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Analysis of Senate Bill 1239: Pupil Health Care: School Nurses

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California Health Benefits Review Program (CHBRP)

Publication Date

2014

Data Availability

The data associated with this publication are within the manuscript.

Peer reviewed

California Health Benefits Review Program

Analysis of Senate Bill 1239: Pupil Health Care: School Nurses

A Report to the 2013–2014 California Legislature

June 13, 2014



KEY FINDINGS

Analysis of California Senate Bill (SB) 1239: Pupil Health Care: School Nurses

SUMMARY TO THE 2013–2014 CALIFORNIA LEGISLATURE • JUNE 13, 2014



AT A GLANCE

SB 1239 (amended April 1, 2014) would require DMHC-regulated plans and CDI-regulated insurers to reimburse school districts for covered services delivered to a pupil by a school nurse, registered nurse (RN), or licensed vocational nurse (LVN) employed by or under contract with the school district. SB 1239 would also prohibit cost sharing for such services. SB 1239 was subsequently amended, but this analysis focuses on the April 1 version (which included a benefit mandate).

- **Enrollees.** An estimated 23.4 million Californians (60%) have health insurance that would be subject to SB 1239 (see Figure 1), including Medi-Cal beneficiaries enrolled in DMHC-regulated plans. Among this group are 5.7 million pupils (76% of California children aged 4–18 years).
- **Impact on expenditures.** In the initial year, CHBRP has made the simplifying assumption that school districts would bill health insurance as other providers do, which would increase expenditures (premiums) by \$150 million (0.117%).
- **EHBs.** SB 1239 requires reimbursement for services provided by school nurses that “would otherwise be covered by” a pupil’s plan or policy, so SB 1239 would not exceed EHBs.
- **Medical effectiveness.** Nursing services are effective in many settings. However, there is *insufficient evidence* to determine the effect of school nurse services on pupil health outcomes.
- **Benefit coverage.** For 100% of enrollees (an increase from 0%), SB 1239 would alter benefit coverage to include covered services when provided by a school nurse to a pupil.
- **Utilization.** For the initial year, CHBRP has made the simplifying assumption that SB 1239 would increase the number of school nurses and the use of reimbursable school nurse services by 10%.
- **Public health.** Although it is reasonable to assume that an increase of 10% services could positively affect pupil health, because there is insufficient evidence to determine effectiveness, the impact of the increase in school nurse services on pupil health outcomes is unknown.
- **Long-term impacts.** Due to the variety of possible responses to the mandate by a variety of actors (school districts, school nurses, health insurance plans and policies, parents, and students), simplifying assumptions made to estimate SB 1239’s initial impacts may not hold in the long term. Therefore, the long-term impacts on utilization, cost, and the public’s health are unknown.

BILL SUMMARY

SB 1239 would require DMHC-regulated plans and CDI-regulated insurers (including Medi-Cal Managed Care Plans) to reimburse school districts for covered services delivered to a pupil (if the pupil is a plan/policy enrollee) by a school nurse, registered nurse (RN), or licensed vocational nurse (LVN) employed by or under contract with the school district. SB 1239 would also prohibit plans and insurers from applying cost-sharing terms for covered services provided by school nurses.

In addition to the benefit mandate just described, SB 1239 would also require school districts eligible to receive concentration funding under the local control funding formula¹ to employ at least one school nurse as a “supervisor of health.”

BACKGROUND

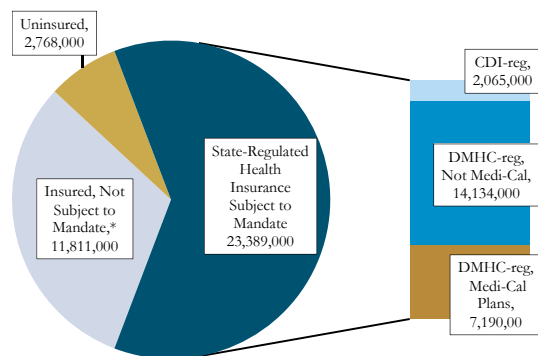
The National Association of School Nurses has identified seven core school nurse roles: (1) providing direct health care to students; (2) providing leadership for the provision of health services; (3) providing screening and referral for health conditions; (4) promoting healthy school environments; (5) promoting health; (6) serving as a leader in health policies and programs; and (7) acting as liaison between school, family, health care professionals, and community. These roles include, but are not limited to, the school nurse services SB 1239 would make reimbursable when provided to pupils by school nurses, registered nurses (RNs), or licensed vocational nurses (LVNs) (collectively referred to as “school nurses” in this report).

¹ California Education Code 42238.02(f).

ANALYTIC APPROACH AND ASSUMPTIONS

To perform this analysis, CHBRP identified school nurse services that would be covered by pupils' plans and policies. This subset of the services included among school nurse roles are referred to in this report as "reimbursable services." CHBRP assumed the following: (1) the term "pupil" would include children aged 4–18 years attending K-12 public or private schools, or being home-schooled; (2) plans and insurers would be required to reimburse school districts for services provided by school nurses. However, plans and insurers would not be required to reimburse school districts for school nurses acting in other capacities (e.g., school nurses attached to school-based health clinics); and (3) "reimbursable services" would include covered services when provided by a school nurse (such as medication administration, screening, etc.), but would not include drugs or durable medical equipment.

Figure 1. SB 1239 Interaction With California Health Insurance: Enrollees/Persons, All Ages



Source: California Health Benefits Review Program, 2014.

Note: *Insured, Not Subject to Mandate = Federally regulated health insurance, such as Medicare, veterans, or self-insured plans.

Although the 5.7 million pupils enrolled in DMHC-regulated plans and CDI-regulated policies would be the potential users of reimbursable school nurse services, SB 1239's benefit coverage and premium impacts would affect the health insurance of all 23.4 million enrollees.

CHBRP KEY FINDINGS: INCREMENTAL IMPACT OF SB 1239

Medical Effectiveness

CHBRP's medical effectiveness analysis focused on the evidence of effectiveness of services delivered by a school nurse in a school setting. A limited number of studies addressed the effectiveness of school nurse services that SB 1239 would make reimbursable. These studies indicate: *insufficient evidence* to determine whether case management services delivered by a school nurse affect emergency department visits and/or hospital visits; *insufficient evidence* to determine whether immunization and surveillance efforts on the

part of school nurses affect vaccination rates; *insufficient evidence* to determine whether services delivered by a school nurse affect absenteeism. Although it stands to reason that the services provided by nurses may be as effective in school settings as in other settings, the medical effectiveness review found insufficient evidence to demonstrate the effectiveness in a school setting. Please note: insufficient evidence is not evidence of no effect, rather it indicates an unknown effect.

Benefit Coverage, Utilization, and Cost

If SB 1239 were enacted:

Benefit coverage impacts: Coverage for reimbursable services provided by school nurses would increase from 0% to 100% for all enrollees in DMHC-regulated plans and CDI-regulated policies.

Utilization impacts: For this analysis, CHBRP identified reimbursable services then averaged them all into a standard 15-minute visit increment. This reimbursable visit is the increment used throughout the analysis to calculate utilization and cost impacts. CHBRP has made the simplifying assumption that the number of school nurses would increase by 10% (due to SB 1239's impact on the education code and the economic incentive of reimbursable services), which would increase utilized reimbursable services from 3.6 to 3.9 million in the initial, postmandate year.

Cost impacts: For the initial, postmandate year, CHBRP has also made the simplifying assumption that school districts will bill for covered services provided by school nurses to pupils enrolled in DMHC-regulated plans and CDI-regulated policies, as other providers do. This would result in an increase in expenditures (premiums) of \$238 million (0.1851%).

CHBRP found no evidence in the literature that indicated cost shifting from pediatricians or other providers due to school nurse services; therefore, potential cost offsets are unknown.

Public Health Impacts

CHBRP estimates a 10% increase in services in the short term, and it stands to reason that nursing services found to be effective in other settings could be effective in school settings, which could positively impact pupil health. However, evidence is insufficient, so the degree to which increased services would improve pupil health and reduce pupil health disparities is unknown.

Long-Term Impacts

Due to the many possibilities for implementation (and action on the part of school districts, school nurses, health insurance carriers, parents, and students), the short-term simplifying assumptions CHBRP has made to model the initial year may not hold. Therefore, the long-term impacts are unknown.

A Report to the 2013–2014 California State Legislature

**Analysis of Senate Bill 1239
Pupil Health Services: School Nurses**

June 13, 2014

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Additional free copies of this and other CHBRP bill analyses and publications may be obtained by visiting the CHBRP website at www.chbrp.org.



The California Health Benefits Review Program (CHBRP) was established in 2002 to provide the California Legislature independent analysis of the medical, financial, and public health impacts of proposed health insurance benefit mandates and repeals per its authorizing statute.¹ The program was reauthorized in 2006 and again in 2009. CHBRP's authorizing statute defines legislation proposing to mandate or proposing to repeal an existing health insurance benefit as a proposal that would mandate or repeal a requirement that a health care service plan or health insurer: (1) permit covered individuals to obtain health care treatment or services from a particular type of health care provider; (2) offer or provide coverage for the screening, diagnosis, or treatment of a particular disease or condition; (3) offer or provide coverage of a particular type of health care treatment or service, or of medical equipment, medical supplies, or drugs used in connection with a health care treatment or service; and/or (4) specify terms (limits, time frames, copayments, deductibles, coinsurance, etc.) for any of the other categories.

An analytic staff in the University of California's Office of the President supports a task force of faculty and staff from several campuses of the University of California to complete each analysis within a 60-day period, usually before the Legislature begins formal consideration of a mandate or repeal bill. A certified, independent actuary helps estimate the financial impacts. A strict conflict-of-interest policy ensures that the analyses are undertaken without financial or other interests that could bias the results. A National Advisory Council, drawn from experts from outside the state of California, provides balanced representation among groups with an interest in health insurance benefit mandates or repeals, and reviews draft analyses to ensure their quality before they are submitted to the Legislature. Each report summarizes scientific evidence relevant to the proposed mandate, or proposed mandate repeal, but does not make recommendations, deferring policy decision making to the Legislature. The State funds this work through an annual assessment on health plans and insurers in California. All CHBRP reports and information about current requests from the California Legislature are available on the CHBRP website, www.chbrp.org.

¹ Available at: www.chbrp.org/documents/authorizing_statute.pdf.

PREFACE

This report provides an analysis of the medical, financial, and public health impacts of Senate Bill 1239. In response to a request from the California Senate Committee on Health on April 7, 2014, the California Health Benefits Review Program (CHBRP) undertook this analysis pursuant to the program's authorizing statute, which established CHBRP provide independent and impartial analysis of proposed health insurance benefit mandates and repeals.

Margaret Fix, MPH, Chris Tonner, MPH, and Gina Evans-Young, all of the University of California, San Francisco, prepared the medical effectiveness analysis. Bruce Abbott, MLS, of the University of California, Davis, conducted the literature search. Ronald Fong, MD, MPH, Dominique Ritley, MPH, and Patricia Zrelak, PhD, RN, CNRN, NEA-BC, all of the University of California, Davis, prepared the public health impact analysis. Shana Lavarreda, PhD, MPP, Jack Needleman, PhD, and AJ Scheitler, MEd, all of the University of California, Los Angeles, prepared the cost impact analysis. Robert Cosway, FSA, MAAA, and John Rogers, MS, of Milliman, provided actuarial analysis. Dian Baker, PhD, APRN-BC, PNP, of California State University, Sacramento, and Joanne Spetz, PhD, of the University of California, San Francisco, provided technical assistance with the literature review and expert input on the analytic approach. John Lewis, MPA, and Nimit Ruparel, MPP, of CHBRP staff prepared the *Introduction* and synthesized the individual sections into a single report. A subcommittee of CHBRP's National Advisory Council (see final pages of this report for a full list of members) reviewed the analysis for its accuracy, completeness, clarity, and responsiveness to the Legislature's request.

CHBRP gratefully acknowledges all of these contributions but assumes full responsibility for all of the report and its contents. Please direct any questions concerning this report to:

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All CHBRP bill analyses and other publications and resources are available on the CHBRP website, www.chbrp.org.

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EXECUTIVE SUMMARY

California Health Benefits Review Program Analysis of Senate Bill 1239

The California Senate Committee on Health requested on April 7, 2014, that the California Health Benefits Review Program (CHBRP) conduct an evidence-based assessment of the medical, financial, and public health impacts of the health insurance benefit mandate proposed by Senate Bill (SB) 1239, Pupil Health Care Services: School Nurses. In response to this request, CHBRP undertook this analysis pursuant to the provisions of the program's authorizing statute,² which allows for the review of benefit mandates affecting health insurance regulated by the state. SB 1239 was subsequently amended and the health insurance benefit mandate was removed from the bill. However, at the request of the Senate Committee on Health, CHBRP completed this analysis of the April 1, 2014, version of SB 1239 (the version that includes a health insurance benefit mandate).

State benefit mandates apply to a subset of health insurance in California, those regulated by one of California's two health insurance regulators:³ the California Department of Managed Health Care (DMHC)⁴ and the California Department of Insurance (CDI).⁵ In 2015, CHBRP estimates that approximately 23.4 million Californians (60%) will have health insurance that may be subject to any state health benefit mandate law.⁶ 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.

The mandate would affect the health insurance of approximately 23.4 million enrollees (60% of all Californians). Specifically, DMHC-regulated plans and/or CDI-regulated policies, including DMHC-regulated plans that enroll Medi-Cal beneficiaries, would be subject to SB 1239.

Bill-Specific Analysis of SB 1239

As of January 2015, SB 1239 would enact a health insurance benefit mandate. SB 1239 would require DMHC-regulated plans and CDI-regulated insurers (including Medi-Cal Managed Care Plans) to reimburse school districts for covered services when services are delivered to a pupil (if the pupil is a plan/policy enrollee) by a school nurse, registered nurse (RN), or licensed vocational nurse (LVN) employed by or under contract with the school district. SB 1239 would prohibit plans and insurers from applying cost-sharing terms for covered services provided by school nurses.

² Available at: www.chbrp.org/docs/authorizing_statute.pdf.

³ California has a bifurcated system of regulation for health insurance. The Department of Managed Health Care (DMHC) regulates health care service plans, which offer benefit coverage to their enrollees through health plan contracts. The California Department of Insurance (CDI) regulates health insurers, which offer benefit coverage to their enrollees through health insurance policies.

⁴ DMHC was established in 2000 to enforce the Knox-Keene Health Care Service Plan of 1975; see Health and Safety Code (H&SC) Section 1340.

⁵ CDI licenses "disability insurers." Disability insurers may offer forms of insurance that are not health insurance. This report considers only the impact of the benefit mandate on health insurance policies, as defined in Insurance Code (IC) Section 106(b) or subdivision (a) of Section 10198.6.

⁶ CHBRP's estimates are available at: www.chbrp.org/other_publications/index.php.

In addition to the health insurance benefit mandate just described, SB 1239 would also, at a later date (July 1, 2016), alter the California Education Code to require school districts eligible to receive concentration funding under the local control funding formula⁷ to employ at least one school nurse as a supervisor of health.

Just as only a portion of Californians are enrolled in DMHC-regulated plans or CDI-regulated policies, only a portion of California pupils (children aged 4–18 years) are plan/policy enrollees. Some pupils are enrolled in health insurance not subject to regulation by DMHC or CDI and some pupils have no health insurance. SB 1239 would not affect the health insurance of these pupils. CHBRP estimates that SB 1239 would affect the health insurance of 76% of California pupils.

Background on School Nurses

The National Association of School Nurses has identified 7 core roles of school nurses:

- Provide direct health care to students
- Provide leadership for the provision of health services
- Provide screening and referral for health conditions
- Promote healthy school environment
- Promote health
- Serve as a leader in health policies and programs
- Liaison between school, family, health care professionals, and community

These roles are inclusive of but not limited to the school nurse services SB 1239 would make reimbursable when provided by school nurses, registered nurses (RNs), or licensed vocational nurses (LVNs) collectively referred to as “school nurses” in this report.”

Analytic Approach and Key Assumptions

To perform this analysis, CHBRP identified school nurse services that would be covered by pupil’s plans and policies. This subset of the services included among school nurse roles are referred to in this report as “reimbursable services.” The roles of a school nurse include but are not limited to services covered under a pupil’s health insurance plan or policy. In this report, CHBRP will use the term “roles” to indicate the broad set of school nurse activities and “reimbursable services” to discuss school nurse actions for which a school district could bill a plan or policy.

The term “school nurse” is defined in law as a registered nurse (RN) who has a current credential in school nursing.⁸ However, because school districts utilize credentialed and noncredentialed RNs, as well as licensed vocational nurses (LVNs), to perform some or all school nursing roles, and because SB 1239 would make some services by all of these providers reimbursable, this

⁷ California Education Code 42238.02(f).

⁸ California Education Code 49426.

report uses term “school nurse” to include all RNs and LVNs performing some or all roles associated with school nursing.

In order to conduct this analysis, CHBRP assumed the following:

- The term “pupil” would include children aged 4–18 attending K-12 public or private schools, or being home-schooled.
- Plans and insurers would be required to reimburse school districts for services provided by school nurses. However, plans and insurers would not be required to reimburse school districts for school nurses acting in other capacities (e.g., school nurses attached to school-based health clinics).
- “Reimbursable services” would include covered services when provided by a school nurse (such as medication administration, screening, etc) but would not include drugs or durable medical equipment (DME).

Medical Effectiveness

The literature shows that nursing services are effective in many settings, including hospital-based care, primary care, community-based care, and home-based care. Although it stands to reason that the services provided by nurses may be as effective in school settings, the purpose of the Medical Effectiveness literature review and analysis was to find the evidence on the effectiveness of services provided by a school nurse in a school setting. The review of these studies indicate:

- There is *insufficient evidence* to determine whether case management services delivered by a school nurse affect emergency department visits and/or hospital visits. Insufficient evidence is not evidence of no effect, *rather it indicates an unknown effect*.
- There is *insufficient evidence* to determine whether immunization and surveillance efforts on the part of school nurses affect vaccination rates. Insufficient evidence is not evidence of no effect, *rather it indicates an unknown effect*.
- There is *insufficient evidence* to determine whether services delivered by a school nurse affect absenteeism. Insufficient evidence is not evidence of no effect, *rather it indicates an unknown effect*.
- The medical effectiveness review found no studies on the effects of other reimbursable services that SB 1239 would require coverage, such as medication administration and health education.

Taken collectively, although it stands to reason that the services provided by nurses may be as effective in school settings, the medical effectiveness review found insufficient evidence to demonstrate the effectiveness of services provided by a school nurse in a school setting. Insufficient evidence is not evidence of no effect, rather it indicates an unknown effect.

Benefit Coverage, Utilization, and Cost Impacts

The *Benefit Coverage, Utilization, and Cost Impacts* section only examines the services SB 1239 would make reimbursable (a sub-set of the full range included in the roles of school nurses).

Coverage impacts

- If SB 1239 were enacted, coverage for reimbursable services provided by school nurses would increase to 100% (from 0%) for all enrollees in DMHC-regulated plans and CDI-regulated policies.⁹

Utilization impacts

On the basis of existing literature and content expert input, CHBRP estimates that school nurse services are limited by the supply of school nurses; that demand far surpasses supply, so increasing the number of school nurses would increase utilization. To calculate reimbursable school nurse services, CHBRP averaged all reimbursable nursing services into a standard fifteen-minute visit increment. This reimbursable visit is the increment used throughout the calculations of utilization and cost impacts. CHBRP has also made a simplifying assumption: that the number of school nurses (due to SB 1239's legislative requirement for some school districts to employ school nurses, the economic incentives newly reimbursable services would provide, or a combination of both) will increase by 10% for the first year if SB 1239 were enacted.

- CHBRP estimates that there are currently 1,218 reimbursable visits for health services provided per school nurse per year that would be reimbursable through DMHC-regulated plans or CDI-regulated policies if SB 1239 were enacted (Table 1).
- In total, CHBRP estimates that 3,554,070 school nurse visits that would be reimbursable under SB 1239 are currently provided to a pupil population of 5.7 million pupils with health insurance subject to SB 1239.
- CHBRP estimates that utilization of reimbursable visits will increase to 3.9 million in the first year, postmandate.

Cost impacts

CHBRP also assumes that school districts will, as other providers do, be able to bill state-regulated plans and policies for covered services provided to pupils by school nurses.

- SB 1239 would increase expenditures by \$150,272,000 or 0.117% on behalf of enrollees in DMHC-regulated plans and CDI-regulated policies (Table 1).
- CHBRP found no evidence in the literature that indicated cost-shifting from pediatricians or other providers due to school nurse services; therefore, potential cost offsets are unknown.

Public Health Impacts

- CHBRP estimates a 10% increase in services in the short term, and it stands to reason that if nursing services found to be effective in other settings are similarly effective in school settings, SB 1239 could have a positive health impact for pupils; however, the degree to which the increased access to school nurses would improve pupil health and reduce disparities in pupil health is unknown.

