

California Health Benefits Review Program

Analysis of California Assembly Bill AB 502 Dental Hygiene

A Report to the 2015-2016 California State Legislature

April 21, 2015



Key Findings:

Analysis of California Assembly Bill AB 502 Dental Hygiene

Summary to the 2015-2016 California State Legislature, April 2015



AT A GLANCE

Assembly Bill AB 502 (introduced February 2015) would require dental PPO plans and insurers that reimburse for dental hygiene services to reimburse Registered Dental Hygienists in Alternative Practice (RDHAP) as out-of-network providers without any separate registration process. AB 502 would not require dental plans and insurers to contract with RDHAPs as in-network providers, nor would AB 502 require direct reimbursement to RDHAPs.

- **Enrollees covered.** CHBRP estimates that in 2015, 8.34 million Californians have state-regulated dental coverage with access to dental hygiene services through their standalone or embedded dental benefit.
- **Impact on expenditures.** CHBRP provides two estimates on expenditures, derived in part from two different data sources that generated its baseline expenditure estimates. Estimate A projects total net annual expenditures to increase by \$47,236 (0.001% in PMPM). In Estimate B, the projected increase in total net annual expenditures would be \$1.944 million (0.04% in PMPM).
- **EHBs.** No impact on the essential health benefits (EHB) pediatric dental coverage requirement for children is expected, nor any EHB costs for the state to defray.
- **Medical effectiveness.** CHBRP found a preponderance of evidence from moderate quality research that the services potentially provided by RDHAPs are effective in alternative practice settings, such as schools, homes of homebound, institutions, and shortage areas. Although CHBRP is unable to estimate health benefits from AB 502 quantitatively, it stands to reason that access to effective oral health care would improve health outcomes among these populations.
- **Public health.** While patients in alternative practice settings would be likely to experience improved oral health outcomes, the effect that AB 502 would have on health disparities by gender, race, and ethnicity among the RDHAP patient population is unknown.

- **Long-term impacts.** The reductions in administrative barriers associated with RDHAP practice, including problems with reimbursement, may result in increasing numbers of RDHAP licensees and greater willingness to provide services to vulnerable populations. Thus, the long-term effects would likely increase access to dental health services and consequent improvement in dental health for patient populations in RDHAP practice settings. However, the number of patients impacted is small, thus the magnitude of public health outcomes is also small.

BILL SUMMARY

AB 502 (as introduced on February 23, 2015) would amend the Health and Safety Code (H&SC) and Insurance Code (IC), requiring health plans and policies that cover dental services, including specialized health plans and policies, to:

- Allow a registered dental hygienist in alternative practice (RDHAP) to submit any claim for dental hygiene services performed as authorized in the California Business and Professionals Code (B&PC).¹
- Reimburse an RDHAP for dental hygiene services that may be performed by a registered dental hygienist (RDH) under the B&PC if the plan or policy provides reimbursement for dental hygiene services.
- Use the same fee schedule for dental hygiene services whether they are performed by an RDH or an RDHAP.

Further, AB 502 would amend the B&PC²:

¹ Business and Professionals Code (B&PC), Division 2, Article 9, Chapter 4.

² In a subsequent amendment to AB 502 on April 16, 2015, both the DHPSA continuation language and removal of the 18 month written verification requirement were deleted from the bill (http://www.leginfo.ca.gov/pub/15-16/bill/asm/ab_0501-0550/ab_502_bill_20150416_amended_asm_v98.html).

- Requiring that an alternative dental hygiene practice established in a dental health professional shortage area (dental HPSA) continue regardless of certification.
- Removing the requirement that an RDHAP who has seen a patient for 18 months or more obtain a written verification, including a prescription for dental hygiene services, that a patient has been examined by a licensed dentist, physician, or surgeon.

CONTEXT FOR BILL CONSIDERATION: RDHAPS

With the goal of improving access to dental services for underserved populations, California formally recognized a new category of dental care professional in 1998 — RDHAPs. RDHAPs are registered dental hygienists (RDHs) in the state of California with bachelor's degrees (or equivalent certifications), who have completed a continuing education course in independent practice dental hygiene and passed a licensing examination administered by the Dental Hygiene Committee of California (DHCC). Once licensed, DHCC requires RDHAPs to designate a "dentist of record" for referrals, consultations, or emergencies, after which RDHAPs are able to provide dental hygiene services without the supervision of a dentist to underserved populations in alternative practice settings, which are schools, residential and other institutions, residences of the homebound, and dental health professional shortage areas. According to DHCC there are currently 563 RDHAPs licensed to practice in specified alternative settings, which include residences of the homebound, schools, residential and other institutions, and dental HPSAs.

Currently, while no other states have legislation focused on reimbursement as AB 502 is, many states are looking at requirements around scope of practice for dental hygienists (note: AB 502 does not change RDHAPs scope of direct dental services rendered). These bills are primarily focused on modifying existing requirements for or allowing registered dental hygienists to practice under nondirect supervision of dentists in alternative settings. In some cases, the legislation is focused on expanding services registered dental hygienists are able to provide without direct supervision of a dentist.

Incremental Impact of Assembly Bill AB 502

Benefit Coverage, Utilization, and Cost

Benefit Coverage

Premandate (baseline) benefit coverage

Currently, all 8.34 million enrollees subject to AB 502 have access to dental hygiene services through their standalone or embedded dental benefit. CHBRP's findings also concluded that:

- There are not currently any RDHAPs that participate as contracted network providers in dental HMOs (DMO) or dental PPOs (DPPO) in California. Thus, CHBRP estimates that 5.25 million (62.9% are estimated to be in DPPO plans, in which RDHAPs can currently submit claims for services delivered as an out-of-network provider.

AB 502 would require several changes that have utilization and cost implications for services delivered and billed to private, state-regulated dental PPOs in California.

Utilization

Premandate (baseline) utilization

Premandate, 100% of enrollees (8.34 million) have benefit coverage for dental hygiene services, including cleanings, x-rays, preventive services, and fluoride treatment for children. However, only 53.6% of enrollees were in state-regulated DPPOs that currently reimbursed all out-of-network RDHAP claims.

Due to conventional data availability constraints, CHBRP used two different approaches to calculate the impact of AB 502.

Postmandate utilization

Postmandate, it is expected that all RDHAPs providing care to any of the 5.25 million state-regulated, private dental PPO enrollees would be reimbursed for services, if provided out of network.

Estimate A

CHBRP calculated in Estimate A that reimbursement of RDHAP services is estimated to increase among enrollees in plans that did not previously reimburse by 0.24 visits per 1,000 enrollees, for an increase of 674.8 reimbursed visits annually (a 116% increase).

Despite the limits of the calculation above and limited data, the increase described above provides a better understanding of the limited impact of AB 502 on utilization and cost, given the narrow definition of alternative practice, the low number of RDHAPs practicing, and the small number of privately insured individuals who seek care in alternative practice settings.

Estimate B

Using data from on the number of RDHAPs in various practice settings (see Table 2 on page 9 of the report), and the percentage of patients likely to be privately insured (10%), CHBRP estimated that all 27,768 services provided by RDHAPs were unreimbursed by state-regulated private DPPO plans (46.4% of the 59,844 total visits provided by RDHAPs). Although the utilization of visits would not change based on these data, the RDHAPs delivering these services would be reimbursed for 27,768 additional hygiene visits (87% increase).

Expenditures

Premandate (baseline) expenditures

In Estimate A, using the baseline utilization estimate of 0.24 visits per 1,000 enrollees in plans that covered RDHAP services already, the total expenditure per year is \$40,885. Of that, it is estimated that 20% is out-of-network cost sharing, so the expenditure by DPPO carriers is \$32,709.

In Estimate B, using the baseline utilization estimate of 32,076 reimbursed visits to RDHAPs and an average cost of \$70 per visit, the total expenditure per year is \$2,245,347. Of that, it is estimated that 20% is out-of-network cost sharing, so the expenditure by DPPO carriers is \$1,796,278.

Postmandate expenditures

Changes in total expenditures

According to Estimate A, AB 502 would increase total net annual expenditures by \$47,236 or 115.5% for enrollees with DMHC-regulated plans and CDI-regulated policies. The increased spending will be partially paid for by DPPO carriers (\$37,779) while the remaining \$9,457 will be from patient cost sharing for out-of-network services (20%).

According to Estimate B, AB 502 would increase total net annual expenditures by \$1,943,760 (87%) due to the 27,768 newly reimbursed RDHAP services. At \$70 per visit, and assuming one visit being reimbursed per year, this represents an 86.6% increase in spending. \$388,752 (20%) of the spending would be paid for by enrollees due to out-of-network cost sharing, while the remainder (\$1,555,008) would be paid for by DPPOs that did not previously reimburse all or part of RDHAP claims.

Based on an average dental insurance per member per month premium of \$39.30 among the 8.34 million enrollees in state-regulated plans, the additional expenditure in Estimate A would translate to a 0.001% increase in premiums.

In Estimate B, the increase in total net annual expenditures for DPPO plans would be \$1,555,008 after patient cost sharing. Based on a \$39.30 dental PMPM for the 8.34 million enrollees in state-regulated plans, the additional expenditure in Estimate B would translate to a 0.04% increase in premiums.

Related Considerations for Policymakers

Cost of exceeding essential health benefits

As explained previously, dental hygiene services are already included in California's EHB package for children in 2015 and 2016. The state is required to defray the additional cost incurred by enrollees in QHPs in Covered California for any state benefit mandate that exceeds the EHBs. Because dental hygiene services delivered by RDHAPs are already a covered benefit and AB 502 focuses on codifying payment levels and expectations for out-of-network RDHAP providers, the law will not impact the EHBs.

Public Health

Although the bill's focus is on the lack of reimbursement for some RDHAPs providing care to a small number of privately insured patients residing in shortage areas or seeking care through alternative settings, it will impact coverage for approximately 46.4% of those with private dental coverage regulated by the state. Little is known about current attempts by RDHAPs to collect reimbursement from out-of-network plans, or the cost sharing their patients may be exposed to. However, this bill would codify the requirement that all RDHAPs should receive reimbursement for services provided out of network in DPPO products regulated by the state, which could decrease barriers to reimbursement, patient utilization, and change perceptions and business practices for RDHAPs.

Long-term Impacts

The reductions in administrative barriers associated with RDHAP practice may result in increasing numbers of RDHAP licensees. Thus, the long-term effects would like increase access to dental health services and consequent improvement in dental health for patient populations in RDHAP practice settings. However, the number of patients impacted is small, thus the magnitude of public health outcomes is also small.

Medical Effectiveness

CHBRP's Medical Effectiveness review presents findings of studies relevant to both the provision of dental services in general, and by RDHAPs specifically. These services included: (1) preventive interventions (dental sealants and oral hygiene education); (2) therapeutic interventions [prophylaxis (teeth cleaning) and periodontal maintenance (root planning and the application of fluoride)]; and (3) diagnostic services (oral health screenings). CHBRP's review also describes evidence on the effectiveness of providing oral hygiene services in the settings in which RDHAPs most typically provide those services.

CHBRP found a high degree of evidence from studies with moderate to strong research designs that preventive interventions such as topical dental sealants, fluoride applications, and dental health education are effective in improving oral health outcomes such as the prevention of tooth decay, caries, and the loss of tooth enamel.

CHBRP found ambiguous evidence from studies with weak to moderate designs that prophylaxis (teeth cleaning) and scaling are ambiguously effective in improving oral health outcomes such as plaque, gingivitis, caries, and periodontal disease.

There is a preponderance of evidence from studies with weak to moderate designs that periodontal maintenance is highly effective in controlling or slowing the progression of existing periodontal disease.

One of the most basic functions served by the RDHAP model is the potential to provide services in alternative settings. These settings are generally defined by population density and population to dentist ratio. However, the mobility of the RDHAP also lends itself to the ability to provide services in school, work, institutional, or residential settings. There have been very few specific studies examining the impact of these alternative settings; however, it should be noted that there have been very few specific studies examining the impact of RDHAPs providing these services in these settings. Although there is such a limited body of evidence available, it stands to reason that the effectiveness of these services would not be different to those provided in the environment of a dental office. The distinction between alternative practice settings and more traditional settings is unlikely to impact patient care, and has more to do with the type of patient seen by RDHAPs (i.e., vulnerable, uninsured, Medi-Cal) and less to do with the care provided in each setting.

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ABOUT CHBRP

The California Health Benefits Review Program (CHBRP) was established in 2002 to provide the California Legislature with independent analysis of the medical, financial, and public health impacts of proposed health insurance benefit mandates and repeals, per its authorizing statute. The state funds CHBRP through an annual assessment on health plans and insurers in California.

An analytic staff in the University of California's Office of the President supports a task force of faculty and research staff from several campuses of the University of California 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, and 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, as well as all CHBRP reports and publications are available at www.chbrp.org.

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POLICY CONTEXT

The California Assembly Committee on Health has requested³ that the California Health Benefits Review Program (CHBRP)⁴ conduct an evidence-based assessment of the medical, financial, and public health impacts of AB 502, dental hygiene.

If enacted, AB 502 would affect the health insurance of approximately 5.25 million enrollees (13.8% of all Californians). This represents 48.7% percent of the 10.61 million Californians who will have standalone dental insurance regulated by the state⁵ that may be subject to any state health benefit mandate law.^{6,7}

Bill-Specific Analysis of AB 502, Dental Hygiene

Bill Language

AB 502 would amend the Health and Safety Code (H&SC) and Insurance Code (IC), requiring health plans and policies that cover dental services, including specialized health plans and policies, to:

- Allow a registered dental hygienist in alternative practice (RDHAP) to submit any claim for dental hygiene services performed as authorized in the California Business and Professionals Code (B&PC).⁸
- Reimburse RDHAPs for performing dental hygiene services that may lawfully be performed by a registered dental hygienist (RDH) and that are reimbursable under the contracts or policies, and would require the plan or insurer to use the same fee schedule for reimbursing both registered dental hygienists and RDHAPs for dental hygiene services whether they are performed by an RDH or an RDHAP.

Further, AB 502 would amend the B&PC:

- Requiring that an existing alternative dental hygiene practice established in a certified dental health professional shortage area (HPSA) is allowed to continue practicing in the area as an RDHAP, even if the dental HPSA designation ends (i.e., the dental HPSA loses certification).
- Removing the requirement that an RDHAP who has seen a patient for 18 months or more obtain a written verification, including a prescription for dental hygiene services, that a patient has been examined by a licensed dentist, physician, or surgeon.

³ February 27, 2015, available at: www.chbrp.org/.

⁴ CHBRP is authorized to review legislation affecting health insurance regulated by the state. CHBRP's authorizing statute is available at www.chbrp.org/docs/authorizing_statute.pdf.

⁵ State benefit mandates apply to a subset of health insurance in California, those regulated by one of California's two health insurance regulators: the California Department of Managed Health Care (DMHC) and the California Department of Insurance (CDI).

⁶ CHBRP's estimates of the source of health insurance available at: www.chbrp.org/other_publications/index.php.

⁷ Of the rest of the state's population, a portion will be uninsured (and therefore will have no health insurance subject to any benefit mandate), and another portion will have health insurance subject to other state laws or only to federal laws.

⁸ Business and Professionals Code (B&PC), Division 2, Article 9, Chapter 4.

- Allows professional corporations to provide professional services via persons duly licensed by the Dental Hygiene Committee of California (DHCC), by exempting them from the requirement to obtain a certificate of registration in order to render those professional services.
- Allows RDHAPs to be shareholders, officers, or directors of an RDHAP corporation, and allows licensed dentists and dental assistants to be professional employees of an RDHAP corporation.

The full text of AB 502 can be found in Appendix A.

RDHAPs

With the goal of improving access to dental services for underserved populations, California formally recognized a new category of dental care professional in 1998: RDHAPs (Mertz, 2008). RDHAPs are a subset of registered dental hygienists (RDHs) in the state of California that are authorized to practice in specified underserved areas. Although RDHAPs and RDHs share the same scope of practice (see the *Background on RDHAPs* section), RDHs may not practice dental hygiene in the absence of an on-site dentist whereas RDHAPs, through additional schooling and licensing process, may provide dental hygiene services without the supervision of a dentist.

