California Health Benefits Review Program

Analysis of California Senate Bill SB 289
Telephonic and Electronic Patient Management

A Report to the 2015-2016 California State Legislature

April 14, 2015

CALIFORNIA
HEALTH BENEFITS REVIEW PROGRAM

Key Findings:

Analysis of California Senate Bill SB 289
Telephonic and Electronic Patient Management

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

CALIFORNIA HEALTH BENEFITS REVIEW PROGRAM

AT A GLANCE

Senate Bill SB 289 (introduced February 2015) would require health insurance carriers to cover and reimburse physicians and nonphysicians for patient-initiated evaluation and management (E/M) services for telephone, e-mail, live videoconference, and store-and-forward. Only services provided to established patients would be eligible

- **Impact on benefit coverage.** CHBRP estimates that in 2015, 11.7 million enrollees have coverage for telephone and e-mail and 19.2 million have coverage for other telehealth modalities covered by SB 289. Postmandate, all 24.6 million California enrollees with state-regulated coverage would have benefit coverage for these modalities.
- **Impact on utilization.** CHBRP estimates the share of telehealth visits to in-person visits could range from 7.4% to 29.2%. In person visits could decrease by 0.9% to 15.0% depending on patient/provider take-up of all telehealth modalities.
- **EHBs.** SB 289 does not appear to add services health insurers must cover, but affects the setting in which already-covered services are provided. Therefore, SB 289 does not appear to exceed EHBs.
- **Medical effectiveness.**
  - There is insufficient evidence to determine whether E/M services provided via telephone or e-mail are as effective as medical care provided in-person.
  - The evidence suggests that medical care provided by live videoconferencing and store-and-forward is at least as effective as medical care provided in person for those diseases and conditions studied.
- **Public health.** If enacted, patient experience would improve as physicians increase e-mail and telephone responses to patient inquiries, increased convenience, and reduce or eliminate travel times to in-person visits.
- **Long-term impacts.** Technology will continue to drive changes in telehealth. Electronic health records, online patient portals, and increased use of smart phones will increase demand for these types of services. Insurers and physicians could respond by expanding their capacity to deliver those services in a secure manner.

BILL SUMMARY

SB 289 would require state-regulated health insurance, after January 1, 2016, to cover and reimburse physicians for telephonic and electronic E/M services for established patients. If passed, SB 289 would require carriers to pay for those services provided via telephone and e-mail, live videoconferencing, and "store-and-forward," a method by which patients capture medical information and transmit that information to physicians to evaluate at a later time.

Based on SB 289's language, CHBRP limits analysis of services delivered via telephone and e-mail to cases where an established patient initiates contact with the health care provider.

Finally, SB 289 specifies that reimbursements must be equivalent in "complexity and time expenditure." CHBRP uses the American Medical Association's Current Procedural Terminology (CPT) coding descriptions for the required amount of time spent on encounters and the complexity of a patient's illness.

CONTEXT FOR BILL CONSIDERATION

What is telehealth? California law currently includes two methods of electronic communication in its definition of telehealth: live videoconferencing and store-and-forward. Although current law recognizes these two modalities as telehealth, it does not require or set standards for reimbursement. SB 289 would require reimbursement for these modalities, and would also require coverage and reimbursement for telephone and e-mail. Therefore, CHBRP analyzed the impact of SB 289 for four modalities: telephone, e-mail, live videoconferencing, and store-and-forward.

Patient interest in technology for medical transactions: A December 2014 survey of patients in the U.S. found that 64% of patients were interested in using online video. Interest in live videoconferencing with providers peaked among younger adults (74% of respondents ages 18 to

34) and declined gradually to 65% among respondents ages 55 to 64, before significantly decreasing among adults 65 and older. The survey found that 60% of respondents would rather use live videoconferencing to obtain a refill for their prescription drug rather than visit their doctor's office (American Well, 2015).

CHBRP KEY FINDINGS: INCREMENTAL IMPACT OF SB 289

Medical Effectiveness

Telephone and e-mail: There is insufficient evidence to determine whether services provided via telephone or e-mail are as effective as medical care provided in person. Further, it is unknown whether diagnoses made using these technologies are as accurate as diagnoses made during in-person visits. Studies on the effect of telephone consultations or e-mail communication on subsequent utilization are inconsistent. CHBRP notes that the absence of evidence does not mean there is no effect; it means the effect is unknown.

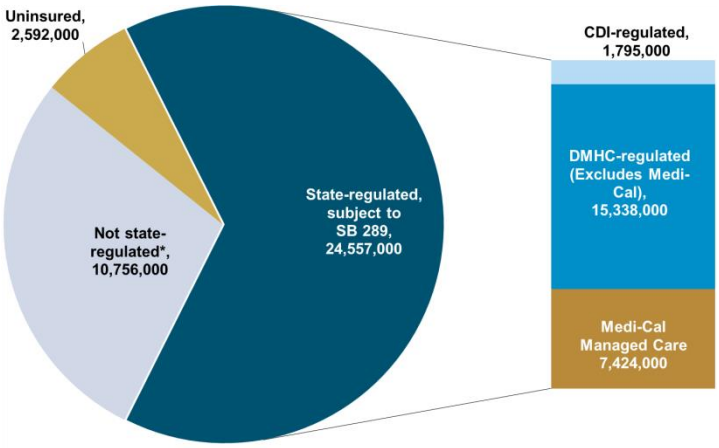
Live videoconferencing and store-and-forward: For the diseases and conditions studied, there is a preponderance of evidence that medical care provided by live videoconferencing or store-and-forward is at least as effective as medical care provided in person for both physical and mental health conditions. In particular, there is clear and convincing evidence that live videoconferencing is equivalent to in-person care in psychiatric health outcomes. The evidence also suggests that store-and-forward technology reduces wait times for specialty outpatient care.

Caveats: A major methodological limitation of the literature is simply the pace of technological change. Technology developments and use advance at a faster rate than the research literature. By the time a research study is published, the technology under study is outdated, making it difficult to draw conclusions about the medical effectiveness of current technologies. Another important limitation of the studies is the inability to disaggregate the mandated services from other interventions, such as an integrated web portal that includes emails as well as information about self-care, access to test results, and ability to refill prescriptions.

Benefit Coverage, Utilization, and Cost

SB 289 affects the health coverage of 24.6 million enrollees with state-regulated health insurance (**Figure 1**).

Figure 1. SB 289 Interaction with California Enrollees



**Not state regulated = Federally regulated health insurance, such as Medicare, veterans, or self-insured plans and thus not subject to SB 289.*

Source: California Health Benefit Review Program, 2015

Benefit coverage: Currently, 48% of enrollees have benefit coverage for telephone and e-mail and 78% of enrollees have benefit coverage for live videoconference or store-and-forward. Postmandate, 100% of enrollees with state-regulated health insurance would have benefit coverage for all four telehealth modalities.

Kaiser Permanente: CHBRP relied on data from Kaiser Permanente Northern California to estimate changes in the number of E/M visits between physicians and patients. Kaiser's experience is the only well-documented examination of the utilization of telephone and e-mail visits between physicians and patients, pre- and post-implementation of a strategy that included telephone, secure e-mail, and live videoconferencing visits (Pearl, 2014).

Data limitations: Although Kaiser's rate of telephone and e-mail use serves as a good benchmark, it may underestimate the impact of SB 289 on the adoption of all four modalities statewide.

- Kaiser does not impose cost sharing for its e-mail or telephone use. CHBRP assumes lower patient cost sharing for telehealth services, proportional to the price of the service, would occur, which

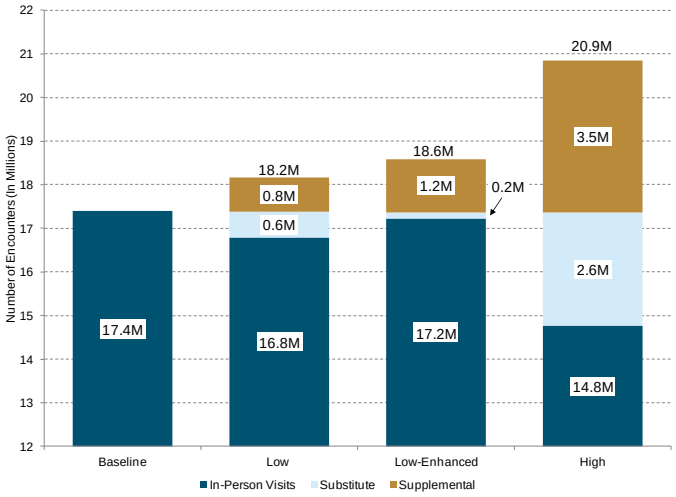
could either dampen enrollees' use of any of the four telehealth modalities, or prompt physicians to encourage enrollees to interact via a certain telehealth modality if they prove to be effective or cost efficient. Therefore, Kaiser's rate of telephone and e-mail use may not generalize to nonsalaried providers outside of an integrated HMO setting.

