

California Health Benefits Review Program

Executive Summary

Analysis of Senate Bill 799:

Colorectal Cancer: Genetic Testing and Screening

A Report to the 2013-2014 California Legislature

June 7, 2013



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EXECUTIVE SUMMARY

California Health Benefits Review Program Analysis of Senate Bill 799

The California Senate Committee on Health requested on April 9, 2013, that the California Health Benefits Review Program (CHBRP) conduct an evidence-based assessment of the medical, financial, and public health impacts of Senate Bill (SB) 799: Colorectal Cancer: Genetic Testing and Screening. In response to this request, CHBRP undertook this analysis pursuant to the provisions of the program's authorizing statute.¹

In 2014, CHBRP estimates that approximately 25.9 million Californians (67%) will have health insurance that may be subject to a health benefit mandate law passed at the state level.² Of the rest of the state's population, a portion will be uninsured (and so 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.

Uniquely, California has a bifurcated system of regulation for health insurance subject to state benefit mandates. The California Department of Managed Health Care (DMHC)³ 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,⁴ which offer benefit coverage to their enrollees through health insurance policies.

All DMHC-regulated plans and CDI-regulated policies would be subject to SB 799. Therefore, the mandate would affect the health insurance of approximately 25.9 million enrollees (67% of all Californians).

Developing Estimates for 2014 and the Effects of the Affordable Care Act

The Affordable Care Act (ACA)⁵ is expected to dramatically affect health insurance and its regulatory environment in California, with many changes becoming effective in 2014. It is important to note that CHBRP's analysis of proposed benefit mandate bills typically address the marginal 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 marginal effects are presented in this report. Because expanded enrollment will not occur until January 2014, CHBRP relies on projections from the California

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

² CHBRP's estimates are available at: www.chbrp.org/other_publications/index.php.

³ The California Department of Managed Health Care (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.

⁴ The California Department of Insurance (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.

⁵ 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).

Simulation of Insurance Markets (CalSIM) model⁶ to help estimate baseline enrollment for 2014. From this projected baseline, CHBRP estimates the marginal impact of benefit mandates proposed that could be in effect after January 2014.

Bill-Specific Analysis of SB Bill 799

SB 799 addresses “genetic testing for hereditary nonpolyposis colorectal cancer (HNPCC).” Based on reviews of the clinical literature and content expert consultation, this analysis uses the term Lynch syndrome (LS) in place of HNPCC. In 2004, the Mallorca Group, a meeting of hereditary cancer experts, determined that LS was a more appropriate term than HNPCC. Although much of the clinical literature had switched from LS to HNPCC, much of the newer clinical literature again refers to LS. Therefore, CHBRP uses LS when referring to the mismatch repair gene mutations that contribute to the increased risk for hereditary cancers, including but not limited to colorectal cancer (CRC).

LS is the most common known cause of hereditary CRC. About 3% of CRCs are caused by LS. LS is defined as a gene mutation occurring in mismatch repair genes MLH1, MSH2, MSH6, or PMS2, which means that first-degree relatives (including children and siblings) have a 50% chance of inheriting the condition from the parent who carries the gene mutation, thereby becoming carriers themselves. When adjusted for stage of disease, the CRC mortality rate associated with LS is lower than the rate for sporadic (non-hereditary) CRC. Scientists have yet to explain the LS paradox of an increased risk for cancer with lower associated mortality rates.