RDHAPs must possess bachelor's degrees (or equivalent certifications), complete a continuing education course in independent practice dental hygiene, and pass a licensing examination administered by the DHCC. Once licensed, RDHAPs are required by DHCC to designate a "dentist of record" for referrals, consultations, or emergencies, after which RDHAPs are able to provide dental hygiene services without the supervision of a dentist to underserved populations in alternative practice settings (Wides et al., 2011). According to DHCC, there are currently 563 RDHAPs⁹ licensed to practice in specified alternative settings, which include residences of the homebound, schools, residential and other institutions, and dental HPSAs (Mertz, 2008). However, 93% of the RDHAPs report actively practicing, for a total of 524 RDHAPs statewide.

AB 502 does not change or expand RDHAPs' scope of direct dental services rendered.

Analytic Approach and Key Assumptions

Scope of benefit coverage, utilization, and cost impact estimates

CHBRP will focus on measuring utilization and expenditure changes that are likely to result from enactment of AB 502. Due to a lack of information on baseline utilization of dental hygiene services overall or services provided by RDHAPs, the traditional CHBRP cost model will not be employed for this analysis. Instead, CHBRP will provide two estimates of the potential impact of AB 502 based on data collected from insurance carriers on current reimbursement of RDHAP services, data on populations obtaining care in specified alternative practice settings, and information from the California Association of Dental Plans on the types of plans and their enrollment in California.

Reimbursement for RDHAPs

RDHAPs are billable providers that can obtain a National Provider Identifier (NPI) number from the federal government to submit claims for reimbursement. However, having an NPI number does not guarantee reimbursement. Plans and policies that currently reimburse RDHAPs for dental hygiene services

⁹ Personal Communication, DHCC, March 2015.

reimburse RDHAPs as out-of-network providers. AB 502 would not require that plans or policies contract with RDHAPs as in-network providers.

Dental Health Maintenance Organizations (Dental HMOs)

Dental HMOs contract directly with dental practices to provide services to their enrollees and do not reimburse out-of-network providers. AB 502 would not require dental HMOs to contract with RDHAPs as in-network providers and thus would not require dental HMOs to reimburse RDHAPs given the closed nature of DHMO networks. Therefore, AB 502 would have no impact on dental HMOs.

Dental Preferred Provider Organizations (Dental PPOs)

Dental PPOs do reimburse out-of-network providers. Currently, some dental PPO plans and insurers reimburse RDHAPs as out-of-network providers, but not all. Additionally, of the dental PPO plans and insurers that do currently reimburse RDHAPs as out-of-network providers, some require RDHAPs to register with them to be reimbursed. AB 502 would require all dental PPOs that reimburse for dental hygiene services to reimburse RDHAPs as out-of-network providers without a separate registration process.

Direct reimbursement

Dental plans and insurers can pay an out-of-network claim for an enrollee in a dental PPO product directly to the provider of the service or to the enrollee. If the claim is paid directly to the enrollee, the provider must bill and obtain reimbursement directly from the enrollee as opposed to the dental plan or insurer. AB 502 would not require direct reimbursement to RDHAPs for services, although it may remove barriers to obtaining direct reimbursement.

AB 502 would require dental PPO plans and insurers that reimburse for dental hygiene services to reimburse RDHAPs as out-of-network providers without any registration process. AB 502 would not require dental plans and insurers to contract with RDHAPs as in-network providers, nor would AB 502 require direct reimbursement to RDHAPs.

Coverage for dental services

Private insurance: Health plans and policies that cover dental services

AB 502 would apply to all health plans and policies that cover dental services, including specialized health care service plans and policies. As with full-service plans and policies that provide coverage for hospital, medical, or surgical benefits, specialized health plans and policies are regulated by DMHC and CDI. Enrollees in specialized health plans and policies would overlap with enrollees in full-service plans and policies. Enrollees in full-service plans and policies could have coverage through a specialized health plan or policy for dental, for example, which is generally not covered through a full-service plan or policy.

Although health insurance does not typically include embedded dental benefits, the Affordable Care Act (ACA) requires nongrandfathered plans and policies in the small-group and individual market to cover essential health benefits (EHBs), which are made up of 10 coverage categories.¹⁰ One of the EHB

¹⁰ For more information on essential health benefits, including how they have been defined in California, see CHBRP's brief, *California's State Benefit Mandates and the Affordable Care Act's "Essential Health Benefits,"* available at: www.chbrp.org/other_publications/index.php.

coverage categories is pediatric services, including dental and vision. Therefore, these full-service plans and policies either provide coverage for dental services for enrollees aged 19 years or younger, or sell a standalone dental plan alongside the health insurance benefit to meet the EHB requirements.¹¹ CHBRP estimates that less than 14,000 children and adolescents are enrolled in non-grandfathered, individual or small group policies with embedded dental PPO plans. It is unknown how many of those 14,000 children reside in dental HPSAs or receive care in settings where RDHAPs can practice. Given that Medi-Cal coverage for children extends to 266% of the Federal Poverty Level (FPL), the population of children subject to RDHAP reimbursement may be very small.

Public Insurance: Medi-Cal and Denti-Cal

Dental services, including dental hygiene services, for enrollees in the Medi-Cal program are delivered through Denti-Cal. Denti-Cal is almost entirely a fee-for-service (FFS) program (96%) as opposed to a managed care program (4%) (CHCF, 2010). Denti-Cal FFS is not subject to the H&SC¹² and thus not subject to AB 502. Only two counties in California are Denti-Cal managed care — Sacramento and Los Angeles. Denti-Cal managed care in Sacramento is mandatory, but it is optional in Los Angeles.¹³ Denti-Cal managed care plans do not currently contract with allied professionals such as RDHAPs, as these provider types cannot provide comprehensive care and as such cannot be assigned as an enrollee's dental home provider.

Business and Professions Code (B&PC)

CHBRP analyzes the impact of health benefit mandate legislation on DMHC-regulated plans that are subject to the Health and Safety Code (H&SC) and CDI-regulated policies that are subject to the Insurance Code (IC). In addition to adding provisions to the H&SC and IC that would constitute a benefit mandate for plans and policies, AB 502 amends the B&PC, as stated above. The amendments to the B&PC are not a benefit mandate. However, this analysis takes into account those amendments, looking at how they may impact access and utilization.

General Caveat for All CHBRP Analyses

It is important to note that CHBRP's analysis of proposed benefit mandate bills typically address the incremental effects of the proposed bills — specifically, how the proposed legislation would impact benefit coverage, utilization, costs, and public health. CHBRP's estimates of these incremental effects are presented in this report.¹⁴

¹¹ Covered pediatric services, including dental and vision, must be provided through the plan/policy year in which the beneficiary turns 19.

¹² Medi-Cal managed care is regulated by DMHC and DHCS, not CDI, and there is subject to the H&SC and not the IC.

¹³ According to a California State Auditor report from December 2014, *Department of Health Care Services: Weaknesses in Its Medi-Cal Dental Program Limit Children's Access to Dental Care*, "In 2013, about 143,000 child beneficiaries received services under the dental managed care plans operating in the counties of Los Angeles and Sacramento." Available at: www.auditor.ca.gov/pdfs/reports/2013-125.pdf.

¹⁴ For CHBRP's technical approach to developing estimates, please see Appendix C, Cost Impact Analysis: Data Sources, Caveats, and Assumptions.

Interaction with Existing Requirements

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

State Requirements

California law and regulations

Chapter 4 of the B&PC covers dentistry and Article 9 focuses on dental hygienists, establishing the Dental Hygiene Committee of California (DHCC), the licensing requirements for RDHs, registered dental hygienist in extended functions, and RDHAPs, and the services that can be performed by these three provider types. AB 502 would amend this section of the B&PC.

Most recently (in 2014), the B&PC was amended to give RDHAPs as well as RDHs and registered dental hygienists in extended functions the ability to determine what radiographs to perform and to place protective restorations.¹⁵

Similar requirements in other states

Thirty-seven states, including California, are direct-access states for dental hygienists, meaning that a dental hygienist can “initiate treatment based on his or her assessment of patient’s needs without the specific authorization of a dentist, treat the patient without the presence of a dentist, and can maintain a provider-patient relationship” (ADHA, 2014). These services are generally provided in settings such as Head Start centers, schools, federally qualified health centers (FQHCs), and long-term care facilities. Washington and Colorado were the first states to allow this. In 1984, Washington began to allow unsupervised practice in alternative settings. In 1987, Colorado began to allow dental hygienists to practice dental hygiene services without a dentist’s authorization or supervision. Other states have followed suit since. Oregon first allowed dental hygienists to deliver services in limited access settings in 1997. In 2011, Oregon modified this law, adding the requirement that insurance reimburse extended practice dental hygienists. In 16 states, there is statutory or regulatory language allowing the state Medicaid program to directly reimburse dental hygienists for services rendered.¹⁶

Currently, while no other states have legislation focused on reimbursement as AB 502 is, many states are looking at requirements around scope of practice for dental hygienists (note: AB 502 does not change RDHAPs scope of practice). These bills are primarily focused on modifying existing requirements for or allowing registered dental hygienists to practice under nondirect supervision of dentists in alternative settings. In some cases, the legislation is focused on expanding services registered dental hygienists are able to provide without direct supervision of a dentist.

Federal Requirements

Affordable Care Act

As previously discussed, the ACA requires nongrandfathered plans and policies in the small-group and individual market to cover EHBS, including pediatric dental. The state may require qualified health plans

¹⁵ AB 1174 (Bocanegra) Dental Professionals, 2014. B&PC 1910.5.

¹⁶ American Dental Hygienists Association, available here: www.adha.org/reimbursement.

(QHPs)¹⁷ sold in Covered California — the state’s health insurance marketplace — to offer benefits that exceed EHBs.¹⁸ However, if the state chooses to do so it must make payments to defray the cost of those additionally mandated benefits, either by paying the purchaser directly or by paying the QHP.¹⁹

AB 502 and EHBs

Requirements that would be mandated by AB 502 will not impact EHBs coverage, and therefore would not trigger the ACA requirement that the state defray the cost of additional benefit coverage for enrollees in QHPs in Covered California. Furthermore, AB 502 would not change the EHB pediatric dental coverage requirement for children nor extend it to adults.

¹⁷ In California, QHPs are nongrandfathered small-group and individual market DMHC-regulated plans and CDI-regulated policies sold in Covered California, the state’s online marketplace.

¹⁸ ACA Section 1311(d)(3).

¹⁹ As laid out in the Final Rule on EHBs HHS released in February 2013, state benefit mandates enacted on or before December 31, 2011, would be included in a 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. 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.

BACKGROUND ON RDHAPS

In California, an estimated quarter of all adults and one-third of all children have untreated tooth decay (CHCF, 2009). Defined as degeneration of the outer surfaces of the teeth and gums, tooth decay results from a lack of preventive and therapeutic oral hygiene services and is progressive when left untreated. Failure to prevent or obtain timely care for small dental problems can lead to costly and debilitating consequences including tooth loss, poor nutrition, and secondary infections throughout the body (DHF, 2006). Consistent access to the preventive services and basic oral health education provided by dental hygiene professionals significantly contributes to reducing the risk of unabated tooth decay.

Nationally, utilization of dental services is high, with almost 70% of the overall U.S. population reporting at least one visit with a dental professional in the past year, yet low-income, rural, minority, and disabled populations disproportionately experience barriers to dental care that place them at increased risk of tooth decay (Mertz and Glassman, 2011; NCHS, 2014).

RDHAP: Scope of Practice and Practice Settings

As discussed in the *Policy Context* section (page 1), in order to improve access to dental services for populations in underserved settings, California formally recognized a new category of dental care professional in 1998: the Registered Dental Hygienist in Alternative Practice (RDHAP) (Mertz, 2008). RDHAPs are a subset of registered dental hygienists (RDHs) in the state of California who are authorized to practice in specified underserved areas. Although RDHAPs and RDHs share the same scope of practice (see the *Background on RDHAPs* section, page 7), RDHs may not practice dental hygiene in the absence of an on-site dentist whereas RDHAPs, through additional schooling and a licensing process, may provide dental hygiene services without the supervision of a dentist.

RDHAPs must possess bachelor's degrees (or equivalent certifications), complete a continuing education course in independent practice dental hygiene, and pass a licensing examination administered by the Dental Hygiene Committee of California (DHCC). Once licensed, RDHAPs are able to administer dental hygiene services in designated alternative practice settings (see *RDHAP Practice Settings* discussed below) without the supervision of a dentist, provided that they identify a "dentist of record" for referrals, consultations, or emergencies (Wides et al., 2011).

Scope of Practice

RDHAPs may provide the full range of diagnostic, preventive, and therapeutic services for which they are licensed as a registered dental hygienist (Table 1); however, they are prohibited from performing duties that require the direct supervision of a dentist (e.g., administering anesthesia) or restorative tasks that are outside of the scope of dental hygiene practice (e.g., filling cavities, placing crowns, periodontal curettage) (CA B&PC Section 1902-1911; Mertz, 2008). In addition, RDHAPs are an important conduit to advanced dental services. If, during an oral screening, an RDHAP determines that a patient requires treatment beyond their scope of practice, they may issue referrals to dentists or physicians. Considering that RDHAP patient populations are, by definition, underserved, it is likely that patients would not have access to advanced dental services otherwise.

RDHAPs are authorized to independently provide dental hygiene services for a period of 18 months without the involvement of a dentist. Beyond the initial 18 months, RDHAPs must currently obtain written verification from a dentist or physician containing: (a) confirmation that the patient has been examined; and (b) a prescription for continued RDHAP care, valid for two years (Mertz and Glassman, 2011). AB 502 would amend the Business and Professions Code (B&PC), removing this requirement.

Table 1. Provision of Dental Hygiene Services by Dental Hygienist Setting, California, 2014

| Dental Hygiene Services (by required level of supervision) | Able to Provide Service | |
|---|-------------------------|-------|
| | RDH | RDHAP |
| General Dentist Supervision | | |
| Preventive interventions: placing of dental sealants, dental hygiene education, fluoride treatments | Yes | Yes |
| Therapeutic interventions: oral prophylaxis, tooth polishing, root planning | Yes | Yes |
| Diagnostic services: oral health screenings, X-rays | Yes | Yes* |
| Placing protective restorations for interim tooth stabilization | Yes | Yes* |
| Direct Dentist Supervision (a) | | |
| Administration of local anesthesia or nitrous oxide | Yes | No |
| Soft tissue curettage | Yes | No |

Source: California Businesses and Professions Code, 1902-1911

Note: *May be performed in a public health setting, using telehealth to communicate with the supervising dentist if necessary. (a) RDHAPs and RDHs may only perform these services if a dentist is physically present to supervise at the job site.

According to DHCC, there are currently 563 licensed RDHAPs²⁰ throughout California, as compared with approximately 31,000 licensed RDHs (DHCC, 2014). Due to their small numbers, unique designation, and barriers to participation in some networks, RDHAPs often experience difficulty gaining recognition as providers from payers and receiving compensation for their services.²¹ In a 2009 descriptive survey of the RDHAP workforce, 82% of practicing RDHAPs reported maintaining employment in a traditional dental office setting for an average of three days per week in order to support two days of alternative practice, citing significant administrative barriers to receiving consistent reimbursement for services delivered under their RDHAP licensure (Wides et al., 2011). Accordingly, in 2009, RDHAPs identified “administrative hassle” as a significant impediment (4.0 on a 5-point scale) to providing direct patient care and reported spending approximately one-third of RDHAP practice time on administrative activities (Mertz, 2008; Mertz and Glassman, 2011; Wides et al., 2011).

Practice Settings

RDHAPs are licensed to practice in specified alternative settings, which are schools, residential and other institutions, residences of the homebound, and dental health professional shortage areas (HPSAs) (Mertz, 2008) Within these settings, RDHAPs can work in one or multiple settings, and may choose to work as a contractor for a dentist or another RDHAP, as the proprietor of a dental hygiene practice, or as the operator of a mobile clinic or independent office in a dental HPSA (DHCC, 2014). In 2009, the majority of RDHAPs reported working in residential facilities (64%) and residences of the homebound (61%), 22% reported working in schools, and 14% reported working in an independent office-based practice in a dental HPSA (Mertz and Glassman, 2011).