- Kaiser is a closed and integrated health system, equivalent to a staff-model HMO, where similar physicians' salaries should not vary whether they are providing services in person or via e-mail, telephone, or live videoconferencing. Such a system may realize savings efficiencies from the use of telephone and e-mail, whereas the impact of SB 289 on noncapitated (fee-for-service) health insurance may be more limited because the networks of providers may or may not be well-integrated enough to realize savings.

Utilization and cost estimates: CHBRP modeled multiple scenarios to provide policymakers with a range of estimates of the potential impact of SB 289 on both utilization and cost. Three scenarios presented in Figure 2 represent a range of estimates, based on how quickly physicians adopt to include telephone, e-mail, live videoconferencing, and store-and-forward into their workflow and practice. The scenarios assume a blended average of $14 cost sharing for most telephonic or electronic visits. CHBRP estimates utilization increase for both capitated and noncapitated health insurance. CHBRP recognizes that capitation rates for specific medical groups might not increase immediately to reflect any anticipated increase in the total cost to provide health services. However, to the extent CHBRP assumed an increase in the utilization of the four modalities of telehealth services, and, in particular, supplemental telehealth services, 2016 cost and premium estimates in this report assumed that capitated rates set or negotiated by insurers with providers will reflect the use of benefits, including those that may occur via telehealth.

Utilization impact: An assumption driving the push for telehealth is that it would increase access by improving efficiencies, and increase capacity to accommodate enrollees newly covered by the Affordable Care Act and rural populations. CHBRP estimates that SB 289 would result in an overall increase of between 4.5% and 21.1% patient-provider encounters, which includes both in-person and telephonic or electronic visits.

Figure 2. Impact of SB 289 on Utilization/Patient Encounters



CHBRP estimates that between 7.5% and 29.2% of all E/M visits would occur using telephone, e-mail, live videoconferencing, or store-and-forward.

"Substitute" vs. "supplemental" visits: Of the visits that would occur telephonically or electronically, CHBRP assumes 40% would be "substitute" visits — replacing existing in-person visits; and 60% would be visits that are "supplemental," or in other words, visits that would not have been provided if not for the use of telehealth, visits that were previously unreimbursed because physicians could not bill for them, new time slots made because of the increased efficiency of telephonic or electronic visits over in-person visits, or an extension of a physicians' work hours.

Public health

Health outcomes: CHBRP estimates that use of all four modes of telehealth would increase in the first year postmandate; however, CHBRP is unable to quantify the effect of SB 289 on health outcomes.

Telephone and e-mail: CHBRP found insufficient evidence to determine whether services provided via *telephone* or *e-mail* are as effective as in-person visits, with the exception of email communication for glycemic control among diabetic patients. Therefore, although telephone encounters would increase by approximately 821,000 to 3,665,000 and email communication would increase by approximately 274,000 to 1,214,000 encounters, the public health impact of SB 289 is unknown. Note that the

absence of evidence is not "evidence of no effect." It is possible that an impact — positive or negative — could result, but current evidence is insufficient to inform an estimate.

Live videoconferencing and store-and-forward: For mental health and dermatology, evidence indicates that outcomes for live videoconferencing and store-and-forward are equivalent to in-person care, and CHBRP estimates that utilization would increase by approximately 68,000 to 304,000 live videoconferencing encounters and by approximately 205,000 to 911,000 store-and-forward encounters. Therefore, CHBRP estimates that positive mental health and dermatologic outcomes could occur for some newly covered enrollees with these conditions.

Patient experience: CHBRP anticipates that increasing use of telehealth technologies would improve enrollees' overall experience because:

- They would have more methods by which to communicate with their physicians;
- Distance and time travelling to and from in-person visits would be reduced, along with related costs. As a result, some enrollees may have better health outcomes because eliminating travel barriers would reduce the number of delayed or foregone in-person visits; and
- Time off work would also be reduced, leading to higher overall productivity.

Financial burden: CHBRP estimates that SB 289 would modify coverage and, depending on postmandate utilization rates, could increase enrollees' net financial burden for additional telehealth services by over $7.5 million to $33.1 million because enrollees would now be subject to copayments on telephone, e-mail, live videoconferencing, and store-and-forward visits (equivalent to the copayment for in-person visits). The financial burden results from visits that (1) were previously occurring but not reimbursable, or (2) constitute visits that would not have occurred without SB 289, due to distance, inconvenience, or time.

Potential harms: Although the limited literature available cited potential concerns around fragmented care, misdiagnosis, or lack of adherence to security protocols, among other issues, it was considered weak in depth and breadth. That said, CHBRP found insufficient evidence to determine whether services provided telephonically or electronically would harm patients.

Gender and racial disparities: Although there appear to be differences in interest and use of e-mail by sociodemographic characteristics, CHBRP is unable to estimate the impact of SB 289 on health disparities due to lack of evidence.

Long-term Impacts

CHBRP is unable to estimate the long-term impact of SB 289 on overall health outcomes and disparities due to the breadth of conditions telehealth may be used for and the unknown impact of future technology development. To the extent that advances in telehealth technology improve access and provider capacity, CHBRP projects some improvements in patient evaluation and management, especially for enrollees with transportation barriers or chronic health conditions. Because telehealth services can be reimbursed at a lower rate than equivalent in-person services, it is unlikely that physicians operating in a fee-for-service environment would seek to substitute telehealth visits for in-person visits. However, if there is opportunity for providers to deliver supplemental (i.e. new) telehealth services due to technology, excess capacity, changes in reimbursement, or other supports and incentives, there could be a larger expansion in use of telehealth services over time.

Essential Health Benefits and the Affordable Care Act

SB 289 would require reimbursement for services already included in the current required EHB benchmark, but provided in a different setting. Therefore, SB 289 does not appear to exceed or alter EHBs, and therefore appears not to trigger the ACA requirement that the state defray the cost of additional benefit coverage for enrollees in qualified health plans (QHPs) in Covered California.

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ABOUT CHBRP

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

An analytic staff in the University of California's Office of the President supports a task force of faculty and research staff from several campuses of the University of California to complete each CHBRP analysis. A strict conflict-of-interest policy ensures that the analyses are undertaken without bias. A certified, independent actuary helps to estimate the financial impact, and content experts with comprehensive subject-matter expertise are consulted to provide essential background and input on the analytic approach for each report.

More detailed information on CHBRP's analysis methodology, as well as all CHBRP reports and publications are available at www.chbrp.org.

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Table 1. SB 289 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)]	24,557,000	24,557,000	0%	0%
Total enrollees with health insurance subject to SB 289	24,557,000	24,557,000	0%	0%
Number of enrollees with coverage for telephone-based evaluation and management (E/M)	11,727,000	24,557,000	12,830,000	109%
Number of enrollees with coverage for e-mail-based E/M	11,727,000	24,557,000	12,830,000	109%
Number of enrollees with coverage for live videoconferencing	19,151,000	24,557,000	5,406,000	28%
Number of enrollees with coverage for store-and-forward	19,151,000	24,557,000	5,406,000	28%
Percentage of enrollees with coverage for telephone-based evaluation and management	48%	100%	52%	109%
Percentage of enrollees with coverage for e-mail-based evaluation and management	48%	100%	52%	109%
Percentage of enrollees with coverage for live videoconferencing	78%	100%	22%	28%
Percentage of enrollees with coverage for store-and-forward	78%	100%	22%	28%
Unit cost				
Average unit cost of telephone-based E/M	$67.62	$67.62	$0.00	0%
Average unit cost of e-mail-based E/M	$57.71	$57.71	$0.00	0%
Average unit cost of live video E/M	$101.66	$101.66	$0.00	0%
Average unit cost of store-and-forward E/M	$82.75	$82.75	$0.00	0%

Utilization		Postmandate (Incremental Change From Premandate)					
	Premandate	Low	% Change from Premandate	Low-Enhanced	% Change from Premandate	High	% Change from Premandate
Number of telephone-based E/M services used	2,754,407	821,185	30%	818,926	30%	3,644,671	132%
Number of e-mail-based E/M services used	918,136	273,728	30%	272,975	30%	1,214,890	132%
Number of live video E/M services used	229,534	68,432	30%	68,244	30%	303,723	132%
Number of store-and-forward E/M services used	688,602	205,296	30%	204,731	30%	911,168	132%
Assumptions							
% Substitute visits		40%		10%		40%	
% Supplementary visits		60%		90%		60%	
% Adoption rate (phase-in)		25%		25%		100%	
Cost sharing		Average of $14 copayments based on percentage of unit cost for each modality					

Note: Low scenario means 25% adoption rate and 60% new "supplementary" visits. Low-Enhanced means 25% adoption rate, but a larger share (90%) of new "supplementary" visits. High means 100% adoption of all telehealth modalities, with 60% new "supplementary" visits.