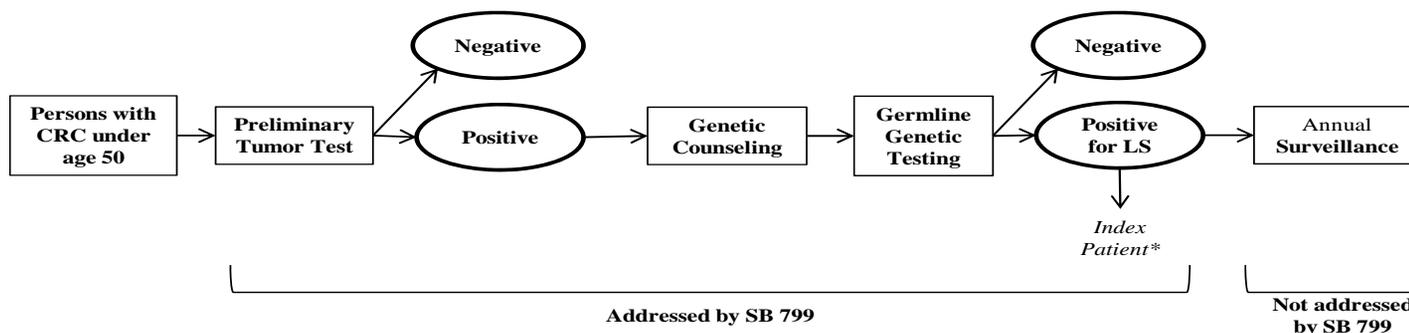
For ease of reading, this report refers to persons diagnosed with colorectal cancer as “persons with CRC” and will refer to persons who have tested positive for Lynch syndrome as “LS+.” For this report, in order to align with SB 799, an “index patient” is a person with CRC who is also LS+.

SB 799 would place requirements on DMHC-regulated plans and CDI-regulated policies. SB 799 would require plans and policies to cover genetic testing for LS for two populations: (1) enrollees younger than 50 years with CRC; and (2) any enrollee who is the child or sibling of an index patient (person with CRC and LS+). SB 799 would also require plans and policies to cover annual CRC screenings, including colonoscopies, for a third population: (3) Any LS+ enrollee who is the child or sibling of an index patient. As described in Figure 1, SB 799’s requirements address particular steps (for particular populations) in the diagnosis and management of LS, as well as CRC-related screening.

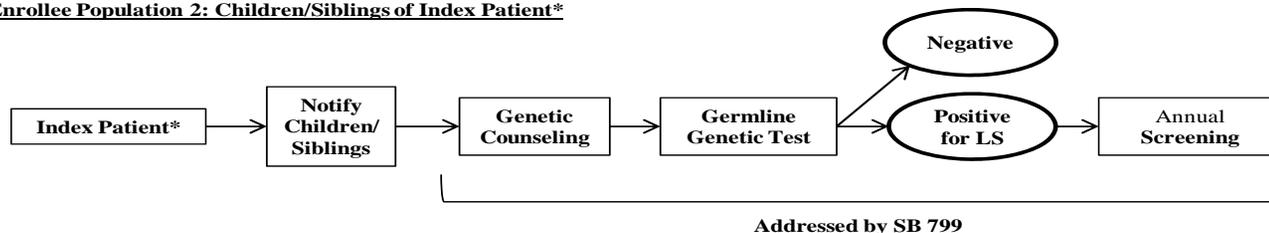
⁶ CalSIM was developed jointly and is operated by the University of California, Los Angeles, Center for Health Policy Research and the University of California, Berkeley, Center for Labor Research. The model estimates the impact of provisions in the ACA on employer decisions to offer, and individual decisions to obtain, health insurance.

Figure 1. SB 799 and the Diagnosis and Management of Lynch Syndrome

Enrollee Population 1: Persons with CRC



Enrollee Population 2: Children/Siblings of Index Patient*



Source: California Health Benefits Review Program, 2013.

Notes: (*) “Index Patient” is defined as an individual with colorectal cancer (CRC) who has Lynch syndrome (LS). The index patients in “Enrollee Population 2” are inclusive of index patients identified in Population 1 and other possible index patients (e.g., patients living out of state or with insurance not subject to SB 799).

Key: CRC=colorectal cancer; LS=Lynch syndrome.

CHBRP's reviews of the clinical literature, clinical guidelines, and content expert consultation indicated that genetic testing generally includes genetic counseling. For this reason, CHBRP has assumed that SB 799's reference to covering "genetic testing" includes genetic counseling.

Because CRC-related screening (testing for persons at risk but not diagnosed) does not include CRC-related surveillance (testing for reoccurrence of cancer in persons with CRC), CHBRP has assumed that SB 799 does not address surveillance.

Interaction with other California requirements

California law⁷ requires DMHC-regulated plans and CDI-regulated policies to cover medically accepted cancer screening tests. Although this benefit mandate requires coverage for CRC screening, at this time it is unclear whether genetic testing for LS or annual CRC screening for any enrollee who is LS+ and whose parent or sibling is both LS+ and diagnosed with CRC are considered "medically accepted cancer screening tests." Therefore, for the purposes of this analysis CHBRP has assumed that the provisions in SB 799 are not already provided for under current California law.