²⁰ Personal Communication, DHCC, March 2015.

²¹ Personal Communication, Elizabeth Mertz PhD, March 2015.

Dental HPSAs are geographic areas, population groups, or facilities located in medical services study areas (MSSAs) with high patient-to-provider ratios (greater than 5,000:1), greater than average levels of oral health needs, or location-related barriers to dental health professional access (HRSA, 2015). Approximately 7% of the state population (a little more than 2.7 million) live in dental HPSAs, the majority of which are located in the northern half of the state and along the Southern coast (KFF, 2014; OSHPD, 2014). On the basis of the 5,000:1 patient-to-provider ratio, the Kaiser Family Foundation (KFF, 2014) estimates that the number of providers currently practicing in dental HPSAs throughout California meets only about 40% of the need in these areas and would require an additional 193 providers state-wide to remove the dental HPSA designations. In the context of AB 502, it is important to note that the vast majority of residents in dental HPSAs are publicly insured or uninsured, and would not be affected by enactment of the law.

RDHAP: Patient Population and Characteristics

Patient Population

CHBRP estimates that, annually, RDHAPs provide dental hygiene services to approximately 598,400 patients statewide (Table 2). In a 2009 survey, RDHAPs estimated that, on average, about a tenth of their patients were privately insured, a third were uninsured, and over half received their insurance through public assistance programs, like Medi-Cal (Wides et al., 2011).²² The estimated annual RDHAP patient population in Table 2 is based on adjustments to the known number of currently practicing RDHAPs and 2009 survey data detailing RDHAP practice elements (see Appendix C for population estimate calculation methodology, and the cost section for more detail on this table).

Table 2. Annual RDHAP Patient Population by Alternative Practice Setting, California

| Alternative Practice Setting | Estimated Number of Patients Served by RDHAPs per Year by Practice Setting | Number of Privately Insured Patients by Practice Setting | Number of Dental PPO Patients Subject to AB 502 |
|--|--|--|---|
| Residential facility/assisted living | 54,533 | 5,453 | 2,530 |
| Residence of homebound | 33,083 | 3,308 | 1,535 |
| Nursing home/skilled nursing facility | 147,139 | 14,714 | 6,827 |
| Other institution | 119,47 | 1,195 | 554 |
| Schools | 247,948 | 24,795 | 11,505 |
| Independent office-based practice in a dental HPSA | 44,587 | 4,459 | 2,069 |

²² It should be noted that these numbers reflect the patient base prior to the implementation of the ACA, and it is likely that greater proportions of RDHAP patients now qualify for Medi-Cal or, for some children, are able to obtain private insurance that includes pediatric dental coverage as part of required EHB coverage.

| Alternative Practice Setting | Estimated Number of Patients Served by RDHAPs per Year by Practice Setting | Number of Privately Insured Patients by Practice Setting | Number of Dental PPO Patients Subject to AB 502 |
|----------------------------------|--|--|---|
| Hospital | 6,433 | 643 | 298 |
| Home health agency | 6,183 | 618 | 287 |
| Public health clinic | 11,779 | 1,178 | 547 |
| Federal/State Tribal Institution | 16,435 | 1,644 | 763 |
| Community centers | 5,942 | 594 | 276 |
| Community/migrant health clinic | 12,435 | 1,243 | 577 |
| TOTAL | 598,445 | 59,844 | 27,768 |

Source: California Health Benefits Review Program, 2015.

Notes: Population estimates are based on 2009 RDHAP census survey data as reported in Wides et al., 2011, and 2014 data on RDHAPs licenses supplied by DHCC and were used to inform Estimate B detailed in the *AB 502 Impacts on Benefit Coverage, Utilization, and Cost*, section. Note that the term “patients is a proxy for dental hygiene visits. Please see Appendix C for full discussion of calculations and assumptions.

Key: RDHAP = Registered Dental Hygienist in Alternative Practice

Patient Characteristics

The characteristics and high levels of need among patients in alternative practice settings present unique challenges to dental hygiene service delivery. Many RDHAP patients do not speak English, are elderly, and a significant proportion have physical or cognitive disabilities that complicate their ability to receive dental care (Mertz and Glassman, 2011; Wides et al., 2011). Additionally, a majority of alternative practice patients are low income and have limited resources with which to finance consistent dental care. Considering the range of physical and financial challenges their patients experience, RDHAPs estimated that, across all settings, over half of their patients had no other source of dental care. Homebound patients were estimated to have the greatest need (82% with no other source of care), followed by patients in long-term residential care facilities (68%), dental HPSAs (52%), and schools (44%) (Mertz and Glassman, 2011; Wides et al., 2011). The absence of a usual source of dental care among alternative practice populations is not necessarily indicative of patient’s insurance status; rather, it is often a reflection of a patient’s level of disability or isolation from available services.

MEDICAL EFFECTIVENESS

Research Approach and Methods

The following review will present the findings of studies relevant to both the provision of dental hygiene services in general, and by RDHAPs specifically. This bill addresses dental hygiene services administered by an RDHAP in designated shortage areas and alternative practice settings. Therefore, this literature review will concentrate on the effectiveness of the services provided by RDHAPs (see Table 1): (1) preventive interventions (dental sealants and oral hygiene education); (2) therapeutic interventions [prophylaxis (teeth cleaning) and periodontal maintenance (root planning and the application of fluoride)]; and (3) diagnostic services (oral health screenings)²³. The review will also describe evidence on the effectiveness of providing oral hygiene services in the settings in which RDHAPs most typically provide those services. Additional details regarding the literature review can be found in Appendix B, Literature Review Methods.

It should be noted that the body of research for the different oral hygiene practices reported below is of widely varying breadth and quality, making it difficult to definitively describe the effectiveness of some specific practices, e.g., teeth cleaning and polishing (Beirne et al., 2007) or the field in general (Haaland, 1999). There is also a lack of studies comparing the effectiveness of those services provided by an RDHAP in alternative practice settings to those provided by a registered dental assistant in supervised settings, with most examining the safety and efficacy of the programs, and not the impact of increased access (Mertz, 2008).

General Study Findings

The Medical Effectiveness of Services Commonly Provided by RDHAPs

An RDHAP may perform any preventive or therapeutic duty that a registered dental hygienist (RDH) is allowed to perform under general supervision. Below are some of the primary services provided by RDHAPs, and a summary of relevant studies of effectiveness of those services.

Preventive interventions

Dental sealants

Dental sealants are a plastic coating applied to the crown surface of back teeth to protect them from decay by sealing out food and bacteria. Sealants can last 5 to 10 years (CDC, 2013). They are most often used on children and adolescents. Systematic reviews of randomized controlled trials of the effectiveness of dental sealants at preventing caries found strong evidence that sealants prevented caries in children at high risk (Beauchamp et al., 2008) and protect better than fluoride in high abrasive conditions (Buzalaf et al., 2014). The evidence of the effectiveness of dental sealants used in adults was weaker, but still indicated that sealants are effective for adults at risk for caries (Beauchamp et al., 2008). Chi et al. (2014) reported that sealing primary molars of Medicaid-enrolled school children reduced the need for subsequent dental treatment, and that the additional costs were outweighed by the benefits. A meta-

²³ Two services presented in Table 1 were not reviewed (x-rays and placing protective restoratives for interim tooth stabilization) because they are limited to being performed in a public health setting, using telehealth to communicate with the supervising dentist if necessary.

analysis of 24 studies showed that the effectiveness of sealants for protection from further decay was over 71% (Llodra et al., 1993).

Fluoride application

Topical fluoride can be applied as gel, foam, or varnish. Depending upon an individual’s oral health, fluoride treatments may be recommended every 3, 6, or 12 months. Laboratory studies have found that a single application of a topical fluoride varnish reduced enamel wear from erosion and abrasion (Sar Sancakli et al., 2015). A study comparing children who received fluoride varnish in conjunction with caregiver oral health counseling had a significantly lower rate of caries than children whose parents received caregiver counseling alone, but with no fluoride varnish treatment for their children (Weintraub, 2006). The application of topical fluorides also can slow demineralization and work toward remineralization of the tooth enamel (Barnes, 2005; Marinho et al., 2013). A review of 7 studies examining various forms of fluoride treatments concluded that topical fluoride toothpastes, mouth rinses, gels, and varnishes were clearly effective in the prevention of caries (Marinho, 2009). The American Dental Association recommends periodic topical fluoride treatments for both children and adults who are moderate to high risk of developing some form of tooth decay, as it has been found effective in preventive treatment for these groups (American Dental Association Council on Scientific Affairs, 2007).

Dental hygiene education

RDHAPs also educate patients regarding the improvement and maintenance of oral health. They may explain to the patient the relationship between specific diets and oral health or they may give advice to patients on how to select the appropriate toothbrush and other oral-care devices. Oral health education can be key in the establishment of good oral health habits in school children (Damle et al., 2014). A recent study found that in an area with fluoridated water, educating parents about oral health may be just as effective in preventing early childhood caries as a semiannual application of fluoride varnish (Jiang et al., 2014).

Table 3. Summary of Findings About the Effectiveness of Topical Sealants and Fluoride Applications

| Treatment | Conclusion |
|---|--|
| <p>Evidence about Preventive Interventions</p> | <p>There is a preponderance of evidence from studies with moderate to strong research designs that preventive interventions such as topical dental sealants, fluoride applications, and dental health education are effective in improving oral health outcomes such as the prevention of tooth decay, caries, and loss of tooth enamel.</p> |

Source: California Health Benefits Review Program, 2015.

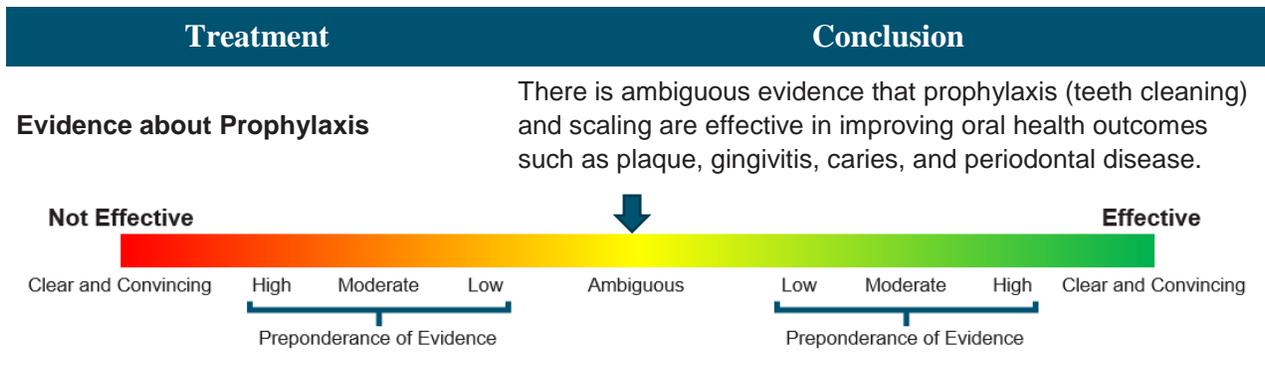
Therapeutic interventions

Prophylaxis (teeth cleaning)

The American Dental Association describes prophylaxis as “including scaling and polishing procedures to remove coronal plaque, calculus, and stains.” Prophylaxis is commonly performed by RDHs. In the environment of a dental office, dental cleaning aids in the initial examination and treatment plan as tooth decay and basic condition are hard to evaluate in the presence of excess buildup. However, the assessment of the effects of routine cleaning, scaling, and polishing, suffers from insufficient evidence-based literature. Two separate Cochrane reviews attempted to summarize the literature on teeth cleaning and scaling on periodontal health. Most recently, a 2013 review of three studies examining the effects of scaling and polishing on various outcomes reported ambiguous findings. The studies either found “no evidence to claim or refute benefit for scale and polish treatments for the outcomes of gingivitis, calculus and plaque,” or found effects, but only at service frequencies not commonly provided (e.g., cleanings every 3 months). No studies reported any adverse effects (Worthington et al., 2013). A 2007 review of nine studies examining the effect of routine scale and polish found that, as a body of research, the studies provided mixed or no evidence for the effectiveness of scaling and polishing for adult periodontal health, and, given the low quality of the studies, the research evidence was insufficient to reach any conclusions regarding the effectiveness of routine scaling and polishing for periodontal health (Beirne et al., 2007).

Beyond general oral health, regular cleanings can be effective in the early detection of oral cancer and serious dental problems (Chu and Craig, 1996), but without proper oral hygiene habits, a regimen of traditional cleanings is not always effective in the prevention of caries and periodontal disease (Axelsson and Lindhe, 1981).

Table 4. Summary of Findings about the Effectiveness of Prophylaxis (Teeth Cleaning)



Source: California Health Benefits Review Program, 2015.

Periodontal maintenance

Periodontal maintenance is a therapeutic procedure for people with periodontal disease. It involves scaling and root planning to remove deposits from the root surface. For patients with early or moderate onset of periodontal disease, treatment for periodontal diseases through periodontal maintenance helps to control the bacterial biofilm, slow the progression of the disease, and restore lost tooth support (Pihlstrom et al., 2005). Additionally, studies have found a relationship between periodontal maintenance and tooth loss, such that individuals who follow their specific periodontal maintenance plan are at decreased risk for tooth loss than patients who don’t follow a maintenance plan (Chambrone et al., 2010).

Table 5. Summary of Findings about Periodontal Maintenance

| Treatment | Conclusion |
|---|--|
| <p>Evidence about Periodontal Maintenance</p>  | <p>There is a preponderance of evidence from studies with weak to moderate designs that periodontal maintenance is highly effective in controlling or slowing the progression of existing periodontal disease.</p> |

Source: California Health Benefits Review Program, 2015.

Diagnostic services: Oral health screenings

One of the regular functions of an RDH in the course of an appointment (and thus of RDHAPs) is to screen for signs of more severe dental problems, such as decay and gingivitis (Academy of General Dentistry, 2015). Screening for dental decay of children has been shown to be an effective method of entry into treatment with a dentist (Zilversmit et al., 2015). RDHAPs also often provide screening for oral cancer. Screening for oral cancer by a dental hygienist can also be an effective means of early detection, which is a key factor in treatment success (Chu and Craig, 1996). A Cochrane review examining the effects of screening on the prevention of oral cancer reported on a single large study in India and found that oral screening reduced the mortality rate for oral cancer for high-risk people (i.e., those who used alcohol or tobacco or both) as compared to a control group, but there was no difference in mortality rates between the control group and a non-high risk oral screening group (Brocklehurst, 2013).

The Effectiveness of RDHAPs in Alternative Practice Settings

One of the most basic functions served by the RDHAP model is the potential to provide services in alternative settings. These settings are generally defined by population density and population to dentist ratio. However, the mobility of the RDHAP also lends itself to the ability to provide services in school, work, institutional, or residential settings. Below is a short summary of relevant literature for some of these alternative settings; however, it should be noted that there have been very few specific studies examining the impact of RDHAPs providing these services in these settings. Although there is such a limited body of evidence available, it stands to reason that the effectiveness of these services would not be different to those provided in the environment of a dental office. The distinction between alternative practice settings and more traditional settings is unlikely to impact patient care, and has more to do with the type of patient seen by RDHAPs (i.e., vulnerable, uninsured, Medi-Cal) and less to do with the care provided in each setting.

Schools

The provision of services in school-based settings is an effective means of delivering services to children with no regular dental provider or families with limited resources (Albert et al., 2005). School-based screenings can be an effective tool in stimulating further contact with a dentist for populations that may tend to underutilize dental services (Donaldson and Kinirons, 2001). The school-based delivery of dental sealants has been shown to be an effective means of preventing caries in school children (Guide to Community Preventive Services, 2013) and application of topical fluoride in school and other

environments can substantially reduce tooth decay (Marinho, 2009). Additionally, exposure to dental hygiene programs in school settings is associated with better dental hygiene practices and future likelihood to have a regular dentist (Damle, 2014).