⁹ Some enrollees have had coverage for CHDN, but this benefit coverage appears to have been limitedly accessed — and is not as broad as the set of services CHBRP is describing as reimbursable.

- Due to SB 1239 language that excludes enrollee cost-sharing, CHBRP projects that this mandate would pose no financial burden for enrollees who use school nurse services

Long-Term Impacts

As noted, above, CHBRP's short-term (first year) impact estimates are based on several assumptions regarding actions of school districts, school nurses, and health insurance. These assumptions may not be consistent over the long-term.

- In the long term, SB 1239 may produce unknown long-term impacts in utilization and costs due to the many possibilities for implementation that might occur after the first year, postmandate.
- Although disparities in health status exist by income, insurance status, and race/ethnicity, the long term impacts of SB 1239 on disparities in school-aged children are unknown due to a variety of indeterminate responses to the mandate by school districts, school nurses, and health insurance carriers and secondarily by parents and students.

Interaction With the Federal Affordable Care Act

The language of SB 1239 explicitly requires reimbursement for health care services provided by school nurses that "would otherwise be covered by" an enrollee's health plan contract or insurance policy. For this reason, CHBRP does not believe that the requirements in SB 1239 would interact with essential health benefits (EHBs) because such services are currently within the scope of EHBs.

Table 1. SB 1239 Impacts on Benefit Coverage, Utilization, and Cost, 2015

	Premandate	Postmandate	Increase/ Decrease	Change Postmandate
Benefit coverage				
Total enrollees with health insurance subject to state benefit mandates (a)	23,389,000	23,389,000	0%	0%
Total enrollees with health insurance subject to SB 1239	23,389,000	23,389,000	0%	0%
Percent of enrollees with coverage for reimbursable services provided by a school nurse	0%	100%	100%	100%
Number of enrollees with coverage for reimbursable services provided by a school nurse	—	23,389,000	23,389,000	100%
Utilization and cost				
Number of school nurses	2,918	3,210	292	10%
Number of reimbursable service visits per school nurse per year	1,218	1,218	—	0%
Number of unreimbursed school nurse visits	—	3,909,477	3,909,477	100%
Number of reimbursed school nurse visits	3,554,070	—	-3,554,070	-100%
Total number of school nurse visits	3,554,070	3,909,477	355,407	10%
Average per-unit cost of reimbursable services visit	\$45.00	\$45.00	\$0.00	0%
Expenditures				
<u>Premium expenditures by payer</u>				
Private employers for group insurance	\$54,590,722,000	\$54,649,043,000	\$58,321,000	0.1068%
CalPERS HMO employer expenditures (c)	\$4,297,494,000	\$4,301,715,000	\$4,221,000	0.0982%
Medi-Cal Managed Care Plan expenditures	\$17,504,711,000	\$17,557,088,000	\$52,377,000	0.2992%
Enrollees for individually purchased insurance	\$16,930,080,000	\$16,941,024,000	\$10,944,000	0.0646%

Table 1. SB 1239 Impacts on Benefit Coverage, Utilization, and Cost, 2015 (Cont'd)

	Premandate	Postmandate	Increase/ Decrease	Change Postmandate
Expenditures (cont'd)				
Enrollees with group insurance, CalPERS HMOs, Covered California, and Medi-Cal Managed Care (a) (b)	\$22,232,708,000	\$22,257,117,000	\$24,409,000	0.1098%
<u>Enrollee expenses</u>				
Enrollee out-of-pocket expenses for covered benefits (deductibles, copayments, etc.)	\$12,867,143,000	\$12,867,143,000	\$0	0.0000%
Enrollee expenses for noncovered benefits (d)	\$0	\$0	\$0	0.000%
Total Expenditures	\$128,422,858,000	\$128,573,130,000	\$150,272,000	0.1170%

Source: California Health Benefits Review Program, 2014.

Note: (a) This population includes persons with privately funded (including Covered California) and publicly funded (e.g., CalPERS HMOs, Medi-Cal Managed Care Plans) health insurance products regulated by DMHC or CDI. Population includes enrollees aged 0 to 64 years and enrollees 65 years or older covered by employer-sponsored health insurance.

(b) Of the increase in CalPERS employer expenditures, about 57% or \$3,327,000, would be state expenditures for CalPERS members who are state employees, state retirees, or their dependents. This percentage reflects the share of enrollees in CalPERS HMOs as of September 30, 2013. CHBRP assumes the same ratio in 2015.

(c) Enrollee premium expenditures include contributions to employer-sponsored health insurance, health insurance purchased through Covered California, and contributions for Medi-Cal Managed Care.

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

Key: CalPERS HMOs=California Public Employees' Retirement System Health Maintenance Organizations; CDI=California Department of Insurance; DMHC=Department of Managed Health Care.

INTRODUCTION

The California Senate Committee on Health requested on April 7, 2014, that the California Health Benefits Review Program (CHBRP) conduct an evidence-based assessment of the medical, financial, and public health impacts of the health insurance benefit mandate proposed by Senate Bill (SB) 1239, Pupil Health Care Services: School Nurses. In response to this request, CHBRP undertook this analysis pursuant to the provisions of the program’s authorizing statute,¹⁰ which allows for the review of benefit mandates affecting health insurance regulated by the state. SB 1239 was subsequently amended and the health insurance benefit mandate was removed from the bill. However, at the request of the Senate Committee on Health, CHBRP completed this analysis of the April 1, 2014, version of SB 1239 (the version that includes a health insurance benefit mandate).

State benefit mandates apply to a subset of health insurance in California, those regulated by one of California’s two health insurance regulators:¹¹ the California Department of Managed Health Care (DMHC)¹² and the California Department of Insurance (CDI).¹³ In 2015, CHBRP estimates that approximately 23.4 million Californians (60%) will have health insurance that may be subject to any state health benefit mandate law.¹⁴ 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.

As noted in Figure 1, the mandate would affect the health insurance of approximately 23.4 million enrollees (60% of all Californians). Specifically, DMHC-regulated plans and/or CDI-regulated policies, including DMHC-regulated plans that enroll Medi-Cal beneficiaries, would be subject to SB 1239.

Just as only a portion of Californians are enrolled in DMHC-regulated plans or CDI-regulated policies, only a portion of California pupils (children aged 4–18 years) are plan/policy enrollees. As noted in Figure 2, some pupils are enrolled in health insurance not subject to regulation by DMHC or CDI, and some pupils have no health insurance. SB 1239 would not affect the health insurance of approximately 24% of Californian pupils. Please note, although the 76% of Californian pupils enrolled in DMHC-regulated plans and CDI-regulated policies would be the users of reimbursed school nurse services, the related impacts on premiums would extend to all persons enrolled in health insurance subject to SB 1239.

¹⁰ Available at: www.chbrp.org/docs/authorizing_statute.pdf.

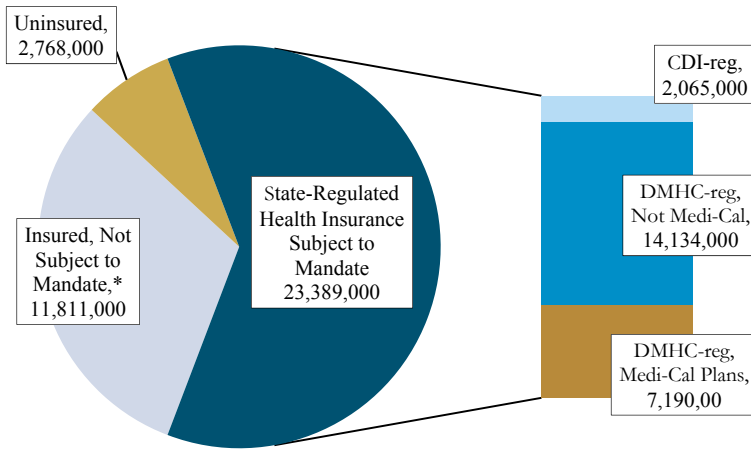
¹¹ California has a bifurcated system of regulation for health insurance. The Department of Managed Health Care (DMHC) regulates health care service plans, which offer benefit coverage to their enrollees through health plan contracts. The California Department of Insurance (CDI) regulates health insurers, which offer benefit coverage to their enrollees through health insurance policies.

¹² DMHC was established in 2000 to enforce the Knox-Keene Health Care Service Plan of 1975; see Health and Safety Code (H&SC) Section 1340.

¹³ CDI licenses “disability insurers.” Disability insurers may offer forms of insurance that are not health insurance. This report considers only the impact of the benefit mandate on health insurance policies, as defined in Insurance Code (IC) Section 106(b) or subdivision (a) of Section 10198.6.

¹⁴ CHBRP’s estimates are available at: www.chbrp.org/other_publications/index.php.

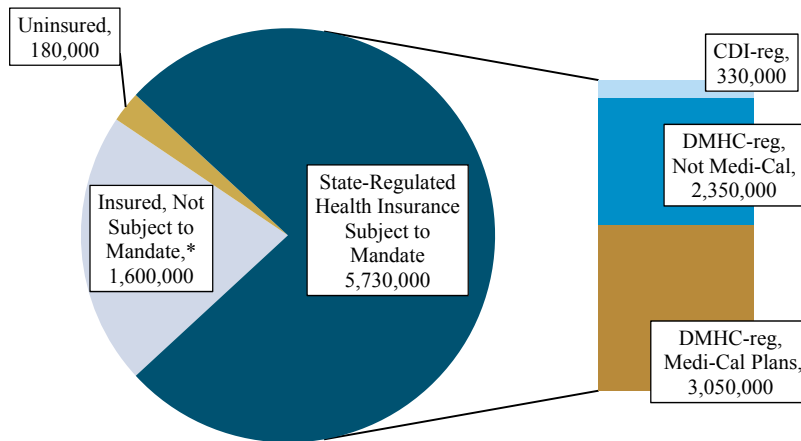
Figure 1. SB 1239 Interaction With California Health Insurance: Enrollees/Persons, All Ages



Source: California Health Benefits Review Program, 2014.

Note: * Includes enrollees in federally regulated health insurance (such as Medicare, veterans, or self-insured plans) as well as Medi-Cal beneficiaries in Medi-Cal Fee For Service.

Figure 2. SB 1239 Interaction With Californian Health Insurance: Enrollees/Persons, Aged 4–18 Years



Source: California Health Benefits Review Program, 2014.

Note: * Includes enrollees in federally regulated health insurance (such as Medicare, veterans, or self-insured plans) as well as Medi-Cal beneficiaries in Medi-Cal Fee For Service.

Developing Estimates for 2015 and the Effects of the Affordable Care Act

The Affordable Care Act (ACA)¹⁵ is substantially affecting health insurance and its regulatory environment in California. As of January 2014, an expansion of the Medi-Cal program, California's Medicaid program,¹⁶ and the availability of subsidized and nonsubsidized health insurance purchased through Covered California,¹⁷ the state's newly established state health insurance marketplace, are significantly increasing the number of people with health insurance in California.

State health insurance marketplaces, such as Covered California, are responsible for certifying and selling qualified health plans (QHPs) in the small-group and individual markets.¹⁸ QHPs sold through Covered California are DMHC-regulated plans or CDI-regulated policies, and as such are subject to California state benefit mandates.

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 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 this report. In order to accommodate continuing changes in health insurance enrollment, CHBRP is relying on projections from the California Simulation of Insurance Markets (CalSIM) model¹⁹ to help estimate baseline enrollment for 2015. From this projected baseline, CHBRP estimates the incremental impact of proposed benefit mandates that could be in effect after January 2015. CHBRP's methods for estimating baseline 2015 enrollment from CalSIM projections are provided in further detail in Appendix D.

Bill-Specific Analysis of SB 1239

Bill Language and Analysis

The full text of SB 1239 can be found in Appendix A.

¹⁵ The federal “Patient Protection and Affordable Care Act” (P.L.111-148) and the “Health Care and Education Reconciliation Act” (P.L. 111-152) were enacted in March 2010. Together, these laws are referred to as the Affordable Care Act (ACA).

¹⁶ The Medicaid expansion, which California will pursue, is to 133% of the federal poverty level (FPL) — 138% with a 5% income disregard.

¹⁷ The California Health Benefits Exchange Authorizing Statute is available here: www.healthexchange.ca.gov/Documents/California%20Codes%20Governing%20the%20Health%20Benefit%20Exchange.pdf.

¹⁸ Effective 2017, states may allow large-group purchasing through health insurance marketplaces, which may make some large-group plans and policies subject to the requirement to provide essential health benefits [ACA Section 1312(f)(2)(B)].

¹⁹ CalSIM was developed jointly and is operated by the University of California, Los Angeles Center for Health Policy Research and the University of California, Berkeley Center for Labor Research. The model estimates the impact of provisions in the ACA on employer decisions to offer, and individual decisions to obtain, health insurance.

SB 1239 would enact a health insurance benefit mandate. SB 1239 would require DMHC-regulated plans and CDI-regulated insurers (including Medi-Cal Managed Care Plans) to reimburse school districts for covered services when services are delivered to a pupil (if the pupil is a plan/policy enrollee) by a school nurse, registered nurse (RN), or licensed vocational nurse (LVN) employed by or under contract with the school district. SB 1239 would prohibit plans and insurers from applying cost-sharing terms for covered services provided by school nurses.

In addition to the health insurance benefit mandate just described, SB 1239 would also alter the California Education Code to require school districts eligible to receive concentration funding under the local control funding formula²⁰ to employ at least one school nurse as a supervisor of health. Although CHBRP focuses its analysis on the effects of the proposed benefit mandate, the amendment to the California Education code may influence the overall school nurse supply.

California recently adopted a new public school funding method for K-12 schools, known as the Local Control Funding Formula (LCFF). It has three tiers of funding to support the needs of underperforming districts (LAO, 2013):

1. *Base funding* — all districts get the same base rate (by grade span) per enrolled student plus a base rate adjustment for the K-3 and 9-12 grade spans.
2. *Supplemental funding* — a separate allotment for certain student groups. Each English learner/low income (EL/LI) and foster youth student generates an additional 20% of their adjusted base rate.
3. *Concentration funding (CF)*: for districts where more than 55% of enrollment is EL/LI, they will receive an additional 50% of the adjusted base rate for each EL/LI student above the 55% threshold.

Analytic Approach

To perform this analysis, CHBRP identified school nurse services that would be covered by pupil's plans and policies. This subset of services that are included among school nurse roles are referred to in this report as "reimbursable services." The roles of a school nurse include, but are not limited to, services covered under a pupil's health insurance plan or policy. In this report, CHBRP will use the term "roles" to indicate the broad set of school nurse activities and "reimbursable services" to discuss school nurse actions for which a school district could bill a plan or policy.

The term "school nurse" is defined in law as a registered nurse (RN) who has a current credential in school nursing.²¹ However, because school districts utilize credentialed and noncredentialed RNs, as well as licensed vocational nurses (LVNs), to perform some or all school nursing roles, and because SB 1239 would make some services by all of these providers reimbursable, this report uses the term "school nurse" to include all RNs and LVNs performing some or all roles associated with school nursing.

²⁰ California Education Code 42238.02(f).

²¹ California Education Code 49426.

In order to conduct this analysis, CHBRP assumed the following:

- The term “pupil” would include children aged 4–18 attending public or private schools, or being home-schooled.
- Plans and insurers would be required to reimburse school districts for services provided by school nurses. However, plans and insurers would not be required to reimburse school districts for school nurses acting in other capacities (e.g., school nurses attached to school-based health clinics).
- “Reimbursable services” would include covered services when provided by a school nurse (such as medication administration, screening, etc.), but would not include drugs or durable medical equipment (DME).

Requirements in Other States

Although CHBRP is aware of other state’s Medicaid programs (including California’s Medi-Cal program) reimbursing school districts for health care services, CHBRP is unaware of other states that have similar mandates requiring state-regulated health plans and insurers to reimburse school districts for services provided by school nurses.

Interaction With the Affordable Care Act

A number of ACA provisions have the potential to or do interact with state benefit mandates. Below is an analysis of how SB 1239 may interact with requirements in the ACA, including the federal requirement for certain health insurance to cover “essential health benefits” (EHBs), and the requirement for health plans and insurers to provide coverage of specified preventive services without cost sharing.²²

Essential Health Benefits

The ACA requires nongrandfathered²³ small-group and individual market health insurance — including, but not limited to, QHPs sold in Covered California — to cover 10 specified

²² Resources on EHBs and other ACA impacts are available on the CHBRP website: www.chbrp.org/other_publications/index.php.

²³ A grandfathered health plan is defined as: “A group health plan that was created — or an individual health insurance policy that was purchased — on or before March 23, 2010. Grandfathered plans are exempted from many changes required under the ACA. Plans or policies may lose their “grandfathered” status if they make certain significant changes that reduce benefits or increase costs to consumers” (www.healthcare.gov/glossary/grandfathered-health-plan/).

categories of EHBs.²⁴ California has selected the Kaiser Foundation Health Plan Small Group Health Maintenance Organization (HMO) 30 plan as its benchmark plan.^{25,26}

The ACA allows a state to require that a QHP offered in a health insurance marketplace, such as Covered California, offer benefits that exceed EHBs.²⁷ However, a state that chooses to do so must make payments to defray the cost of those additionally mandated benefits, either by paying the purchaser directly or by paying the QHP.²⁸ However, as laid out in the Final Rule on EHBs that the U.S. Department of Health and Human Services (DHHS) released in February 2013,²⁹ state benefit mandates enacted on or before December 31, 2011, would be included in the state's EHBs for 2014 and 2015, 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. State benefit mandates that could exceed EHBs would “be specific to the care, treatment, and services that a state requires issuers to offer to its enrollees,” whereas “state rules related to provider types, cost-sharing, or reimbursement methods” would not meet the definition of state benefit mandates that could exceed EHBs. A state's health insurance marketplace would be responsible for determining when a state benefit mandate exceeds EHBs, and QHP issuers would be responsible for calculating the cost that must be defrayed.³⁰

SB 1239 and essential health benefits

The language of SB 1239 explicitly requires reimbursement for health care services provided by school nurses that “would otherwise be covered by” an enrollee's health plan contract or insurance policy. For this reason, CHBRP does not believe that the requirements in SB 1239 would interact with EHBs, because such services are currently within the scope of EHBs.

Additionally, SB 1239 would allow school districts to serve as a provider of school nurse services. As mentioned earlier, according to federal guidelines, state rules around provider types are not considered state benefit mandates that would trigger the requirement for the state to defray the costs of a benefit mandate that exceeds EHBs.

²⁴ The 10 specified categories of essential health benefits (EHBs) are: ambulatory patient services; emergency services; hospitalization; maternity and newborn care; mental health and substance use disorder services, including behavioral health treatment; prescription drugs; rehabilitative and habilitative services and devices; laboratory services; preventive and wellness services and chronic disease management; and pediatric services, including oral and vision care. [ACA Section 1302(b)].

²⁵ The U.S. Department of Health and Human Services (HHS) has allowed each state to define its own EHBs for 2014 and 2015 by selecting one of a set of specified benchmark plan options. CCIIO, Essential Health Benefits Bulletin. Available at: http://cciio.cms.gov/resources/files/Files2/12162011/essential_health_benefits_bulletin.pdf. Accessed December 16, 2011.

²⁶ H&SC Section 1367.005; IC Section 10112.27.

²⁷ ACA Section 1311(d)(3).

²⁸ State benefit mandates enacted on or before December 31, 2011, may be included in a state's EHBs for 2014 and 2015, according to the U.S. Department of Health and Human Services (DHHS). 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.

²⁹ Department of Health and Human Services. 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. 12843. Available at: www.gpo.gov/fdsys/pkg/FR-2013-02-25/pdf/2013-04084.pdf.

³⁰ Essential Health Benefits. Final Rule.

Preventive Services

The ACA requires that nongrandfathered group and individual health insurance plans and policies cover certain preventive services without cost sharing when delivered by in-network providers and as soon as 12 months after a recommendation appears in one of four specified sources. One of the sources that the ACA refers to in determining which preventive services are required is the Health Resources and Services Administration (HRSA)-supported comprehensive guidelines for infants, children, and adolescents, which includes the Bright Futures Recommendations for Pediatric Preventive Health Care³¹ and the recommendations of the Secretary's Advisory Committee on Heritable Disorders in Newborns and Children.³²

SB 1239 and the preventive services mandates

Although there is likely to be overlap between the types of preventive services provided by school nurses to pupils in the school setting and the requirements of the HRSA-supported guidelines for infants, children, and adolescents, this bill would likely not interact with the ACA's preventive services mandate. SB 1239 prohibits cost-sharing requirements for all reimbursed services provided by school nurses, so any preventive services provided by school nurses would have to be provided without cost sharing, thus complying with the ACA requirement.

BACKGROUND

CHBRP presents the following background information about several concepts important to the analysis of SB 1239: the range of school nurse roles; types of school nurse services that may be provided); the ratio of school nurses to pupils; and a description of the health status of the school-aged population. This information is general in nature and provides context for the consideration of this bill.