Expenditures		Postmandate (Incremental Change From Premandate)					
	Premandate	Low	% Change from Premandate	Low-Enhanced	% Change from Premandate	High	% Change from Premandate
Premium Expenditures (by payer)							
Private employers for group insurance	$58,393,205,000	$16,874,000	0.03%	$26,563,000	0.05%	$74,893,000	0.13%
CalPERS HMO employer expenditures[(b)]	$4,391,552,000	$1,171,000	0.03%	$1,844,000	0.04%	$5,197,000	0.12%
Medi-Cal Managed Care Plan expenditures	$17,667,731,000	-	0.00%	-	0.00%	-	0.00%
Enrollees for individually purchased insurance	$21,319,735,000	$15,605,000	0.07%	$24,566,000	0.12%	$69,260,000	0.32%
Individually purchased – Outside Exchange	$8,581,274,000	$5,667,000	0.07%	$8,922,000	0.10%	$25,153,000	0.29%
Individually purchased – Covered California	$12,738,461,000	$9,938,000	0.08%	$15,644,000	0.12%	$44,107,000	0.35%
Enrollees with group insurance, CalPERS HMOs, Covered California, and Medi-Cal Managed Care[(b)]	$18,703,917,000	$5,614,000	0.03%	$8,838,000	0.05%	$24,917,000	0.13%
Enrollee Expenses							
Enrollee out-of-pocket expenses for covered benefits (deductibles, copayments, etc.)	$15,510,004,000	$7,451,000	0.05%	$16,132,000	0.10%	$33,072,000	0.21%
Enrollee expenses for noncovered benefits[(d)]	$0	-	0.00%	-	0.000%	-	0.000%
Total Expenditures	**$135,986,144,000**	**$46,715,000**	**0.03%**	**$77,943,000**	**0.06%**	**$207,339,000**	**0.15%**

Source: California Health Benefits Review Program, 2015.

Notes: (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 55.4% or $648,000 (Low scenario); $1,021,000 (Low-Enhanced Scenario) and $2,877,000 (High Scenario), 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, 2014. CHBRP assumes the same ratio in 2016.

(c) Enrollee premium expenditures include contributions to employer-sponsored health insurance, health insurance purchased through Covered California, and contributions to 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 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; DMHC = Department of Managed Health Care.

POLICY CONTEXT

The California Senate Committee on Health has requested[1] that the California Health Benefits Review Program (CHBRP)[2] conduct an evidence-based assessment of the medical, financial, and public health impacts of SB 289, telephonic and electronic patient management.

If enacted, SB 289 would affect the health insurance of approximately 24.6 million enrollees (64.8% of all Californians). This represents 100% percent of the 24.6 million Californians who would have health insurance regulated by the state[3] that may be subject to any state health benefit mandate law.[4,5] Specifically, all DMHC-regulated plans and/or CDI-regulated policies would be subject to SB 289.

Bill-Specific Analysis of SB 289

SB 289 would require DMHC-regulated plans and CDI-regulated policies issued or renewed after January 1, 2016, to cover patient-initiated "telephonic and electronic patient management services" provided by either a physician or nonphysician based on the time and complexity of those services. SB 289 would only require coverage of these services for established patients. SB 289 would not require reimbursement in cases where services are included under capitation, or as part of a pre-paid bundle. While some HMOs regulated by DMHC may reimburse physicians, medical groups, independent practice associations, or other selectively contracted physician networks via capitation, many physicians in primary care and specialty care would continue to be reimbursed based on a negotiated fee-for-service rate. The full text of SB 289 can be found in Appendix A.

Analytic Approach and Key Assumptions

Electronic communication tools

SB 289 specifies that state-regulated plans and policies must "cover...electronic patient management services" and defines that term to include "electronic communication tools...to enable treating physicians to evaluate and manage established patients."

CHBRP acknowledges advances in new technology, and uses of existing technology, that allow patients to use a variety of electronic tools to communicate with medical providers. However, for purposes of this analysis, CHBRP limits the analysis to four broad telehealth modalities for the following reasons:

- Telephone and e-mail, because they have been specifically identified within the bill, or by the bill author;

[1] February 23, 2015, available at http://www.chbrp.org/.
[2] CHBRP is authorized to review legislation affecting health insurance regulated by the state. CHBRP's authorizing statute is available at www.chbrp.org/docs/authorizing_statute.pdf.
[3] State benefit mandates apply to a subset of health insurance in California, those regulated by one of California's two health insurance regulators: the California Department of Managed Health Care (DMHC) and the California Department of Insurance (CDI).
[4] CHBRP's estimates of the source of health insurance are available at: www.chbrp.org/other_publications/index.php.
[5] 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.

- Live videoconferencing, which is explicitly included in California's definition of telehealth and means the real-time (synchronous) video interaction between patient and physician when they are in different places;[6] and
- Store-and-forward (asynchronous) technology, which is also explicitly defined in California's current telehealth law and involves the capture and storage of medical information (such as an x-ray, photograph, video, or sound recording) that is then forwarded to a physician for evaluation at a later time.[6]

Services covered

CHBRP treats the term "evaluate and manage" broadly, and includes any billable services that a) do not require a physical examination by a physician or nonphysician, and b) are considered either evaluation or management of established patients. CHBRP included CPT codes for E/M services performed at hospitals, nursing facilities, custodial care facilities, assisted living facilities, or at home, and specifically excluded CPT codes that require a physical exam. CHBRP assumed that any visit that would require a physical exam could not be provided remotely via the four telehealth modalities. (Please see Table 13 and Table 14 in Appendix C for the full list of CPT codes used.)

Patients

SB 289 specifies that only services that are initiated by an established patient would qualify for reimbursement for telephonic and electronic services provided.

- Established patient: SB 289 specifies that "established" patient means one who has received services from the provider, or another provider of the same specialty or subspecialty within the group practice, within the previous three years. This definition aligns with definitions used in the American Medical Association's manual for CPT codes.
- Patient-initiated: SB 289 excludes visits "for which a provider or staff contacts a patient to initiate service."

Further, CPT codes clarify that telephone or e-mail visits that refer to an episode of care, which occurred within the previous seven days, would be considered part of that previous E/M service or procedure (American Medical Association, 2013) and not a separate billable service.

Health professionals

CHBRP relied on the California Business and Professions Code, Division 2 to define which health professionals, and by extension their health services, provided via telehealth, would be reimbursable under SB 289 (**Table 2**) Further, CHBRP evaluated claims for those nonphysicians who could be directly billed for their services, rather than requiring a referral from a primary care physician, to determine potential increase in utilization for those health professionals.

[6] Business & Professions Code 2290.5

Table 2. Health professionals included in SB 289

Health Professionals Regulated under the California Business and Professions Code, Division 2	
• Registered nurses	• Occupational therapists
• Advanced practice nurses	• Perfusionists
• Licensed vocational nurses	• Pharmacists
• Acupuncturists±	• Physical therapists
• Audiologists	• Physicians±
• Chiropractors±	• Physician assistants±
• Clinical laboratory scientists	• Podiatrists±
• Dieticians	• Psychiatric technicians
• Licensed clinical social workers	• Psychologists±
• Licensed counselors	• Respiratory therapists
• Licensed midwives	• Speech language pathologists
• Marriage and Family Therapists	

± Indicates that the provider may bill directly.
Note: This is not a comprehensive list of regulated health professionals. CHBRP excludes nonphysicians such as dentists, dental hygienists, dental assistants, optometrists, and opticians, who are not typically covered under health insurance medical benefits. For most Californians, dentists' and optometrists' services are covered under separate dental and vision plans.