Residences of homebound individuals

The ability to receive home-based delivery of dental care is increasingly important for those with limited mobility or who are homebound due to disability, advanced age, or physical or mental illness. This is especially true for the fast-growing older adult population who often have restricted mobility. According to the Centers for Disease Control, Division of Oral Health, older adults experience continued tooth decay on both the crowns and roots of teeth, and may experience new tooth decay at higher rates than children (CDC, 2013). Although there is a lack of studies examining the impact of targeted oral hygiene programs for the homebound, there is some evidence that delivering oral hygiene care to the homebound can be effective. For example, a randomized controlled trial compared an experimental group of stroke survivors who received a home-based oral care program with a control group who received usual care (Kuo et al., 2015). The experimental group had significant improvements in oral care knowledge and self-efficacy, which have been associated with better dental health outcomes.

Institutions

Institutionalized settings can include correctional facilities, nursing homes, hospital settings for the chronically ill, and juvenile institutions. It is a challenge for oral health care professionals to provide care to the chronically ill, institutionalized, and older adults with limited finances (DeBiase and Austin, 2003). Many times, the nature of these settings precludes access to regular dental care. Access to dental hygienists in these settings can help fill the need for oral health care for these populations (Glassman and Subar, 2010). This can be especially important in confined settings such as institutions, as bacteria in the mouth can be inhaled leading to respiratory illness. In a study by Adachi et al. (2007), researchers compared the risk of respiratory infection between nursing home patients receiving professional oral health care and those who were not. The patients who received professional oral health care were found to show a lower prevalence of respiratory pathogens, fatal aspiration pneumonia, and fevers. These results suggest that professional oral health care by dental hygienists is effective in preventing respiratory infections in older individuals living in nursing home settings. Furthermore, it has been seen that nurses and certified nursing assistants commonly do not have the training or resources to adequately maintain oral health in institutional settings (Coleman, 2006).

Dental health professional shortage areas

Limited access to oral care for individuals in remote or underserved areas can result in a disproportionate burden of oral disease in rural populations (Mertz and Glassman, 2011). Although not required to serve in a dental HPSA, RDHAPs (and those serving in similar positions under other job titles) often help fill the gap between available services and need. The very nature of some of the geographic regions that meet shortage area criteria results in a geographically spread out population with limited transportation options. Coupled with the inability to attract appropriate numbers of dentists, these regions constitute severe problems regarding the delivery of oral healthcare. The RDHAP model, which centers around mobility and remote delivery of services, has been seen as an effective solution for oral hygiene and maintenance needs for these populations (Mertz, 2008).

Table 6. Summary of Findings About the Effectiveness of Providing Services in Alternative Settings

| Treatment | Conclusion |
|---|---|
| <p>Evidence about the Effectiveness of Providing Services in Alternative Practice Settings</p> | <p>There is a preponderance of evidence from moderate quality research that the services potentially provided by RDHAPs is effective in alternative practice settings such as schools, homes of homebound, institutions, and shortage areas, although it stands to reason that access to effective oral health care would improve health outcomes among these populations. Although the trend of the evidence is towards effectiveness, the lack of studies in these specific settings, especially higher quality studies such as RCTs, leads to a more conservative estimate of the effectiveness.</p> |



Source: California Health Benefits Review Program, 2015.

AB 502 IMPACTS ON BENEFIT COVERAGE, UTILIZATION, AND COST, 2016

Based on extensive information gathered from health plans, standalone dental plans, administrators for embedded dental benefits, a content expert, and the sponsors of the bill, key assumptions were established to assess the utilization and cost impact on services delivered by Registered Dental Hygienists in Alternative Practice (RDHAP), were AB 502 to be enacted. They are as follows:

- There are currently no RDHAPs that participate as contracted network providers in dental HMOs (DHMO) or dental PPOs (DPPO) in the state. It is not anticipated that RDHAPs will become participating providers in either type of dental insurance plan under AB 502 due to their scope of practice and network participation requirements.
- RDHAPs are already allowed to submit claims as out-of-network providers to DPPO plans, but the rate of reimbursement and likelihood of having the claim paid varies by plan, service, and the certification requirements of each plan. AB 502 is likely to increase the likelihood of claims being paid and RDHAPs being recognized by DPPOs as out-of-network providers only.
- Removing the requirement that RDHAPs obtain written verification and a prescription for dental hygiene services from a licensed dentist, physician, or surgeon if they have been seeing a patient for 18 months or more will not change the likelihood of initial visits and treatment. However, it could reduce barriers to continuing care for existing patients. AB 502 should increase visits and reimbursement to RDHAPs for this reason.
- Reduced paperwork, changes to professional corporation requirements and staffing, certification requirements, and barriers to providing and being reimbursed for care will not change the out-of-network nature of RDHAP care or the limitations on where they can practice. However, it could increase the number and/or amount of time spent by RDHAPs practicing independently in dental HPSAs and alternative practice settings.

This section reports the potential incremental impact of AB 502 on estimated baseline benefit coverage, utilization, and overall cost. For further details on the underlying data sources and methods, please see Appendix C, Cost Impact Analysis: Data Sources, Caveats, and Assumptions.

Benefit Coverage

Premandate (Baseline) Benefit Coverage

Currently, all 8.34 million enrollees subject to AB 502 have access to dental hygiene services through their standalone or embedded dental benefit. AB 502 would only apply to few Medi-Cal enrollees in managed care plans in Los Angeles and Sacramento.

Of 8.34 million with private, state-regulated standalone or embedded dental insurance:

- 5.25 million (62.9%) are estimated to be in DPPO plans, in which RDHAPs can currently submit claims under current state law for services delivered as an out-of-network provider. Among DPPOs:
 - 50% of enrollees are in plans that reimburse some RDHAP services (based on existing reimbursement policy and provider registration processes), but may not reimburse all dental

hygiene services. It is estimated that 57.25% of the services delivered by out-of-network RDHAPs in these DPPOs are currently reimbursed.

- 25% of DPPO enrollees do not have access to any RDHAP services because their insurer does not reimburse for any services delivered by out-of-network RDHAPs.
- 25% of DPPO enrollees are allowed to seek care from out-of-network RDHAPs and all necessary dental hygiene services are currently reimbursed by their insurer based on the carrier's fee-schedule for out-of-network services, less any cost sharing.

AB 502 would require several changes that have utilization and cost implications for services delivered and billed to private, state-regulated dental PPOs in California.

Of 8.34 million with private, state-regulated standalone or embedded dental insurance:

- All 5.25 million (62.9%) estimated to be in DPPO plans, would be able to obtain care from out-of-network RDHAPs, and 100% of the necessary dental hygiene services billed by the RDHAP would be reimbursed based on the carrier's existing fee schedule for out-of-network dental hygiene services delivered in other settings.

Utilization

Premandate (Baseline) Utilization

Premandate, 100% of enrollees (8.34 million) have benefit coverage for dental hygiene services, including cleanings, x-rays, preventive services, and fluoride treatment for children.

RDHAP-provided dental hygiene services are potentially reimbursed for 53.6% of the enrollees (2.81 million) that have coverage through state-regulated DPPO products. However, all of those reimbursed RDHAP services occur out-of-network.

CHBRP typically uses analysis by Milliman of Truven Analytics® data on claims to calculate baseline utilization of health care services. However, the Truven Analytics® data does not include dental claims. Carriers CHBRP interviewed for this analysis also have limited data on utilization of dental hygiene services and so it is difficult to establish an estimate for baseline utilization. To calculate the impact of AB 502, CHBRP decided to use two different approaches to model the impact of the law. Estimate A uses a limited set of claims data to calculate the potential impact, while Estimate B uses data from the survey of RDHAPs (Wides et al., 2011) to forecast the potential increase in dental hygiene service reimbursement among all residents of dental HPSAs or alternative practice settings.

Estimate A

CHBRP did receive DPPO data on the number of RDHAP claims that occurred over a three-month period. Although a very limited sample, it provided the only administrative data on RDHAP claims and the share of overall claims represented. After annualizing the utilization for that DPPO product, 48 dental hygiene claims were paid per year among 204,000 enrollees. Based on this utilization data, CHBRP calculated Estimate A (one of two calculations using different assumptions):

- Based on this limited information, CHBRP assumes that for DPPOs that do reimburse RDHAPs, that baseline utilization was 0.24 visits per 1,000 enrollees.

- The remaining 46.4% of DPPO enrollees are in plans that do not reimburse for some or all RDHAP provided services, so CHBRP assumes their baseline utilization and reimbursement is zero.

The total baseline utilization for Estimate A is estimated to be 0.11 visits per 1,000 DPPO enrollees in the state.

Estimate B

Using data from the RDHAP survey conducted by Wides et al. (2011), a count of RDHAP-provided dental hygiene services was calculated based on those in active practice, the average number of patients reported per day, and the assumption that only 10% of RDHAP services were provided to privately insured individuals (see Table 2 and Appendix C). 59,844 privately insured patients were estimated to be seen in the RDHAP settings statewide. Based on the benefit coverage reported for DPPO patients by plans, CHBRP estimated that 53.6% currently have coverage for RDHAP services via DPPOs, resulting in RDHAP reimbursement.

The total baseline utilization in Estimate B is estimated to be 32,076 visits for dental hygiene services (i.e., one per 12 months).

Postmandate Utilization

Postmandate, it is expected that all RDHAPs providing care to any of the 5.25 million state-regulated, private dental PPO enrollees would be reimbursed for services, if provided out of network.

Estimate A

Based on premandate utilization estimates, CHBRP anticipates that any RDHAPs providing care to the 46.4% DPPO enrollees will now be able to collect reimbursement for services provided. Because of this change in reimbursement, CHBRP calculated in Estimate A that reimbursement of RDHAP services is estimated to increase among enrollees in plans that did not previously reimburse by 0.24 visits per 1,000 enrollees, for an increase of 674.8 reimbursed visits annually (a 116% increase).

Despite the limits of the calculation above and the lack of data to inform the full cost model, the increase described above provides a better understanding of the limited impact of AB 502 on utilization and cost, given the narrow definition of alternative practice, the low number of RDHAPs practicing, and the small numbers of privately insured individuals who seek care in alternative practice settings.

Estimate B

Using data from Wiles et al. (2011) on the number of RDHAPs in various practice settings (Table 2), and the percentage of patients likely to be privately insured (10%), CHBRP estimated that 27,768 services provided by RDHAPs were unreimbursed by private health plans (46.4% of the 59,844 total visits provided by RDHAPs). Although the utilization of visits would not change based on these data, the RDHAPs delivering these services would be reimbursed for 27,768 additional hygiene visits (87% increase), assuming that all 27,768 visits were provided for state-regulated DPPO enrollees.

Impact on access and health treatment/service availability

Per-Unit Cost

Premandate (Baseline) and Postmandate Per-Unit Cost

This bill would require the out-of-network fee-schedule used to pay dentists using registered dental hygienists to be used to reimburse RDHAPs. According to an analysis by Milliman of its dental charge data and cost benchmarks, along with fee schedule data provided by carriers who already reimburse RDHAPs, there does not appear to be a difference between the out-of-network RDHAP fee schedule and the existing fee schedule for dental hygiene services delivered by RDHs in traditional practice. CHBRP does not anticipate any change in the per-unit cost.

For the purposes of calculating changes in expenditures, CHBRP will use the cost of a typical oral exam (\$70 per visit) to estimate the magnitude of the cost increase in both Estimates A and B.

Expenditures

Premandate (Baseline) Expenditures

In Estimate A, using the baseline utilization estimate of 0.24 visits per 1,000 enrollees in plans that covered RDHAP services already, the total expenditure per year is \$40,885. Of that, it is estimated that 20% is out-of-network cost sharing, so the expenditure by DPPO carriers is \$32,709.

In Estimate B, using the baseline utilization estimate of 32,076 reimbursed visits to RDHAPs and an average cost of \$70 per visit, the total expenditure per year is \$2,245,347. Of that, it is estimated that 20% is out-of-network cost sharing, so the expenditure by DPPO carriers is \$1,796,278.

Postmandate Expenditures

Changes in total expenditures

According to Estimate A, AB 502 would increase total net annual expenditures by \$47,236 or 115.5% for enrollees with DMHC-regulated plans and CDI-regulated policies. The increased spending will be partially paid for by DPPO carriers (\$37,779) while the remaining \$9,457 will be from patient cost sharing for out-of-network services (20%).

According to Estimate B, AB 502 would increase total net annual expenditures by \$1,943,760 (87%) due to the 27,768 newly reimbursed RDHAP services. At \$70 per visit, and assuming one visit being reimbursed per year, this represents an 86.6% increase in spending. \$388,752 (20%) of the spending would be paid for by enrollees due to out-of-network cost sharing, while the remainder (\$1,555,008) would be paid for by state-regulated DPPOs that did not previously reimburse all or part of RDHAP claims. This is likely an overestimate because all 27,768 patients will not be enrolled in state-regulated DPPO plans that will now be required to reimburse for out-of-network services. At least a portion may be in DHMO plans or self-insured DPPO products, which would reduce the estimate if that information was available.

Based on an average dental insurance per member per month premium of \$39.30 among the 8.34 million enrollees in state-regulated plans²⁴, the additional expenditure in Estimate A would translate to a 0.001% increase in premiums.

In Estimate B, the increase in total net annual expenditures for DPPO plans would be \$1,555,008 after patient cost sharing, assuming that all of the RDHAP users were enrolled in state-regulated DPPO products. Based on a \$39.30 dental PMPM for the 8.34 million enrollees in state-regulated plans²³, the additional expenditure in Estimate B would translate to a 0.04% increase in premiums.

Postmandate administrative expenses and other expenses

CHBRP estimates that the increase in administrative costs of DMHC-regulated plans and/or CDI-regulated policies will remain proportional to the increase in premiums. Because AB 502 requires plans to remove certification policies or programs and drop requirements to obtain written authorizations from dentists, physicians, or surgeons for RDHAPs providing 18 months of care to a specific patient, CHBRP estimates that administrative costs would decrease. However, plans could incur short-term costs to ensure out-of-network RDHAPs are administratively added to the billing system and are not denied claims unnecessarily.²⁵

Related Considerations for Policymakers

Cost of exceeding essential health benefits

As explained previously, dental hygiene services are already included in California's EHB package for children in 2015 and 2016. The state is required to defray the additional cost incurred by enrollees in QHPs in Covered California for any state benefit mandate that exceeds the EHBs. Because dental hygiene services delivered by RDHAPs are already a covered benefit and AB 502 focuses on codifying payment levels and expectations for out-of-network RDHAP providers, the law will not impact the EHBs.

Postmandate Changes in Uninsured and Public Program Enrollment

Changes in the number of uninsured persons

There is no change in the number of uninsured persons expected due to the enactment of AB 502.

Changes in public program enrollment

CHBRP estimates that the mandate would produce no measurable impact on enrollment in publicly funded insurance programs or on utilization of covered benefits in the publicly funded insurance market.

²⁴ Although it is anticipated that children with embedded dental PPO benefits make up approximately 14,000 of the 5.25 million beneficiaries, it is unknown how many of them reside in dental HPSAs or use RDHAP services. The typical PMPM for a child with embedded dental benefits is \$4. In this case, we used \$39.30 PMPM for all enrollees, given the lower likelihood of privately insured children using RDHAP services via a DPPO product.

²⁵ On April 16, 2015, AB 502 was further amended, although CHBRP was not requested to consider the new language. The April 16th amendments removed these two provisions. CHBRP notes that even with these changes, the central assumptions of our analysis projections remain unchanged: RDHAP reimbursement barriers would be lifted, but major pent-up demands for RDHAP services would not materialize.

How Lack of Coverage Results in Cost Shifts to Other Payers

It appears unlikely that the current benefit coverage prompts enrollees to seek care from public programs or other payers, including charities, and other state departments. However, insofar as county health departments, clinics, nonprofit organizations, or foundations currently fund dental hygiene activities for people in dental HPSAs due to the difficulty RDHAPs have in being paid for services provided to privately insured patients, there may be a shift from those external funding sources providing dental hygiene due to the availability of reimbursement for services covered by AB 502. That would mean the postmandate premium increases could result in savings to other organizations that have been providing dental hygiene services already, without insurance reimbursement.

PUBLIC HEALTH IMPACTS

The *Public Health Impacts* analysis includes estimates on mandate-relevant health outcomes, potential treatment harms, gender and racial disparities, financial burden, premature death, and economic loss in the short and long term. This section estimates the short-term impact²⁶ of AB 502 on oral health outcomes (dental caries, tooth loss, gum disease), disparities, and financial burden. See *Long-Term Impact of AB 502* (page 26) for discussion of premature death, economic loss, and outcomes related to untreated dental disease beyond the first 12 months of the bill implementation.