School Nurses and the Services They Provide

School districts may employ school nurses, contract for services through a private nurse registry, and/or use non-nurse staff to provide health services to students.

School Nurse Role

The role of the school nurse is to manage the implementation of the school health services program for all children in the school. The National Association of School Nurses identified seven core roles of school nurses, which encompass specific tasks and services (NASN, 2002). Table 2 below provides descriptions of the types of services based on these seven core roles.

³¹ Available at:

<http://brightfutures.aap.org/pdfs/AAP%20Bright%20Futures%20Periodicity%20Sched%20101107.pdf>.

³² Available at:

www.hrsa.gov/advisorycommittees/mchbadvisory/heritabledisorders/recommendedpanel/uniformscreeningpanel.pdf

4

Table 2. Core Roles of School Nurses

Core Roles of School Nurses	Examples of Services Associated With Role
Provide clinical health services to students	Administers care for injuries and acute illness and management of chronic conditions or students with special health care needs (i.e., gastric feeding tube, lice checks, insulin administration, etc.)
Provides leadership for the provision of health services	Assesses the school system of care including emergency/disaster planning and documentation of student health information; training non-nurse staff to provide health care (i.e., epi-pen administration, asthma education, medication administration, etc.)
Provides screening and referral for health conditions	Hearing, vision, scoliosis, body mass index screenings and early identification of illnesses and referral to medical home or community resources
Promotes healthy school environment	Tracks immunizations, reports communicable diseases per law, assesses environmental hazards (playgrounds, air quality etc.), plans prevention/management of school violence, bullying, disasters, suicide prevention
Promotes health	Provides health education to students (individually or group), staff, families and community. Topics may include nutrition, reproductive health, tobacco cessation, oral health, substance abuse, etc.
Serves as a leader in health policies and programs	Develop policies addressing chronic disease management, emergency medical condition management, mental health protection, acute illness management, health promotion, etc.
Liaison between school, family, health care professionals, and community (including case management)	Participates on development of IEP and 504 plans* and as case manager for students with chronic health care needs by facilitating communication among all involved parties to ensure care coordination.

Source: California Health Benefits Review Program, 2014 (based on AAP, 2008).

Note: * Individualized Education Plans (IEPs) and 504 plans identify and provide accommodations for special educational and/or health needs of students.

Historically, the school nurse roles were intended to reduce pupil absenteeism and to promote learning readiness (Zaiger, 2000). Although still true, school nurse services have evolved to reflect and respond to demographic, legal, and social changes (Button and Rienzo, 2002; Dryfoos, 1997; Fleming, 2011). School nurse services are shifting from those related to communicable disease to increasingly focus on the expanding number of children with special health care needs; the rise in social morbidities such as substance abuse, depression, and violence; and changes in healthcare technology and delivery (Robert Wood Johnson Foundation, 2010). The exact set of roles and services provided by school nurses may vary across school districts due to workforce supply issues, budget constraints, and customizing specific services that serve the health needs of the local children. The California Department of Education (CDE) requires that, at a minimum, school districts must provide vision, hearing, and scoliosis screening, verification of immunization status, infectious disease reporting, and care for students with special health care needs (i.e., medication administration, diabetes or asthma management) (CDE, 2013b); however, other non-nurse staff may provide these mandated services. In addition, there are some federal laws that also require school systems to provide necessary nursing services to children with disabilities including the Individuals With Disabilities Education Act (IDEA), the Americans With Disabilities Act (ADA), and Free Appropriate Public Education (FAPE).

Allocation of Services Provided by School Nurses in California

CHBRP found no sources of data tracking the volume or type of school nurse services or student health status. However, in 2013, Baker et al. described school nurse services based on survey results from over 400 credentialed school nurses in California. They describe the current school nurse workforce, identification and planning process for children with special health care needs, and who delivers care and training (Baker, Davis-Alldritt, & Hebbeler, 2014a). Table 3 presents the surveyed nurses' estimates of time spent on various tasks.

Table 3. How California School Nurses Spend Their Time

Activity	Average Time Spent (N=414)
Driving between schools, central office, student's home, etc.	6%
Communicating with families/service	11%
Communicating with health care providers in the community	5%
Communicating with other school personnel	12%
Screening	12%
IEP meetings	6%
Other meetings	6%
Paperwork	17%
Clinical Services	24%
Other	2%
Total	100%*

Source: Baker D, Davis-Alldritt L, Hebbeler K (2014).

Note: * Total does not add to 100% due to rounding in figures above.

Ratio of School Nurses to Pupils in California

California's nurse-to-student ratio is estimated to be 1:2,635 (Baker et al., 2014b). By county, the ratio of nurses-to-students in 2012 varied widely from 1:13,838 (Yuba County) to 1:980 students (Trinity County) (Lucile Packard Foundation, 2012). The National Association of School Nurses (NASN) recommends a ratio of 1:750 for healthy students, a ratio of 1:225 for students requiring daily and continuous school nursing services, and a ratio of 1:125 for medically complex students (NASN, 2011). The U.S. Department of Health and Human Services has endorsed the 1:750 nurse-to-student ratio in Healthy People 2020, a 10-year agenda for improving the nation's health (DHHS, 2014).

Delegation of Health Services

Due in part to the lack of school nurses and the increasing proportion of pupils with special needs, some tasks that have historically been performed by specially-trained licensed personnel or a family member are increasingly being delegated to nonlicensed school personnel. This includes medication administration and tasks such as performing gastrostomy tube feeding, suctioning tracheotomies, and providing urinary catheterization (Baker et al., 2014). The impact of these shifting of services to nonlicensed staff is understudied; CHBRP found a single study by Canham et al. that focused on medication administration by nonlicensed school staff who were trained and supervised by school nurses in 10 elementary schools in Northern California. They reported that common administration errors by nonlicensed personnel include the lack of documentation of side effects, problems with proper storage of medication, and errors in administration (with missed doses being the most common [79.7% of all errors]) (Canham et al., 2007). Other types of medication errors include use of expired medication, continuing to give medications that should be discontinued, and improper administration (such as not using a spacer with an inhaler [as used in treating asthma] when a spacer was part of the medication order). However, the study did not report any adverse health outcomes resulting from medication administration errors.

California's K-12 School-Aged Population

Pupil Demographics

The California Department of Education (CDE) reports the 2012–2013 racial/ethnic composition of California K-12 pupils enrolled in public schools as: 52% Hispanic; 25% white; 6% African American; 12% Asian, Filipino, or Pacific Islander; 1% American Indian/Alaska Native; and almost 3% report two or more races (CDE, 2013a).

In 2012–2013, about 22% of K-12 pupils were English learners, and 58% qualified for free or reduced price meals (CDE, 2013b); two specific populations that are targeted by SB 1239 (through alteration of the education code rather than through a health insurance benefit mandate) for receipt of school nurse services. Other data sources regarding possibly underserved populations include Medi-Cal beneficiaries. According to the California HealthCare Foundation, in 2011, children comprised 52% of the Medi-Cal beneficiaries and 19% of Medi-Cal's expenditures on services (CHCF, 2013)."

Disparities

A number of factors influence health status and contribute to poor health and disease among California pupils. Pupils with lower socioeconomic status (SES) standing suffer disproportionately from many diseases (such as problems with vision, asthma, and obesity) compared to those with higher SES (Adler et al., 1993; Flores, 2010; Kaplan et al., 1987; Starfield, 1989, 1997; Syme and Berkman, 1976; Wise et al., 1985). They are also more likely to have greater severity of disability, even with the same type of disability, and to have co-occurring conditions (Newacheck, 1994; Newacheck and Starfield, 1988; Starfield, 1989). Both

disparities in access to health care and poverty in pupils are predictors of low scholastic achievement (Basch, 2010).

In urban schools, poverty has been shown to strongly predict the utilization of school nursing services (Fleming, 2011). School health programs and services are inequitably distributed as are other school resources — with fewer and lower quality resources available in many schools serving low-income minority youth (Basch, 2010).

Key Health Conditions Related to School Nurse Services and Possible Disparities in

Prevalence/Incidence

Over the last 20 years, schools have seen an increasing number of children requiring more intense health services for chronic diseases such as asthma and diabetes, and increasing numbers of children with special health care needs who are now enrolled in mainstream classrooms (McCarthy et al., 2006). An estimated 4% to 6% of all school-aged children receive medication in school on a typical day (Ficca and Welk, 2006; McCarthy et al., 2000, 2006), with 18% of 12–17 year olds and 14% of children age 5–11 receiving regular medication (Bloom et al., 2011).

Student health status is not tracked or reported to a central registry by schools. In the absence of bill-specific population data, CHBRP presents prevalence rates for common childhood conditions requiring increased care such as proper medication adherence and administration (i.e., asthma, diabetes, and epilepsy) to provide some context around California’s student health status. Note that the statistics presented in each category may overlap (i.e., children with epilepsy also might be counted under children with special health care needs), but CHBRP is unable to determine the frequency of overlap due to different data sources.

Children with special health care needs

Children with special health care needs (CSHCN) are described as “children who have or are at increased risk for a chronic physical, developmental, behavioral, or emotional condition and who also require health and related services of a type or amount beyond that required by children generally” (McPherson et al., 1998). Results from a 2009–2010 survey estimated that 12.5% of Californians aged 6–11 years and 13.1% of those aged 12–17 years had special health care needs, with nearly all having health insurance coverage (92%). Of those with special health care needs, about 30% have conditions that affect their daily activities (CAHMI, 2013). Additionally, of all California children, about 13% of whites, 15% of Blacks and 9% “other” are classified as CSHCN; about 12% of non-Hispanic and 9% of Hispanic California children are classified as CSHCN (CAHMI, 2013).

Asthma

Asthma is a chronic inflammatory condition of the lungs that inhibits breathing and is episodically treated using an inhaler (Telljohann et al., 2004b). According to the California Health Information Survey (CHIS), in 2011:

- 16% (1,286,000) of all children aged 4 to 18 years were diagnosed with asthma; and of those:
 - 315,000 reported taking daily medication to control their asthma;

- 173,000 reported missing 1 to 4 days of school due to asthma in the last 12 months, and 92,000 reported missing 5 or more days of school; and
- 142,000 reported an emergency room/urgent care visit due to an asthma attack.

Diabetes

Diabetes mellitus (diabetes) is a serious group of diseases characterized by high blood glucose levels that result from defects in the body's ability to produce (type 1) and/or use insulin (type 2). (California Diabetes Program, 2012). Type 1 diabetes is the most common chronic illness in children, affecting 1 in every 400 school children, and requires daily insulin administration. Type 2, more common in adults, is the less severe form of diabetes and may be controlled by diet, exercise, and sometimes, oral medication. The prevalence of diabetes in children aged 5–19 years in California is 2.3/1,000. This translates to an estimated 18,000 children with diabetes, of which 15,000 are diagnosed with type 1 and 3,000 are diagnosed with type 2 (California Diabetes Program, 2012). Data from 2002–2005 show the incidence of type 1 diabetes among white and black children aged 10–19 years to be about 22/100,000 and 18/100,000, respectively, which is higher than that of Hispanics, Pacific Islanders, and Asians (~16/100,000, 7/100,000, and 5/100,000, respectively) (NDIC, 2011).

The incidence of childhood diabetes is increasing by 3% per year (Izquierdo et al., 2009). According to the SEARCH for Diabetes in Youth study, which includes California as one of the five data collection sites, the prevalence of diabetes in youth increased by 21.1% (type 1) and 30.5% (type 2) between 2001 and 2009 (Dabelea et al., 2014). Children with type 1 diabetes require frequent finger-stick glucose measurements, multiple daily injections of insulin (or insulin infusion by an insulin pump), and frequent insulin dose adjustments in order to prevent complications such as hypoglycemia, hyperglycemia, and diabetic ketoacidosis, which can be life threatening (ANA, 2011). In 2004, approximately 6% of school-aged children with type 1 diabetes used an insulin pump.

Epilepsy

Epilepsy is a neurological condition that causes abnormal electrical activity in the brain (seizures) affecting body movement, sensation awareness, or behavior (CDC, 2011). There are few epilepsy surveillance data available in the United States. A study by Russ et al. reported the prevalence of epilepsy/seizure disorder ever diagnosed in children aged 0–17 years ranged from 6.3 to 14.0/1,000 (Russ et al., 2012). Among those children, the prevalence was higher in whites than in blacks, Hispanics, or multiracial/other races (adjusted relative risk rates of 0.72, 0.68, and 0.75, respectively) (Russ et al., 2012). Another report by the CDC estimates that 467,711 children across the United States have epilepsy (CDC, 2013).

Other health care needs

Other health care needs commonly identified or treated at school include mental health, obesity, and screening for vision, hearing, and scoliosis. Between 2010–2011, about 19% of California youth reported needing help for emotional or mental health problems (CHKS, 2014). Additionally, about 38% of students are overweight or obese (CHKS, 2014). A survey of California schools found that 26% of schools provide enhanced vision and hearing screening that goes beyond the required basic vision and hearing tests, and with no more than 56% finding the

screening adequate. About 45% identified resource problems as the main reason for inadequate screening (Kamei, 2009). Screening for scoliosis is mandated in California public schools for girls in 7th grade and boys in 8th grade by qualified personnel; however, CHBRP found no data on the volume or outcomes of this screening test (CDE website [CDE, 2014]).

MEDICAL EFFECTIVENESS

As discussed in the *Introduction*, SB 1239 would require insurers to reimburse school districts for covered services when services are delivered to a pupil by a school nurse, a registered nurse (RN) or licensed vocational nurse (LVN) employed by or under contract with the school district. The literature shows that nursing services are effective in many settings, including hospital-based care, primary care, community-based care, and home-based care (Ekers et al., 2013; Joo and Hubers, 2013; Keleher et al., 2009; Sutherland and Hayter, 2009; Tappenden et al., 2012). Although it stands to reason that the services provided by nurses may be as effective in school settings, the purpose of the medical effectiveness literature review and analysis was to find the evidence in support of that supposition. The medical effectiveness review summarizes findings from the literature to assess the effectiveness of: 1) reimbursable services provided by a school nurse on pupil health and absenteeism; and 2) all services that fall under the role of a school nurse (reimbursable and nonreimbursable) on pupil health and absenteeism.

Research Approach and Methods

Studies of the evidence of the effectiveness of direct services provided by a school nurse on child and adolescent health among students enrolled in school were identified through searches of PubMed, the Cochrane Library, Web of Science, ERIC, EMBASE and Scopus, CINAHL, and PsycINFO. Websites maintained by the following organizations were also searched: Centers for Disease Control and Prevention Advisory Committee on Immunization Practices and U.S. Preventive Services Task Force.

The medical effectiveness review focused on studies of school nursing services that school nurses are authorized to perform, per California regulations and the California Commission on Teacher Credentialing (i.e., conduct immunization programs, and design and implement care management plans for chronic conditions). Among these studies, the medical effectiveness review included studies that evaluated the effectiveness of providing school nursing services on pupil health and absenteeism. CHBRP excluded studies of the effectiveness of additional school nursing interventions, such as a new diabetes education intervention that supplements standard diabetes education already provided by a school nurse, to ensure the inclusion of only studies evaluating school nursing services that would be mandated under SB 1239. Information about services that school nurses are authorized to perform were identified through searches of the California Education Code, California Business and Professions Code, and California Health and Safety Code and the following websites: California Commission on Teacher Credentialing (CCTC, 2008) and California Department of Education. Recommendations for school nursing practices were identified through websites maintained by the American Academy of Pediatrics, Centers for Disease Control and Prevention, and the National Association of School Nurses (NASN).

The search was limited to abstracts of studies published in English. The search was also limited to studies published from 1999 to the present and, because of differences in school health services across nations, to studies conducted in the United States. Of the 612 articles found in the literature review, 156 were reviewed for potential inclusion in this report, and a total of 106 studies were added to the medical effectiveness review for SB 1239. The other articles were eliminated

because they did not focus on direct services provided by a school nurse, on student health outcomes, or were otherwise not applicable. A more thorough description of the methods used to conduct the medical effectiveness review and the process used to grade the evidence for each outcome measure is presented in Appendix B: Literature Review Methods. Appendix C includes a table describing the studies that CHBRP reviewed (Table C-1) and a table summarizing evidence of the effectiveness of reimbursable services (Table C-2a) and all services that fall under the role of a school nurse (reimbursable and nonreimbursable) (Table C-2b).

Methodological Considerations

It stands to reason that credentialed school nurses can safely provide authorized services, as defined by the California Teaching Credentialing. CHBRP's medical effectiveness review found a total of nine studies on the effectiveness of services provided by school nurses on pupil health and absenteeism. Although the scope of licensed practice encompasses a range of services that school nurses may provide, the services and outcomes associated with school nursing appear to be understudied for a variety of reasons, variable, ill-defined system of services; nonuniform educational and employment standards; unstable and inadequate funding for school nursing services; lack of electronic databases/records of school nursing services received by students; and lack of regulatory oversight such as that associated with an acute care hospital (Costante, 2001; Engelke et al., 2009). The medical effectiveness review found four studies that examined the effectiveness of reimbursable services provided by school nurses, including providing case management, surveillance of varicella, and implementing a vaccination program. The medical effectiveness review found no studies on the effects of other reimbursable services for which SB 1239 would require coverage, such as medication administration and health education of pupils.

To ensure the inclusion of only studies evaluating school nursing services that would be mandated under SB 1239, three studies were excluded from the medical effectiveness review because the school nursing intervention involved care from other health care professionals. One school nursing intervention included the use of a nurse practitioner to facilitate chronic care management (Rodriguez et al., 2013); another intervention used a school health team consisting of a full-time school nurse, a school physician, and a public health assistant (Bruzzese et al., 2006), and the third study used a multilevel school-based intervention in which pupils with persistent asthma meet with a project physician, develop an asthma action plan, and receive a 1-month supply of medication (Bartholomew et al., 2006). In these studies, the effects from school nurses services cannot be separated from the effects from other providers' services. SB 1239 would not mandate coverage for other provider services in the school setting even when provided in combination with school nurses.

The optimal study design to test all services that fall under the role of a school nurse (reimbursable and nonreimbursable) would be to compare the effects on pupil health of schools randomized to a school nurse to schools randomized to no school nurse. The medical effectiveness review found no studies with this design, but did include two studies of the effectiveness of services provided by school nurses among schools with higher nurse-to-pupil ratios compared to schools with lower nurse-to-pupil ratios; the outcomes of these studies focused mainly on the uptake of services delivered by a school nurse. Most of the studies included in the medical effectiveness review had major limitations in methodological design.

Only two studies of these interventions randomly allocated subjects to intervention and comparison groups; the rest did not, which limits CHBRP's ability to ascertain whether observed differences in outcomes between groups are due to differences in the treatments provided to them or due to differences in the characteristics of the study subjects.

Outcomes Assessed

Studies that examined the effectiveness of reimbursable services delivered by a school nurse assessed the following outcomes:

- Emergency department and hospital visits;
- Immunization and surveillance rates; and
- Absenteeism.

Studies that examined the effectiveness of the roles of a school nurse (reimbursable and nonreimbursable services) in schools with higher nurse-to-pupil ratios compared to schools with lower nurse-to-pupil ratios assessed the following outcomes:

- Health screening and detection rates; and
- Visits to a school nurse for counseling or immunizations.

Study Findings

Guidelines

National organizations have developed guidelines and recommendations for school nursing health services (AAP, 2003, 2008; NASN, 2002). According to these guidelines, the role of the school nurse is to manage the implementation of the school health services program for all children in the school. As mentioned in the *Background* section, the National Association of School Nurses (NASN) identified the following seven core roles of school nurses (see Table 2):

Although recommendations for school nursing roles encompass the provision of a comprehensive health care, the school nurse's main role is to provide health assessments, interventions, and follow-up for children within the school setting. The American Academy of Pediatrics notes that schools at a minimum should provide at least the following types of services (AAP, 2008):

- State-mandated services: including health screening, verification of immunization status, and infectious disease reporting;
- Assessment of minor health complaints, medication administration, and care for students with special health care needs, and;
- Capability to handle emergencies and other urgent health care situations. Comprehensive health services also include individual health education.

Effectiveness of Reimbursable Services Provided by School Nurses

The medical effectiveness review found four studies on the effects of reimbursable services that school nurses provide, including providing case management, implementing a vaccination program and surveillance of varicella. The medical effectiveness review found no studies on the effects of other reimbursable services that SB 1239 would require coverage, such as medication administration and health education. Taken collectively, although it stands to reason that the services provided by nurses may be as effective in school settings, the medical effectiveness review found insufficient evidence to demonstrate the effectiveness of services provided by a school nurse in a school setting. Insufficient evidence is not evidence of no effect, rather it indicates an unknown effect.