Medical Effectiveness

The use of genetic testing to detect LS among patients with CRC and their family members has been identified as a strategy to improve the clinical management of LS. National organizations and expert groups have developed guidelines that recommend genetic testing begin with testing the CRC patient's tumor with less expensive preliminary genetic tests, such as microsatellite instability (MSI) and immunohistochemistry (IHC) tests. CRC patients who test positive on these preliminary tumor tests move onto the more expensive germline genetic tests, such as DNA sequencing, which can confirm the diagnosis of LS. Once a CRC patient has been diagnosed with LS, their relatives could be notified and offered genetic counseling and genetic testing. Relatives who test LS+ could then be screened for CRC using colonoscopies. Screening for CRC with colonoscopy can reduce mortality and morbidity because lesions can be detected at a precancerous stage and removed before they become cancerous. The medical effectiveness review for SB 799 examined the evidence for this chain-of-event strategy by addressing the following questions:

- What is the effectiveness of genetic testing to identify LS (e.g., clinical validity)?
- What is the take-up rate⁸ of genetic counseling and genetic testing for family members of persons with LS?
- What is the effectiveness of frequent colonoscopy screening among LS+ family members on CRC morbidity and CRC-related mortality?
- What is the take-up rate for frequent colonoscopy screening among children and siblings of persons diagnosed with LS?
- What are harms associated with genetic testing and colonoscopy screening?

⁷ California Health & Safety Code (1367.665) and California Insurance Code (10123.20)

⁸ Take-up rate refers to the proportion of persons who receive a treatment among those who were eligible to receive such treatment.

Methodological Considerations

In the majority of studies reviewed on the impact of colonoscopy screening on CRC morbidity and mortality, persons were recruited from LS surveillance programs where study participants received a type of active reminder to receive ongoing colonoscopies (e.g., clinicians received reminders to contact patients when colonoscopies were due). The findings from these studies may differ from population-based estimates of LS+ persons who are not enrolled in a surveillance registry with reminder notifications.

Over the years, there have been rapid changes in knowledge about genetics and genetic testing technology. Findings from older studies on the clinical validity of the preliminary tumor test may vary from newer studies due in part to variations in tests available at that time.

The criteria used for the identification of LS has also changed over the years. Across current national guidelines and expert groups, LS refers to persons (CRC patients and family members) who have a genetic predisposition to CRC due to germline mismatch repair gene mutations; genetic tests are currently used for identifying LS. Prior to the advent of genetic testing, LS was identified by clinical personal information and a family history of cancer. Given this change in the clinical definition of LS, CHBRP Medical Effectiveness focuses on the most current literature that clinically defines LS as a germline mismatch repair gene mutation.

CHBRP terminology for grading evidence of medical effectiveness

CHBRP uses the following terms to characterize the strength of the evidence it identifies regarding the medical effectiveness of a treatment for which a bill would mandate coverage.

- Clear and convincing evidence
- Preponderance of evidence
- Ambiguous/conflicting evidence
- 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 are of high quality and consistently find that the treatment is either effective or not effective.

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.

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 of equal quality 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 are not of high quality. It does not indicate that a treatment is not effective.

Study Findings

- The **preponderance of evidence** from systematic reviews on the clinical validity of preliminary genetic tests, MSI, IHC, and BRAF⁹ suggests that these preliminary tumor tests can accurately identify most persons with CRC who would benefit from germline genetic testing.
- The **preponderance of evidence** indicates that approximately half of family members of patients with CRC and LS who are offered genetic counseling obtain counseling, and the take-up rate for genetic testing following genetic testing ranged from 79% in a single retrospective study to 95% for a systematic review of six studies.
- There was **insufficient evidence** to assess the effectiveness of annual colonoscopy screening among LS+ family members on CRC morbidity among LS+ family members. The evidence from one nonrandomized controlled study indicates colorectal screening at 3-year intervals leads to a 56% reduction in CRC among LS+ persons.
- There was **insufficient evidence** to assess the effectiveness of annual colonoscopy screening on CRC-related mortality among LS+ family members. The **preponderance of evidence** indicates that colonoscopy screening at 2- to 3-year intervals reduce CRC-related mortality. Evidence from two studies that compared CRC mortality rates among persons who received frequent colonoscopies to persons who did not receive them found that screening at 2- and 3-year intervals is associated with a reduction in CRC mortality rates of 65% to 81%.
- The **preponderance of evidence** indicates that the take-up rate for colonoscopies within 2 to 3 years of diagnosis of LS is approximately 70% to 100%.
- The **preponderance of evidence** suggests that colonoscopies are associated with small increases in risk for bleeding and perforation of the colon. Findings from studies of the impact of frequent colonoscopies on mental health found no harmful emotional impact after receiving colonoscopies.
- The **preponderance of evidence** suggests that genetic counseling reduces anxiety about genetic testing and that there is no long-term difference in psychological distress between persons who are tested and found to have LS and those who are found not to have LS.