Estimated Public Health Outcomes

As discussed in the *Background on RDHAPs* section, registered dental hygienists in alternative practice may provide any preventive or therapeutic service that an RDH is authorized to perform under general supervision of a dentist, with the intent to improve oral health outcomes among specified underserved populations (Table 1). As presented in the *Medical Effectiveness* section (page 11), there is a preponderance of evidence that preventive and therapeutic dental hygiene procedures (including dental sealants, fluoride application, periodontal maintenance, and oral health screenings/oral health education) are effective at improving oral health outcomes, with the exception of prophylaxis and scaling procedures, for which *Medical Effectiveness* found the evidence for benefit to be ambiguous. Additionally, *Medical Effectiveness* concludes that the RDHAP model may be an effective solution for addressing the unique oral health needs of underserved populations in specified alternative practice settings.

As presented in the *Benefit Coverage, Utilization, and Cost* section (page 17), all 8.34 million enrollees with private, state-regulated dental insurance have coverage for dental hygiene services. However, for the 5.25 million (62.9%) enrollees in dental PPO plans (to which RDHAPs may submit claims as out-of-network providers) dental hygiene services as provided by RDHAPs are not consistently covered across all plans. As a result of the amendments proposed in AB 502, CHBRP estimates that, for the 46% (27,768 — see Table 2) of DPPO enrollees in plans that currently do not reimburse for some or all services delivered by out-of network RDHAPS, 100% would be able to obtain all necessary dental hygiene services from RDHAPs who would then be eligible for reimbursement at the full out-of-network rate based on the carrier's fee schedule. In other words, although coverage for dental hygiene services would not change as a result of AB 502, RDHAPs would be able to provide and bill for services delivered to all DPPO enrollees.

To estimate the impact of AB 502, CHBRP created two calculations of RDHAP use, reimbursement and postmandate coverage: Estimate A, based on partial claims data, and Estimate B, based on existing patient data collected from a 2009 RDHAP census. On the basis of these estimates, CHBRP anticipates that the number of reimbursed RDHAP visits would increase between 678 (116%) in Estimate A and 27,768 (87%) in Estimate B. Given the limitations of the two models, it is unknown whether a change in utilization would accompany an increase in reimbursed RDHAP visits, but it stands to reason that some patients may be newly offered RDHAP services, or a wider range of services under the amendments proposed in AB 502. Furthermore, to the extent that reducing paperwork, certification requirements, and other barriers to providing care and receiving reimbursement would make RDHAP practice more efficient and attractive to practitioners, AB 502 could gradually increase the number of practice days RDHAPs spend in alternative practice settings and the amount of time they devote to direct patient care in the long-term (see *Long-Term Impact of AB 502*, page 26).

²⁶ CHBRP defines short-term impacts as changes occurring within 12 months of bill implementation.

Medical Effectiveness found that preventive and therapeutic dental hygiene treatments and oral health education provided by RDHAPs are effective at preventing the advance of dental disease and promoting effective oral health practices (excluding oral prophylaxis for which there was ambiguous evidence of effectiveness). In addition, RDHAPs may provide referrals to dentists or physicians when restorative care is indicated. Therefore, it stands to reason that patients in alternative practice settings receiving services from RDHAPs are likely to experience improved oral health outcomes.

Little is known about current attempts by RDHAPs to collect reimbursement from plans out of network or the level of cost sharing their patients experience. CHBRP attempted to model differences in use and reimbursement wherein reimbursements are primarily captured in Estimate B and have no impact on utilization. However, as Estimate A is agnostic to when services were delivered, CHBRP considers that any barriers to payment might have resulted in decreased reimbursement and use, and removing those barriers could result in increases in both payment and use. Therefore, utilization of RDHAP services within the first 12 months following implementation of the mandate is unknown. Thus, the impact on oral health outcomes is unknown. However, to the extent that AB 502 would codify the requirement that all RDHAPs should receive reimbursement for services provided out of network in DPPO products regulated by the state, this bill could decrease barriers to reimbursement and patient utilization, and change perceptions and business practices for RDHAPs. Although CHBRP is unable to estimate the impact quantitatively, AB 502 is likely for these reasons to lead in the long term to increased utilization and improved oral health in the affected populations.

Impact on Gender and Racial/Ethnic Disparities

Several competing definitions of “health disparities” exist. CHBRP relies on the following definition:

A health disparity/inequality is a particular type of difference in health or in the most important influences of health that could potentially be shaped by policies; it is a difference in which disadvantaged social groups (such as the poor, racial/ethnic minorities, women or other groups that have persistently experienced social disadvantage or discrimination) systematically experience worse health or great health risks than more advantaged groups (Braveman, 2006).

CHBRP investigated the effect that AB 502 would have on health disparities by gender, race, and ethnicity among the RDHAP patient population. Literature and surveys evaluating patterns of use associated with dental hygiene care typically employ the term “dental visit” to include both dentist and dental hygiene visits, thus limiting CHBRP’s ability to focus on dental hygiene visits alone. The following discussion of gender and racial/ethnic disparities uses this terminology.

Impact on Gender Disparities

There is some evidence to suggest that women may use dental services more consistently than men. A 2012 study of preventive care services utilization in the United States found that that women are more likely than men to use preventive services (such as dental hygiene services) and more successfully adhere to preventive care guidelines (Vaidya et al, 2012). Accordingly, adult women respondents to the 2003 California Health Interview Survey (the last year for which this question was asked among adult populations) reported more frequent dental visits than men, with 70% of women reporting a visit with a dental health professional in the year prior to the survey as compared with 64% of men. Conversely, in 2003, 20% of adult men, compared to 16% of women, reported no dental visits in two or more years prior to the survey.

Gender disparities in dental services utilization exist in California. However, it is unknown whether RDHAP use among the patient population subject to AB 502 is reflective of state-wide dental service utilization patterns with regard to gender. Therefore, AB 502's impact on gender disparities is unknown.

Impact on Racial/Ethnic Disparities

Nationally, Hispanics and non-Hispanic blacks are less likely than non-Hispanic whites to have a yearly visit with a dental health professional, particularly among adults and the elderly (Table 4). Additionally, Hispanic adults are almost four times more likely than whites and over twice as likely as blacks to have never had a dental visit (NCHS, 2014). Among California adults, Hispanic populations reported the lowest prevalence (57.1%) of a yearly dental visit in 2003²⁷ compared with blacks (65%) or whites (73.3%). These racial/ethnic differences are less pronounced among children and teens. In 2012 Hispanic youth were slightly less likely (87%) than white (90%) or black (89%) children and teens to have a yearly dental visit and were more likely to have never visited a dentist (CHIS, 2012).

Although a portion of the racial/ethnic differences in dental hygiene service utilization in California may be attributable to financial disparities, there is evidence to suggest that cultural beliefs about the importance of dental hygiene may account for difference in usage patterns between groups. Despite traditional recommendations for twice-yearly dental check-ups, a 2007 Harris survey of California adults showed that 7% of Hispanic respondents endorsed the belief that dental checkups should occur as infrequently as every two years, compared to 6% of white respondents and only 1% of black respondents (ADA, 2015; CHCF, 2008a).

Racial or ethnic disparities in the prevalence of dental services use exist in California. Given that patients in alternative settings are, by definition, underserved, it stands to reason that disparities are likely to be affected by increased access to RDHAPs. However, it is unknown how or to what extent racial/ethnic disparities are reflected among the RDHAP patient population. Therefore, although the dental hygiene services provided by RDHAPs are medically effective at improving oral health, the impact of AB 502 on reducing disparities among racial and ethnic groups is unknown.

Estimated Impact on Financial Burden

When possible, CHBRP estimates the incremental impact of mandates on financial burden, defined as uncovered medical expenses paid by the enrollee as well as out-of-pocket expenses (i.e., deductibles, copayments, and coinsurance). Depending on the change in reimbursed RDHAP visits following the implementation of AB 502, enrollee out-of-pocket expenses may increase by up to \$390,000. It should be noted that although CHBRP estimates a net increase in enrollee cost sharing due to newly reimbursed RDHAP services, some patients may experience a decrease in out-of-pocket expenses related to RDHAP services that were previously unreimbursed by the DPPO plan, and may have been completely the responsibility of the patient. Conversely, although some enrollees will experience an increase in out-of-pocket expenses associated with RDHAP service, the alternative may have been a lack of access to dental hygiene services.

CHBRP estimates that, depending on postmandate changes in the number of reimbursed RDHAP visits, AB 502 could increase the net financial burden by almost \$390,000 for enrollees who would be mandate eligible to utilize RDHAP services. The effect on premium costs are estimated to be 0.04% or less.

²⁷ 2003 is the most recent year for which CHIS adult dental visit data is available.

LONG-TERM IMPACT OF AB 502

Long-Term Public Health Impacts

Some interventions in proposed mandates provide immediate measurable impacts (e.g., maternity service coverage or acute care treatments) while other interventions may take years to make a measurable impact (e.g., coverage for tobacco cessation or vaccinations). When possible, CHBRP estimates the long-term effects of a proposed mandate (beyond CHBRP's 12-month analytic timeframe) to capture possible impacts to the public's health that would be attributable to the mandate, including impacts on premature death and economic loss.

If enacted, AB 502 would remove the requirement that RDHAPs obtain a prescription patient care beyond 18 months, eliminate certification requirements for out-of-network providers to DPPO enrollees, and require carriers to apply the same fee schedule for dental hygiene services regardless of whether the services are performed by an RDHAP or an RDH. Although AB 502 will not alter the limitations on settings in which RDHAPs may practice or extend coverage to any additional populations, taken together the changes proposed in the bill constitute a reduction in administrative barriers to compensation for RDHAPs. To the extent that barriers to delivering long-term care and receiving compensation for services delivered to enrollees in dental PPOs would be reduced, the long-term impact of AB 502 may be a gradual increase in the proportion or amount of time that RDHAPs devote to alternative practice. Similarly, reductions in the administrative barriers previously associated with RDHAP practice may result in increasing numbers of RDHAP licensees. Thus, the net long-term effect of AB 502 is likely to be an increase in access to dental health services and consequent improvement in dental health for patient populations in RDHAP practice settings.

However, only a small portion of RDHAP patients would be affected by AB 502, i.e., the fraction of persons in the 10% of privately insured patients who are also members of dental PPOs. Therefore, the magnitude of any impact on public health outcomes in the long term would be small.

Impacts on Gender and Racial/Ethnic

As presented in the *Public Health Impacts* section (page 23), gender and racial/ethnic disparities in dental services utilization exist in California and are likely to be present in dental hygiene alternative practice settings, although it is unknown how or to what extent state-wide patterns in disparities are reflected among the RDHAP patient population. Therefore, although AB 502 may increase the supply of RDHAPs across all practice settings, the long-term impact on gender and racial/ethnic disparities is unknown.

Impacts on Premature Death and Economic Loss

Premature death is often defined as death before the age of 75 years (Cox, 2006). The overall impact of premature death due to a particular disease can be measured in years of potential life lost prior to age 75 and summed for the population (generally referred to as "YPLL") (Cox, 2006; Gardner and Sanborn, 1990). In California, it is estimated that there are nearly 102,000 premature deaths each year, accounting for more than two million YPLL (CDPH, 2011; Cox, 2006). In order to measure the impact of premature mortality across the population impacted by a proposed mandate, CHBRP first collects baseline mortality rates. Next, the literature is examined to determine whether the proposed mandated benefit impacts mortality and whether YPLL have been established for the given condition. Some diseases and conditions do not result in death, and therefore a mortality outcome is not relevant.

Premature Death

As discussed in the *Background on RDHAPs* section (page 7), untreated oral infections may result in secondary infections throughout the body, including endocarditis and pneumonia. Oral infections also pose a threat to the health of people who are already compromised with chronic comorbidities such as diabetes, HIV, or osteoporosis (DHHS, 2000). Additionally, periodontal disease is associated with increased incidence of oral cancer, stroke, and diabetes (CDC, 2003). To the extent that RDHAPs provide oral health treatments that contribute to the prevention of dental disease and act as conduits to restorative care for acute dental problems through referrals, any expansion in RDHAP practice resulting from AB 502 would potentially decrease the incidence of premature death attributed to poor oral health in alternative settings.

Although the dental hygiene treatments provided by RDHAPs may decrease a person's risk of secondary infections and chronic health conditions resulting from dental disease, only a small portion of RDHAP patients — 27,768 of the 10% (59,844) of RDHAP patients with private insurance who are also members of dental PPOs — would be subject to the changes proposed in AB 502. Therefore, the magnitude of any impact on premature death would likely be very small.

Economic Burden and Loss

Nationally, employed adults lose more than 164 million hours of work (20.5 million work days) each year due to oral health problems, and according to the California Health Interview Survey (CHIS), an estimated 6% of California adults (about 1.8 million people) missed work in 2003 due to complications associated with dental disease (CDC, 2013; CHCF, 2010).

Additionally, almost 7% of school-aged children in California missed at least one day of school in 2007 because of a dental problem, accounting for an estimated 874,000 missed days of school (CHCF, 2010; Pourat and Nicholson, 2009). In a study of almost 1,500 elementary and high school students, Seirawan et al. (2012) found that students missed an average of 2.2 school days a year due to oral health problems and their parents missed an average of 2.5 work days as a results. Moreover, students with poor oral health were six times more likely to miss school and were four times more likely to have a below average GPA. The economy as a whole suffers from lost productivity due to adult absences, and public schools suffer funding losses because attendance is incorporated into school funding formulas.

Although untreated dental disease may pose a substantial burden to California's economy, only a small portion of RDHAP patients — 27,768 of the 10% (59,844) of RDHAP patients with private insurance — would be subject to the changes proposed in AB 502. Therefore, CHBRP estimates that the magnitude of any impact on economic loss would be very small.

APPENDIX A TEXT OF BILL ANALYZED

On February 27, 2015, the California Assembly Committee on Health requested that CHBRP analyze AB 502.²⁸

ASSEMBLY BILL NO. 502

Introduced by Assembly Member Chau

FEBRUARY 23, 2015

An act to amend Sections 1924, 1926, and 1931 of the Business and Professions Code, to amend Sections 13401 and 13401.5 of the Corporations Code, to add Section 1374.196 to the Health and Safety Code, and to add Section 10120.4 to the Insurance Code, relating to dental hygiene.

LEGISLATIVE COUNSEL'S DIGEST

AB 502, as introduced, Chau. Dental hygiene.

(1) Existing law, the Dental Practice Act, provides for the licensure and regulation of registered dental hygienists, registered dental hygienists in extended functions, and registered dental hygienists in alternative practice by the Dental Hygiene Committee of California.

Existing law authorizes a registered dental hygienist in alternative practice to perform various duties in specified settings, including dental health professional shortage areas, as certified by the Office of Statewide Health Planning and Development.

This bill would require an alternative dental hygiene practice established within a certified shortage area to continue regardless of certification.

Existing law authorizes a registered dental hygienist in alternative practice to provide services to a patient without obtaining written verification that the patient has been examined by a dentist or physician and surgeon licensed to practice in this state. However, under existing law, if the registered dental hygienist in alternative practice provides services to a patient 18 months or more after the first date that he or she provides services to a patient, he or she is required to obtain written verification, including a prescription for dental hygiene services, that the patient has been examined by a dentist or physician and surgeon licensed to practice in this state.

This bill would delete that written verification and prescription requirement.

(2) Existing law, the Moscone-Knox Professional Corporation Act, prohibits a professional corporation from rendering professional services in this state without a currently effective certificate of registration issued by the governmental agency regulating the profession in which the corporation is or proposes to be engaged and excepts any professional corporation rendering professional services by persons duly licensed by specified state entities from that requirement. Existing law authorizes specified healing arts practitioners to be shareholders, officers, directors, or professional employees of a designated professional corporation, subject to certain limitations relating to ownership of shares.

²⁸ Further amendments were made on April 16, 2015, which CHBRP has acknowledged, but was not asked to formally review since the new amendments occurred just before CHBRP's deadline to the Assembly Health Committee.