Case management

One randomized controlled trial examined the effects of an asthma nurse case management program in 14 elementary schools located in urban Tennessee. Schools were selected based on high rates of emergency department visits, hospitalizations, and Medicaid participation (Levy et al., 2006). Schools were randomized to receive asthma nurse case management, including weekly asthma education curriculum and coordinated asthma care, or usual care.³³ Children with asthma in schools with asthma nurse case management experienced significantly fewer emergency department visits and fewer hospital days than students in schools with no school nurse interventions. Schools that were randomized to receive asthma case management had fewer school absences than those randomized to usual care (4.38 vs. 8.18 days); the statistical significance of this result was not presented. However, these results should be interpreted with caution as schools with different staffing configurations were randomized to the intervention group so that the results may be due in part to the staffing configuration as well as in part to the school nurse services.

One study examined the impact of implementing a school nurse case management program in a large urban school district. In 2002, 55 registered nurses were assigned to 148 schools to manage the ongoing health needs of its pupils. Using cross-sectional self-report data, the nurses answered the question, “Did this student show improvement?” Nurses reported that 63% of pupils improved in health compliance, 59% of the students self-reported an improvement in their quality of life, and 67% were reported by a teacher or parent as having an improvement in quality of life (Bonaiuto, 2007). Because there was no comparison group, there is limited ability to ascertain whether observed differences in outcomes are due to the treatments provided or other factors. Findings were presented as unadjusted percentages that limit ability to draw inferences on the program’s effect.

³³ Health professionals in the California Department of Education and the California Asthma Public Health Initiative developed guidelines for the management of asthma in California schools (California Department of Education, 2004). In addition to guidelines, the document included sample forms for school nurse and personnel to use to develop a care plan, and a description of procedures by which a school nurse is to train authorized school staff in the provision of services. It is not clear whether the California guidelines for the management of asthma represents a higher or lower level of asthma services provided by a school nurse compared to the services delivered in the Levy et al. (2006) study.

One study examined the impact of a school nurse case management intervention on pupil health (Engelke et al., 2014). School nurses enrolled 143 pupils with asthma who tended to have the most difficulty with their illness. Case management was defined as having at least 5 intervention days from the school nurse. Pupils reported asthma symptoms at baseline and at the end of case management. At baseline, over 70% of pupils reported that they had problems with their chest hurting or feeling tight, feeling wheezy, or having asthma attacks. At the end of case management, approximately 48% of pupils reported such asthma symptoms. Because there was no comparison group, there is limited ability to ascertain whether observed differences in outcomes are due to the treatments provided.

Immunization and surveillance

Narciso et al. (2012) describes vaccination rates among three school nurse staffing scenarios during the 2009 H1N1 pandemic. In October 2009 and March 2010, all public elementary schools in New York City were mandated to participate in an influenza H1N1 vaccination campaign. School nurses were responsible for vaccinating pupils in schools with fewer than 400 students while remaining responsible for other school nursing practices. In schools with 400 to fewer than 600 pupils, school nurses in conjunction with supplemental contract nurses delivered vaccinations, and in schools with more than 600 students, a mobile vaccination team delivered vaccinations. No difference in vaccination rates were found across the three types of delivery settings. Schools with only school nurses had a vaccination rate of 21.2%, schools with a school nurse and contact nurse had a vaccination rate of 19.2%, and schools with mobile teams had a vaccination rate of 22.4% (Narciso et al., 2012). These results suggest that during the emergence of pandemic virus, in schools of fewer than 400 students, school nurses were as effective in the uptake of immunizations compared to other administration models in larger schools. However, there was no control group that would allow for a comparison of the effectiveness of uptake of services among pupils with and without access to a school nurse to estimate the impact of services provided by a school nurse.

Lee assessed the ability of school nurse surveillance to detect varicella cases among students in grades K-5 in one county in Oregon. School nurses informed the county Department of Public Health of a student's absence due to school nurse-observed or parent report of varicella. During the school years 2002–2007, school nurses reported 595 student absences potentially related to varicella. The Department of Public Health confirmed varicella in 502 students; the positive predictive value for school nurse surveillance was 94%. In the school year 2002–2003, school nurses actively assessed for varicella cases among classmates who were exposed to 112 students with confirmed varicella. Active case findings found 13 unreported cases among classmates, resulting in a sensitivity of school nurse surveillance of 90% (Lee et al., 2008). Although this study demonstrates the validity of a school nurse surveillance practice, there was no control group to compare the impact of school nurse surveillance practice to schools with other types of surveillance practices and its effects on pupil health.

Summary of findings regarding the effectiveness of reimbursable services provided by a school nurse. The findings from the four studies on direct services provided by a school nurse represent few of the services that SB 1239 would make reimbursable and the studies have major methodological weaknesses or limited generalizability; therefore, CHBRP finds insufficient evidence of the effectiveness of direct school nurse services on pupil health. Note that insufficient evidence is not evidence of no effect — rather the effect is unknown.

Effectiveness of the Role of a School Nurse (Reimbursable and Nonreimbursable Services) on Pupil Health

The optimal study design to test the effectiveness of services provided by a school nurse would be to compare the effects on pupil health of schools with a school nurse to schools without a school nurse. The medical effectiveness review found no studies with this design, but did include two studies on the effectiveness of services provided by school nurses among schools with higher nurse-to-pupil ratios compared to school with lower nurse-to-pupil ratios.

Guttu et al. (2004) examined the relationship between school nurse-to-pupil ratios on rates of identifying chronic conditions, counseling, and vision services that were delivered by a school nurse. Nineteen counties in eastern North Carolina were categorized as “good” nurse-to-student ratio (1 school nurse for <1,000 students) or “fair to poor” nurse-to-student ratio (1 school nurse for \geq 1,000 students). In counties with good nurse-to-student ratios, a larger proportion of students received counseling sessions compared to counties with fair to poor nurse-to-student ratios (7.2% vs. 1.2%, respectively; $p = 0.0001$). In counties with good nurse-to-student ratios, a larger proportion of students received treatment for a serious injury compared to counties with fair to poor nurse-to-student ratios (2.2% vs. 0.7%, respectively; $p = 0.001$). There were no differences in rates of identifying diabetes, or screening for visual problems and subsequent vision referrals. These results should be interpreted with caution, as these estimates do not apply adequate statistical controls to account for pupil population differences.

A randomized study compared the effects of assigning a full-time school nurse (5 days per week) or a part-time school nurse (2 days per week) to 14 schools in an inner city school district in a large Midwestern city (Telljohann et al., 2004a). Approximately 75% of students qualify for free/reduced lunch.³⁴ Among schools assigned a full-time nurse, pupils received significantly higher rates of care for critical incident or trauma, counseling sessions, vision screening, care for seizures and neurological conditions. However, schools assigned a part-time nurse, pupils received significantly higher rates of care for major/terminal illnesses and sickle cell disease compared to pupils in schools assigned a full-time nurse. These findings may be generalizable to low-income pupils enrolled in inner city schools that would be subject to mandate under SB 1239.

Allen (2003) examined the impact of the presence of an elementary school nurse on student attendance in 22 schools in Alabama. The results showed that in schools with a full-time school nurse, there was no difference in daily attendance compared to schools without a school nurse. The results showed a marginal impact on the reduction of checkouts from school due to medical reasons in schools with a school nurse compared to schools without a school nurse ($p = 0.04$). However, this analysis did not use adequate statistical controls to account for pupil differences that may explain part of these findings. Foster and Keele (2006) examined the impact on school attendance of implementing a statewide policy that would allow school nurses to deliver an over-the-counter medication. Using a pre and post design, attendance rates were compared to the year

³⁴ The U.S. Department of Agriculture Food and Nutrition Service Program establish income eligibility guidelines, to be used in determining eligibility for free and reduced price meals. In 2001, the year of data collection in the Telljohann study (Telljohann et al., 2004), pupils in household at or below 185% of the Federal Poverty Level were eligible for free and reduced price meals.

before the policy implementation and 1 and 2 years after policy implementation. Results showed no differences in attendance rates pre and post policy implementation.

Wyman (2005) examined the effects of the presence of a school nurse on pupil early dismissal from school. The results state that significantly fewer students were released by a school nurse than by non-nursing personnel; however, pupils were not included in the analysis if they had early dismissal without school nurse authorization on the days the nurse was present.

Summary of findings regarding the effectiveness of services provided by school nurses on pupil health. Studies present ambiguous findings on the effects of services delivered by a school nurse on pupil health and absenteeism. Most of these studies have serious methodological weaknesses or limited generalizability. Therefore, CHBRP finds insufficient evidence of the effectiveness of services delivered by school nurses on pupil health and absenteeism. Note that insufficient evidence is not evidence of no effect — rather the effect is unknown.

BENEFIT COVERAGE, UTILIZATION, AND COST IMPACTS

SB 1239 would require DMHC-regulated plans and CDI-regulated insurers (including DMHC-regulated plans enrolling Medi-Cal beneficiaries) to reimburse school districts for covered services when services are provided to an enrolled pupil by a school nurse, as defined in the *Introduction* section. SB 1239 would also prohibit plans and insurers from requiring cost-sharing for covered services provided by school nurses. For the purposes of this analysis, CHBRP assumed that a “pupil” is a person 4–18 years of age and attending a grade K-12 school or being home-schooled, and a “reimbursable service” refers to health services provided by a school nurse directly to a pupil whose health insurance is subject to SB 1239, and does not include the procurement of prescriptions drugs or durable medical equipment.

The *Benefit Coverage, Utilization, and Cost Impacts* section only examines school nurse services that would be likely reimbursable under SB 1239 (i.e., a subset of the full range of services that would be included in school nurse roles). Table 4 is based on Table 2 presented in the *Background* section, but adds CHBRP’s assumptions of likely reimbursable services.

Table 4. Core Roles of School Nurses and Reimbursable Services per SB 1239

Core Roles of School Nurses	Examples of Services Associated With Role	Likelihood of Role Including Reimbursable Services (a) per SB 1239
Provide clinical health services to students	Administers care for injuries and acute illness and management of chronic conditions or students with special health care needs (i.e., gastric feeding tube, lice checks, insulin administration, etc.)	Likely
Provides leadership for the provision of health services	Assesses the school system of care including emergency/disaster planning and documentation of student health information; training non-nurse staff to provide health care (i.e., epi-pen administration, asthma education, medication administration, etc.)	Unlikely
Provides screening and referral for health conditions	Hearing, vision, scoliosis, body mass index screenings and early identification of illnesses and referral to medical home or community resources	Some, but not all, services within this role are likely to be reimbursable services
Promotes healthy school environment	Tracks immunizations, reports communicable diseases per law, assesses environmental hazards (playgrounds, air quality etc.), plans prevention/management of school violence, bullying, disasters, suicide prevention	Unlikely
Promotes health	Provides health education to students (individually or group), staff, families and community. Topics may include nutrition, reproductive health, tobacco cessation, oral health, substance abuse, etc.	Some, but not all, services within this role are likely to be reimbursable services

Table 4. Core Roles of School Nurses and Reimbursable Services per SB 1239 (Cont'd)

Core Roles of School Nurses	Examples of Services Associated With Role	Likelihood of Role Including Reimbursable Services (a) per SB 1239
Serves as a leader in health policies and programs	Develop policies addressing chronic disease management, emergency medical condition management, mental health protection, acute illness management, health promotion, etc.	Some, but not all, services within this role are likely to be reimbursable services
Liaison between school, family, health care professionals, and community (including case management)	Participates on development of IEP and 504 plans (b) and as case manager for students with chronic health care needs by facilitating communication among all involved parties to ensure care coordination.	Likely

Source: California Health Benefits Review Program, 2014 (based on AAP, 2008).

Note: (a) CHBRP assumes that reimbursable services are services that are covered by health insurance subject to SB 1239 and used by pupil enrollees. In California, some of these services may also be provided by non-nurse staff.

(b) Individualized Education Plans (IEP) and 504 plans identify and provide accommodations for special educational and/or health needs of students.

This section will first present the premandate (baseline) benefit coverage, utilization, and costs related to reimbursing school districts for covered services provided by school nurses, and then provide estimates of the impacts on coverage, utilization, and cost for the first year postmandate if SB 1239 is enacted. For further details on the underlying data sources and methods, please see Appendix D at the end of this document.

Premandate (Baseline) Benefit Coverage, Utilization, and Cost

Premandate (Baseline) Benefit Coverage

Currently, 0% of the 23,389,000 enrollees in DMHC-regulated plans and CDI-regulated policies subject to SB 1239 have coverage for reimbursable school nurse services.

Current coverage of reimbursable school nurse services was determined by a survey of the seven largest providers of health insurance in California. Respondents to this survey represent:

- 92.79% of enrollees in the privately funded, DMHC-regulated market;
- 87.68% of enrollees in the CDI-regulated market; and
- 91.76% of enrollees in the privately-funded market subject to state mandates.

Premandate (Baseline) Utilization

There are 1,043 school districts in California (CDE, 2013a). CHBRP calculates that currently, these districts in the aggregate employ 2,918 school nurses (see Table 1 in the *Executive Summary* for data, and Appendix D for calculation methodology). School districts may also employ an unknown number of contracted RNs or LVNs on an as-needed basis, but these nurses

do not often perform reimbursable health services and do not work full time.³⁵ Contracted nurses, therefore, have been excluded from the cost analysis. The distribution of school nurses across school districts is uneven, with 43% of all school districts (translating to roughly 80% of students) employing at least one school nurse (Baker et al, 2014). These RN/LVNs are concentrated mainly in the major urban districts, reflecting the concentration of school-aged children in California in those districts as well.³⁶ They mainly work for a number of schools, traveling between them during the day to provide health care services to students regardless of their insurance status. The lowest student-to-nurse ratio in California is in Trinity County, with 980 students for every 1 school nurse (see the *Background* section for details).

On the basis of existing literature (Gonzalez, 2013) and content expert input,³⁷ CHBRP found that the number of school nurse visits is limited by the existing supply of school nurses. Increasing the number of school nurses would therefore increase utilization. In order to calculate reimbursable school nurse services, CHBRP averaged all reimbursable nursing services into a standard modeled 15-minute visit increment. This modeled reimbursable visit is the increment used throughout the calculations of utilization and cost impacts.

CHBRP used data from the 2012 Survey of Registered Nurses to ascertain the total number of working hours per school nurse, and applied an analysis of the billable CPT (current procedural terminology) codes to derive the number of school nurse visits as well as the number of billable services used. See Appendix D for a full explanation of the methodology.

CHBRP estimates that there are currently an average of 1,218 school nurse visits per nurse per year that would be reimbursable through DMHC-regulated plans or CDI-regulated policies if SB 1239 were enacted (Table 1). In total, CHBRP estimates that a yearly total of 3,554,070 school nurse visits that would be reimbursable under SB 1239 if enacted currently occur (see Appendix D for calculations). The users of these school nurse visits are the 5.7 million pupils enrolled in DMHC-regulated plans or CDI-regulated policies (see the *Introduction*) that are enrolled in school districts statewide; however, school nurse visits are unevenly distributed because they are limited by school nurse supply.

Premandate (Baseline) Unit Cost Per Visit Providing Direct Health Services by a School Nurse

Covered services were aggregated into an average billable visit of 15-minute increments, based on the CPT codes assigned to the health services. See Appendix D for a complete list of CPT codes included in this analysis. CHBRP used the Milliman Claims Database in order to identify current per-unit costs of an RN/LVN visit occurring outside of the school setting. Aggregating all of the RN/LVN health services rendered for all included CPT codes yields an average current per-visit cost of \$45 (Table 1).

³⁵ Personal communication, Dian Baker, CSU, Sacramento, May 2014.

³⁶ Personal communication, Dian Baker, CSU, Sacramento, May 2014.

³⁷ Personal communication, Dian Baker, CSU, Sacramento, May 2014; personal communication, Joanne Spetz, UCSF, May 2014.

Premandate (Baseline) Premiums and Expenditures

Table 5 (at the end of this section) presents per member per month (PMPM) premandate estimates for premiums and expenditures by market segment for DMHC-regulated plans and CDI-regulated policies.

PMPM by market segment is as follows for DMHC-regulated plans and CDI-regulated policies, respectively:

- Large group: \$524.86 and \$639.07;
- Small group: \$474.63 and \$576.55; and
- Individual market: \$454.56 and \$329.35.

Total current annual expenditures for all DMHC-regulated plans and CDI-regulated policies is \$128,422,858,000.

Public Demand for Benefit Coverage

Considering the criteria specified by CHBRP's authorizing statute, CHBRP reviews public demand for benefits relevant to a proposed mandate in two ways. CHBRP:

- Considers the bargaining history of organized labor; and
- Compares the benefits provided by self-insured health plans or policies (which are not regulated by the DMHC or CDI, and therefore not subject to state-level mandates) with the benefits that are provided by plans or policies that would be subject to the mandate.

CHBRP is unaware of any unions that include coverage for services provided by school nurses in their health insurance negotiations. In general, unions negotiate for broader contract provisions such as coverage for dependents, premiums, deductibles, and broad coinsurance levels.

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

To further investigate public demand, CHBRP used the bill-specific coverage survey to ask carriers who act as third-party administrators for (non-CalPERS) self-insured group health insurance programs whether the relevant benefit coverage differed from what is offered in group market plans or policies that would be subject to the mandate. The responses indicated that there were no substantive differences.

Given the lack of specificity in labor-negotiated benefits and the general match between health insurance that would be subject to the mandate and self-insured health insurance (not subject to state-level mandates), CHBRP concludes that public demand for coverage is essentially satisfied by the current state of the market.

How Lack of Coverage Results in Cost Shifts to Other Payers

As mentioned in the *Introduction*, school districts may be reimbursed for some services provided by a school nurse under the Medi-Cal Local Education Agency (LEA) billing option. The LEA billing option allows school districts, county offices of education, universities, and other educational institutions certified as LEAs to receive reimbursement from the Department of Health Care Services (DHCS) for services provided in a school setting. In 2011–2012 (the most recent state fiscal year data available), DHCS reimbursed 519 LEAs (including school districts, universities, etc.) \$137,982,764 for services to 266,715 pupils, (DHCS, 2014a). It is unclear how many of these LEAs were school districts (as opposed to universities or other educational institutions) or how many of the pupils were in grades K-12.

LEAs may request reimbursement from DHCS for services provided to Medi-Cal eligible pupils for whom an Individualized Education Plan (IEP)³⁸ has been completed. However, LEAs are not restricted to school nurse services, and school nurse services are not restricted to students with IEPs. Furthermore, the LEA billing option does not reimburse LEAs for services that are provided for free to all pupils. Therefore, although there is some potential for overlap between services provided by LEAs and the services provided by school nurses that would be reimbursable under SB 1239, CHBRP does not expect a measurable cost shift to occur.

In California, in addition to the Medi-Cal LEA program, a separate program called the Medi-Cal Administrative Activities (MAA) program exists to provide reimbursement for health-related administrative activities, such as outreach and enrollment. Because SB 1239 would not require reimbursement for such activities, the mandate would not interact with MAA.

Impacts of the Mandated Benefit Coverage

Postmandate Benefit Coverage

If SB 1239 were enacted, coverage for direct health services provided by a school nurse would increase to 100% for all enrollees in DMHC-regulated plans and CDI-regulated policies (see Table 1 in the *Executive Summary*).

Postmandate Utilization

CHBRP includes in the postmandate utilization estimates the simplifying assumption that school districts will increase the number of FTE school nurses, as the potential for a new funding source through newly reimbursable services and the requirement in SB 1239 to add additional school nurses among Local Control Funding Formula–Concentration Funding (LCFF-CF) schools will combine to offer an incentive to hire. A precise increase cannot be determined because some or all of the affected school districts may have a school nurse, premandate, or may assign some large portion of a newly hired school nurse’s time to supervision (decreasing time available for reimbursable services). The economic incentives for hiring school nurses are similarly uncertain. On the basis of current school nurse roles (which include only 33% of time dedicated to

³⁸ An IEP is a plan that identifies and provides accommodations for special educational and/or health needs of students with disabilities.

reimbursable services), CHBRP estimates that annual reimbursement would be approximately \$55,000 per year (which would not fully fund employing a nurse and billing for services). Given these uncertainties, CHBRP has made a simplifying assumption and modeled a 10% increase.

CHBRP also makes the simplifying assumption that school nurses will not (in the first year) alter their current mix of billable/nonbillable work activities, or increase as a portion of billable work activities the time devoted to services for which reimbursement rates are highest, allowing for modeling of an average bill for a standard 15-minute service.

CHBRP projects that utilization of school nurse services will increase in the first year postmandate, due to the hiring of 10% additional school nurses statewide. Currently, there is a surplus of RNs and LVNs, who would be able to fill these new school nurse job openings.³⁹ Beyond the first year postmandate if SB 1239 were enacted, the school districts eligible for Local Control Funding Formula–Concentration Funding (LCFF-CF) would be required to employ at least one school nurse as a “health supervisor” on or after July 1, 2016. The bill language is ambiguous as to the definition of supervisor of health”; it is unclear whether a single, school-based RN would fulfill the requirement that a school district employ “at least one” “supervisor of health.” At a minimum, each of the 510 LCFF-CF school districts would be required to employ one school nurse to fulfill this requirement. Potentially, they could each hire a new person to fill this position, but it is possible that some portion of the LCFF school districts would shift the duties of their existing employed RN to a supervisory role. However, some number of LCFF-CF schools may employ an additional school nurse, if SB 1239 is enacted.