Benefit Coverage, Utilization, and Cost Impacts

SB 799 would require DMHC-regulated plans and CDI-regulated policies to cover genetic testing for LS for two populations: (1) enrollees younger than 50 years with CRC and (2) any enrollee who is the child or sibling of an index patient (a person with CRC and LS+). Utilization of genetic testing for LS in this section takes into account expected use of these tests by both populations. In this analysis, CHBRP assumes that counseling would precede testing.

SB 799 would also require plans and policies to cover annual CRC screening, including colonoscopy for a third population: (3) LS+ enrollees who are the children or siblings of an index patient. For this analysis, CHBRP has focused on utilization of colonoscopy because it is the CRC screening test recommended for LS+ persons.

⁹ MSI refers to the microsatellite instability test, IHC refers to the immunohistochemistry test, and BRAF refers to testing for the BRAF gene.

The benefit coverage, utilization, and cost impacts expected for SB 799 are presented in Table 1.

Coverage impacts

- Although 96.0% of enrollees in DMHC-regulated plans and CDI-regulated policies have coverage for genetic counseling and testing for LS, only 57.1% have benefit coverage compliant with SB 799. The other 42.9% of enrollees are in plans or policies without the relevant benefit coverage or with utilization management criteria not compliant with SB 799. For example, the enrollee might have to be related to two index patients. SB 799 would require counseling/testing to be covered for enrollees related to only one index patient. Postmandate, all enrollees would have SB 799-compliant benefit coverage.
- Although 100% of enrollees in DMHC-regulated plans and CDI-regulated policies have coverage for CRC screening, including colonoscopy, only 79.9% have benefit coverage compliant with SB 799. The other 20.1% of enrollees are in plans or policies with utilization management criteria not compliant with SB 799. For example, LS+ enrollees might be covered for biennial (alternate year) but not annual colonoscopy. SB 799 would require that LS+ enrollees who are the children or siblings of an index patient be covered for annual colonoscopy. Postmandate, all enrollees would have SB 799-compliant benefit coverage.

Utilization impacts

- Because reviewed utilization management criteria regarding LS-related genetic counseling testing for enrollees younger than 50 years with CRC is compliant with SB 799, CHBRP estimates no postmandate increase in genetic counseling or testing for this population.
- Because, in order to become compliant with SB 799, some reviewed utilization management criteria would have to change in regard to LS-related genetic counseling and testing for enrollees who are the children or siblings of an index patient, CHBRP expects a postmandate increase in utilization among this population. Reviewed examples of noncompliant utilization management criteria are broad; premandate, CHBRP estimates that four of five of the enrollees described by SB 799 would have been covered for LS-related genetic counseling and testing. Postmandate, CHBRP estimates that an additional 420 sessions of genetic counseling and an additional 692 genetic tests among adult enrollees would be covered. Because sequential enrollee expenses have a greater effect on the last step of a multi-step process, decreased enrollee expenses have a greater effect on utilization of the last step (testing) than on the first step (counseling).
- Because, in order to become compliant with SB 799, some reviewed utilization management criteria would have to change in regard to annual colonoscopy for LS+ enrollees who are the children or siblings of an index patient, CHBRP expects a postmandate increase in utilization among this population. Reviewed examples of noncompliant utilization management criteria are broad, covering biennial (alternate year) colonoscopy; premandate, CHBRP estimates that four of five of the enrollees described by SB 799 would have been covered for colonoscopy. Postmandate, CHBRP estimates that an additional 75 colonoscopies among adult enrollees would be covered. In later years, the number of additional screening colonoscopies may increase further,

since SB 799 would mandate coverage for annual screening, and some plans previously only covered biennial (alternate year) colonoscopy screening for this population.