General Caveat for All CHBRP Analyses

It is important to note that CHBRP's analysis of proposed benefit mandate bills typically address the incremental effects of the proposed bills — specifically, how the proposed legislation would change benefit coverage, utilization, costs, and public health. CHBRP's estimates of these incremental effects are presented in this report.[7]

Interaction with Existing Requirements

Broadly speaking, electronic communications tools could encompass a range of modalities in telehealth, from live videoconferencing, to real-time continuous heart monitors that send data to physicians' offices. It is an evolving and growing segment in health care, used as a way to increase and hasten access to health care, particularly for patients in rural areas, and to specialists.[8] In California, telehealth is defined as a way for health care providers to evaluate and treat patients — even if doctor and patient are in different places, though it generally excludes telephone and e-mail communications from that definition.

Existing State Policies

California law and regulations

SB 289 expands on California's two existing telehealth laws.

[7] For CHBRP's technical approach to developing estimates, please see http://www.chbrp.org/analysis_methodology/cost_impact_analysis.php
[8] American Telemedicine Association, What is Telemedicine, www.americantelemed.org/about-telemedicine/what_is_telemedicine#.VSIOCSmuokQ. Accessed March 18, 2015.

California's Business & Professions (B&P) Code defines telehealth as the delivery of health care services via information communication technologies to assist with consultation, diagnosis, treatment, and management of patient health care when provider and patient are not in the same place. See *Background on Telehealth* (page 16) for additional information on the uses of telehealth.

As previously mentioned, existing law defines two modalities of telehealth: live videoconferencing and store-and-forward.

Although the definition of telehealth under current law ("information communication technologies") does not exclude telephone and e-mail, those modalities are also not explicitly included. Similarly, California's existing definition of telehealth does not exclude evolving methods of telehealth, such as remote patient monitoring or mobile health, nor does it explicitly include those methods.

As Table 3 below shows, SB 289 adds to California's existing telehealth law to require reimbursement of the technology, and also requires reimbursement for telephone and e-mail.

Table 3. Evolution of California's Telehealth Policy for Specific Modalities

	Live Videoconferencing	Asynchronous Store-and-Forward	Telephone/E-mail
SB 1665 (1996)	Included in telehealth definition, but does not require coverage	Not explicitly included in telehealth definition	Excluded from definition of telehealth (a)
AB 415 (2011)	Included in telehealth definition, but does not require coverage	Included in telehealth definition, but does not require coverage	Not explicitly included in or excluded from definition of telehealth
SB 289, proposed (2015)	Requires coverage/payment	Requires coverage/payment	Requires coverage/payment

Source: CHBRP, Review of California's existing laws.
Notes: (a) SB 922 (Thompson, 1997) clarified exclusion of telephone and fax from telehealth.
AB 1771 (Perez, 2014), as introduced, would have required reimbursement for live videoconference, store-and-forward, and telephone/e-mail visits with physicians.

Existing coverage requirements for telehealth

Existing law allows for coverage of telehealth technologies, but does not require coverage (or accordingly, reimbursement for live videoconferencing or store-and-forward services).

The state's two health insurance regulators have 55 complaints against insurance carriers' denials of claims related to telehealth since 2009.[9] Most cases relate to coverage for remote patient monitoring, such as real-time continuous heart or glucose monitors, which collect and transmit data on patients' health indicators and that are beyond the scope of SB 289. However, in 2010, one complaint was filed related to speech therapy via interactive videoconferencing, and in 2014, two complaints related to telephonic treatment with nonphysicians: a nutritionist and mental health professional.

[9] CHBRP reviewed Independent Medical Review cases from both regulators from 2009 to present.

Similar requirements in other states

Approximately half of states nationwide (22) have laws or regulations that define telehealth; however, the type of technology that is included in the definition of telehealth varies.[10] As is the case in California, defining telehealth does not necessarily mean requiring reimbursement. Approximately half of states require reimbursement of live videoconferencing, and half a dozen states require reimbursement of store-and-forward. Telephone and e-mail reimbursement is only required in one state (Oregon), but only in cases where live videoconferencing is unavailable.

Pending legislation. CHBRP is aware of six states[11] considering legislation that would require reimbursement of telehealth services, though definitions of telehealth vary by state and most exclude telephone and e-mail from their definition of telehealth. Two states that have pending legislation most similar to SB 289 — Florida[12] and Rhode Island[13] — would define telehealth as services provided by a health professional (both physicians and nonphysicians) and include telephone and e-mail, live videoconferencing, and store-and-forward. New Jersey[14] is also considering legislation for coverage of telepsychiatry.

Federal Programs' Telehealth Policies

Medicaid

Almost all states (45) recognize either live videoconferencing and/or store-and-forward in their Medicaid programs, primarily reimbursing for live videoconferencing.[15]Only two state Medicaid programs require reimbursement for telephone interactions: Nevada, for crisis interventions, and Oregon, in lieu of live videoconferencing if equipment is unavailable.[16]

Medicare

Medicare is often used as the benchmark for reimbursement decisions by insurance companies. Medicare restricts the use of telehealth by both geographic region and "originating site," that is where the medical provider is located. Medicare will reimburse for live videoconferencing in all 50 states[17] if patients are in a rural Health Professional Shortage Area[18] or in an area with a shortage of health professionals; and physically located in a physician office, rural health clinic, or hospital while receiving live videoconferencing services. For example, patients may not be at a renal dialysis center, or their own home, or the service will not be covered by Medicare.

[10] Center for Connected Health Policy State Law database, accessed March 8, 2015.
[11] Florida, Indiana, Iowa, Missouri, New Jersey, and Rhode Island. Center for Connected Health Policy, March 8, 2015.
[12] Florida Senate Bill 478
[13] Rhode Island House Bill 5422/Senate Bill 321
[14] New Jersey Assembly Bill 1289
[15] Center for Connected Health Policy, State Policy Database, accessed March 8, 2015.
[16] About 85% of beneficiaries in California's Medi-Cal program are in Medi-Cal Managed Care. These plans are paid a capitated rate by the state, and therefore required services would be absorbed within the capitated rate.
[17] Medicare Telehealth Payment Eligibility Analyzer: datawarehouse.hrsa.gov/telehealthAdvisor/telehealthEligibility.aspx access March 8, 2015.
[18] Health Professional Shortage Areas are designated by the US health Resources and Services Administration as having shortages of primary medical care, dental or mental health providers. Hpsafind.hrsa.gov Accessed April 5, 2014.

Medicare covers store-and-forward technology for demonstration programs in Alaska and Hawaii, or coverage of teleradiology and remote EKG applications.

Medicare does not pay for telephone or e-mail encounters.

Department of Veterans Affairs

The federal Department of Veterans Affairs (VA) has an Office of Telehealth Services, which has experimented with telehealth over the past two decades and is widely considered a leader in the integration and use of the technologies. In fiscal year 2013, the latest year for which data are available, about 11% of veterans — 600,000 patients — in the VA health care system received a service delivered through telehealth, and delivery of such services is growing at a pace of about 22% annually. The VA has invested heavily in telehealth to address the needs of its patients, nearly half of whom live in remote rural areas with limited access to a VA facility.[19]

The VA defines telehealth[20] as:

- Clinical video telehealth: Live videoconferencing that helps to connect the VA's medical facilities. Types of services typically provided via live videoconferencing include mental health services, rehabilitation (such as for post-stroke patients), and surgical specialist consultations. The VA is also developing competencies in other areas of live videoconferencing, such as cardiology, genomics, neurology, nutrition, ICU, and primary care;
- Store-and-forward: Defined as in California law, and at the VA, used for conditions such as teleretinal and teledermatology;
- Home telehealth**:** The VA defines this as chronic disease management through remote patient monitoring and provides such care to nearly 150,000 veterans.

The VA also has secure messaging features that allow patients to communicate via a web portal or their mobile devices; and mobile health, defined as smart phone applications for self-management of health conditions.

The VA does not include audio-only telephone or e-mail in its definition of telehealth.

The VA supports three National Telehealth Training Centers to continue to develop telehealth capabilities, including 44 clinical specialties as previously noted. The training centers also serve to standardize training for health care professionals.