Therefore, CHBRP estimates that the number of school nurses will increase from 2,918 to 3,210, which will translate to an increase in reimbursable school nurse visits from 3,554,070 to 3,909,477.

Impact on access and health treatment/service availability

CHBRP projects that SB 1239 will increase access to reimbursable school nurse services by 10% for the first year, postmandate, because school districts have incentives to hire more school nurses due to the potential for increased reimbursement and the new requirement for LCFF-CF schools to have a school nurse supervisor.

Postmandate Per-Unit Cost

CHBRP assumes that there is no impact on the per-unit costs postmandate, because CHBRP assumes reimbursements for covered services delivered by school nurses will be negotiated with DMHC-regulated plans and CDI-regulated policies, and that these negotiations will produce per-unit costs that are similar to what have been negotiated with other providers.

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. CHBRP assumes

³⁹ Personal communication, Dian Baker, CSU, Sacramento, June 2014.

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

CHBRP assumes that administrative costs borne by school districts will not be prohibitive in billing state-regulated plans and policies for the first year, but this may not be the case. Because these costs are not borne by enrollees or by insurance carriers, they are not part of the CHBRP Cost Model.

Postmandate Expenditures

CHBRP assumes that school districts would be able to bill both state regulated plans and policies for reimbursable school nurse services as if they were covered under the enrollee's plan or policy. CHBRP assumes that reimbursable school nurse services would be covered as if school districts were in-network providers for covered health services, at negotiated rates.

To simplify the analysis, CHBRP assumes that school districts will be able to ascertain the health insurance status of students and will have the administrative capacity to bill the appropriate health insurance providers. CHBRP also assumes that health insurance carriers will comply with the billing requests at currently negotiated contracted rates.

Changes in total expenditures

SB 1239 would increase total net annual expenditures by \$150,272,000, or 0.1170%, for enrollees with DMHC-regulated plans and CDI-regulated policies. This is due to a \$150,272,000 increase in total health insurance premiums paid by employers and enrollees for newly covered benefits.

Postmandate premium expenditures and PMPM amounts per category of payer

Increases in insurance premiums as a result of SB 1239 would vary by market segment, due to differences in the distribution of pupils within each market segment. Note that the total population in Table 6 reflects the full 23,389,000 million enrollees in DMHC-regulated plans and CDI-regulated policies subject to SB 1239.

Across all markets: Increases in per member per month premiums for the newly mandated benefit coverage in all markets, as measured by:

- **Percentage changes in PMPM** ranging from a low of 0.000% (for DMHC-regulated Medi-Cal managed care plans for ages 65+ years) to a high of 0.393% (for DMHC-regulated Medi-Cal managed care plans for ages under 65).
- **Dollar changes in PMPM** ranging from a low of \$0.00 (for DMHC-regulated Medi-Cal managed care plans for ages 65+) to a high of \$0.70 (for DMHC-regulated Medi-Cal managed care plans for ages under 65).

In the privately funded market: Increases in per member per month premiums for the newly mandated benefit coverage by market segment would be as follows:

- **Large group**
 - DMHC-regulated plans: \$0.55 PMPM
 - CDI-regulated policies: \$0.56 PMPM
- **Small group**
 - DMHC-regulated plans: \$0.59 PMPM
 - CDI-regulated policies: \$0.59 PMPM
- **Individual market**
 - DMHC-regulated plans: \$0.24 PMPM
 - CDI-regulated policies: \$0.38 PMPM

Among publicly funded DMHC-regulated health plans, CalPERS HMO plans would have an average increase of \$0.52 PMPM. SB 1239 would impact DMHC-regulated Medi-Cal Managed Care plans (under age 65) the most, with an premium increase of \$0.70 PMPM, whereas DMHC-regulated Medi-Cal managed care plans for those 65 and older would see no impact (\$0.00 PMPM).

Potential cost offsets or savings in the first 12 months after enactment

CHBRP found no evidence in the literature that indicated that the provision of health services by a school nurse was associated with cost-shifting away from pediatricians or other providers; therefore, the cost offsets for the first 12 months after enactment are unknown. Postmandate Changes in Uninsured and Public Program Enrollment

Changes in the number of uninsured persons

CHBRP estimates premium increases of less than 1% for each market segment; this premium increase would not have a measurable impact on the number of persons who are uninsured. CHBRP does not anticipate loss of health insurance, changes in availability of the benefit beyond those subject to the mandate, changes in offer rates of health insurance, changes in employer contribution rates, changes in take-up of health insurance by employees, or purchase of individual market policies, due to the small size of the increase in premiums after the mandate.

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.

Table 5. Baseline (Premandate) Per Member Per Month Premiums and Total Expenditures by Market Segment, California, 2015

	DMHC-Regulated						CDI-Regulated			Total
	Privately Funded Plans (by Market) (a)			Publicly Funded Plans			Privately Funded Plans (by Market) (a)			
	Large Group	Small Group	Individual	CalPERS HMOs (b)	MCMC (Under 65) (c)	MCMC (65+) (d)	Large Group	Small Group	Individual	
Enrollee counts										
Total enrollees in plans/policies subject to state mandates (e)	8,779,000	2,012,000	2,498,000	845,000	6,364,000	826,000	567,000	662,000	836,000	23,389,000
Total enrollees in plans/policies subject to SB 1239	8,779,000	2,012,000	2,498,000	845,000	6,364,000	826,000	567,000	662,000	836,000	23,389,000
Premium costs										
Average portion of premium paid by employer	\$384.24	\$339.01	\$0.00	\$423.82	\$176.26	\$408.00	\$478.73	\$336.01	\$0.00	\$76,392,927,000
Average portion of premium paid by employee	\$140.62	\$135.62	\$454.56	\$105.95	\$0.89	\$0.00	\$160.34	\$240.54	\$329.35	\$39,162,788,000
Total premium	\$524.86	\$474.63	\$454.56	\$529.77	\$177.15	\$408.00	\$639.07	\$576.55	\$329.35	\$115,555,715,000
Enrollee expenses										
Enrollee expenses for covered benefits (deductibles, copays, etc.)	\$28.53	\$95.87	\$121.22	\$28.10	\$0.41	\$0.00	\$90.13	\$153.75	\$175.65	\$12,867,143,000
Enrollee expenses for benefits not covered (f)	\$0.66	\$0.66	\$0.27	\$0.61	\$0.85	\$0.00	\$0.67	\$0.66	\$0.42	\$179,073,000
Total expenditures	\$554.06	\$571.17	\$576.05	\$558.49	\$178.41	\$408.00	\$729.86	\$730.96	\$505.42	\$128,601,932,000

Source: California Health Benefits Review Program, 2014.

Note: (a) Includes enrollees with grandfathered and nongrandfathered health insurance, inside and outside the exchange.

(b) As of September 30, 2013, 57.5%, or 462,580, CalPERS members were state retirees, state employees, or their dependents. CHBRP assumes the same ratio for 2015.

(c) Includes children formerly in Healthy Families, which was moved into Medi-Cal Managed Care in 2013 as part of the 2012–2013 state budget.

(d) Medi-Cal Managed Care Plan expenditures for members over 65 years include those who also have Medicare coverage.

(e) This population includes both persons who obtain health insurance using private funds (group and individual) and through public funds (e.g., CalPERS HMOs, Medi-Cal Managed Care Plans). Only those enrolled in health plans or policies regulated by the DMHC or CDI are included. Population includes all enrollees in state-regulated plans or policies aged 0 to 64 years, and enrollees 65 years or older covered by employer-sponsored health insurance.

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

Key: CalPERS HMOs=California Public Employees' Retirement System Health Maintenance Organizations; CDI=California Department of Insurance; DMHC=Department of Managed Health Care; MCMC=Medi-Cal Managed Care.

Table 6. Postmandate Impacts of the Mandate on Per Member Per Month Premiums and Total Expenditures by Market Segment, California, 2015

	DMHC-Regulated						CDI-Regulated			Total
	Privately Funded Plans (by Market) (a)			Publicly Funded Plans			Privately Funded Plans (by Market) (a)			
	Large Group	Small Group	Individual	CalPERS HMOs (b)	MCMC (Under 65) (c)	MCMC (65+) (d)	Large Group	Small Group	Individual	
Enrollee counts										
Total enrollees in plans/policies subject to state mandates (e)	8,779,000	2,012,000	2,498,000	845,000	6,364,000	826,000	567,000	662,000	836,000	23,389,000
Total enrollees in plans/policies subject to SB 1239	8,779,000	2,012,000	2,498,000	845,000	6,364,000	826,000	567,000	662,000	836,000	23,389,000
Premium costs										
Average portion of premium paid by employer	\$0.40	\$0.42	\$0.00	\$0.42	\$0.69	\$0.00	\$0.42	\$0.35	\$0.00	\$114,919,000
Average portion of premium paid by employee	\$0.15	\$0.17	\$0.24	\$0.10	\$0.01	\$0.00	\$0.14	\$0.25	\$0.38	\$35,353,000
Total premium	\$0.55	\$0.59	\$0.24	\$0.52	\$0.70	\$0.00	\$0.56	\$0.59	\$0.38	\$150,272,000
Enrollee expenses										
Enrollee expenses for covered benefits (deductibles, copays, etc.)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0
Enrollee expenses for benefits not covered (f)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0
Total expenditures	\$0.55	\$0.59	\$0.24	\$0.52	\$0.70	\$0.00	\$0.56	\$0.59	\$0.38	\$150,272,000
Postmandate percentage change										
Percent change insured premiums	0.1049%	0.1251%	0.0527%	0.0982%	0.3930%	0.0000%	0.0881%	0.1031%	0.1139%	0.1300%
Percent change total expenditures	0.0995%	0.1041%	0.0416%	0.0933%	0.3921%	0.0000%	0.0772%	0.0814%	0.0743%	0.1170%

Source: California Health Benefits Review Program, 2014.

Note: (a) Includes enrollees with grandfathered and nongrandfathered health insurance, inside and outside the exchange.

(b) As of September 30, 2013, 57.5%, or 462,580, of CalPERS members were state retirees, state employees, or their dependents. CHBRP assumes the same ratio for 2014.

(c) Includes children formerly in Healthy Families, which was moved into Medi-Cal Managed Care in 2013 as part of the 2012–2013 state budget.

(d) Medi-Cal Managed Care Plan expenditures for members over 65 include those who also have Medicare coverage.

(e) This population includes both persons who obtain health insurance using private funds (group and individual) and through public funds (e.g., CalPERS HMOs, Medi-Cal Managed Care Plans). Only those enrolled in health plans or policies regulated by the DMHC or CDI are included. Population includes all enrollees in state-regulated plans or policies aged 0 to 64 years, and enrollees 65 years or older covered by employer-sponsored health insurance.

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

Key: CalPERS HMOs=California Public Employees' Retirement System Health Maintenance Organizations; CDI=California Department of Insurance; DMHC=Department of Managed Health Care; MCMC=Medi-Cal Managed Care.

PUBLIC HEALTH IMPACTS

SB 1239 would require state-regulated health insurance policies and plans (including DMHC-regulated plans enrolling Medi-Cal beneficiaries) to reimburse school districts for covered services provided by school nurses. CHBRP estimates that of the 7.51 million children aged 4–18 years in California, 5.71 million (76%) would have insurance subject to SB 1239. About 53% of the 5.71 million children (3.05 million) are Medi-Cal beneficiaries enrolled in DMHC-regulated plans (Figure 1).

CHBRP’s analytic method requires evidence of effectiveness and changes in coverage and/or utilization in order to estimate a mandate’s public health impact. As described in the *Background* sections, school nurses provide a broad range of services to school-aged children that may impact public health. As reported in the *Medical Effectiveness* section, there is insufficient evidence of the effectiveness of school nursing services on health outcomes. However, CHBRP notes that it stands to reason that those nursing services found to be effective in other settings would be similarly effective in school settings (see the *Medical Effectiveness* section). Additionally, CHBRP projects in the *Benefit Coverage, Utilization, and Cost* section that postmandate, SB 1239 would increase the supply of school nurses and school nurse services by 10%.

Estimated Public Health Outcomes

CHBRP estimates a 10% increase in services in the short term, and it stands to reason that if nursing services found to be effective in other settings are similarly effective in school settings, SB 1239 could have a positive health impact for pupils; however, the degree to which the increased access to school nurses would improve pupil health is unknown.

CHBRP is unable to estimate an impact on racial/ethnic or income disparities (see the *Background* section) due to lack of data regarding the health status of pupils who could receive the additional school nurse services and an unknown distribution of pupils by race/ethnicity or income level who would access services and the types of services accessed. Due to SB 1239 language that excludes enrollee cost sharing, CHBRP projects that this mandate would pose no financial burden for enrollees who use school nurse services.

LONG-TERM IMPACT OF THE MANDATE

CHBRP generally does not provide quantitative estimates of long-term impacts because of unknown improvements in clinical care, changes in prices, implementation of other complementary or conflicting policies, changes in the number of Californians enrolled in DMHC-regulated plans or CDI-regulated policies, and other unexpected factors.

Long-Term Utilization and Cost Impacts

In the absence of examples of health insurance reimbursing school districts for school nurse services, CHBRP has, as previously discussed, made a number of assumptions to model the short-term (initial year) impacts of SB 1239. These assumptions are sufficiently complex and interdependent to make the long-term impacts of SB 1239 on utilization and cost unknown.

Following is a discussion of how the short-term impacts described in the *Benefit Coverage, Utilization, and Cost Impacts* section may not apply over the long term.

The rationale for including both a 10% increase in school nurses and utilization of their reimbursable health services was provided in the *Benefit Coverage, Utilization, and Cost Impacts* section. CHBRP's confidence in this estimate over the long term is reduced by the presence of numerous plausible long-term outcomes that could either exceed or fall short of short-term projections. It is possible that school districts could dramatically increase their hiring of school nurses, particularly if the short-term increase in school nurses was successful in garnering reimbursement. However, if the short-term increase did not garner sufficient reimbursement to fund the expense of hiring school nurses and billing for reimbursable services, then school districts could reduce the number of nurses and use only the minimally required single nurse to fulfill the mandate in SB 1239 for a "health supervisor" school nurse. CHBRP cannot quantify the potential overestimate or underestimate, but acknowledges both as possible.

A key assumption in the short-term model was that school nurses would continue to perform their same duties both pre- and postmandate, dedicating only 33% of time to reimbursable services and not prioritizing services eligible for greater reimbursement. Over the long term, this assumption may not hold, because school nurses could face district pressure to maximize funding streams from health insurance carriers. This has the potential to shift population/aggregate-level services to those at the individual level (Solum, 2003). CHBRP cannot quantify the potential change, but acknowledges it as possible.

For the short-term cost model, CHBRP assumes that all school districts will be able to bill pupils' health insurance for reimbursable services as do other health care providers. This assumption might apply more directly to the larger school districts. Approximately 30% of California's K-12 pupils are enrolled in 2% of the total number of school districts, or 25 of 1,043 school districts (CDE, 2014). School districts similar to these 25 may realize economies of scale in order to contract with their pupils' multiple plans and policies for negotiated rates and "in-network" provider status, invest in the robust record keeping and billing systems other health providers use to seek reimbursement, and consistently secure pupils' current health insurance status from parents and guardians — and thus be able to bill as other providers do. However,

these are significant administrative hurdles, so school districts with fewer students may not attempt them. If short-term billing garnered sufficient reimbursement, more school districts may attempt to bill. However, if short-term billing did not garner sufficient reimbursement to fund the initial expense of establishing contracts and setting up billing systems, as well as the continuing expense of employing school nurses and billing for reimbursable services, fewer school districts may bill their pupils' health insurance. CHBRP cannot quantify the potential overestimate or underestimate, but acknowledges both as possible.

In the long term, due to the many possibilities for implementation that might occur, SB 1239's impact on utilization and cost is unknown.

Long-Term Public Health Impacts

Although disparities in health status exist by income, insurance status, and race/ethnicity, the long-term impacts of SB 1239 on disparities in school-aged children are, as noted above, unknown due to a variety of possible responses to the mandate on the part of school districts, school nurses, and parents.

APPENDICES

Appendix A: Text of Bill Analyzed

On April 7, 2014, the Senate Committee on Health requested that CHBRP analyze SB 1239. SB1239 was subsequently amended, such that it no longer included a health insurance benefit mandate. However, the Senate Committee on Health requested that CHBRP complete an analysis on the April 1, 2014, version of the bill — the bill containing the health insurance benefit mandate. Below is the language CHBRP analyzed.

AMENDED IN SENATE APRIL 1, 2014

SENATE BILL No. 1239

Introduced by Senator Wolk

February 20, 2014

An act to add Section 49428 to the Education Code, to add Section 1371.34 to the Health and Safety Code, and to add Section 10133.68 to the Insurance Code, relating to pupil health care services.

LEGISLATIVE COUNSEL'S DIGEST

SB 1239, as amended, Wolk. *Pupil health care services: school nurses.*

(1) Existing law requires the governing board of a school district to give diligent care to the health and physical development of pupils, and authorizes the governing board of a school district to employ properly certified persons for the work. Existing law authorizes a school nurse, subject to approval by the governing board of the school district, to perform various pupil health services, including, among others, evaluating the health and developmental status of pupils, and designing and implementing health maintenance plans to meet the individual health needs of pupils.

This bill, on and after July 1, 2016, would require the governing board of a school district that is eligible for concentration funding pursuant to the provisions of the local control funding formula to employ at least one school nurse as a supervisor of health, and would require a supervisor of health to supervise other school nurses, registered nurses, or other licensed vocational nurses employed by a school district and, if applicable, a nurse of a county office of education under contract, as provided. The bill would require the governing board of a school district to consider specified factors in determining the number of nurses to be supervised by the supervisor of health, including, among others, the acuity of pupil health care needs. Because the bill would

require school districts to perform new duties, the bill would impose a state-mandated local program.

(2) 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 for the reimbursement of claims and the resolution of claim and coverage disputes, as specified. Existing law requires a health care service plan to reimburse providers for emergency services and care provided to its enrollees until the care results in stabilization of the enrollee and also requires group plans to authorize and permit assignment of the enrollee's right to reimbursement for covered health care services to the State Department of Health Care Services when services are provided to a Medi-Cal beneficiary. Existing law provides for the direct payment of group insurance medical benefits by a health insurer to the person or persons furnishing or paying for hospitalization or medical or surgical aid or, in the case of a Medi-Cal beneficiary, to the State Department of Health Care Services, as specified. Existing law provides that specified services provided by a local educational agency are covered Medi-Cal benefits and authorizes providers to bill for those services.

This bill would require a health care service plan or health insurer to reimburse a school district for the health care services provided by a school nurse, registered nurse, or licensed vocational nurse employed by, or under contract with, a school district to an enrollee or insured that would otherwise be covered by the enrollee's plan contract or the insured's health insurance policy and would authorize the school district to submit a claim to a health care service plan or health insurer for reimbursement of the cost of those services. Because a willful violation of the bill's requirements with respect to health care service plans would be a crime, the bill would impose a state-mandated local program.

(3) 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 with regard to certain mandates no reimbursement is required by this act for a specified reason.

With regard to any other mandates, this bill would provide that, if the Commission on State Mandates determines that the bill contains costs so mandated by the state, reimbursement for those costs shall be made pursuant to the statutory provisions noted above.

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

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

SEC 1.

(a) The Legislature finds and declares both of the following:

(1) The health needs of pupils are not being adequately met in California's schools due to a lack of qualified health professionals employed by school districts who have access to local school campuses.

(2) Nurses are uniquely qualified to attend to the primary care of pupils suffering from chronic and acute health conditions.

(b) It is therefore the intent of the Legislature in enacting this act to ensure that a school district that is eligible for concentration funding under the local control funding formula employ at least one school nurse, in accordance with standards accepted by national professional nursing organizations.

SEC. 2. Section 49428 is added to the *Education Code* to read:

(a) The governing board of a school district that is eligible to receive concentration funding under the local control funding formula pursuant to subdivision (f) of Section 42238.02 shall employ at least one school nurse as a supervisor of health. The supervisor of health shall supervise other school nurses, registered nurses, or licensed vocational nurses employed by the school district and, if applicable, a school nurse of a county office of education under contract pursuant to subdivision (d).

(b) The governing board of a school district shall consider the following factors in determining the number of nurses to be supervised by the supervisor of health:

(1) The acuity of pupil health care needs.

(2) The distance and travel time between schools under the supervision of the school nurse.

(3) The total healthy pupil population at each school site.

(c) A registered nurse or licensed vocational nurse shall provide health care services to pupils under the supervision of a school nurse.

(d) A school district may contract with a county office of education for the services of a school nurse employed by the county office of education.

(e) This section shall not apply to schools served by a school health center, as defined in Section 124174 of the Health and Safety Code. However, the Legislature encourages schools with a school health center to also employ a school nurse.