Cost impacts

- SB 799 would increase total net annual expenditures by \$637,000, or 0.0004%, for the insured population. This is due to a \$774,000 total increase in health insurance premiums and a \$95,000 increase in enrollee out-of-pocket expenses for covered benefits (copayments, etc), partially offset by a reduction in enrollee expenses for noncovered benefits (\$232,000).
- Increases in insurance premiums if SB 799 were enacted have some variation by market segment. The increases range from 0.0000% for California Public Employees' Retirement System Health Maintenance Organizations (CalPERS HMOs) to 0.0034% for the plans enrolling beneficiaries of the former Healthy Families Program.

Public Health Impacts

CHBRP estimates that, in the year following enactment of SB 799, about 700 additional enrollees would use genetic testing for LS and about 75 additional enrollees would undergo a screening colonoscopy.

- *Overall public health impact:* CHBRP projects that SB 799 would increase the use of genetic counseling and testing for LS and annual colonoscopies; however, CHBRP projects no measurable public health impact (at the population level) in the first year, postmandate, due to the small number of additional enrollees who would use mandate-relevant services.
 - At the individual-level, SB 799 would likely yield health and quality-of-life improvements for the additional enrollees who would use mandate-relevant services. Genetic testing for relatives of LS+ persons has many benefits, including reliably differentiating between family members who are LS mutation carriers and LS noncarriers, who would not require frequent colorectal screening. Additionally, for LS+ persons, screening colonoscopy at recommended intervals can be expected to reduce mortality and morbidity over time (because lesions can be detected at a precancerous stage and removed before they become cancerous).
 - *Premature death:* Although mortality may be decreased for LS+ enrollees through frequent colonoscopy screening, CHBRP is unable to quantify a reduction in mortality due to a lack of relevant literature. However, CHBRP concludes that increased screening colonoscopy among these enrollees would likely contribute to a reduction in CRC deaths in California beyond the first year, postmandate.
 - *Potential harms:* The risk of psychological harm from genetic testing or physical harms from colonoscopy are small compared to the health advantages conferred through early identification of LS status and subsequent CRC screening to identify precancerous lesions or early-stage cancer.

- *Financial burden:* CHBRP estimates that SB 799 would reduce the net financial burden (enrollee expenses for uncovered services) by \$137,000 in the first year, postmandate, for the enrollees who use genetic testing and enrollees who use colonoscopy.
- *Gender disparities:* It is unknown whether there are gender disparities in the prevalence of LS-related CRC. CHBRP found no evidence indicating differential use of genetic counseling or testing for LS by males or females, or difference in adherence to screening colonoscopy by gender among LS carriers. CHBRP estimates that, despite SB 799 increasing use of these services and possible gender disparities in LS prevalence, the bill would have no public health impact in the first year postmandate on gender disparities due to no known gender differences in uptake of services and the small additional utilization that would result from SB 799.
- *Racial/ethnic disparities:* There are racial/ethnic disparities in the prevalence of CRC, but it is unknown whether the disparities extend to the LS-related CRCs in California. Although CHBRP estimates a small increase in uptake of genetic counseling and testing and screening colonoscopy for LS+ relatives, CHBRP is unable to estimate how these changes in the utilization might vary by race or ethnicity. In addition, any potential statewide racial/ethnic disparities in LS-related CRC morbidity and mortality are unlikely to be measurably affected, due to the small increase in utilization that would result from SB 799.
- *Economic loss:* Increased utilization of screening colonoscopy related to SB 799 among LS+ enrollees is unlikely to measurably alter the overall societal economic loss due to lost wages and lost productivity attributable to CRC.
- *Long-term impacts:* The preponderance of evidence shows that screening for LS and screening colonoscopies for LS+ persons at recommended levels are considered to be cost-effective over the long-term, resulting in increases in life-years and commonly acceptable quality-adjusted-life-year cost-effectiveness ratios. SB 799 would mandate coverage for annual colonoscopies for an increasing number of LS+ enrollees, thus reducing their risk for cancer, premature death, and associated lost productivity, but at an increased cost.