Federal Requirements

Affordable Care Act

The ACA encourages and promotes the use of telehealth to increase provider access, including to medically underserved areas — such as Native American reservations — to improve patient medication therapy management, but chiefly as a component of "value-based care."

[19] Veterans Health Administration, "Connecting Veterans with Telehealth" www.va.gov, accessed March 8, 2015.
[20] www.telehealth.va.gov

Provider payment reforms and Affordable Care Act

The ACA pioneers a number of payment methods and demonstration projects aimed at replacing fee-for-service under Medicare and encouraging more "value-based" and "patient-centered" care. Through this framework, policymakers seek to create incentives for teams of providers to better coordinate the care of a patient, thereby increasing patient engagement, improving quality, and reducing overall health costs. These programs, including the formation of accountable-care organizations (ACOs), specifically encourage the use of "telehealth, remote patient monitoring, and other such enabling technologies" to achieve cost savings while maintaining or improving quality.

SB 289 and Essential Health Benefits

SB 289 would require reimbursement for services already included in the current required EHB benchmark, but provided in a different setting. Therefore, SB 289 does not appear to exceed or alter EHBs,[21] and does not appear to trigger the ACA requirement that the state defray the cost of additional benefit coverage for enrollees in qualified health plans (QHPs)[22] in Covered California.

[21] Health insurance offered in Covered California is required to at least meet the minimum standard of benefits as defined by the ACA as essential health benefits (EHBs), and available in the Kaiser Foundation Health Plan Small Group Health Maintenance Organization (HMO) 30 plan, the state's benchmark plan for federal EHBs. 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 (HHS). Patient Protection and Affordable Care Act: Standards Related to Essential Health Benefits, Actuarial Value, and Accreditation. Final Rule. Federal Register, Vol. 78, No. 37. February 25, 2013. Available at: www.gpo.gov\fdsys\pkg\FR-2013-02-25\pdf\2013-04084.pdf.

[22] In California, QHPs are non-grandfathered small-group and individual market DMHC-regulated plans and CDI-regulated policies sold in Covered California, the state's online marketplace.

BACKGROUND ON TELEHEALTH

Telehealth has been broadly defined as "the use of medical information exchange from one site to another via electronic communications to improve the patient's health status" (IOM, 2012) and as "a collection of means or methods for enhancing health care, public health, and health education delivery and support using telecommunication technologies" (Telehealth Resource Centers, 2015). SB 289 defines telehealth as "telephonic and electronic patient management services," meaning use of electronic communication tools to enable providers to evaluate and manage existing patients for non–face-to-face visits. This bill requires that telehealth services be *initiated* by an *established patient* and provided by a licensed *physician or nonphysician*.

Telehealth Modalities

The Center for Connected Health Policy places telehealth modalities into four distinct categories: (1) live videoconferencing, (2) store-and-forward, (3) remote patient monitoring, and (4) mobile health, or mHealth.

- **Live videoconferencing** uses two-way interactive audio-visual technologies to connect users (patients, caregivers, providers) when a face-to-face encounter is necessary, but an in-person encounter is not possible (Center for Connected Health Policy, 2015). Live videoconferencing has been used to care for conditions such as acute stroke, organ transplants, obesity, mental health problems, and diabetes-related complications. Live videoconferencing can be used for multiple purposes, such as connecting emergency room physicians with outside specialists, facilitating consults between physicians as well as between physicians and patients with limited mobility (such as the homebound) and allowing patients at multiple locations to participate in health education/disease management courses (CCHP, 2015).
- **Store-and-forward** involves the acquisition and secure transmission of recorded clinical information (such as x-rays, photos, or videos) to another provider for evaluation. This modality has been used extensively in dermatology and radiology, as well as pathology and ophthalmology. Similarly to live videoconferencing, store-and-forward can connect physicians with specialists who may otherwise be unavailable (CCHP, 2015).
- **Remote patient monitoring** involves using electronic communication technologies to collect personal health and medical data from an individual and transmit it to a provider for evaluation and disease management. Remote patient monitoring can be used for a multitude of chronic health conditions, such as cardiovascular disease or chronic obstructive pulmonary disease, and in a variety of settings, including patients' homes, hospitals and intensive care units, and skilled nursing facilities (CCHP, 2015).
- **Mobile health** (mHealth) uses mobile communication devices, such as cell phones, to support health care and promote public health practice and education (CCHP, 2015). Mobile health can be used for a variety of purposes, such as sending reminders to patients about medication regimens or sending advice to individuals attempting to quit smoking.

Telehealth Modalities Covered by SB 289

As previously mentioned, SB 289 defines telehealth as "telephonic and electronic patient management services" and requires that these services be *initiated* by an *established patient* and provided by a *physician or nonphysician*. For the purposes of SB 289, CHBRP considers both live videoconferencing and store-and-forward to be included as covered "telephonic and electronic patient management

services," given that they are defined in existing law.[23] However, not all aspects of live videoconferencing and store-and-forward would be covered by this mandate, such as physician-to-physician consultations. CHBRP also included telephone and email (considered modalities within mHealth category) because they can be *initiated by patients* and used for non–face-to-face visits.

Over the last decade, telehealth has developed at an accelerating pace, especially within the areas of store-and-forward and live videoconferencing. In particular, telehealth has traditionally focused on *provider-to-patient* consults in a limited area of medical specialties and within or between hospitals. Health insurance coverage and reimbursement for these two modes already exists as part of an episode of care for many enrollees, though as previously mentioned, coverage is not mandated. SB 289 would essentially bring telephone and email into the definition of telehealth for reimbursement purposes by requiring coverage of certain medical services by these two modes of communication. Although telephone technology is more than a century old and the adoption of e-mail is nearly ubiquitous, and both have been widely used for patient care for years, the idea of covering these modes of communications to facilitate the *patient-provider* relationship is new.

Telehealth Utilization

The Rural Policy Research Institute (RUPRI) Center for Rural Health Policy Analysis at the University of Iowa's College of Public Health examined health information technology used in U.S. hospitals and found that nearly one-third of nonspecialty hospitals were currently using at least one telehealth modality. The analysis found that academic medical centers, nonprofit hospitals, and hospitals belonging to an integrated health system were more likely to have implemented some form of telehealth. Compared to hospitals in urban areas, the analysis found that rural hospitals were more likely to have implemented telehealth in emergency and radiology departments (Ward et al., 2014). A 2014 survey of 57 health care executives in the United States found that over 90% had either implemented or were developing a telehealth program; among those with an implemented telehealth program, 64% offered remote monitoring, 54% offered store-and-forward, 52% offered "real-time interaction capabilities" (which may include live videoconferencing) and 39% offered mHealth. The majority of respondents cited reimbursement concerns as a barrier to telehealth implementation; 41% responded that they do not receive reimbursement for telehealth services, 20% responded that managed care organizations had lower reimbursement rates for telehealth visits compared to in-person visits, and 18% responded that their state law does not mandate commercial coverage and managed care organizations were not covering telehealth services. Over one-third of respondents indicated that ensuring adequate reimbursement for telehealth visits was the most significant issue regarding physician acceptance of telehealth (Foley & Lardner, 2014).

A 2014 survey of patients in the United States found that 64% of patients were interested in using live videoconferencing. Interest in this technology peaked among younger adults (74% of respondents ages 18 to 34) and declined gradually to 64% among respondent's ages 55 to 64, before significantly decreasing among adults 65 years and older (41%). The survey found that 60% of respondents would rather use live videoconferencing to obtain a refill for their prescription drug instead of a visit to their doctor's office (American Well, 2015).