This bill would additionally except any professional corporation rendering professional services by persons duly licensed by the Dental Hygiene Committee of California from the certificate of registration requirement. The bill would authorize dental assistants and licensed dentists to be shareholders, officers, directors, or professional employees of a registered dental hygienist in alternative practice corporation.

(3) 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 provides certain standards that govern health care service plan contracts covering dental services, health insurance policies covering dental services, specialized health care service plan contracts covering dental services, and specialized health insurance policies covering dental services.

This bill would require health care service plan contracts covering dental services, health insurance policies covering dental services, specialized health care service plan contracts covering dental services, and specialized health insurance policies covering dental services issued, amended, or renewed on or after January 1, 2016, to reimburse registered dental hygienists in alternative practice for performing dental hygiene services that may lawfully be performed by registered dental hygienists and that are reimbursable under the contracts or policies. The bill would also require the plan or insurer to use the same fee schedule for reimbursing both registered dental hygienists and registered dental hygienists in alternative practice. Because a willful violation of the bill's provisions by a health care service plan covering dental services or a specialized health care service plan covering dental services would be a crime, it would impose a state-mandated local program.

(4) 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.

Vote: majority. Appropriation: no. Fiscal committee: yes. State-mandated local program: yes.

The people of the State of California do enact as follows:

SECTION 1.

Section 1924 of the *Business and Professions Code* is amended to read:

1924.

A person licensed as a registered dental hygienist who has completed the prescribed classes through the Health Manpower Pilot Project (HMPP) and who has established an independent practice under the HMPP by June 30, 1997, shall be deemed to have satisfied the licensing requirements under Section 1922, and shall be authorized to continue to operate the practice he or she presently operates, so long as he or she follows the requirements for prescription and functions as specified in Sections 1922, 1925, 1926, 1927, 1928, and 1930, and 1931, and subdivision (b) of Section 1929, and as long as he or she continues to personally

practice and operate the practice or until he or she sells the practice to a licensed dentist.

SEC. 2.

Section 1926 of the *Business and Professions Code* is amended to read:

1926.

A registered dental hygienist in alternative practice may perform the duties authorized pursuant to subdivision (a) of Section 1907, subdivision (a) of Section 1908, and subdivisions (a) and (b) of Section 1910 in the following settings:

- (a) Residences of the homebound.
- (b) Schools.
- (c) Residential facilities and other institutions.
- (d) Dental health professional shortage areas, as certified by the Office of Statewide Health Planning and Development in accordance with existing office guidelines. *An alternative dental hygiene practice established within a certified shortage area shall continue regardless of certification.*

SEC. 3.

Section 1931 of the *Business and Professions Code* is amended to read:

1931.

~~(a)(1)~~ A registered dental hygienist in alternative practice may provide services to a patient without obtaining written verification that the patient has been examined by a dentist or physician and surgeon licensed to practice in this state.

~~(2) If the dental hygienist in alternative practice provides services to a patient 18 months or more after the first date that he or she provides services to a patient, he or she shall obtain written verification that the patient has been examined by a dentist or physician and surgeon licensed to practice in this state. The verification shall include a prescription for dental hygiene services as described in subdivision (b).~~

~~(b) A registered dental hygienist in alternative practice may provide dental hygiene services for a patient who presents to the registered dental hygienist in alternative practice a written prescription for dental hygiene services issued by a dentist or physician and surgeon licensed to practice in this state. The~~

~~prescription shall be valid for a time period based on the dentist's or physician and surgeon's professional judgment, but not to exceed two years from the date it was issued.~~

~~(c) (1) The committee may seek to obtain an injunction against any registered dental hygienist in alternative practice who provides services pursuant to this section, if the committee has reasonable cause to believe that the services are being provided to a patient who has not received a prescription for those services from a dentist or physician and surgeon licensed to practice in this state.~~

~~(2) Providing services pursuant to this section without obtaining a prescription in accordance with subdivision (b) shall constitute unprofessional conduct on the part of the registered dental hygienist in alternative practice, and reason for the committee to revoke or suspend the license of the registered dental hygienist in alternative practice pursuant to Section 1947.~~

SEC. 4.

Section 13401 of the *Corporations Code* is amended to read:

13401.

As used in this part:

(a) "Professional services" means any type of professional services that may be lawfully rendered only pursuant to a license, certification, or registration authorized by the Business and Professions Code, the Chiropractic Act, or the Osteopathic Act.

(b) "Professional corporation" means a corporation organized under the General Corporation Law or pursuant to subdivision (b) of Section 13406 that is engaged in rendering professional services in a single profession, except as otherwise authorized in Section 13401.5, pursuant to a certificate of registration issued by the governmental agency regulating the profession as herein provided and that in its practice or business designates itself as a professional or other corporation as may be required by statute. However, any professional corporation or foreign professional corporation rendering professional services by persons duly licensed by the Medical Board of California or any examining committee under the jurisdiction of the board, the Osteopathic Medical Board of California, the Dental Board of California, *the Dental Hygiene Committee of California* the California State Board of Pharmacy, the Veterinary Medical Board, the California Architects Board, the Court Reporters Board of California, the Board of Behavioral Sciences, the Speech-Language Pathology and Audiology Board, the Board of Registered Nursing, or the State Board of Optometry shall not be required to obtain a certificate of registration in order to render those professional services.

(c) "Foreign professional corporation" means a corporation organized under the laws of a state of the United States other than this state that is engaged in a profession of a type for which there is authorization in the Business and Professions Code for the performance of professional services by a foreign professional corporation.

(d) "Licensed person" means any natural person who is duly licensed under the provisions of the Business and Professions Code, the Chiropractic Act, or the Osteopathic Act to render the same professional services as are or will be rendered by the professional corporation or foreign professional corporation of which he or she is or intends to become, an officer, director, shareholder, or employee.

(e) "Disqualified person" means a licensed person who for any reason becomes legally disqualified (temporarily or permanently) to render the professional services that the particular professional corporation or foreign professional corporation of which he or she is an officer, director, shareholder, or employee is or was rendering.

SEC. 5.

Section 13401.5 of the *Corporations Code* is amended to read:

13401.5.

Notwithstanding subdivision (d) of Section 13401 and any other provision of law, the following licensed persons may be shareholders, officers, directors, or professional employees of the professional corporations designated in this section so long as the sum of all shares owned by those licensed persons does not exceed 49 percent of the total number of shares of the professional corporation so designated herein, and so long as the number of those licensed persons owning shares in the professional corporation so designated herein does not exceed the number of persons licensed by the governmental agency regulating the designated professional corporation. This section does not limit employment by a professional corporation designated in this section ~~of~~ to only those licensed professionals listed under each subdivision. Any person duly licensed under Division 2 (commencing with Section 500) of the Business and Professions Code, the Chiropractic Act, or the Osteopathic Act may be employed to render professional services by a professional corporation designated in this section.

- (a) Medical corporation.
 - (1) Licensed doctors of podiatric medicine.
 - (2) Licensed psychologists.
 - (3) Registered nurses.
 - (4) Licensed optometrists.

- (5) Licensed marriage and family therapists.
- (6) Licensed clinical social workers.
- (7) Licensed physician assistants.
- (8) Licensed chiropractors.
- (9) Licensed acupuncturists.
- (10) Naturopathic doctors.
- (11) Licensed professional clinical counselors.
- (12) Licensed physical therapists.

- (b) Podiatric medical corporation.
 - (1) Licensed physicians and surgeons.
 - (2) Licensed psychologists.
 - (3) Registered nurses.
 - (4) Licensed optometrists.
 - (5) Licensed chiropractors.
 - (6) Licensed acupuncturists.
 - (7) Naturopathic doctors.
 - (8) Licensed physical therapists.

- (c) Psychological corporation.
 - (1) Licensed physicians and surgeons.
 - (2) Licensed doctors of podiatric medicine.
 - (3) Registered nurses.
 - (4) Licensed optometrists.
 - (5) Licensed marriage and family therapists.
 - (6) Licensed clinical social workers.
 - (7) Licensed chiropractors.
 - (8) Licensed acupuncturists.
 - (9) Naturopathic doctors.
 - (10) Licensed professional clinical counselors.

- (d) Speech-language pathology corporation.
 - (1) Licensed audiologists.

- (e) Audiology corporation.
 - (1) Licensed speech-language pathologists.

- (f) Nursing corporation.
 - (1) Licensed physicians and surgeons.
 - (2) Licensed doctors of podiatric medicine.
 - (3) Licensed psychologists.
 - (4) Licensed optometrists.
 - (5) Licensed marriage and family therapists.
 - (6) Licensed clinical social workers.
 - (7) Licensed physician assistants.
 - (8) Licensed chiropractors.
 - (9) Licensed acupuncturists.
 - (10) Naturopathic doctors.
 - (11) Licensed professional clinical counselors.

- (g) Marriage and family therapist corporation.
 - (1) Licensed physicians and surgeons.
 - (2) Licensed psychologists.
 - (3) Licensed clinical social workers.
 - (4) Registered nurses.

- (5) Licensed chiropractors.
 - (6) Licensed acupuncturists.
 - (7) Naturopathic doctors.
 - (8) Licensed professional clinical counselors.
- (h) Licensed clinical social worker corporation.
- 1) Licensed physicians and surgeons.
 - (2) Licensed psychologists.
 - (3) Licensed marriage and family therapists.
 - (4) Registered nurses.
 - (5) Licensed chiropractors.
 - (6) Licensed acupuncturists.
 - (7) Naturopathic doctors.
 - (8) Licensed professional clinical counselors.
- (i) Physician assistants corporation.
- (1) Licensed physicians and surgeons.
 - (2) Registered nurses.
 - (3) Licensed acupuncturists.
 - (4) Naturopathic doctors.
- (j) Optometric corporation.
- (1) Licensed physicians and surgeons.
 - (2) Licensed doctors of podiatric medicine.
 - (3) Licensed psychologists.
 - (4) Registered nurses.
 - (5) Licensed chiropractors.
 - (6) Licensed acupuncturists.
 - (7) Naturopathic doctors.
- (k) Chiropractic corporation.
- (1) Licensed physicians and surgeons.
 - (2) Licensed doctors of podiatric medicine.
 - (3) Licensed psychologists.
 - (4) Registered nurses.
 - (5) Licensed optometrists.
 - (6) Licensed marriage and family therapists.
 - (7) Licensed clinical social workers.
 - (8) Licensed acupuncturists.
 - (9) Naturopathic doctors.
 - (10) Licensed professional clinical counselors.
- (l) Acupuncture corporation.
- (1) Licensed physicians and surgeons.
 - (2) Licensed doctors of podiatric medicine.
 - (3) Licensed psychologists.
 - (4) Registered nurses.
 - (5) Licensed optometrists.
 - (6) Licensed marriage and family therapists.
 - (7) Licensed clinical social workers.
 - (8) Licensed physician assistants.
 - (9) Licensed chiropractors.
 - (10) Naturopathic doctors.
 - (11) Licensed professional clinical counselors.
- (m) Naturopathic doctor corporation.

- (1) Licensed physicians and surgeons.
- (2) Licensed psychologists.
- (3) Registered nurses.
- (4) Licensed physician assistants.
- (5) Licensed chiropractors.
- (6) Licensed acupuncturists.
- (7) Licensed physical therapists.
- (8) Licensed doctors of podiatric medicine.
- (9) Licensed marriage and family therapists.
- (10) Licensed clinical social workers.
- (11) Licensed optometrists.
- (12) Licensed professional clinical counselors.

- (n) Dental corporation.
- (1) Licensed physicians and surgeons.
 - (2) Dental assistants.
 - (3) Registered dental assistants.
 - (4) Registered dental assistants in extended functions.
 - (5) Registered dental hygienists.
 - (6) Registered dental hygienists in extended functions.
 - (7) Registered dental hygienists in alternative practice.

- (o) Professional clinical counselor corporation.
- (1) Licensed physicians and surgeons.
 - (2) Licensed psychologists.
 - (3) Licensed clinical social workers.
 - (4) Licensed marriage and family therapists.
 - (5) Registered nurses.
 - (6) Licensed chiropractors.
 - (7) Licensed acupuncturists.
 - (8) Naturopathic doctors.

- (p) Physical therapy corporation.
- (1) Licensed physicians and surgeons.
 - (2) Licensed doctors of podiatric medicine.
 - (3) Licensed acupuncturists.
 - (4) Naturopathic doctors.
 - (5) Licensed occupational therapists.
 - (6) Licensed speech-language therapists.
 - (7) Licensed audiologists.
 - (8) Registered nurses.
 - (9) Licensed psychologists.
 - (10) Licensed physician assistants.

(q) Registered dental hygienist in alternative practice corporation.

- (1) Dental assistants.*
- (2) Licensed dentists.*

SEC. 6.

Section 1374.196 is added to the *Health and Safety Code*, to read:

1374.196.

(a) This section shall only apply to a health care service plan contract covering dental services or a specialized health care service plan contract covering dental services issued, amended, or renewed on or after January 1, 2016.

(b) A registered dental hygienist in alternative practice, licensed pursuant to Section 1922 of the Business and Professions Code, may submit or allow to be submitted on his or her behalf any claim for dental hygiene services performed as authorized pursuant to Article 9 (commencing with Section 1900) of Chapter 4 of Division 2 of the Business and Professions Code to a health care service plan covering dental services or a specialized health care service plan covering dental services.

(c) If a health care service plan contract covering dental services or a specialized health care service plan contract covering dental services provides reimbursement for dental hygiene services that may lawfully be performed by a registered dental hygienist, licensed pursuant to Section 1917 of the Business and Professions Code, reimbursement under that plan contract shall not be denied when the service is performed by a registered dental hygienist in alternative practice.

(d) (1) Nothing in this section shall preclude a health care service plan contract covering dental services or a specialized health care service plan contract covering dental services from setting different fee schedules for different services provided by different providers.

(2) A health care service plan contract covering dental services or a specialized health care service plan contract covering dental services shall use the same fee schedule for dental hygiene services whether the services are performed by a registered dental hygienist or a registered dental hygienist in alternative practice.

SEC. 7.

Section 10120.4 is added to the *Insurance Code*, to read:

10120.4.

(a) This section shall only apply to a health insurance policy covering dental services or a specialized health insurance policy covering dental services issued, amended, or renewed on or after January 1, 2016.

(b) A registered dental hygienist in alternative practice, licensed pursuant to Section 1922 of the Business and Professions Code, may submit or allow to be submitted on his or her behalf any claim for dental hygiene services performed as authorized pursuant to Article 9 (commencing with Section 1900) of Chapter 4 of Division

2 of the Business and Professions Code to a health insurer covering dental services or a specialized health insurer covering dental services.

(c) If a health insurance policy covering dental services or a specialized health insurance policy covering dental services provides for reimbursement for dental hygiene services that may lawfully be performed by a registered dental hygienist, licensed pursuant to Section 1917 of the Business and Professions Code, reimbursement under that policy shall not be denied when the service is performed by a registered dental hygienist in alternative practice.

(d) (1) Nothing in this section shall preclude a health insurance policy covering dental services or a specialized health insurance policy covering dental services from setting different fee schedules for different services provided by different providers.

(2) A health insurance policy covering dental services or a specialized health insurance policy covering dental services shall use the same fee schedule for dental hygiene services whether the services are performed by a registered dental hygienist or a registered dental hygienist in alternative practice.

SEC. 8.

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 METHODS

The literature searches were limited to studies published in English for all years and for all age groups.

The following databases of peer-reviewed literature were searched: PubMed (MEDLINE), Cochrane Database of Systematic Reviews, Web of Science, EconLit, and Business Source Complete.

Search Terms

The search terms used to locate studies relevant to AB 502 were as follows.