Interaction With the Federal Affordable Care Act

Below is a discussion of how SB 799 may interact with the ACA’s requirement for certain health insurance to cover “essential health benefits”¹⁰ (EHBs), as well as other ACA requirements that may interact with this proposed benefit mandate.

- Although medically accepted cancer screenings are part of EHBs, it is unclear whether genetic testing for LS or annual CRC screening for any enrollee who is LS+ and whose parent or sibling is both LS+ and diagnosed with CRC are considered “medically accepted cancer screening tests.” Therefore, it is unclear whether SB 799 would exceed EHBs.

¹⁰ Resources on EHBs and other ACA impacts are available on the CHBRP website: www.chbrp.org/other_publications/index.php.

- Although colonoscopy for average-risk persons is required to be covered without cost-sharing, neither coverage for genetic testing for LS nor annual CRC screening for any enrollee who is LS+ (and so at higher risk for CRC) and whose parent or sibling is both LS+ and diagnosed with CRC is required by the ACA's preventive services benefit mandate. Therefore, SB 799 appears to address screening not addressed by the ACA's preventive services benefit mandate.

Table 1. SB 799 Impacts on Benefit Coverage, Utilization, and Cost, 2014

	Before Mandate	After Mandate	Increase/ Decrease	Change After Mandate
Benefit coverage				
Total enrollees with health insurance subject to state-level benefit mandates (a)	25,899,000	25,899,000	0	0%
Total enrollees with health insurance subject to SB 799	25,899,000	25,899,000	0	0%
Percentage of enrollees with coverage for the mandated benefit				
Coverage for genetic testing for LS	96.0%	100.0%	4.0%	4.1%
Coverage for genetic testing for LS, compliant with SB 799	57.1%	100.0%	42.9%	75.1%
Coverage for CRC screening	100.0%	100.0%	0%	0%
Coverage for CRC screening, compliant with SB 799	79.9%	100.0%	20.1%	25.2%
Number of enrollees with coverage for the mandated benefit				
Coverage for genetic testing for LS	24,874,000	25,899,000	1,025,000	4.1%
Coverage for genetic testing for LS, compliant with SB 799	14,788,000	25,899,000	11,111,000	75.1%
Coverage for CRC screening	25,899,000	25,899,000	0	0%
Coverage for CRC screening, compliant with SB 799	20,682,000	25,899,000	5,217,000	25.2%
Utilization and cost				
Annual number of procedures				
Genetic counseling due to CRC diagnosis (b)	34	34	0	0%
Germline testing due to CRC diagnosis	34	34	0	0%
Genetic counseling due to relative w/CRC and LS+ (b)	6,627	7,047	420	6.3%
Germline testing due to relative w/CRC and LS+ (c)	6,003	6,695	692	11.5%
Colonoscopy due to LS+ (no CRC) (d)	2,025	2,100	75	3.7%
Average charge per procedure				
Genetic counseling due to CRC diagnosis (b)	\$156.77	\$156.77	\$0.00	0%
Germline testing due to CRC diagnosis	\$549.48	\$549.48	\$0.00	0%
Genetic counseling due to relative w/CRC and LS+ (b)	\$156.77	\$156.77	\$0.00	0%
Germline testing due to relative w/CRC and LS+	\$549.48	\$549.48	\$0.00	0%
Colonoscopy due to LS+ (no CRC) (d)	\$1,386.01	\$1,386.01	\$0.00	0%
Expenditures				
Premium expenditures by private employers for group insurance	\$78,385,161,000	\$78,385,496,000	\$335,000	0.0004%
Premium expenditures for individually purchased insurance	\$13,639,719,000	\$13,639,825,000	\$106,000	0.0008%

	Before Mandate	After Mandate	Increase/ Decrease	Change After Mandate
Premium expenditures by persons with group insurance, CalPERS HMOs, and Covered California (e)	\$21,272,946,000	\$21,273,043,000	\$97,000	0.0005%
CalPERS HMO employer expenditures (f)	\$4,016,233,000	\$4,016,233,000	\$0	0.0000%
Medi-Cal Managed Care Plan expenditures	\$12,480,492,000	\$12,480,705,000	\$213,000	0.0017%
Healthy Families Plan expenditures	\$667,300,000	\$667,323,000	\$23,000	0.0034%
Enrollee out-of-pocket expenses for covered benefits (deductibles, copayments, etc.)	\$14,462,198,000	\$14,462,293,000	\$95,000	0.0007%
Enrollee expenses for noncovered benefits (g)	\$232,000	\$0	-\$232,000	-100%
Total expenditures	\$144,924,281,000	\$144,924,918,000	\$637,000	0.0004%

Source: California Health Benefits Review Program, 2013.