(f) For purposes of this section, the following definitions apply:

(1) "Licensed vocational nurse" means a licensed vocational nurse licensed under Chapter 6.5 (commencing with Section 2840) of Division 2 of the Business and Professions Code.

(2) "Registered nurse" means a registered nurse licensed under Chapter 6 (commencing with Section 2700) of Division 2 of the Business and Professions Code.

(3) “School nurse” has the same meaning as set forth in Section 49426.

(g) This section shall be operative on July 1, 2016.

SEC. 3. Section 1371.34 is added to the *Health and Safety* to read

A health care service plan shall reimburse a school district for the health care services provided by a school nurse, registered nurse, or licensed vocational nurse employed by, or under contract with, a school district, pursuant to Section 49428 of the Education Code, to an enrollee of the plan that would otherwise be covered by the enrollee’s plan contract. The school district may submit a claim to a health care service plan for reimbursement of the services described in this section. The enrollee shall not be responsible for any share of the cost of providing the services described in this section.

SEC. 4. Section 10133.68 is added to the *Insurance Code*, to read:

A health insurer shall reimburse a school district for the health care services provided by a school nurse, registered nurse, or licensed vocational nurse employed by, or under contract with, a school district, pursuant to Section 49428 of the Education Code, to an insured of the insurer that would otherwise be covered by the insured’s policy of health insurance. The school district may submit a claim to a health insurer for reimbursement of the services described in this section. The insured shall not be responsible for any share of the cost of providing the services described in this section.

SEC. 5.

No reimbursement is required by this act pursuant to Section 6 of Article XIII B of the California Constitution for certain costs that may be incurred by a local agency or school district because, in that regard, 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. However, if the Commission on State Mandates determines that this act contains other costs mandated by the state, reimbursement to local agencies and school districts for those costs shall be made pursuant to Part 7 (commencing with Section 17500) of Division 4 of Title 2 of the Government Code.

Appendix B: Literature Review Methods

Appendix B describes methods used in the medical effectiveness literature review conducted for this report. A discussion of CHBRP’s system for grading evidence, as well as lists of MeSH Terms, Publication Types, and Keywords, follows.

As previously detailed in the *Introduction*, school nurse services include (but are not limited to) direct and indirect services provided to pupils, such as case management, vaccination surveillance as well as participating in immunization programs.

The literature search was limited to studies published in English from January 1999 to present. The following databases of peer-reviewed literature were searched: MEDLINE (PubMed), the Cochrane Library, Web of Science, ERIC, EMBASE and Scopus, CINAHL, and PsycInfo. Websites maintained by the following organizations were also searched: Centers for Disease Control and Prevention Advisory Committee on Immunization Practices and US Preventive Services Task Force. In addition, websites maintained by the following organizations that index or publish systematic reviews and evidence-based guidelines were searched: the Agency for Healthcare Research and Quality, National Guidelines Clearinghouse, National Institute for Health and Clinical Excellence, the Cumulative index of Nursing and Allied Health Literature, Journal of School Health, and the Journal of School Nursing.

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

Abstracts for 612 articles were identified. Abstracts for no meta-analyses, evidence-based guidelines or systematic reviews were found. Ten articles were retrieved and reviewed for inclusion; six were included in the *Medical Effectiveness* section of the report.

Evidence Grading System

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

Research design;

Consistency of findings;

Generalizability of findings to the population whose coverage would be affected by mandate;
and

Cumulative impact of evidence.

⁴⁰ Available at: www.chbrp.org/analysis_methodology/docs/medeffect_methods_detail.pdf.

CHBRP uses a hierarchy to classify studies' research designs by the strength of the evidence they provide regarding a treatment's effects.

CHBRP evaluates consistency of findings across three dimensions: statistical significance, direction of effect, and size of effect.

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

- Clear and convincing evidence;
- Preponderance of evidence;
- Ambiguous/conflicting evidence; and
- Insufficient evidence.

A grade of *clear and convincing evidence* indicates that there are multiple studies of a treatment and that the large majority of studies have strong research designs, consistently find that the treatment is either effective or not effective, and have findings that are highly generalizable to the population whose coverage would be affected. This grade is assigned in cases in which it is unlikely that publication of additional studies would change CHBRP's conclusion about the effectiveness of a treatment.

A grade of *preponderance of evidence* indicates that the majority of the studies reviewed are consistent in their findings that treatment is either effective or not effective and that the findings are generalizable to the population whose coverage would be affected. Bodies of evidence that are graded as *preponderance of evidence* are further subdivided into three categories based on the strength of their research designs: strong research designs, moderate research designs, and weak research designs.

A grade of *ambiguous/conflicting evidence* indicates that although some studies included in the medical effectiveness review find that a treatment is effective, a similar number of studies with equally strong research designs suggest the treatment is not effective.

A grade of *insufficient* evidence indicates that there is not enough evidence available to know whether or not a treatment is effective, either because there are too few studies of the treatment or because the available studies have weak research designs. It does not indicate that a treatment is not effective.

In addition to grading the strength of evidence regarding a treatment's effect on specific outcomes, CHBRP also assigns an overall grade to the whole body of evidence included in the medical effectiveness review. A statement of the overall grade is included in the Executive Summary and in the Medical Effectiveness section of the text of the report. The statement is accompanied by a graphic to help readers visualize the conclusion.

Search Terms

The search terms used to locate studies relevant to SB 1239 were as follows:

MeSH Terms Used to Search PubMed

- Outcome Assessment (Health Care)
- Program Evaluation
- School health nurses
- School nurse
- School nurses
- School nursing
- School nursing and cost of illness
- United states
- USA

Keywords used to search PubMed, Cochrane Library, EconLit, Web of Science, and Relevant Websites

- Outcome
- School health nursing and insurance, health, reimbursement
- School health nursing and reimbursement mechanisms
- School health nursing and reimbursement, incentive
- School nursing and child welfare
- Treatment outcomes

Publication Types:

- Clinical Trial
- Comparative Study
- Controlled Clinical Trial
- Empirical study
- Field study
- Longitudinal study
- Meta-Analysis
- Practice Guideline
- Prospective study
- Qualitative study
- Quantitative study
- Randomized Control Trial
- Retrospective study
- Systematic Reviews

Appendix C: Summary Findings on Medical Effectiveness

Appendix C describes the studies on services delivered by a school nurse on pupil health that were analyzed by the medical effectiveness team. Table C-1 presents information regarding the citation, type of study, intervention and control groups, populations studied, and the location at which a study was conducted. Table C-2a lists the summary of findings from studies that assessed the effects of reimbursable services delivered by a school nurse. Table C-2b lists the summary of findings from studies that assessed the effects of services (reimbursable and non-reimbursable) delivered by a school nurse.

Table C-1. Characteristics of Studies That Examined the Effectiveness of School Nurses

Type of Intervention	Citation	Type of Trial	Intervention versus Comparison Group	Population Studied	Location
Impact of school nurses on student attendance	Allen 2003	Comparative study	Comparison of schools with a full-time nurse to schools without a full-time nurse on attendance rates	Elementary school children from 22 schools, grades kindergarten through 5	Alabama, USA
Case management outcomes	Bonaiuto et al., 2007	Case management evaluation	Health outcomes for school nurse student case management over a period of 4 years	Pupils in grades pre-K through 12 in from 140 to 153 schools in a large urban area	USA
Case management outcomes	Engelke et al., 2014	Case management evaluation	Pupil report of asthma symptoms pre and post case management intervention	Pupils in grades 1 through 12	USA
Various health service outcomes	Guttu et al., 2004	Observational study	Counties with nurse-to-student ratios <1–1,000 compared to counties with nurse-to-student ratios ≥1–1,000	Children from schools across 21 counties with number of students in in each district ranging from 672 in the smallest district to 19,970 in the largest district	USA

Table C-1. Characteristics of Studies That Examined the Effectiveness of School Nurses (Cont'd)

Type of Intervention	Citation	Type of Trial	Intervention versus Comparison Group	Population Studied	Location
Vaccine surveillance	Lee et al., 2008	Prospective surveillance study	Varicella surveillance case finding	Public elementary school students attending school in a county in Oregon during years 2002–2007	USA
Asthma case management	Levy et al., 2006	Randomized controlled trial	Comparison of asthma management in schools that implemented nurse case management approach compared to schools without nurse case management	Elementary school children with an asthma diagnosis	USA
Impact of medication administration on student attendance	Foster and Keele, 2006	Quasi-experimental study	Comparison of school attendance before and after implementation of an over-the-counter medication policy	Elementary school students in a low socioeconomic status district, in grades kindergarten through 5	New Mexico, USA
Influenza H1N1 school vaccinations	Narciso et al., 2012	Comparative study	Vaccination campaign carried out by three different vaccination models: by school nurses alone, school nurse + contract nurse, or nurse teams	Elementary school students ages 4 and older attending public and nonpublic schools were included	NY, USA
Access to health services provided by school nurses	Telljohanna et al., 2004	Randomized study	Full time 5 days per week school nurse care compared to 2 days/week part time school nurse care	Elementary school children from an inner-city school district	USA

Table C-1. Characteristics of Studies That Examined the Effectiveness of School Nurses (Cont'd)

Type of Intervention	Citation	Type of Trial	Intervention versus Comparison Group	Population Studied	Location
Early release from school for ill or injured students	Wyman et al., 2005	Comparative study	Comparison of children released early for injury or illness by a school nurse versus non-nursing personnel	Children from a public school system attending two elementary schools, two middle schools, and two high schools with similar demographics. Grades included are kindergarten through 12th	USA

Table C-2a. Summary of Findings From Studies of Reimbursable Services Provided by School Nurses

Outcome	Citation (s)	Research Design	Statistical Significance	Direction of Effect	Size of Effect	Conclusion
Hospitalizations	Levy et al., 2006	Randomized controlled trial	Statistically significant	Favors intervention	Case managed students (M=0.18, SD 0.73) vs. usual care students (M=0.45, SD 1.06)	School-based nurse in an urban school system may reduce hospitalizations
Urgent care or emergency room departments for each semester and over the entire year	Levy et al., 2006	Randomized controlled trial	Statistically significant	Favors intervention	Case managed students (M=1.36, SD 0.49) vs. usual care students (M=1.59, SD 1.0)	School-based nurse in an urban school system may reduce urgent care and ER visits
Improved quality of life	Bonaiuto et al., 2007	Case management evaluation	Not stated	NA	2002–2003=59% 2003–2004=54% 2004–2005=60% 2005–2006=64%	Not enough evidence to draw a conclusion
Improved quality of life	Bonaiuto et al., 2007	Case management evaluation	Not stated	NA	2002–2003=59% 2003–2004=54% 2004–2005=60% 2005–2006=64%	Not enough evidence to draw a conclusion
Improved health/health compliance	Bonaiuto et al., 2007	Case management evaluation	Not stated	NA	2002–2003=63% 2003–2004=no data 2004–2005=69% 2005–2006=66%	Not enough evidence to draw a conclusion

Table C-2a. Summary of Findings From Studies of Reimbursable Services Provided by School Nurses (Cont'd)

Outcome	Citation (s)	Research Design	Statistical Significance	Direction of Effect	Size of Effect	Conclusion
Average vaccination rate	Narciso et al., 2012	Level III Comparative study	Not statistically significant	No effect	School nurse only 21.2%, school nurse + contact nurse 19.2%, and mobile team 22.4%	Vaccination rates did not vary significantly by school nurse vaccination model
Surveillance rates	Lee et al., 2008	Retrospective study	Not stated	Favors nurse involvement	Positive predictive value of school nurse surveillance was 94%, and sensitivity was 90%	School nurse surveillance is a reliable means to track varicella occurrence
Care for critical incident or trauma	Telljohann et al., 2004	Randomized study	Statistically significant	Favors full time school nurse	5 days/week school nurses 1.7 encounters vs. 0.2 encounters for 2 days/week school nurses	Children in schools with full-time nurses had higher rates of care for critical incident or trauma compared to school with part-time nurses
Counseling sessions	Telljohann et al., 2004	Randomized study	Statistically significant	Favors full time school nurse	5 days/week school nurses 9.0 encounters vs. 1.4 for 2 encounters days/week school nurses	Children in schools with full-time nurses had higher rates of counseling sessions compared to school with part-time nurses

Table C-2a. Summary of Findings From Studies of Reimbursable Services Provided by School Nurses (Cont'd)

Outcome	Citation (s)	Research Design	Statistical Significance	Direction of Effect	Size of Effect	Conclusion
Vision screening	Telljohann et al., 2004	Randomized study	Statistically significant	Favors full time school nurse	5 days/week school nurses 17.2 encounters vs. 10.1 encounters for 2 days/week school nurses	Children in schools with full-time nurses had higher rates of vision screening sessions compared to school with part-time nurses
Seizure/neurological care	Telljohann et al., 2004	Randomized study	Statistically significant	Favors full time school nurse	5 days/week school nurses 17.2 encounters vs. 10.1 encounters for 2 days/week school nurses	Children in schools with full-time nurses had higher rates of seizure/neurological care sessions compared to school with part-time nurses
Sickle cell visits	Telljohann et al., 2004	Randomized study	Statistically significant	Favors part time school nurse	5 days/week school nurses 0.5 encounters vs. 0.8 encounters for 2 days/week school nurses	Children in schools with part-time nurses had higher visits for sickle cell condition compared to school with full-time nurses
Major/terminal illness visits	Telljohann et al., 2004	Randomized study	Statistically significant	Favors part time school nurse	5 days/week school nurses 17.2 encounters vs. 10.1 encounters for 2 days/week school nurses	Children in schools with part-time nurses had higher visits for major/terminal illness compared to school with full-time nurses

Table C-2b. Summary of Findings From Studies of Services (Reimbursable and Nonreimbursable Services) Provided by School Nurses

Outcome	Citation (s)	Research Design	Statistical Significance	Direction of Effect	Size of Effect	Conclusion
Health service outcomes in asthma	Guttu et al., 2004	Observational study	Statistically significant	Favors lower student-to-nurse ratio	Mean 5.5 for <1–1,000 ratio vs. 4.9% >1–1,000 ratio	Districts with lower nurse-to-student ratios were more likely to identify children with asthma than districts with higher nurse-to-student ratios
Health service outcomes in diabetes	Guttu et al., 2004	Observational study	Not statistically significant	No effect	Mean 0.3 % for <1–1,000 ratio vs. 0.2% >1–1,000 ratio	Districts with lower nurse-to-student ratios were no more likely to identify children with diabetes than districts with higher nurse-to-student ratios
Health service outcomes for counseling rates	Guttu et al., 2004	Observational study	Statistically significant	Favors lower student-to-nurse ratio	7.2% for <1–1,000 ratio vs 1.2% >1–1,000 ratio	Districts with lower ratios reported more services to children with psychosocial problems than districts with higher nurse-to-student ratios

Table C-2b. Summary of Findings From Studies of Services (Reimbursable and Nonreimbursable Services) Provided by School Nurses (Cont'd)

Outcome	Citation (s)	Research Design	Statistical Significance	Direction of Effect	Size of Effect	Conclusion
Health service outcomes for injury rates	Guttu et al., 2004	Observational study	Statistically significant	Favors lower student-to-nurse ratio	2.2% for <1–1,000 ratio vs. 0.7% >1–1,000 ratio	Districts with lower ratios reported higher care for injury than districts with higher nurse-to-student ratios
Care for critical incident or trauma	Telljohann et al., 2004	Randomized study	Statistically significant	Favors full-time school nurse	5 days/week school nurses 1.7 encounters vs. 0.2 encounters for 2 days/week school nurses	Children in schools with full-time nurses had higher rates of care for critical incident or trauma compared to school with part-time nurses
Counseling sessions	Telljohann et al., 2004	Randomized study	Statistically significant	Favors full-time school nurse	5 days/week school nurses 9.0 encounters vs. 1.4 for 2 encounters days/week school nurses	Children in schools with full-time nurses had higher rates of counseling sessions compared to school with part-time nurses

Table C-2b. Summary of Findings From Studies of Services (Reimbursable and Nonreimbursable Services) Provided by School Nurses (Cont'd)

Outcome	Citation (s)	Research Design	Statistical Significance	Direction of Effect	Size of Effect	Conclusion
Vision screening	Telljohann et al., 2004	Randomized study	Statistically significant	Favors full-time school nurse	5 days/week school nurses 17.2 encounters vs. 10.1 encounters for 2 days/week school nurses	Children in schools with full-time nurses had higher rates of vision screening sessions compared to school with part-time nurses
Seizure/neurological care	Telljohann et al., 2004	Randomized study	Statistically significant	Favors full-time school nurse	5 days/week school nurses 17.2 encounters vs. 10.1 encounters for 2 days/week school nurses	Children in schools with full-time nurses had higher rates of seizure/neurological care sessions compared to school with part-time nurses
Sickle cell visits	Telljohann et al., 2004	Randomized study	Statistically significant	Favors part-time school nurse	5 days/week school nurses 0.5 encounters vs. 0.8 encounters for 2 days/week school nurses	Children in schools with part-time nurses had higher visits for sickle cell condition compared to school with full-time nurses

Table C-2b. Summary of Findings From Studies of Services (Reimbursable and Nonreimbursable Services) Provided by School Nurses (Cont'd)

Outcome	Citation (s)	Research Design	Statistical Significance	Direction of Effect	Size of Effect	Conclusion
Major/terminal illness visits	Telljohann et al., 2004	Randomized study	Statistically significant	Favors part-time school nurse	5 days/week school nurses 17.2 encounters vs. 10.1 encounters for 2 days/week school nurses	Children in schools with part-time nurses had higher visits for major/terminal illness compared to school with full-time nurses
Difference in pupils report of asthma symptoms	Engelke et al., 2014	Pre and post design	Statistically significant	Favors case management	Pre and post reports of chest hurting or feeling tight, feeling wheezy, or having asthma attacks were over 70% and 48%, respectively	Among pupils with asthma and asthma symptoms, case management reduced rates of asthma systems
School attendance before and after OTC medication administration policy	Foster and Keele, 2006	Pre and post design	Not statistically significant	No difference	3.6% of students were sent home in the year before the policy was implemented verses 3.4% during the first year post policy implementation, 3.1% for the second year post policy implementation	There was no difference in children's school attendance before medication policy implementation compared to the years after the medication policy implementation

Table C-2b. Summary of Findings From Studies of Services (Reimbursable and Nonreimbursable Services) Provided by School Nurses (Cont'd)

Outcome	Citation (s)	Research Design	Statistical Significance	Direction of Effect	Size of Effect	Conclusion
Difference in attendance in schools with part-time nurse vs. schools with full-time nurse	Allen, 2003	Comparative study	Not statistically significant	No difference	No effect	There was no difference in children's school attendance between schools with part-time nurses vs. full-time nurses.
Student checkouts due to medical reasons	Allen, 2003	Comparative study	Statistically significant	Favors schools with full-time nurses	T test = -0.77	Children in schools with a full-time school nurse were less likely to checkout due to medical reasons than children in schools without a school nurse
Students dismissed from school early by a school nurse versus non-nurse personnel	Wyman, 2005	Comparative study	Statistically significant	Favors school nurses	Of students who had contact with school nurses, 57% fewer students left early than those who did not have nurse contact ⁴¹	School children were dismissed less often when there was nurse contact compared to students who had no nurse contact

⁴¹ Pupils were not included in the analysis if they had early dismissal without school nurse authorization on the days the nurse was not present.

Appendix D: 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. (Milliman).⁴²

Data Sources

In preparing cost estimates, the cost team relies on a variety of data sources as described below.

Baseline model

- The California Simulation of Insurance Markets (CalSIM) is used to project health insurance status of Californians aged 64 and under in 2015. CalSIM is a microsimulation model that projects the effects of the Affordable Care Act on firms and individuals.⁴³ CalSIM relies on national Medical Expenditure Panel Survey (MEPS) Household Component and Person Round Plan 2006–2010, California Health Interview Survey (CHIS) 2011/2012, and California Employer Health Benefits Survey data 2013.
- California Health Interview Survey (2011/2012) data is used to estimate the number of Californians aged 65 and older, and the number of Californians dually eligible for both Medi-Cal and Medicare coverage. CHIS 2011/2012 is also used to determine the number of Californians with incomes below 400% of the federal poverty level. CHIS is a continuous survey that provides detailed information on demographics, health insurance coverage, health status, and access to care. CHIS 2011/2012 surveyed approximately 44,600 households and is conducted in multiple languages by the UCLA Center for Health Policy Research. More information on CHIS is available at: www.chis.ucla.edu
- The latest (2013) California Employer Health Benefits Survey is used to estimate:
 - Size of firm;
 - Percentage of firms that are purchased/underwritten (versus self-insured);

⁴² 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).

⁴³ UC Berkeley Center for Labor Research and Education and UC Los Angeles Center for Health Policy Research. *Methodology & Assumptions, California Simulation of Insurance Markets (CalSIM) Version 1.7*, June 2012. Available at: http://healthpolicy.ucla.edu/publications/Documents/PDF/calsim_methods.pdf. Accessed March 25, 2014.