MeSH terms used to search PubMed and Cochrane Library:

- Dental Hygienists
- Preventive Dentistry
- Dental Prophylaxis
- Fluoridation
- Dental Service, Hospital
- Public Health Dentistry
- Health Services Accessibility/manpower/statistics and numerical data/supply and distribution/utilization
- Outcome Assessment (Health Care)
- Health Care Rationing
- Dentist's Practice Patterns
- Health Care Reform
- Healthcare Disparities
- Dental Health Services/manpower/standards/supply and distribution/utilization/legislation and jurisprudence/trends

Keywords used to search PubMed, Cochrane Library, Web of Science, EconLit, and Business Source Complete:

- dental hygienists
- Registered Dental Hygienists in Alternative Practice
- RDHAP
- Expanded Practice Dental Hygienists
- EPDH
- claims

- economic or economics
- costs or cost
- Public Health
- shortage
- economic loss
- cost analysis
- workforce shortage
- medically underserved
- disparity of healthcare
- disparities
- racial
- poor oral hygiene
- preventive dentistry
- utilization
- outcome or outcomes
- cleanings
- fluoride
- sealants
- screenings

APPENDIX C COST IMPACT ANALYSIS: DATA SOURCES, CAVEATS, AND ASSUMPTIONS

This appendix describes data sources, estimation methodology, as well as general and mandate-specific caveats and assumptions used in conducting the cost impact analysis. For additional information on the cost model and underlying methodology, please refer to the CHBRP website at: www.chbrp.org/analysis_methodology/cost_impact_analysis.php.

The cost analysis in this report was prepared by the members of the cost team, which consists of CHBRP task force members and contributors from the University of California, Los Angeles, and the University of California, Davis, as well as the contracted actuarial firm, Milliman, Inc.²⁹

Data Sources

This subsection discusses the variety of data sources CHBRP used for this analysis of AB 502. While the typical data sources used by CHBRP in calculating changes in utilization and cost were unavailable for dental care utilization, enrollment, and benefit coverage, CHBRP was able to supplement existing sources with newly collected information and data from a variety of organizations. Key sources and data items are listed below, in Table 7.

Table 7. Data for 2016 Projections Specific to AB 502

| Data Source | Items |
|--|---|
| California Department of Health Care Services (DHCS) administrative data for the Medi-Cal program, data available as of end of December 2014 | Distribution of enrollees by managed care or FFS distribution by age: 0–17; 18–64; 65+ Medi-Cal Managed Care premiums |
| California Department of Managed Health Care (DMHC) data from the interactive website “Health Plan Financial Summary Report,” August–October, 2014 | Distribution of DMHC-regulated plans by market segment* |
| Ad Hoc Data Report Requested from California Department of Insurance (CDI) Dental Insurance Division on 3/30/2015 | Total number of enrollees overall in the top 10 dental standalone plans (in aggregate), and the remaining enrollees in smaller plans. |

²⁹ CHBRP’s authorizing legislation requires that CHBRP use a certified actuary or “other person with relevant knowledge and expertise” to determine financial impact (www.chbrp.org/docs/authorizing_statute.pdf).

| | |
|---|--|
| <p>California Health Benefits Review Program (CHBRP) Annual Enrollment and Premium Survey of California’s largest (by enrollment) health care service plans and health insurers; data as of September 30, 2014; responders’ data represent approximately 97.3% of persons not associated with CalPERS or Medi-Cal with health insurance subject to state mandates — 98.0% of full-service (nonspecialty) DMHC-regulated plan enrollees and 97.0% of full-service (nonspecialty) CDI-regulated policy enrollees.</p> | <p>Enrollment by:</p> <ul style="list-style-type: none"> • Size of firm (2–50 as small group and 51+ as large group) • DMHC vs. CDI regulated • Grandfathered vs. nongrandfathered <p>Premiums for individual policies by:</p> <ul style="list-style-type: none"> • DMHC vs. CDI regulated • Grandfathered vs. nongrandfathered |
| <p>Milliman Dental Health Cost Guidelines</p> | <p>Dental Premium estimate for standalone and embedded benefits</p> |
| <p>California Association of Dental Plans, Enrollment Report, 2014</p> | <p>De-identified enrollment data for Dental HMO, Dental PPO, Indemnity, Self-Funded, and Discount Dental Plans in California</p> |
| <p>Interviews and Ad Hoc Survey Responses from Dental Plans that sell standalone, embedded, and self-insured products in California</p> | <p>Provided estimates of utilization, benefit coverage, and payment policy</p> |

Notes: (*) CHBRP assumes DMHC-regulated PPO group enrollees and POS enrollees are in the large-group segment.

Key: CDI = California Department of Insurance; CHCF = California HealthCare Foundation; CHIS = California Health Interview Survey; CMS = Centers for Medicare & Medicaid Services; DHCS = Department of Health Care Services; DMHC = Department of Managed Health Care; FFS = fee-for-service; HMO = health maintenance organization; NORC = National Opinion Research Center; POS = point of service; PPO = preferred provider organization.

Further discussion of external and internal data follows.

Internal data

- CHBRP’s Annual Enrollment and Premium Survey collects data from the seven largest providers of health insurance in California (including Aetna, Anthem Blue Cross of California, Blue Shield of California, CIGNA, Health Net, Kaiser Foundation Health Plan, and United Healthcare/PacificCare) to obtain estimates of enrollment not associated with CalPERS or Medi-Cal by purchaser (i.e., large and small group and individual), state regulator (DMHC or CDI), grandfathered and nongrandfathered status, and average premiums. CalSIM and market trends were applied to project 2016 health insurance enrollment in DMHC-regulated plans and CDI-regulated policies.

- CHBRP's other surveys of the largest plans/insurers collect information on benefit coverage relevant to proposed benefit mandates CHBRP has been asked to analyze. In each report, CHBRP indicates the proportion of enrollees — statewide and by market segment — represented by responses to CHBRP's bill-specific coverage surveys. In this specific analysis, surveys were sent out to the health insurance plans typically included in the carrier survey, along with a new set of plans that provided dental insurance as a standalone benefit or as an embedded benefit on behalf of health insurance carriers. CHBRP followed up several survey responses with informational interviews to better understand responses and understand the potential impact of AB 502.

External sources

- California Department of Health Care Services (DHCS) data are used to estimate enrollment in Medi-Cal Managed Care (beneficiaries enrolled in Two-Plan Model, Geographic Managed Care, and County Operated Health System plans), which may be subject to state benefit mandates, as well as enrollment in Medi-Cal Fee For Service (FFS), which is not. The data are available at: www.dhcs.ca.gov/dataandstats/statistics/Pages/Monthly_Trend_Report.aspx. Medi-Cal enrollment is projected to 2016 based on CalSIM's estimate of the continuing impact of the Medi-Cal expansion implemented in 2014.
- Milliman data sources are relied on to estimate the premium impact of mandates. Milliman's projections derive from the Milliman Health Cost Guidelines (HCGs). The HCGs are a health care pricing tool used by many of the major health plans in the United States. Most of the data sources underlying the HCGs are claims databases from commercial health insurance plans. The data are supplied by health insurance companies, HMOs, self-funded employers, and private data vendors. The data are mostly from loosely managed health care plans, generally those characterized as PPO plans. More information on the Milliman HCGs is available at: <http://us.milliman.com/Solutions/Products/Resources/Health-Cost-Guidelines/Health-Cost-Guidelines---Commercial/>.
- The California Association of Dental Plans provided a table of enrollment for dental insurance products in 2014, with enrollment numbers for California associated with each market segment. Although plan name was de-identified in the file, CHBRP used this file to estimate the share of DPPO enrollees in standalone state-regulated dental insurance products in California.

Projecting 2016

This subsection discusses adjustments made to CHBRP's Cost and Coverage Model to project 2016, the period when mandates proposed in 2015 would, if enacted, generally take effect. It is important to emphasize that CHBRP's analysis of specific mandate bills typically addresses the incremental effects of a mandate — specifically, how the proposed mandate would impact benefit coverage, utilization, costs, and public health, *holding all other factors constant*. CHBRP's estimates of these incremental effects are presented in the *AB 502 Impacts on Benefit Coverage, Utilization, and Cost*, section of this report (page 17).

Baseline expenditure and premium rate development methodology

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

- Dental Insurance premiums PMPM;

- Dental care costs paid by the health plan or insurer; and
- Dental care costs paid by the beneficiary.

CHBRP first obtained an estimate of the dental insurance premium PMPM by taking the 2014 reported premium from the above-mentioned data sources and trending that value to 2016. CHBRP uses trend rates published in the Milliman HCGs to estimate the dental care costs for each market segment in 2016. The baseline estimate for dental insurance PMPM is \$39.30.

Because claims for dental services were not available for this analysis, two different methods were used to calculate the potential change in RDHAP reimbursement due to enactment of AB 502. Estimate A is based on data provided by a single carrier that already reimbursed RDHAPs for services on an out-of-network basis, based on a set fee schedule. The utilization numbers were used to calculate a rate of reimbursement for RDHAP services provided to individuals in state-regulated standalone and embedded dental plans.

The values used for Estimate A were derived by:

1. Calculating the number of individuals enrolled in dental plans without RDHAP reimbursement or with limitations of RDHAP reimbursement. Half of the DPPO plans reported limiting RDHAP reimbursement such that 57.25% of the enrollees had RDHAP coverage and RDHAPs serving them could expect reimbursement. The remaining half of DPPO plan enrollees were in plans that did not cover RDHAP reimbursement at all (25%), while the other 25% reported covering all out-of-network RDHAP claims. Combined, 46.4% of RDHAP patients would not result in reimbursement for services delivered, or would not have coverage for RDHAP services.
2. The calculation of premandate baseline use and postmandate use was based on 0.24 RDHAP visits per 1,000 enrollees per year in plans that did reimburse for RDHAPs (which represented 53.6% of DPPO plans premandate and 100% of DPPO plans postmandate).

The values for Estimate B were derived by:

1. Calculating an estimate of the number of patients in California who receive dental services from registered dental hygienists in alternative practice (RDHAPs) based on data from a 2009 census survey of licensed RDHAPs. The survey, as presented in Wides et al. (2011), had a response rate of 72%, accounting for 176 of the 244 RDHAPs licensed in California at the time, and is the most recent and comprehensive data available on RDHAP demographics, practice activities, practice settings, and patient population characteristics. It should be noted that these data are based on RDHAP self-report and, as such, are educated estimates of the conditions that RDHAPs experience in their practice.

As discussed in the *Background on RDHAPs* section (page 7), a substantial number of practicing RDHAPs in the 2009 census survey reported maintaining employment in a traditional dental office setting for an average of three days per week in order to support two days of alternative practice (Wides et al., 2011). Within the two days of alternative practice time, RDHAPs may work in multiple settings. Additionally, the number of patients an RDHAP may serve in a single workday varies by practice setting depending on the infrastructure and physical needs of their patients (Wides et al., 2011). In order to calculate the yearly patient totals by practice setting, CHBRP extracted survey data detailing the average number of days per week that RDHAPs reported practicing in each setting as well as the average number of patients they reported seeing in one day of practice. Assuming a 50-week work year (allowing for two weeks of vacation), the yearly

patient population per RDHAP in each setting is the product of average number of days and the average number of patients served multiplied by 50 weeks.

The Dental Hygiene Committee of California (the official state licensing body for dental hygienists) provided CHBRP with an up-to-date accounting of RDHAP licenses indicating that there were 563 RDHAPs³⁰ licensed throughout the state as of March in 2015. However, holding an active license does not mean that one is actively practicing. Accordingly, 93% of survey respondents reported being in active practice, while the remaining 7% were not engaged in active practice due to retirement, schooling, or residence in another state (Wides et al., 2011). Using these rates, CHBRP assumes that 524 of the 563 licensed RDHAPs are currently in active practice.

To calculate the baseline yearly RDHAP patient population, CHBRP applied the reported percentage of practicing RDHAPs working in each setting (as specified in the 2009 survey) to the number of practicing RDHAPs (524) and multiplied the resulting number by the yearly patient count per RDHAP for the corresponding practice setting. This calculation yields the number of patients served per year by RDHAPs in each practice setting. The sum of these numbers is the baseline yearly RDHAP patient population for the state of California.

2. Only 10% of RDHAP patients are privately insured, and AB 502 would immediately affect only enrollees in state-regulated dental PPO plans. Given the need for RDHAP services, CHBRP assumed that all of the 10% of RDHAP patients who were privately insured were enrolled in state-regulated DPPOs rather than DHMOs or self-funded DPPOs.
3. According to information supplied by state-regulated dental PPOs, CHBRP estimates that 46.4% of the insured RDHAP patient population enrolled in the private, state-regulated DPPO plans would be affected by the changes proposed in AB 502.

General Caveats and Assumptions

This subsection discusses the general caveats and assumptions relevant to all CHBRP reports. The projected costs are estimates of costs that would result if a certain set of assumptions were exactly realized. Actual costs will differ from these estimates for a wide variety of reasons, including:

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

Additional assumptions that underlie the cost estimates presented in this analysis include:

- Cost impacts are shown only for plans and policies subject to state benefit mandate laws.
- Cost impacts are only for the first year after enactment of the proposed mandate.

³⁰ Personal Communication, DHCC, 2015

- Employers and employees will share proportionately (on a percentage basis) in premium rate increases resulting from the mandate. In other words, the distribution of the premium paid by the subscriber (or employee) and the employer will be unaffected by the mandate.
- For state-sponsored programs for the uninsured, the state share will continue to be equal to the absolute dollar amount of funds dedicated to the program.
- When cost savings are estimated, they reflect savings realized for 1 year. Potential long-term cost savings or impacts are estimated if existing data and literature sources are available and provide adequate detail for estimating long-term impacts. For more information on CHBRP's criteria for estimating long-term impacts, please see: www.chbrp.org/analysis_methodology/docs/longterm_impacts08.pdf.
- Several studies have examined the effect of private insurance premium increases on the number of uninsured (Chernew et al., 2005; Glied and Jack, 2003; Hadley, 2006). Chernew et al. (2005) estimate that a 10% increase in private premiums results in a 0.74 to 0.92 percentage point decrease in the number of insured, whereas Hadley (2006) and Glied and Jack (2003) estimate that a 10% increase in private premiums produces a 0.88 and a 0.84 percentage point decrease in the number of insured, respectively. Because each of these studies reported results for the large-group, small-group, and individual insurance markets combined, CHBRP employs the simplifying assumption that the elasticity is the same across different types of markets. For more information on CHBRP's criteria for estimating impacts on the uninsured, please see *Criteria and Methods for Estimating the Impact of Mandates on the Number of Individuals Who Become Uninsured in Response to Premium Increases*, available at: www.chbrp.org/analysis_methodology/cost_impact_analysis.php.

There are other variables that may affect costs, but which CHBRP did not consider in the estimates presented in this report. Such variables include, but are not limited to:

- Population shifts by type of health insurance: If a mandate increases health insurance costs, some employer groups and individuals may elect to drop their health insurance. Employers may also switch to self-funding to avoid having to comply with the mandate.
- Changes in benefits: To help offset the premium increase resulting from a mandate, deductibles or copayments may be increased. Such changes would have a direct impact on the distribution of costs between health plans/insurers and enrollees, and may also result in utilization reductions (i.e., high levels of cost sharing result in lower utilization of health care services). CHBRP did not include the effects of such potential benefit changes in its analysis.
- Adverse selection: Theoretically, persons or employer groups who had previously foregone health insurance may elect, postmandate, to enroll in a health plan or policy because they perceive that it is now to their economic benefit to do so.
- Medical management: Health plans/insurers may react to the mandate by tightening medical management of the mandated benefit. This would tend to dampen the CHBRP cost estimates. The dampening would be more pronounced on the plan/policy types that previously had the least effective medical management (i.e., PPO plans).
- Geographic and delivery systems variation: Variation exists in existing utilization and costs, and in the impact of the mandate, by geographic area and by delivery system models. Even within the health insurance plan/policy types CHBRP modeled (HMO, including HMO and POS plans, and non-HMO, including PPO and FFS policies), there are likely variations in utilization and costs. Utilization also differs within California due to differences in the health status of the local population, provider practice patterns, and the level of managed care available in each

community. The average cost per service would also vary due to different underlying cost levels experienced by providers throughout California and the market dynamic in negotiations between providers and health plans/insurers. Both the baseline costs prior to the mandate and the estimated cost impact of the mandate could vary within the state due to geographic and delivery system differences. For purposes of this analysis, however, CHBRP has estimated the impact on a statewide level.

- Compliance with the mandate: For estimating the postmandate impacts, CHBRP typically assumes that plans and policies subject to the mandate will be in compliance with the benefit coverage requirements of the bill. Therefore, the typical postmandate coverage rates for persons enrolled in health insurance plans/policies subject to the mandate are assumed to be 100%.