Notes: (a) This population includes persons with privately funded (including Covered California, the state's health insurance exchange) 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) Utilization for genetic counseling is not explicitly included in SB 799, but is a guideline-recommended precursor to obtaining genetic testing. CHBRP assumes that 66.8% of enrollees have SB 799-compliant benefit coverage for genetic counseling, the same rate as for genetic testing. Utilization presented is only for persons younger than 50 years with CRC or for persons with a parent or sibling with CRC who is LS+.

(c) Sequential enrollee expenses have a greater effect on the last step of a multi-step process and so decreased enrollee expenses have a greater effect on utilization of the last step (testing) than on the first step (counseling).

(d) CHBRP estimates utilization of colonoscopy only, as that is the guideline-recommended procedure for CRC screening among nonsymptomatic persons identified as LS+. Utilization for CRC screenings only includes nonsymptomatic for CRC but LS+ children or siblings of a person who has been both diagnosed with LS and has CRC, as per the population specified in SB 799.

(e) Premium expenditures by enrollees include employee contributions to employer-sponsored health insurance, health insurance purchased through Covered California, and enrollee contributions for Medi-Cal Managed Care.

(f) Of the increase in CalPERS employer expenditures, about 58%, or \$50,000, 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, 2012. CHBRP assumes the same ratio in 2014.

(g) 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 would 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; CRC=colorectal cancer; DMHC=Department of Managed Health Care; LS=Lynch syndrome.

ACKNOWLEDGMENTS

This report provides an analysis of the medical, financial, and public health impacts of Senate Bill 799. In response to a request from the California Senate Committee on Health on April 9, 2013, the California Health Benefits Review Program (CHBRP) undertook this analysis pursuant to the program's authorizing statute.

Janet Coffman, MPP, PhD, Chris Tonner, MPH, and Gina Evans-Young, all of the University of California, San Francisco, prepared the medical effectiveness analysis. Min-Lin Fang, MLIS, of the University of California, San Francisco, conducted the literature search. Joy Melnikow, MD, MPH, Dominique Ritley, MPH, and Meghan Soulsby, MPH, all of the University of California, Davis, prepared the public health impact analysis. Shana Lavarreda, PhD, MPP, of the University of California, Los Angeles, prepared the cost impact analysis. Susan Pantely, FSA, MAAA, of Milliman, provided actuarial analysis. Content expert Emily Finlayson, MD, of the University of California, San Francisco, provided technical assistance with the literature review and expert input on the analytic approach. John Lewis, MPA, 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), a member of the CHBRP Faculty Task Force, Theodore Ganiats, MD, of the University of California, San Diego, and one of CHBRP's Task Force Contributors, Sara McMenamain, PhD, of the University of California, San Diego, 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 are available on the CHBRP website, www.chbrp.org.

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California Health Benefits Review Program Committees and Staff

A group of faculty and staff undertakes most of the analysis that informs reports by the California Health Benefits Review Program (CHBRP). The CHBRP **Faculty Task Force** comprises rotating representatives from six University of California (UC) campuses. In addition to these representatives, there are other ongoing contributors to CHBRP from UC. This larger group provides advice to the CHBRP staff on the overall administration of the program and conducts much of the analysis. The **CHBRP staff** coordinates the efforts of the Faculty Task Force, works with Task Force members in preparing parts of the analysis, and coordinates all external communications, including those with the California Legislature. The level of involvement of members of the CHBRP Faculty Task Force and staff varies on each report, with individual participants more closely involved in the preparation of some reports and less involved in others. 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. Milliman also helped with the initial development of CHBRP methods for assessing that impact.

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 and thoughtful critiques provided by the members of the National Advisory Council. However, the Council does not necessarily approve or disapprove of or endorse this report. CHBRP assumes full responsibility for the report and the accuracy of its contents.

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