- Premiums for employment-based health care service plans regulated by the Department of Managed Health Care (DMHC) (primarily health maintenance organizations [HMOs] and point of service [POS] plans); and
- Premiums for employment-based health insurance policies regulated by the California Department of Insurance (CDI) (primarily preferred provider organizations [PPOs]. Premiums for fee-for-service [FFS] plans are no longer available due to scarcity of these policies in California).

This annual survey is currently released by the California Health Care Foundation/National Opinion Research Center (CHCF/NORC) and is similar to the national employer survey released annually by the Kaiser Family Foundation and the Health Research and Educational Trust. Information on the CHCF/NORC data is available at: www.chcf.org/publications/2014/01/employer-health-benefits.

- 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; see: www.milliman.com/expertise/healthcare/products-tools/milliman-care-guidelines/index.php. 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. The HCGs currently include claims drawn from plans covering 41.2 million members. In addition to the Milliman HCGs, CHBRP’s utilization and cost estimates draw on other data, including the following:
 - The MarketScan databases, which reflects the health care claims experience of employees and dependents covered by the health benefit programs of large employers. These claims data are collected from approximately 100 different insurance companies, Blue Cross Blue Shield plans, and third party administrators. These data represent the medical experience of insured employees and their dependents for active employees, early retirees, individuals with COBRA continuation coverage, and Medicare-eligible retirees with employer-provided Medicare Supplemental plans. No Medicaid or Workers Compensation data are included.
 - These data are reviewed for applicability by an extended group of experts within Milliman but are not audited internally.
- Premiums and enrollment in DMHC-regulated health plans and CDI-regulated policies by self-insured status and firm size are obtained annually from CalPERS for active state and local government public employees and their dependents who receive their benefits through CalPERS. Enrollment information is provided for DMHC-regulated health care service plans covering non-Medicare beneficiaries — about 74% of CalPERS total enrollment. CalPERS self-funded plans — approximately 26% of enrollment — are not subject to state mandates. In addition, CHBRP obtains information on current scope of benefits from evidence of coverage (EOC) documents publicly available at: www.calpers.ca.gov. For the 2014 model, CHBRP assumes CalPERS’s enrollment in

2015 will not be affected by continuing shifts in the health insurance market as a result of the ACA.

- Enrollment in Medi-Cal Managed Care (beneficiaries enrolled in Two-Plan Model, Geographic Managed Care, and County Operated Health System plans) is estimated based on data maintained by the Department of Health Care Services (DHCS). CHBRP assesses enrollment information online at: www.dhcs.ca.gov/dataandstats/statistics/Pages/Monthly_Trend_Report.aspx. The most recent Medi-Cal enrollment data from DHCS is projected to 2015 based on CalSIM's estimate of the continuing impact of the Medi-Cal expansion implemented in 2014.

Estimate of premium impact of mandates

- CHBRP's Annual Enrollment and Premium Survey collects information from the seven largest providers of health insurance in California (Aetna, Anthem Blue Cross of California, Blue Shield of California, CIGNA, Health Net, Kaiser Foundation Health Plan, and United Healthcare/PacifiCare) to obtain estimates of baseline enrollment by purchaser (i.e., large and small group and individual), type of plan (i.e., DMHC-regulated or CDI-regulated), grandfathered and nongrandfathered status, and average premiums. Enrollment in plans or policies offered by these seven insurers represent an estimated 97.4% of the persons with health insurance subject to state mandates. This figure represents an estimated 97.8% of enrollees in full-service (nonspecialty) DMHC-regulated health plans and an estimated 95.9% of enrollees in full-service (nonspecialty) CDI-regulated policies. The Annual Enrollment and Premium Survey is representative of enrollment in September 2013; CalSIM and market trends were applied to the 2013 enrollment to project 2015 health insurance enrollment in state-regulated plans and policies.

For CHBRP reports analyzing specific benefit mandates, CHBRP surveys the seven major carriers on current coverage relevant to the benefit mandate. CHBRP reports the share of enrollees — statewide and by market segment — reflected in CHBRP's bill-specific coverage survey responses. The proportions are derived from data provided by CDI and DMHC. CDI provides data by market segment (large, small, and individual) based on "CDI Licenses With HMSR Covered Lives Greater Than 100,000" as part of the Accident and Health Covered Lives Data Call September 30, 2012, by the California Department of Insurance, Statistical Analysis Division. The Department of Managed Health Care's interactive website "Health Plan Financial Summary Report," July–September 2013, provides data on DMHC-regulated plans by segment.⁴⁴

The following table describes the data sources mentioned above, and the data items that they inform.

⁴⁴ CHBRP assumes DMHC-regulated PPO group enrollees and POS enrollees are in the large-group segment. <http://wps0.dmhc.ca.gov/flash/>.

Table D-1. Population and Cost Model Data Sources and Data Items

Data Source	Items
California Simulation of Insurance Markets (CalSIM) (projections for 2015)	Uninsured, age: 0–17; 18–64 Medi-Cal (non-Medicare) (a), age: 0–17; 18–64 Other public (b), age: 0–64 Individual market, age: 0–17; 18–64 Small group, age: 0–17; 18–64 Large group, age: 0–17; 18–64
California Health Interview Survey, 2011/2012 (CHIS 2011/2012)	Uninsured, age: 65+ Medi-Cal (non-Medicare), age: 65+ Other public, age: 65+ Employer-sponsored insurance, age: 65+
CalPERS data, annually, enrollment as of September 30	CalPERS HMO and PPO enrollment <ul style="list-style-type: none"> • Age: 0–17; 18–64; 65+ HMO premiums
California Employer Survey, conducted annually by NORC and funded by CHCF	Enrollment by HMO/POS, PPO/indemnity self-insured, fully insured, Premiums (not self-insured) by: <ul style="list-style-type: none"> • Size of firm (3–25 as small group and 25+ as large group) • Family vs. single • HMO/POS vs. PPO/indemnity vs. HDHP employer vs. employer premium share
DHCS administrative data for the Medi-Cal program, annually, 11-month lag from the end of November	Distribution of enrollees by managed care or FFS distribution by age: 0–17; 18–64; 65+ Medi-Cal Managed Care premiums
CMS administrative data for the Medicare program, annually (if available) as of the end of September	HMO vs. FFS distribution for those 65+ (noninstitutionalized)
CHBRP enrollment survey of the seven largest health plans in California, annually as of the end of September	Enrollment by: <ul style="list-style-type: none"> • Size of firm (2–50 as small group and 51+ as large group), • DHMC vs. CDI regulated • Grandfathered vs. nongrandfathered Premiums for individual policies by: <ul style="list-style-type: none"> • DMHC vs. CDI regulated • Grandfathered vs. nongrandfathered
Department of Finance population projections, for intermediate CHIS years	Projected civilian, noninstitutionalized CA population by age: 0–17; 18–64; 65+
Medical trend influencing annual premium increases	Milliman estimate

Source: California Health Benefits Review Program, 2014.

Note: (a) Includes children previously enrolled in Healthy Families, California’s CHIP. As of January 1, 2014, children enrolled in Healthy Families were transitioned into Medi-Cal as required in the 2012–2013 state budget agreement.

(b) Includes individuals dually eligible for Medi-Cal and Medicare.

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; PPO=preferred provider organization.

Projecting the Effects of the Affordable Care Act in 2015

This subsection discusses adjustments made to CHBRP’s Cost and Coverage Model to account for the continuing impacts of the ACA in January 2015. It is important to emphasize that CHBRP’s analysis of specific mandate bills typically addresses the incremental effects of the mandate bill — 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 *Benefit Coverage, Utilization, and Cost Impacts* section of this report.

Baseline premium rate development methodology — 2015

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:

- Insurance premiums PMPM;
- Gross claims costs PMPM;
- Member cost sharing PMPM; and
- Health care costs paid by the health plan.

For each plan type, we first obtained an estimate of the insurance premium PMPM by taking the 2013 reported premium from the above-mentioned data sources and trending that value to 2015. CHBRP uses trend rates published in the Milliman Health Cost Guidelines to estimate the health care costs for each plan segment in 2015.

The individual segments (CDI-regulated and DMHC-regulated) are split into: grandfathered non-exchange; nongrandfathered non-exchange; and exchange groups in order to separately calculate the impact of ACA and specific mandates that may apply differently to these three subgroups. The premium rate information received from NORC did not split the premiums based on grandfathered or exchange status. The 2013 CHBRP Annual Enrollment and Premium Survey asked the seven largest insurance carriers in California to provide their average premium rates separately for grandfathered and nongrandfathered plans. The ratios from the carrier survey data are then applied to the NORC aggregate premium rates for large and small group, to estimate premium rates for grandfathered and nongrandfathered plans that were consistent with the NORC results. For the individual market, the 2013 premium rates received from the 2013 CHBRP Annual Enrollment and Premium Survey were used directly.

The marginal impact of ACA on 2015 premiums was established as follows:

- For nongrandfathered small-group and individual market segments, a 3% increase in medical costs is applied to reflect the total cost of requiring each plan to cover the essential health benefits.
- For nongrandfathered small-group plans, a 5% increase in medical costs is applied to reflect the other additional costs of ACA (e.g., age rating, health status, increased premium taxes and fees, change in actuarial value, etc.).
- For DMHC-regulated individual plans and CDI-regulated individual policies, an increase of 20% and 31%, respectively, in medical costs is applied to reflect the other additional costs of ACA.

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

- Health care costs paid by the health plan = insurance premiums PMPM \times (1 – profit/administration load).
- Gross claims costs PMPM = health care costs paid by the health plan \div percentage paid by health plan
- Member cost sharing PMPM = gross claims costs \times (1 – percentage paid by health plan)

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

In the above formulas, the quantity “percentage paid by health plan” is the assumed percentage of gross health care costs that are paid by the health plan, as opposed to the amount paid by member cost sharing (deductibles, copays, etc.). In ACA terminology, this quantity is known as the plan’s “actuarial value.” These values vary by insurance category. For each insurance category, Milliman estimated the member cost sharing for the average or typical plan in that category. Milliman then priced these plans using the Milliman Health Cost Guidelines to estimate the percentage of gross health care costs that are paid by the carrier.

Medi-Cal Managed Care

CHBRP has estimated that the PMPM cost for Medi-Cal’s newly eligible population will equal the projected cost of Medi-Cal’s currently eligible family population, excluding maternity costs.

General Caveats and Assumptions

The projected cost estimates are estimates of the 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.
- The impact of ACA on the mandated benefit cost may be different from CHBRP assumptions.

Additional assumptions that underlie the cost estimates presented in this report are:

- 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.
- 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: www.chbrp.org/analysis_methodology/docs/Uninsured_paper_Final_01012009.pdf.

There are other variables that may affect costs, but which CHBRP did not consider in the cost projections 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 benefit plans: To help offset the premium increase resulting from a mandate, subscribers/policyholders may elect to increase their overall plan deductibles or copayments. Such changes would have a direct impact on the distribution of costs between the health plan and policies and enrollees, and may also result in utilization

reductions (i.e., high levels of patient 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, individuals or employer groups who had previously foregone health insurance may now elect to enroll in a health plan or policy, postmandate, because they perceive that it is to their economic benefit to do so.
- Medical management: Health plans and 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 types that previously had the least effective medical management (i.e., PPO plans).
- Geographic and delivery systems variation: Variation in existing utilization and costs, and in the impact of the mandate, by geographic area and delivery system models: Even within the health insurance 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 by type. 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 or 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 coverage levels, CHBRP typically assumes that plans and policies subject to the mandate will be in compliance with the coverage requirements of the bill. Therefore, the typical postmandate coverage rates for populations subject to the mandate are assumed to be 100%.

SB 1239—Specific Caveats and Assumptions

CHBRP analyzed several data sources and made several assumptions to calculate the financial impact of SB 1239 (see the *Benefits, Utilization, and Cost Impacts* section). This section will focus on the methodology based off of these assumptions that was used to calculate the baseline estimates as well as the projected impact of the mandate.

First, CHBRP developed the average unit cost for 15 minutes of reimbursable school nurse services. CHBRP developed a list of services commonly performed by school nurses using publically available literature and content expert input (Table D-3). CHBRP then identified relevant CPT/HCPCS code by examining Medicaid provider manuals and other publically available literature, as well as interviewing content experts. CHBRP conducted an analysis of the types of procedures commonly performed by school nurses, RNs, and LVNs in California to determine the average unit cost of service when these services are reimbursable by a commercial health plan and performed by an RN outside of a school setting. The allowed charge for each service depends primarily on the amount of time used to perform such a service. CHBRP's analysis of Truven MarketScan data indicated that 15 minutes of services provided by a nurse

typically has an allowed charge of \$45. Therefore, CHBRP has defined a procedure as 15 minutes of services provided by a school nurse with an assumption that these services will have an allowed charge of \$45.

Second, CHBRP determined the utilization per 1,000 pupils for reimbursable school nurse services in 15-minute increments. To determine the number of school-aged children, CHBRP assumed each child in our population model would attend 13 years of school.

CHBRP examined what percentage of services are commonly reimbursed by carriers in other settings and estimated that approximately 33% of a school nurse's time would be considered reimbursable by California insurance carriers (Baker et al., 2014). CHBRP assumes that a carrier would not reimburse a school district for services that are not medically necessary or that could be completed by a trained lay person. Additionally, school nurses engage in a wide range of activities including behavioral health, health education, and other programs that are not typically covered by an insurance carrier.

Next, CHBRP used the following methodology to calculate utilization for both 2014 and 2015:

- (1) Total Number of Full-Time School Nurses in CA (~2,900 nurses in 2014, for example)
- (2) Average Number of School Days per Pupil, Including Summer School (184 days)
- (3) Number of Billable Hours per Day (6.5 hours)
- (4) Number of Procedures per Billable Hour (4 procedures per hour)
- (5) Percentage of Nursing Time That Is Reimbursable (33%)⁴⁵
- (6) Total Number of Pupils (7.5 MM)

$$\text{Annual Utilization per 1,000 Pupils} = \frac{(1) \times (2) \times (3) \times (4) \times (5) \times 1000}{(6)}$$

CHBRP assumed that children would use similar levels of school nurse services regardless of their insurance coverage. CHBRP also assumed that the percentage of school-aged children that are in school does not vary by insurance coverage. CHBRP's cost model contains the demographics of insured within each category of insurance. CHBRP applied the above rate of utilization to all school age children within each category of insurance. Therefore, differences in utilization between categories of insurance vary primarily due to differences in the proportion of insured that are school-aged.

Estimating the number of school nurses in California in 2014 and 2015

To develop cost estimates, CHBRP estimated the number of RN and LVN nurses in California with school nurse credentialing, currently employed full-time by a school district. Through consultation with the content expert, CHBRP determined that contract nurses often perform services that are limited in scope and are unlikely to be reimbursable, such as administering medications or assisting with activities of daily living.⁴⁶ Also, contract nurses typically work

⁴⁵ Personal conversation, Dian Baker, CSU, Sacramento, May 2014.

⁴⁶ Personal communication,, Dian Baker, CSU, Sacramento: June 2014.

limited hours, often ranging from a one hour shift to administer medication during lunch to a four hour shift. Finally, in many districts, contract nurses are available “just in case”, but do not perform services throughout their scheduled shift.

CHBRP estimated the final number of school nurses employed full-time in California by assuming that the percentage of LVN school nurses that are full-time is the same as the corresponding percentage for RN school nurses. CHBRP estimates that there are 2,918 full time school nurses in California. We have provided a summary of our calculations in the table below.

Table D-2. Cost Analysis Calculations

Nurse Category	Count	Note	Step
Full-time Employee School Nurses (RN)	2,385	Obtain number of Full-time RNs in California from expert.	(1)
Full-time Employee School Nurses (LVN)	533	Obtain number of Full-time RNs in California from expert.	(2)
Full Time Employee School Nurses	2,918		(3) = (1) + (2)
Increase in School Nurses in CA (2015, RN and LVN)	292	As discussed in the report, CHBRP estimates a 10% increase in the number of school nurses in California.	(4)
School Nurses in CA (2015, RN and LVN)	3,210	Add the estimated number of school nurses in 2014 with the estimated increase attributable to SB 1239.	(5) = (3) + (4)

Source: California Health Benefits Review Program, 2014.

Table D-3. School Nurse Procedure Codes

CPT/HCPCS	Short Description	Long Description	Source
99211	Nurse Visit	Office or other outpatient visit for the evaluation and management of an established patient, that may not require the presence of a physician or other qualified health care professional. Usually, the presenting problem(s) are minimal. Typically, 5 minutes are spent performing or supervising these services.	North Carolina School Community Health Alliance (NCSCHA) 2010 Annual Conference: “Breaking the Code: ICD, CPT, HCPCS, DSM, E&M, EPF, SF, EI-MH”(Brey et al., 2010)
92551	Basic Hearing Screening	Screening test, pure tone, air only	NCSCHA 2010 Annual Conference
99173	Basic Visual Screening	Screening test of visual acuity, quantitative, bilateral	NCSCHA 2010 Annual Conference, CA Medi-Cal LEA Provider Manual (DHCS, 2014a)
99406	Tobacco Counseling	Smoking and tobacco use cessation counseling visit; intermediate, greater than 3 minutes up to 10 minutes	NCSCHA 2010 Annual Conference
99407	Tobacco Counseling	Smoking and tobacco use cessation counseling visit; intensive, greater than 10 minutes	NCSCHA 2010 Annual Conference
99408	Alcohol Screening	Alcohol and/or substance (other than tobacco) abuse structured screening (e.g., AUDIT, DAST), and brief intervention (SBI) services; 15 to 30 minutes	NCSCHA 2010 Annual Conference

Table D-3. School Nurse Procedure Codes (Cont'd)

CPT/HCPCS	Short Description	Long Description	Source
99409	Alcohol Screening	Alcohol and/or substance (other than tobacco) abuse structured screening (e.g., AUDIT, DAST), and brief intervention (SBI) services; greater than 30 minutes	NCSCCHA 2010 Annual Conference
90471	Immunization Administration	Immunization administration (includes percutaneous, intradermal, subcutaneous, or intramuscular injections); 1 vaccine (single or combination vaccine/toxoid)	NCSCCHA 2010 Annual Conference
90472	Immunization Administration	Immunization administration (includes percutaneous, intradermal, subcutaneous, or intramuscular injections); each additional vaccine (single or combination vaccine/toxoid) (list separately in addition to code for primary procedure)	NCSCCHA 2010 Annual Conference
90473	Immunization Administration	Immunization administration by intranasal or oral route; 1 vaccine (single or combination vaccine/toxoid)	NCSCCHA 2010 Annual Conference
90474	Immunization Administration	Immunization administration by intranasal or oral route; each additional vaccine (single or combination vaccine/toxoid) (list separately in addition to code for primary procedure)	NCSCCHA 2010 Annual Conference
T1000	Private Duty Nursing (In School)	Private duty/independent nursing service(s) — licensed, up to 15 minutes	Content matter expert*

Table D-3. School Nurse Procedure Codes (Cont'd)

CPT/HCPCS	Short Description	Long Description	Source
T1001	Nursing Assessment	Nursing assessment/evaluation	Washington State Health Care Authority Medicaid Provider Guide, CA Medi-Cal LEA Provider Manual
T1002	RN Services	RN services, up to 15 minutes	Washington State Health Care Authority Medicaid Provider Guide (WSHCA, 2014), CA Medi-Cal LEA Provider Manual
T1003	LVN Services	LPN/LVN services, up to 15 minutes	Washington State Health Care Authority Medicaid Provider Guide, CA Medi-Cal LEA Provider Manual
T1004	Nursing Aide Services	Services of a qualified nursing aide, up to 15 minutes	Washington State Health Care Authority Medicaid Provider Guide, CA Medi-Cal LEA Provider Manual
T1018	IEP Services	School-based individualized education program (IEP) services, bundled	Content matter expert
T1019	Personal Care Services	Personal care services, per 15 minutes, not for an inpatient or resident of a hospital, nursing facility, part of the individualized plan of treatment (code may not be used to identify services provided by home health aide or certified nurse assistant)	Idaho Medicaid School-Based Services Codes (IDHW, 2013)

Table D-3. School Nurse Procedure Codes (Cont'd)

CPT/HCPCS	Short Description	Long Description	Source
T1020	Personal Care Services	Personal care services, per diem, not for an inpatient or resident of a hospital, nursing facility, ICF/MR or IMD, part of the individualized plan of treatment (code may not be used to identify services provided by home health aide or certified nurse assistant)	Content matter expert
T1503	Medication Administration	Administration of medication, other than oral and/or injectable, by a health care agency/professional, per visit	Idaho Medicaid
G9002	RN Assessment and Plan	Coordinated care fee, maintenance rate	Content matter expert
96150	Health/Nutrition Assessment, 15 mins	Health and behavior assessment (e.g., health-focused clinical interview, behavioral observations, psychophysiological monitoring, health-oriented questionnaires), each 15 minutes face-to-face with the patient; initial assessment	CA Medi-Cal LEA Provider Manual
96151	Health/Nutrition Assessment, 15 mins	Health and behavior assessment (e.g., health-focused clinical interview, behavioral observations, psychophysiological monitoring, health-oriented questionnaires), each 15 minutes face-to-face with the patient; re-assessment	CA Medi-Cal LEA Provider Manual
99401	Health Education and Management, 15 min	Preventive medicine counseling and/or risk factor reduction intervention(s) provided to an individual (separate procedure); approximately 15 minutes	CA Medi-Cal LEA Provider Manual
82962	Blood sugar testing	Glucose, blood by glucose monitoring device(s) cleared by the FDA specifically for home use	Content matter expert