California

Since March 2014, the California Telehealth Network, a nonprofit focused on increasing access to telehealth in California, has begun collecting monthly telehealth utilization reports from their over 140

[23] Business and Professions Code 2290.5

partner sites. From March 2014 to December 2014, the number of telehealth consultations occurring per month ranged from 926 to 1,229, with an average of 1,141 consultations per month. The majority of these telehealth consultations were for behavioral health/telepsychiatry (72%), followed by radiology (8%), endocrinology (5%), pain management (4%) and dermatology (2%). The remaining 9% of the telehealth consultations were for a variety of specialties, such as cardiology, oncology, pediatrics, or nephrology (CTN, 2014)

Kaiser Permanente

Kaiser Permanente Northern California (KPNC) is a unique example of an integrated health care delivery system using all four telehealth modalities. KPNC serves approximately 3.4 million enrollees through 8,000 physicians and 21 hospitals. In 2008, KPNC implemented an inpatient and ambulatory care electronic health record (EHR) system that includes more than 100 patient-centered internet, mobile, and live videoconferencing applications enabling members to review disease-specific information; access personal health information; make appointments, order refills, exchange secure e-mail messages with providers; and participate in virtual care in lieu of an office visit. KPNC's number of virtual visits grew from 4.1 million in 2008 to 10.5 million in 2013 and telephone visits increased from about 640,000 in 2008 to more than 2.3 million in 2013. KPNC estimates that by 2016, virtual visits (e-mail/telephone/video) would outnumber in-person office visits, which have remained constant since 2008 (Pearl, 2014). Although all uses of the EHR and other patient-centered applications are not reimbursable, the Kaiser experience with this expanded suite of services allowed CHBRP to understand the pace of adoption and use of services that would be reimbursable under SB 289. CHBRP then applied the rate of increase in virtual visits to the newly billable services in SB 289.

Disparities[24] in Telehealth

Technology Use

There is limited evidence on disparities in use of or outcomes related to technologies covered by SB 289. Three observational studies considered use of telephone and electronic health care in California and found some disparities by age, race/ethnicity, income, and literacy. Technology users are generally younger, healthier, and live in more affluent communities (Pearl, 2014; Uscher-Pines et al., 2013). Non-Hispanic whites are also more likely to use online services than other ethnic groups (Pearl, 2014).

Rural Health Disparities in California

Residents of rural communities in California experience poorer health status compared to residents of urban communities, such as higher self-reported poor health status (6.1% in rural vs. 4.4% in urban), recent mental health issues (37.8% rural vs. 34.1% urban), physical health issues (52.8% rural vs. 40.3% urban) and recent inability to engage in work, recreation, or self-care (27.0% rural vs. 21.4% urban) (CalSORH, 2013). Travel barriers and inadequate provider-patient ratios are telehealth-relevant factors that contribute to rural health disparities. About 14% (5.2 million) of California's 37.7 million residents live in rural areas (CalSORH, 2013) and in about two-thirds of counties, the number of physicians per capita is less than what is considered adequate to meet demand (CHCF, 2012).

[24] Several competing definitions of "health disparities" exist. CHBRP relies on the following definition: "Health disparities are potentially avoidable differences in health (or health risks that policy can influence) between groups of people who are more or less advantaged socially; these differences systematically place socially disadvantaged groups" at risk for worse health outcomes (Braveman, 2006).

Telehealth may help to overcome some of the disparities in health care by redistributing knowledge and expertise when and where it is needed, including rural areas of California (Nesbitt, 2012). However, telehealth has yet to meet rural demand according to one study. Of 60 California rural health clinics surveyed in 2012, less than half (47%) used telehealth; 47% used live videoconferencing, 5% used store-and-forward, and 3% used home monitoring. Cost of equipment and lack of arrangements with specialists were the primary obstacles to clinic participation (52% and 48%, respectively) (CHCF, 2012). About half of the clinics used the internet to contact other providers, but just 12% did so to contact patients (CHCF, 2012).

MEDICAL EFFECTIVENESS

As discussed previously, SB 289 would require state-regulated health insurance to cover patient-initiated telephonic and electronic patient management and evaluation services provided to existing patients by physicians and nonphysicians beginning in January 2016. The medical effectiveness review summarizes findings from the literature from 2004 to the present on the effectiveness of telephone and e-mail evaluation and management as well as the effectiveness of those telehealth modalities defined in the state's Business & Professions Code: live videoconferencing and store-and-forward. This review encompasses studies of patients with a wide range of diseases and conditions because the bill would require coverage and reimbursement for these telephonic and electronic modalities for all enrollees who are existing patients in a provider's practice. The specific services assessed varied depending on patients' conditions.

Research Approach and Methods

Studies of telephone, e-mail, live videoconferencing, and store-and-forward were identified through searches of multiple bibliographic databases of medical, scientific, and economic literature, as well as websites maintained by organizations that produce and/or index meta-analyses and systematic reviews (see Appendix for full list of databases and websites). The current search was limited to abstracts of peer-reviewed research studies that were published in English in 2014 and 2015. For studies published prior to 2014, CHBRP relied on a literature search conducted in 2014 for its analysis of proposed AB 1771, which also addressed telephonic and electronic communications.

The medical effectiveness review included studies of the use of telephone, e-mail, live videoconferencing, or store-and-forward by physicians or nonphysicians to provide evaluation and management to existing patients. SB 289 specifically excludes services that are not "patient-initiated." Therefore, studies of telephonic and electronic communication between physicians, such as in an emergency room or an ICU, were excluded from this review, as were interventions involving telephone follow-up to patients post-hospitalization. Also excluded were studies of remote patient monitoring, in which electronic devices are used to transmit data on patients' conditions to health professionals at remote sites, because the effect of collecting and analyzing data on patients cannot be evaluated separately from the effect of contacts between patients and health professionals.

Of the 315 articles found in the current literature review, 88 were reviewed for potential inclusion in this report. Studies were eliminated because they did not report findings from clinical research studies, did not focus on the four modalities, or were of poor quality. The 36 studies previously included in the medical effectiveness review for AB 1771 (2014) were also reconsidered, given the differences in the provisions of the bill (specifying patient-initiation and including nonphysicians). These differences led to changes in the scope of the review for the current bill. Telephone triage and consultation services, which are primarily run by nurses, are now included in the review. By contrast, studies of interventions in which all contact is initiated by the health care provider, such as for chronic disease management, are now excluded (see for example, McLean et al., 2010). In total, 32 studies were included in the medical effectiveness review for SB 289, based on the quality of the studies and their relevance to the specific bill language. When systematic reviews had inclusion criteria broader than the mandate of SB 289, CHBRP summarized findings only from the relevant studies.

Methodological Considerations

Most studies pertinent to SB 289 examine the use of telephone, e-mail, live videoconferencing, and store-and-forward as a substitute for in-person care, in which case the relevant studies evaluate whether care provided via these technologies is at least as good as in-person care and whether use of these technologies improves access to care. Some studies, especially studies of e-mail, assesses the effect of the technology to supplement in-person care; these studies evaluate whether adding these technologies improves processes of care and health outcomes relative to receiving in-person care alone.

A major methodological limitation of the literature is simply the pace of technological change. By the time a research study is published, the technology under study is outdated, making it difficult to draw conclusions about the medical effectiveness of current technologies. Another important limitation of the studies is the inability to disaggregate the mandated services from other interventions, such as an integrated web portal that includes emails as well as information about self-care, access to test results, and ability to refill prescriptions.

Study Findings

The findings are summarized for email and telephone and separately for live videoconferencing and store-and-forward. Because SB 289 would apply to many different situations, the medical effectiveness of the mandated telehealth services are considered separately in three sets of outcomes: a) access to care and utilization, such as wait time to specialty care, or number of outpatient, emergency department visits and hospitalizations; b) process of care outcomes, including treatment adherence and accuracy of diagnoses and treatment plans; and c) health outcomes, including both physiological measures and patient-reported outcomes.

Taken together, the evidence for the medical effectiveness of either telephone or email communication is either ambiguous or there is insufficient evidence to make a call. The exception to that is in health outcomes in diabetes, in which a preponderance of the evidence from studies with strong to moderate designs shows that use of secure e-mail as part of a multifaceted web portal is associated with better glycemic control. The preponderance of the evidence from moderate to strong studies across multiple diseases indicates that both live video-conference and store-and-forward are at least as effective in terms of health outcomes and diagnostic accuracy as in-person care and that these technologies can shorten wait times for specialty care, diagnosis, and treatment. These findings are discussed in further detail in the sections that follow.

Findings for Telephone and Email

Access to care and utilization

Telephone consultation and triage systems, staffed by physicians or nurses, have been in existence for several decades. These systems were designed to reduce the demand for outpatient and emergency department visits, but can also have a supplemental effect, adding to the total quantity of services a patient receives. Most of the studies of these services have been in the UK, which has had an after-hours consultation service as part of the National Health Service (NHS) since 1998 (Lattimer et al., 2000; Munro et al., 2005 & 2009; O'Cathain et al., 2003). A study in Indianapolis from the 1980s also reviewed the effect of a call-in line on emergency department utilization and hospitalization, and found no significant effects (Darnell et al., 1985). The evidence from more recent RCT and time-series studies of the effect of telephone consultation services on access to care and utilization is ambiguous, with studies showing

divergent effects for the same type of service utilization (e.g., emergency department, hospitalization, or primary care) (Bunn et al., 2014; Flores-Mateo et al., 2012).