Analysis Specific Caveats and Assumptions

This subsection discusses the caveats and assumptions relevant to specifically to an analysis of AB 502.

Due to a lack of information and data on dental care utilization overall and use of RDHAP services, CHBRP altered the way in which the cost estimates were derived for this bill. Although AB 502 requires reimbursement for RDHAP services for plans covering dental hygiene benefits, it is not enforceable if plan contracts do not include in-network RDHAP. All DHMOs appear to contract directly with dentists for hygiene care, and DPPOs are likely to only reimburse RDHAPs who provide care out-of-network, rather than add them to their existing insurance networks. Because DPPOs were the only potential source of RDHAP utilization and reimbursement, CHBRP used the California Association of Dental Plan (CADP) enrollment data and the CHBRP carrier survey to capture both standalone and embedded DPPO products sold in California that would be subject to DMHC and CDI regulation.

When calculating the increase in reimbursement in Estimate B, CHBRP assumed an optimal number of visits for dental hygiene services as one per 12-month period. CHBRP did not attempt to extrapolate an appropriate amount of dental hygiene service or use that could result from removing barriers to RDHAP reimbursement.

CHBRP estimated that the average price of RDHAP-provided services would be \$70 for a hygiene visit, which was within the range of fee schedules provided by plans that already reimburse RDHAPs out of network (and follow similar fee schedules for hygiene services delivered in dental offices).

Fewer than 14,000 children are enrolled in embedded dental PPO products regulated by DMHC or CDI. Although the PMPM for their benefits should be lower than their adult counterparts, it was unknown what percentage of children live in dental HPSAs or seek care in specified alternative settings. Given that children who are privately insured dental PPO enrollees have family incomes above 266% FPL in most cases, we assumed that the level of RDHAP use among privately insured children would be very low. Therefore, we used the adult dental PPO PMPM of \$39.30 to calculate cost impacts.

REFERENCES

- Academy of General Dentistry. Dental assistant & dental hygienist duties and functions. Available at: [https://www.agd.org/files/webuser/website/advocacy/dentalthyg.-asst.pdfdocs/hygienist_asst_duties_ca\(3-23-10\)-1.pdf](https://www.agd.org/files/webuser/website/advocacy/dentalthyg.-asst.pdfdocs/hygienist_asst_duties_ca(3-23-10)-1.pdf). Accessed April 1, 2015.
- Adachi M, Ishihara K, Abe S, Okuda K. Professional oral health care by dental hygienists reduced respiratory infections in elderly persons requiring nursing care. *International Journal of Dental Hygiene*. 2007; 5; 69-74.
- Albert D, McManus J, Mitchell D. Models for delivering school-based dental care. *Journal of School Health*. 2005; 75:157-61.
- American Dental Association (ADA). Questions about going to the dentist. Available at: www.ada.org/en/Home-MouthHealthy/dental-care-concerns/questions-about-going-to-the-dentist/. Accessed April 17, 2015.
- American Dental Association Council on Scientific Affairs. Professionally applied topical fluoride: Evidence-based clinical recommendations. *Journal of Dental Education*. 2007; 71(3):393-402.
- American Dental Hygienists' Association (ADHA). Direct Access States. June 2014. Available at: www.adha.org/resources-docs/7513_Direct_Access_to_Care_from_DH.pdf. Accessed March 20, 2015.
- Axelsson P, Lindhe J. Effect of controlled oral hygiene procedures on caries and periodontal disease in adults. results after 6 years. *Journal of Clinical Periodontology*. 1981;8(3):239-248.
- Barnes CM. Dental hygiene participation in managing incipient and hidden caries. *Dental Clinics of North America*. 2005;49(4):795-813, vi-vii.
- Beauchamp J, Caufield PW, Crall JJ, et al. Evidence-based clinical recommendations for the use of pit-and-fissure sealants: a report of the American Dental Association Council on Scientific Affairs. *Journal of the American Dental Association*. 2008;139:257-68.
- Beirne P, Forgie A, Worthington HV, Clarkson JE. Routine scale and polish for periodontal health in adults. *The Cochrane Database of Systematic Reviews*. 2005;(1), CD004625. Beirne P, Worthington HV, Clarkson JE. Routine scale and polish for periodontal health in adults. *The Cochrane Database of Systematic Reviews*. 2007;(4):CD004625.
- Braveman P. Health disparities and health equity: concepts and measurement. *Annual Review of Public Health*. 2006;27:167-194.
- Brocklehurst P, Kujan O, O'Malley LA, Ogden G, Shepherd S, Glenny AM. Screening programmes for the early detection and prevention of oral cancer. *Cochrane Database of Systematic Reviews*. 2013;11:CD004150.
- Buzalaf MA, Magalhaes AC, Wiegand A. Alternatives to fluoride in the prevention and treatment of dental erosion. *Monographs in Oral Science*. 2014;25:244-252.

- California Department of Public Health (CDPH). Center for Health Statistics and Informatics Death Data Trend Summary: Premature Mortality Trends 2000-2007. Available at: www.cdph.ca.gov/programs/ohir/Pages/YPLL2007Main.aspx. Accessed December 2011.
- California Health Care Foundation (CHCF). *California Health Care Almanac: Denti-Cal Facts and Figures*. Oakland, CA: CHCF; 2010. Available at: www.chcf.org/~media/MEDIA%20LIBRARY%20Files/PDF/D/PDF%20DentiCalFactsAndFigures2010.pdf. Accessed April 7, 2015.
- California Health Care Foundation (CHCF). *Drilling Down: Access, Affordability, and Consumer Perceptions in Adult Dental Health*. Oakland, CA: CHCF; 2008a. Available at: <http://www.chcf.org/~media/MEDIA%20LIBRARY%20Files/PDF/D/PDF%20DrillingDownAdultDentalSurvey2008.pdf>. Accessed March 26, 2015.
- California Health Interview Survey (CHIS). 2003 California Health Interview Survey: Los Angeles, CA: UCLA Center for Health Policy Research; 2003.
- California Health Interview Survey (CHIS). 2012 California Health Interview Survey: Los Angeles, CA: UCLA Center for Health Policy Research; 2012.
- Centers for Disease Control and Prevention (CDC). *Oral Health for Adults*. 2006. Available at: http://www.cdc.gov/oralhealth/publications/factsheets/adult_oral_health/adults.htm. Accessed on March 20, 2015.
- Centers for Disease Control and Prevention (CDC). *A National Call to Action to Promote Oral Health*. 2003. Available at: http://www.cdc.gov/oralhealth/publications/factsheets/adult_oral_health/call_to_action.htm. Accessed on March 20, 2015.
- Centers for Disease Control and Prevention. *Oral health for older Americans*. 2013. Available at: http://www.cdc.gov/oralhealth/publications/factsheets/adult_oral_health/adult_older.htm. Accessed March 20, 2015.
- Chambrone L, Chambrone D, Lima LA, Chambrone LA. Predictors of tooth loss during long-term periodontal maintenance: A systematic review of observational studies. *Journal of Clinical Periodontology*. 2010;37(7):675-684.
- Chernew M, Cutler M, Keenan PS. Increasing health insurance costs and the decline in insurance coverage. *Health Services Research*. 2005;40:1021-1039
- Chi DL, van der Goes DN, Ney JP. Cost-effectiveness of pit-and-fissure sealants on primary molars in medicaid-enrolled children. *American Journal of Public Health*. 2014;104(3):555-561.
- Children Now. *California Report Card 2011-12, Setting the Agenda for Children*.
- Chu R, Craig B. Understanding the determinants of preventive oral health behaviours. *Probe*. 1996; 30(1):12-8.
- Coleman P, Watson N. Oral care provided by certified nursing assistants in nursing homes. *Journal of the American Geriatrics Society*, 2006;54:138-143.

- Cox DH. *Premature Mortality in California, 2004*. Center for Health Statistics. December 2006. Available at: www.cdph.ca.gov/pubsforms/Pubs/OHIRprematuremortality2004.pdf. Accessed November 30, 2011.
- Damle SG, Patil A, Jain S, Damle D, Chopal N. Effectiveness of supervised toothbrushing and oral health education in improving oral hygiene status and practices of urban and rural school children: A comparative study. *Journal of International Society of Preventive & Community Dentistry*. 2014;4(3):175-181.
- DeBiase B, Austin S. Oral health in older adults. *The Journal of Dental Hygiene*. 2003; 73; 125-148.
- Dental Health Foundation (DHF). *"Mommy, It Hurts to Chew"*. The California Smile Survey, an oral health assessment of California's kindergarten and 3rd grade children: Oakland, CA: Dental Health Foundation; 2006.
- Dental Hygiene Committee of California (DHCC). *Background Paper for the Dental Hygiene Committee of California: Identified Issues, Background and Recommendations Regarding the DHCC*. Report to the Calif. State Legislature. Sacramento, CA: Dental Hygiene Committee of California; 2014.
- Donaldson M, Kinirons M. Effectiveness of the school dental screening programme in stimulating dental attendance for children in need of treatment in northern ireland. *Community Dentistry and Oral Epidemiology*. 2001;29(2):143-149.
- Glassman P, Subar P. Creating and maintaining oral health for dependent people in institutional settings. *Journal of Public Health Dentistry*. 2010;70 Suppl 1:S40-8.
- Glied S, Jack K. *Macroeconomic Conditions, Health Care Costs and the Distribution of Health Insurance*. Cambridge, MA: National Bureau of Economic Research. October 2003. NBER Working Paper (W10029). Available at: www.nber.org/papers/W10029. Accessed August 2, 2010. Guide to Community Preventive Services. Preventing dental caries: school-based dental sealant delivery programs (abbreviated). Available at: www.thecommunityguide.org/oral/schoolsealants.html. 2013. Accessed April 15, 2015.
- Haaland A. Mapping the literature of dental hygiene. *Bulletin of the Medical Library Association*. 1999;87(3):283-286.
- Hadley J. The effects of recent employment changes and premium increases on adults' insurance coverage. *Medical Care Research and Review*. 2006;63:447-476
- Health Resources and Services Administration (HRSA). *Dental HPSA Designation Overview*. 2015. Available at: <http://bhpr.hrsa.gov/shortage/hpsas/designationcriteria/dentalhpsaoverview.html>. Accessed April 1, 2015.
- Jiang EM, Lo EC, Chu CH, Wong MC. Prevention of early childhood caries (ECC) through parental toothbrushing training and fluoride varnish application: A 24-month randomized controlled trial. *Journal of Dentistry*. 2014;42(12):1543-1550.
- Kaiser Family Foundation (KFF). *Dental Care Health Professional Shortage Areas (HPSAs)*. 2014. Available at: <http://kff.org/other/state-indicator/dental-care-health-professional-shortage-areas-hpsas/>. Accessed on April 1, 2015.

- Kuo YW, Yen M, Fetzer S, Chiang LC, Shyu YI, Lee TH, Ma HI. A home-based training programme improves family caregivers' oral care practices with stroke survivors: A randomized controlled trial. *International Journal of Dental Hygiene*. 2015 [Epub ahead of print].
- Llodra JC, Bravo M, Delgado-Rodriguez M, Baca P, Galvez R. Factors influencing the effectiveness of sealants—a meta-analysis. *Community Dentistry and Oral Epidemiology*. 1993;21(5):261-268.
- Marinho VC. (2009). Cochrane reviews of randomized trials of fluoride therapies for preventing dental caries. *European Archives of Paediatric Dentistry: Official Journal of the European Academy of Paediatric Dentistry*. 2009;10(3):183-191.
- Marinho VC, Worthington HV, Walsh T, Clarkson JE. Fluoride varnishes for preventing dental caries in children and adolescents. *The Cochrane Database of Systematic Reviews*. 2013;7: CD002279.
- Mertz E. *Registered Dental Hygienists in Alternative Practice: Increasing Access to Dental Care in California*. San Francisco, CA: Center for the Health Professions, University of California; 2008. Available at: http://futurehealth.ucsf.edu/Content/29/2008-05_Registered_Dental_Hygienists_in_Alternative_Practice_Increasing_Access_to_Dental_Care_in_California.pdf. Accessed March 26, 2015.
- Mertz E, Glassman P. Alternative Practice Dental Hygiene in California: Past, Present, and Future. *Journal of the California Dental Association*. 2011;39:37-46.
- National Center for Health Statistics (NCHS). *Health, United States, 2013: With Special Feature on Prescription Drugs*. Hyattsville, MD; 2014.
- Office of Statewide Health Planning and Development (OSHPD). *Health Professional Shortage Areas – Dental: Find Dental HPSAs in California*. 2010. Available at: <http://gis.oshpd.ca.gov/atlas/topics/shortage/hpsadt>. Accessed on April 1, 2015.
- Pihlstrom BL, Michalowicz BS, Johnson NW. Periodontal diseases. *Lancet*. 2005;366(9499):1809-1820.
- Pourat N and Nicholson G. *Unaffordable Dental Care is Linked to Frequent School Absences*. Los Angeles, CA: UCLA Center for Health Policy Research; 2009.
- Sar Sancakli H., Austin R, Al-Saqabi F, Moazzez R, Bartlett D. The influence of varnish and high fluoride on erosion and abrasion in a laboratory investigation. *Australian Dental Journal*. 2015;60(1):38-42.
- Seirawan H, Faust S, & Mulligan R. The impact of oral health on the academic performance of disadvantaged children. *American Journal of Public Health*. 2012: 102(9): 1729-1734.
- U.S. Department of Health and Human Services (DHHS). *Oral Health in America: A Report of the Surgeon General*. Rockville, MD: U.S. Department of Health and Human Services, National Institute of Dental and Craniofacial Research, National Institutes of Health; 2000.
- Vaidya V, Partha G, & Karmakar M. Gender differences in utilization of preventive care services in the United States. *Journal of Women's Health*. 2012: 21(2):140-145.
- Weintraub JA, Ramos-Gomez F, Jue B, Shain S, Hoover CI, Featherstone JD, Gansky SA., Fluoride varnish efficacy in preventing early childhood caries. *Journal of Dental Research*. 2006;85(2):172-6.

Wides C, Bates T, Mertz E. *Registered Dental Hygienists in Alternative Practice in California, 2009 Descriptive Report*. San Francisco, CA: Center for the Health Professions, University of California; 2011. Available at: http://futurehealth.ucsf.edu/Content/11660/2011_12_Registered_Dental_Hygienists_In_Alternative_Practice_in_California.pdf. Accessed March 26, 2015.

Worthington HV, Clarkson JE, Bryan G, Beirne PV.. Routine scale and polish for periodontal health in adults. *The Cochrane Database of Systematic Reviews*. 2013;11:CD004625. Zilversmit L, Kane DJ, Rochat R, Rodgers T, Russell B. Factors associated with receiving treatment for dental decay among medicaid-enrolled children younger than 12 years of age in iowa, 2010. *Journal of Public Health Dentistry*. 2015;75(1):17-23.

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A group of faculty, researchers, and staff complete the analysis that informs California Health Benefits Review Program (CHBRP) reports. The CHBRP **Faculty Task Force** comprises rotating senior faculty from University of California (UC) campuses. In addition to these representatives, there are other ongoing contributors to CHBRP from UC that conduct much of the analysis. The **CHBRP staff** coordinates the efforts of the Faculty Task Force, works with Task Force members in preparing parts of the analysis, and manages all external communications, including those with the California Legislature. As required by CHBRP's authorizing legislation, UC contracts with a certified actuary, Milliman Inc., to assist in assessing the financial impact of each legislative proposal mandating or repealing a health insurance benefit.

The **National Advisory Council** provides expert reviews of draft analyses and offers general guidance on the program to CHBRP staff and the Faculty Task Force. 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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A group of faculty and staff undertakes most of the analysis that informs reports by the California Health Benefits Review Program (CHBRP). The CHBRP Faculty Task Force comprises rotating representatives from six University of California (UC) campuses. In addition to these representatives, there are other ongoing contributors to CHBRP from UC. This larger group provides advice to the CHBRP staff on the overall administration of the program and conducts much of the analysis.

CHBRP staff coordinates the efforts of the Faculty Task Force, works with Task Force members in preparing parts of the analysis, and coordinates all external communications, including those with the California Legislature.

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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.

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