Table D-3. School Nurse Procedure Codes (Cont'd)

CPT/HCPCS	Short Description	Long Description	Source
51701	Catheterization	Insertion of non-indwelling bladder catheter (e.g., straight catheterization for residual urine)	Content matter expert
36481	Central venous catheters	Percutaneous portal vein catheterization by any method	Content matter expert
43246	Gastrostomy feeding and care	Upper gastrointestinal endoscopy including esophagus, stomach, and either the duodenum and/or jejunum as appropriate; with directed placement of percutaneous gastrostomy tube	Content matter expert
43750	Gastrostomy feeding and care	Change of gastrostomy tube, percutaneous, without imaging or endoscopic guidance	Content matter expert
43760	Gastrostomy feeding and care	Change of gastrostomy tube, percutaneous, without imaging or endoscopic guidance	Content matter expert
43761	Gastrostomy feeding and care	Repositioning of a naso- or orogastric feeding tube, through the duodenum for enteric nutrition	Content matter expert
43830	Gastrostomy feeding and care	Gastrostomy, open; without construction of gastric tube (e.g., Stamm procedure) (separate procedure)	Content matter expert

Table D-3. School Nurse Procedure Codes (Cont'd)

CPT/HCPCS	Short Description	Long Description	Source
S5125	Misc. Care Services - Ostomy, Ventilator, etc.	Attendant care services; per 15 minutes	Content matter expert
J3535	Inhaler medication	Drug administered through a metered dose inhaler	Content matter expert
90783	Injection, ia	Injection of medication	Content matter expert
90782	Injection, sc/im	Injection of medication	Content matter expert
90784	Injection, iv	Injection of medication	Content matter expert
90788	Injection of antibiotic	Injection of medication	Content matter expert
T1503	Med admin, not oral/inject	Administration of medication, other than oral and/or injectable, by a health care agency/professional, per visit	Content matter expert
S5035	HIT routine device maint	Home infusion therapy, routine service of infusion device (e.g., pump maintenance)	Content matter expert
T1502	Medication admin visit	Administration of oral, intramuscular and/or subcutaneous medication by health care agency/professional, per visit	Content matter expert

Table D-3. School Nurse Procedure Codes (Cont'd)

CPT/HCPCS	Short Description	Long Description	Source
H0033	Oral medication administration, direct observation	Oral medication administration, direct observation	Content matter expert
G0154	HHCP-svs of RN, each 15 min	Direct skilled nursing services of a licensed nurse (LPN or RN) in the home health or hospice setting, each 15 minutes	Content matter expert
S9124	Nursing care, in the home	Nursing care, in the home; by licensed practical nurse, per hour	Content matter expert
T1031	LPN home care per diem	Nursing care, in the home, by licensed practical nurse, per diem	Content matter expert
T1030	RN home care per diem	Nursing care, in the home, by registered nurse, per diem	Content matter expert
S9123	Nursing care in home RN	Nursing care, in the home; by registered nurse, per hour (use for general nursing care only, not to be used when CPT codes 99500–99602 can be used)	Content matter expert

Source: California Health Benefits Review Program, 2014.

Note: * Content matter expert: Dian Baker, CSU, Sacramento.

Appendix E: Information Submitted by Outside Parties

In accordance with CHBRP policy to analyze information submitted by outside parties during the first two weeks of the CHBRP review, the following parties chose to submit information.

No information was submitted by interested parties for this analysis.

For information on the processes for submitting information to CHBRP for review and consideration please visit: www.chbrp.org/requests.html.

REFERENCES

- Adler NE, Boyce WT, Chesney MA, et al. Socioeconomic inequities in health: no easy solution. *JAMA*. 1993;269:3140-3145.
- Allen G. The impact of school nurses on student attendance. *Journal of School Nursing*. 2003;19:225-231.
- American Academy of Pediatrics (AAP); Committee on School Health. Guidelines for the administration of medication in school. *Pediatrics*. 2003;112(Pt 1):697- 699.
- American Academy of Pediatrics (AAP) Council on School Health; Magalnick H, Mazyck D. Role of the school nurse in providing school health services. *Pediatrics*. 2008;121:1052-1056.
- American Nurses Association (ANA)/National Association of School Nurses. *Scope and Standards of Practice: School Nursing*. 2nd ed. Nursebooks.org. Silver Spring, MD: American Nurses Association; 2011.
- Baker D, Davis-Alldritt L, Hebbeler K. Children With Special Health Care Needs: Lost at School? Fact Sheet. Sacramento, CA: Sacramento State School of Nursing; 2014.
- The Baltimore Student Attendance Campaign and Elev8 Baltimore. State of Chronic Absenteeism and School Health: A Preliminary Review for the Baltimore Community. April 2012. Available at: www.elev8baltimore.org/site/wp-content/uploads/2012/04/Absenteeism-and-School-Health-Report.pdf. Accessed May 23, 2014.
- Bartholomew LK, Sockrider MM, Abramson SL, et al. Partners in school asthma management: evaluation of a self-management program for children with asthma. *Journal of School Health*. 2006;76:283-290.
- Basch CE. *Healthier Students Are Better Learners: A Missing Link in School Reforms to Close the Achievement Gap*. Equity Matters: Research Review No. 6. New York, NY: Teachers College, Columbia University; 2010.
- Bloom B, Cohen RA, Freeman G. Summary Health Statistics for U.S. Children: National Health Interview Survey, 2010. Vital and Health Statistics Series 10, Number 250. Hyattsville, MD: National Center for Health Statistics; 2011. Available at: www.cdc.gov/nchs/data/series/sr_10/sr10_250.pdf. Accessed May 22, 2014.
- Bonaiuto MM. School nurse case management: achieving health and educational outcomes. *Journal of School Nursing*. 2007;23:202-209.
- Brey L, Sexton C, Loucks K. Breaking the Code: ICD, CPT, HCPCS, DSM, E&M, EPF, SF, EI-MH [PowerPoint presentation]. Presented at: North Carolina School Community Health Alliance 2010 Annual Conference. Available at: http://ncscha.org/uploads/NCSCCHA_Breaking_the_Code_Workshop_.pdf. Accessed April 17, 2014.
- Button JW, Rienzo BA. *The Politics of Youth, Sex, and Health Care in American Schools*. New York, NY: Haworth Press; 2002.

- California Department of Education (CDE). Educational Demographics Unit. Statewide Enrollment by Ethnicity, 2012-2013. 2013a. Available at <http://dq.cde.ca.gov/dataquest/EnrollEthState.asp?Level=State&TheYear=2012-13&cChoice=EnrollEth1&p=2>. Accessed May 15, 2014.
- California Department of Education (CDE). Data Reporting Office. Selected Statewide Data for the Year 2012-13. 2013b. Available at <http://dq.cde.ca.gov/dataquest/Cbeds1.asp?FreeLunch=on&PctEL=on&PctHisp=on&PctBlack=on&PctAm=on&PctAsian=on&PctFil=on&PctPac=on&PctWhite=on&PctTwo=on&PctNone=on&cChoice=StatProf1&cYear=2012-13&cLevel=State&cTopic=Profile&myTimeFrame=S&submit1=Submit>. Accessed June 6, 2014.
- California Department of Education (CDE). Health Services & School Nursing. 2014. Available at: www.cde.ca.gov/ls/he/hn/. Accessed May 14, 2014.
- California Department of Health Care Services (DHCS). LEA Medi-Cal Billing Option Program: Enrollment Trend Analysis: Fiscal Years 1999 - 00 to 2011 - 12. January 2014a. Available at: www.dhcs.ca.gov/provgovpart/Documents/ACLSS/LEA/Paid%20Claims%20Data/FY%2011-12%20LEA%20Enrollment%20Trends.pdf. Accessed May 12, 2014.
- California Department of Health Care Services (DHCS). *Local Education Agency (LEA): A Provider's Guide*. May 2014b. Available at: www.dhcs.ca.gov/provgovpart/Documents/ACLSS/Manuals/LEA%20Manual/LEAProviderManual5-2014.pdf. Accessed May 22, 2014.
- California Diabetes Program. 2012 California Diabetes Program Fact Sheet. Diabetes Information Resource Center (DIRC), California Department of Public Health. March 2012. Available at: www.caldiabetes.org/files.cfm?filesID=899nn. Accessed May 10, 2014. California HealthCare Foundation.
- California HealthCare Foundation (CHCF). California Health Care Almanac: Medi-Cal facts and figures: a program transforms. May 2013. Available at: <http://www.chcf.org/~media/MEDIA%20LIBRARY%20Files/PDF/M/PDF%20MediCalFactsAndFigures2013.pdf>. Accessed June 9, 2014.
- California Health Interview Survey (CHIS). Los Angeles, CA: UCLA Center for Health Policy Research; 2009. Available at: <http://ask.chis.ucla.edu>. Accessed May 2, 2014.
- California Health Interview Survey (CHIS).. Los Angeles, CA: UCLA Center for Health Policy Research; 2011. Available at: <http://ask.chis.ucla.edu>. Accessed May 2, 2014.
- California Healthy Kids Survey, California Department of Education (Safe and Healthy Kids Program Office) and WestEd (Health and Human Development Department) (CHKS), 2011. Available at: <http://chks.wested.org>, accessed June 5, 2014.
- Canham D, Bauer L, Concepcion M, et al. An audit of medication administration: a glimpse into school health offices. *Journal of School Nursing*. 2007;23:21-27.
- Centers for Disease Control and Prevention (CDC). National Center for Chronic Disease Prevention and Health Promotion, Division of Population Health. Epilepsy: Frequently Asked Questions. 2011. Available at: www.cdc.gov/epilepsy/basics/faqs.htm#4. Accessed June 6, 2014.

- Chernew M, Cutler M, Keenan PS. Increasing health insurance costs and the decline in insurance coverage. *Health Services Research*. 2005;40:1021-1039.
- Child and Adolescent Health Measurement Initiative (CAHMI). Data Resource Center for Child and Adolescent Health, Data Snap Shots. 2009/10 National Survey of Children With Special Health Needs: California Profile. 2013. Available at: www.cshcndata.org/browse/snapshots/cshcn-profiles?rpt=9&geo=6. Accessed May 6, 2014.
- Costante CC. School health nursing: framework for the future, part I. *Journal of School Nursing*. 2001;17:3-11.
- Dabelea D, Mayer-Davis EJ, Saydah S, et al., on behalf of the SEARCH for Diabetes in Youth Study. Prevalence of type 1 and type 2 diabetes among children and adolescents from 2001 to 2009. *JAMA*. 2014;311:1778-1786.
- Dryfoos J. New approaches to the organization of health and social services in schools. In: Allensworth D, Lawson E, Nicholson L, Wyche J, eds. *Schools and Health: Our Nation's Investment*. Washington, DC: National Academy Press; 1997:365-415.
- Ekers D, Murphy R, Archer J, Ebenezer C, Kemp D, Gilbody S. Nurse-delivered collaborative care for depression and long-term physical conditions: a systematic review and meta-analysis. *Journal of Affective Disorders*. 2013;149:14-22.
- Engelke MK, Guttu M, Warren MB. Defining, delivering, and documenting the outcomes of case management by school nurse. *Journal of School Nursing*. 2009;25:417-426.
- Engelke MK, Swanson M, Guttu M. Process and outcomes of school nurse case management for students with asthma. *Journal of School Nursing*. 2014;30:196-205.
- Ficca M, Welk D. Medication administration practices in Pennsylvania schools. *Journal of School Nursing*. 2006;22:148-155.
- Fleming R. Use of the school nurse services among poor ethnic minority students in the urban Pacific Northwest. *Public Health Nursing*. 2011;28:308-316.
- Flores G, Committee On Pediatric Research. Technical report: racial and ethnic disparities in the health and health care of children. *Pediatrics*. 2010;125:e979-e1020.
- Foster LS, Keele R. Implementing an over-the-counter medication administration policy in an elementary school. *Journal of School Nursing*. 2006;22:108-113.
- 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.
- Gonzalez D. Memorandum: Registered Nurse Shortage Area Update. May 3, 2013. Sacramento, CA: Office of Statewide Health Planning and Development; 2013.
- Guttu M, Engelke MK, Swanson M. Does the school nurse-to-student ratio make a difference? *Journal of School Health*. 2004;74:6-9.

- Hadley J. The effects of recent employment changes and premium increases on adults' insurance coverage. *Medical Care Research and Review*. 2006;63:447-476.
- Idaho Department of Health & Welfare (IDHW). School-Based Services Codes — Idaho Medicaid. 2013. Available at: <http://healthandwelfare.idaho.gov/Portals/0/Providers/Medicaid/SBSWebTable.pdf>. Accessed April 17, 2014.
- Izquierdo R, Morin PC, Bratt K, et al. School-centered telemedicine for children with type 1 diabetes mellitus. *Journal of Pediatrics*. 2009;155:374-379.
- Joo JY, Huber DL. An integrative review of nurse-led community-based management effectiveness. *International Nursing Review*. 2013. 61:14-24.
- Kaplan GA, Haan NM, Syme SL, et al. Socioeconomic status and health. In: Amer RW, Dull HB, eds. *Closing the Gap: The Burden of Unnecessary Illness*. New York, NY: Oxford University Press; 1987.
- Kamei SA. *The Health of California's School Children: A Case of State Malpractice*. February 2009. San Diego, CA: Children's Advocacy Institute, University of San Diego School of Law; 2009. Available at: www.caichildlaw.org/Misc/SchoolNurseReport_Web.pdf. Accessed May 16, 2014.
- Keleher H, Parker R, Abdulwadud O, Francis K. Systematic review of the effectiveness of primary care nursing. *International Journal of Nursing Practices*. 2009;15:16-24.
- Legislature Analyst Office (LAO). 2013 Cal Facts. Available at: www.lao.ca.gov/reports/2013/calfacts/calfacts_010213.aspx. Accessed May 23, 2014.
- Lucile Packard Foundation for Children's Health. Ratio of Students to Pupil Support Personnel, by Type of Personnel. 2012. Available at: www.kidsdata.org/topic/126/pupilsupportpersonnel-type/table#fmt=1096&loc=2,127,347,1763,331,348,336,171,321,345,357,332,324,369,358,362,360,337,327,364,356,217,353,328,354,323,352,320,339,334,365,343,330,367,344,355,366,368,265,349,361,4,273,59,370,326,333,322,341,338,350,342,329,325,359,351,363,340,335&tf=67&ch=280&sortType=asc. Accessed May 14, 2014.
- Lee LE, Ho H, Lorber E, Fratto J, Perkins S, Cieslak PR. Vaccine-era varicella epidemiology and vaccine effectiveness in a public elementary school population, 2002-2007.. *Pediatrics*. 2008;121: e1548.
- Levy M, Heffner B, Stewart T, Beeman G. The efficacy of asthma case management in an urban school district in reducing school absences and hospitalizations for asthma. *Journal of School Health*. 2006;76:320-324.
- Maughan E. The impact of school nursing on school performance: a research synthesis. *Journal of School Nursing*. 2003;19:163-171.
- McCarthy AM, Kelly MW, Johnson S, et al. Changes in medications administered in schools. *Journal of School Nursing*. 2006;22:78-83.
- McCarthy AM, Kelly MW, Reed D. Medication administration practices of school nurses. *Journal of School Health*. 2000;70:371-376.

- Moricca ML, Grasska MA, Marthaler MB, Morphew T, Weismuller PC, Galant SP. School asthma screening and case management: attendance and learning outcomes. *Journal of School Nursing*. 2012;29:104-112.
- Narciso HE, Pathela P, Morgenthau BM, et al. Description of a large urban school-located 2009 pandemic H1N1 vaccination campaign, New York City 2009-2010. *Journal of Urban Health*. 2012;89:317-328.
- National Association of School Nurses (NASN). Issue Brief: School Health Nursing Services Role in Health Care: Role of the School Nurse. Silver Spring, MD: National Association of School Nurses; 2002.
- National Association of School Nurses (NASN), Durant BV, Gibbons LJ, Poole C, Suessman M, Wyckoff L. Position statement: case load assignments. *NASN School Nurse*. 2011;26:49-51.
- National Diabetes Information Clearing House (NDIC). National Diabetes Statistics, 2011: Racial and Ethnic Differences in Diagnosed Diabetes. February 2011. Available at <http://diabetes.niddk.nih.gov/dm/pubs/statistics/#Racial>. Accessed June 6, 2014.
- Newacheck PW. Poverty and childhood chronic illness. *Archives of Pediatric and Adolescent Medicine*. 1994;148:1143-1449.
- Newacheck PW, Starfield B. Morbidity and use of ambulatory care services among poor and on poor children. *American Journal of Public Health*, 1988;78:927-933.
- Pennington N, Delaney E. The number of students sent home by school nurses compared to unlicensed personnel. *Journal of School Nursing*. 2008;24:290-297.
- Robert Wood Johnson Foundation. School Nurses: Keeping Children Healthy and Ready to Learn.. August 18, 2010. Princeton, NJ: Robert Wood Johnson Foundation; 2010.
- Rodriguez E, Rivera DA, Perlroth D, et al. School nurses' role in asthma management, school absenteeism, and cost savings: a demonstration project. *Journal of School Health*. 2013;83:842-850.
- Russ SA, Larson K, Halfon N. A national profile of childhood epilepsy and seizure disorder. *Pediatrics*. 2012;129:256-264.
- Smith R, Sherrod J. School Nurses and Student Absenteeism: The Role of School Nurse Staffing Levels in NC's Efforts to Turn Around Low-Performing Schools. Financial and Business Services Internship Program. Project 7.3. August 2013. North Carolina State Board of Education. Available at: www.ncpublicschools.org/docs/intern-research/reports/nursestudent.pdf. Accessed May 20, 2014.
- Solum L. Ethical problems experienced by school nurses. *Journal of School Nursing*. 2003;19:330-337.
- Starfield B. Child health care and social factors: poverty, class, race. *Bulletin of the New York Academy of Medicine*. 1989;65:299-306.

- Starfield B. Social, economic, and medical care determinants of children's health. In: Stein R, ed. *Health Care for Children: What's Right, What's Wrong, What's Next*. New York, NY: United Hospital Fund; 1997.
- Sutherland D, Hayter M. Structured review: evaluating the effectiveness of nurse case managers in improving health outcomes in three major chronic diseases. *Journal of Clinical Nursing*. 2009;18:2978-2992.
- Syme SL, Berkman LF. Social class, susceptibility and sickness. *American Journal Epidemiology*. 1976;104:1-8.
- Tappenden P, Campbell F, Rawdin A, Wong R, Kalita N. The clinical effectiveness and cost-effectiveness of home-based, nurse-led health promotion for older people: a systematic review. *Health Technology Assessment*. 2012;16:1-72.
- Telljohann SK, Price JH, Dake JA, Durgin J. Access to school health services: differences between full-time and part-time school nurses. *Journal of School Nursing*. 2004a;20:176-181.
- Telljohann SK, Dake JA, Price JH. Effect of full-time versus part-time school nurses on attendance of elementary students with asthma. *Journal of School Nursing*. 2004b;20:331-334.
- U.S. Department of Health and Human Services (DHHS). Healthy People 2020 Summary of Objectives. Washington DC: U.S. Department of Health and Human Services. Available at: www.healthypeople.gov/2020/topicsobjectives2020/pdfs/EducationalPrograms.pdf. Accessed May 18, 2014.
- Washington State Health Care Authority (WSHCA). *Medicaid Provider Guide: School-Based Health Care Services for Children in Special Education*. Chapter 182-537 WAC. January 2014. Available at: www.hca.wa.gov/medicaid/billing/documents/guides/schoolbasedhealthcareservices_bi.pdf. Accessed April 17, 2014.
- Weismuller PC, Grasska MA, Alexander M, White CG, Kramer P. Elementary school nurse interventions: attendance and health outcomes. *Journal of School Nursing*. 2007;23:111-118.
- Wise PH, Kotelchuck M, Wilson ML, Mills M. Racial and socioeconomic disparities in childhood mortality in Boston. *New England Journal of Medicine*. 1985;313:360-366.
- Wyman LL. Comparing the number of ill or injured students who are released early from school by school nursing and nonnursing personnel. *Journal of School Nursing*. 2005;21:350-355.
- Zaiger DS. School nursing services: the early years. *Journal of School Nursing*. 2000;16:11-19.

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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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