Several studies of email access to physicians in the U.S. were conducted within an integrated health system (such as Kaiser) that also included a multifaceted web portal, making these studies less generalizable to SB 289. The findings from these large and well-designed studies were also ambiguous, with one showing a decrease in primary care visits, one showing no difference, and two showing an increase in visits associated with patients' use of email to access primary care providers. (Liss et al., 2014; North et al., 2013; Palen et al. 2012; Zhou et al., 2007). An RCT of diabetes patients with email access to a care manager also found no difference between the intervention and control groups in numbers of inpatient days or primary and specialty care visits (Ralston et al., 2009). Many of these studies were summarized in a systematic review (Goldzweig et al., 2012).

Processes of care

CHBRP found few studies that examined the impact of patient-initiated telephone contact with providers on adherence to recommended treatments or screenings or to accuracy of diagnoses. Two studies from the U.S. evaluated after-hours nurse telephone consulting services for their potential for missed critically important outcomes. The studies found evidence for a small number of errors that subsequently led to a hospitalization, but there was no comparison with either in-person evaluations or physician-staffed phone lines (Kempe et al., 2003 & 2006). In psychiatry, a review of studies of telephone psychiatric interviews found insufficient evidence to evaluate diagnostic accuracy (Muskens et al., 2014).

Three studies of patients with diabetes with email access to physicians via a multifaceted web portal found evidence for improved screening adherence relative to those without such access, but these studies could not distinguish email use from other features of the web portal, such as reminder notices or electronic appointment scheduling (Bredfeldt et al., 2011; Harris et al., 2013; Zhou et al., 2010). Moreover, two of these studies had poorly controlled comparison groups, which limits the reliability of the findings. It is also difficult to generalize from this condition to the entire population of insured individuals. CHBRP found no studies that related email use to accuracy of diagnosis.

Health outcomes

CHBRP found no recent studies of the effect of telephone access or email communication on health outcomes for the general population. An early evaluation of the UK NHS telephone triage system found that adverse events (including mortality, emergency department visits, and hospitalizations) were no more likely for patients accessing that system than for patients accessing physicians through face-to-face visits (Lattimer, 1998). Meta-analyses of telephone-based interventions for coronary heart disease (CHD) found evidence of a reduction in all-cause mortality compared to the control group, as well as for markers of cardiovascular risk factors such as total cholesterol, blood pressure, and body mass index (Neubeck et al., 2009). A meta-analysis of telephone-based interventions in chronic heart failure (CHF) found evidence for reduction in all-cause mortality and CHF-specific hospitalization (Inglis et al., 2011). Two RCTs found that replacing in-person visits with phone follow-up was associated with better quality of life in asthma (Gruffydd-Jones et al., 2005) and with greater reduction in hemoglobin A1c (HbA1c) in diabetes (Bogner et al., 2012). However, a meta-analysis of five studies of telephone communication in diabetes found a nonsignificant reduction in HbA1c when the results were combined (Suksomboon et al., 2014).

Health outcomes associated with email access has also been well-studied in diabetes. Five studies of email communication as part of a multifaceted web portal consistently found that use of secure e-mail was associated with better glycemic control as measured by HbA1c (Harris et al., 2009, 2013; Lau et al.,

2014; Ralston et al., 2009; Zhou et al., 2010). There was less consistency in the findings regarding other outcomes, such as hypertension or hyperlipidemia.

Table 4 Telephone and Email Summary

Treatment	Conclusion
Evidence about phone and email (all diagnoses taken together)	Insufficient evidence to make a call.
Evidence about email (diabetes only)	Preponderance of evidence from moderately strong studies that email communication within a multifaceted web portal is associated with better glycemic control.

CHBRP concludes that there is insufficient evidence to determine whether services provided via telephone or e-mail are as effective as medical care provided in person. Furthermore, it is unknown whether diagnoses made using these technologies are as accurate as diagnoses made during in-person visits. The studies of the effect of telephone consultations or email communication on subsequent utilization are inconsistent. However, in diabetes, there is a preponderance of evidence from moderately strong studies that email communication within a multifaceted web portal is associated with better glycemic control.

CHBRP notes that the absence of evidence does not mean there is no effect; it means the effect is unknown.

Findings for Live Videoconferencing and Store-and-Forward

There are more studies of the medical effectiveness of live videoconferencing and store-and-forward than of telephone calls and e-mail. The studies of live videoconferencing and store-and-forward also have stronger research designs on average.

Access to care and utilization

Studies of live videoconferencing used to replace in-person care have shown improvements in timely treatment to outpatient specialty care (Ferrer-Roca et al., 2010), and that live videoconferencing was not associated with increased hospitalization, emergency department visits, visits to specialists for outpatient care, or primary care visits. (Leimig et al., 2008; Modai et al., 2006; O'Reilly et al., 2007; Wallace et al., 2004). In a systematic review of access to care related to store-and-forward dermatology care, the studies consistently found that teledermatology was associated with shorter time to treatment as measured by time until appointment, biopsy, surgery, or other intervention. (Warshaw et al., 2011).

Process of care

Diagnoses via patient-physician live videoconferencing have been shown to be highly accurate across multiple specialties, including dermatology (Warshaw et al., 2011), cardiology (Scalvini et al., 2002), and

neurology (Craig et al., 2000). Treatment plans also did not vary between live videoconferencing and in-person visits in these specialties. Three studies of adherence to treatment in psychiatry with live videoconferencing are inconsistent, with one study showing no difference (Frueh et al., 2007), one improved adherence for those seen in person (Ruskin et al., 2004), and one for the live videoconferencing group (Modai et al., 2006). However, a systematic review of 23 studies of psychotherapy via live videoconferencing found strong support for the development of therapeutic alliance at least as strong as with face-to-face therapy (Simpson and Reid, 2014).

In studies of store-and-forward technology, findings are inconsistent for diagnostic accuracy. A systematic review in dermatology found poorer accuracy compared to in-person diagnosis, especially for malignant and premalignant lesions (Warshaw et al., 2011). More recently, a large RCT found very high reliability between store-and-forward and in-person dermatology for both diagnosis and treatment plans (Nami et al., 2015) Store-and-forward diagnosing in diabetic retinopathy and pediatric heart murmurs have been shown to be highly accurate (Dahl et al., 2002; Saari et al., 2004). CHBRP found no studies relevant to SB 289 of the relationship between store-and-forward technology and adherence.

Health outcomes

There is a large body of evidence on the effects of live videoconferencing on health outcomes, including numerous RCTs comparing live videoconferencing to in-person care. Several studies compared quality of life in multiple conditions and found similar outcomes for live videoconferencing and in-person care (Ferrer-Roca, et al., 2010; Harrison et al., 1999; Wallace et al., 2004). A systematic review of rehabilitation programs delivered by live videoconferencing (telerehabilitation) found improvements in clinical outcomes that were comparable to in-person rehabilitation (Kairy et al., 2009). Nine RCTs in mental health have found that outcomes for psychiatry and counseling delivered by live videoconferencing did not differ from in-person care. Seven were included in a systematic review (Garcia-Lizana and Munoz-Mayorga, 2010) and two were published after that review (Morland et al., 2010 & 2014). CHBRP concludes that there is *clear and convincing evidence* that these mental health services delivered by live videoconferencing are at least as effective as in-person care.

The evidence for the effect of store-and-forward technology on health outcomes is limited to dermatology. A systematic review in 2011 found that there was insufficient evidence to evaluate clinical outcomes of store-and-forward teledermatology (Warshaw, 2011). Since then, one RCT found that teledermatology was equivalent to in-person care in both disease-specific and general health outcomes (Whited et al., 2013a; Whited et al., 2013b).

Table 5. Live Videoconferencing and Store-and-Forward Summary

Treatment	Conclusion
Evidence about live videoconferencing and store-and-forward	Preponderance of evidence that these modalities are at least as effective as in-person care.

Source: California Health Benefits Review Program.

CHBRP concludes that, for the diseases and conditions studied, there is a preponderance of evidence that medical care provided by live videoconferencing and store-and-forward is at least as effective as medical care provided in person for both physical and mental health conditions. In particular, there is clear and convincing evidence that live videoconferencing is equivalent to in person care in psychiatric health outcomes. The evidence suggests that store-and-forward technology reduces wait times for specialty outpatient care.

BENEFIT COVERAGE, UTILIZATION, AND COST IMPACTS

SB 289 would require DMHC-regulated health plans and CDI-regulated policies to cover patient-initiated telephonic and electronic services used to evaluate and manage established patients for health insurance policies starting or renewed on or after January 1, 2016.The bill specifically states that state-regulated plans would "cover telephonic and electronic patient management services provided by a physician or nonphysician health care provider." Those services would have to be "reimburse(d)...based on their complexity and time expenditure." Based on this language, CHBRP assumes that coverage and reimbursement would apply to four telehealth modalities:

- Telephone and e-mail, because they have been specifically identified within the bill, or by the bill author;
- Live videoconferencing, which is explicitly included in California's definition of "telehealth," and means the real-time (synchronous) video interaction between patient and physician when they are in different places; and
- Store-and-forward (asynchronous) technology, which is also explicitly defined in California's telehealth law and involves the capture and storage of medical information (such as an x-ray, photograph, sound recording) that is then forwarded to a physician for evaluation.

This section reports the potential incremental impact of SB 289 on estimated baseline benefit coverage, utilization, and overall cost. For further details on the underlying data sources and methods, please see Appendix C.

Benefit Coverage

Premandate (Baseline) Benefit Coverage

Currently, 48% of enrollees (11.7 million) subject to SB 289 have benefit coverage for telephone and e-mail E/M visits, while 78% have benefit coverage for live videoconference and store-and-forward E/M visits.

Current coverage of telehealth by state-regulated insurance carriers was determined by a survey of the seven largest providers of health insurance in California. Responses to this survey represent:

- 64.6% of enrollees in the privately funded, DMHC- regulated market.
- 91.6% of enrollees in the CDI-regulated market; and,
- 87.3% of enrollees in the privately funded market subject to state mandates.

Postmandate Benefit Coverage

Postmandate, all 24.6 million enrollees with state-regulated health insurance would have coverage for telephone, e-mail, live videoconferencing, and store-and-forward evaluation and management services.

California's Medi-Cal Managed Care plans include coverage for live videoconferencing and store-and-forward technology within their capitated rates. The plans do not currently reimburse separately for

telephone and e-mail encounters, but given the nature of capitation[25] to the health plan, carriers or providers could decide to provide telehealth services although not separately reimbursable under current law.

Utilization

Premandate (Baseline) Utilization

Premandate, a combined 4.6 million enrollee encounters were performed using telephone, e-mail, or other recognized telehealth modality:

- Telephone: 2,754,407
- E-mail: 918,136
- Live videoconferencing: 229,534; and,
- Store-and-forward: 688,602.

Assessing premandate utilization

SB 289 specifies that the use of "telephonic and electronic management services" should "enable treating physicians to evaluate and manage established patients in a manner recognized by the American Medical Association (AMA), Current Procedural Terminology (CPT) codes." CHBRP interprets the legislation as allowing providers (both nonphysician and physician) to provide existing covered services with similar complexity and time requirements via a telephonic or electronic setting, rather than in person. SB 289 does not change the definition of a treating physician or the scope of practice for nonphysicians. CHBRP interpreted the bill as allowing physician providers and nonphysician providers (e.g. chiropractors, acupuncturists, clinical psychologists, and physician's assistants) who are already allowed to bill for services independently or under the supervision of a physician to be reimbursed for telehealth services if delivered as a covered benefit and equivalent in complexity and time to an in-person visit (

[25] While SB 289 does not affect Medicare beneficiaries, the Accountable Care Organization (ACO) model and other attempts at payment reform could interact with the requirement to provide telehealth services. Efforts by insurance carriers and provider groups to develop private ACO arrangements in the state could alter incentives and use of telehealth services. Private ACOs may use a variety of payment mechanisms to incentivize efficiency, quality, and spending reductions, including global budgets, capitation, performance payments, and fee-for-service with shared savings based on specific targets. In these types of alternative payment models, telehealth reimbursement should be built into negotiated reimbursement rates and savings targets. ACOs could potentially realize lower costs from providing services via telehealth in place of in-person visits. If use of telehealth results in savings to a provider group, ACO, or insurance carrier based on the effectiveness of services and needs of patients, the premium increases will be lower than estimated.

Table 2). Although some of the provider types listed above would not be able to deliver many of their current services via telehealth (i.e., chiropractors, acupuncturists, physical therapists), the bill does not explicitly exclude them from providing any telehealth services. CHBRP anticipates that these physician and nonphysician providers that use nurses and other allied health professionals who cannot directly bill for services in their practice would be able to bill for services delivered as they typically do with in-person visits, if the service is delivered under physician order and guidance as dictated by coding and practice standards.

Based on SB 289's language, CHBRP reviewed claims for services that met the following criteria:

- Were initiated by an established patient;[26]
- Provided and billed by a physician or nonphysician;
- Considered broadly to be either evaluation or management services.

The definition of services used to evaluate and manage a patient is not necessarily limited to the specific evaluation and management (E/M) CPT codes. CHBRP includes CPT codes that do not require a physical exam for E/M services performed at hospitals, nursing facilities, custodial care facilities, assisted living facilities, or at home, and specifically excluded CPT codes that required a physical exam. (Please see Table 13 and Table 14 in Appendix CC for the full list of CPT codes used.)

Telephone and e-mail

SB 289 requires coverage of telephonic and electronic services used to evaluate and manage established patients. Physicians are reimbursed for their professional services through the use of standardized CPT billing codes. SB 289 targets CPT codes 99441–99443 for telephone services and 99444 for electronic mail. Nonphysicians also have CPT codes for telephone and e-mail services, 98966-98968 for telephone and 98969 for e-mail.

CHBRP assumes that current billing for telephone and e-mail evaluation and management services underestimates true utilization of these services because 52% of enrollees subject to SB 289 do not have coverage for these services (Table 1), and therefore records of them would not be reflected in claims data. With a few exceptions, the Centers for Medicare & Medicaid Services (CMS) does not reimburse for telephone and e-mail communications, and most commercial insurance carriers follow CMS reimbursement decisions. Therefore, most providers are not reimbursed for services they provide by e-mail and telephone, and to a lesser extent for other electronic services. Current utilization of telehealth, specifically e-mail and telephone, is difficult to ascertain, in part because of the lack of reimbursement that would document the frequency of services. Not all telephone or e-mail contact initiated by established patients will be included in the definition of telehealth, because all conversations or communications do not meet the existing time, complexity, and coding standards for E/M visits.

Live video and store-and-forward

CHBRP uses in-person CPT codes for E/M, which are further defined by modifier codes GT (for interactive audio and video telecommunications systems [live videoconferencing]) and GQ (for asynchronous telecommunications system such as store-and-forward technology) to identify current utilization for those modalities of telehealth.

Postmandate Utilization

CHBRP estimates that overall encounters – whether they occur in-person or via telehealth – would increase between 4.5% (Low) and 20.0% (High). Telehealth, as a share of all visits, would range between 7.4% (Low-Enhanced) to 29.2% (High), while in-person visits would decrease by 0.9% (Low-Enhanced) to 15.0% (High) (See Table 6 and Figure 4).

[26] For definitions of patient-initiated and established patient, please see *Policy Context.*

Table 6. Estimates of Percentage Change in Encounters from SB 289

	Low	Low-Enhanced	High
% Increase in overall encounters (In-person and telehealth)	4.5%	7.0%	20.0%
% change in in-person visits	-3.3%	-0.9%	-15.0%
% of encounters using any type of telehealth	7.5%	7.4%	29.2%

Source: California Health Benefits Review Program, 2015

Determining overall utilization of telehealth

CHBRP drew on Kaiser Permanente Northern California's experience integrating telephone, e-mail, and live videoconferencing to generate estimates. Kaiser's experience is one of the only well-documented examinations of utilization of telephone and e-mail visits between physicians and patients. The evaluation occurred over the period of time between 2008[27] (at the introduction of a telehealth strategy) and 2013. CHBRP uses the "rate of use" of telephone and e-mail in 2008 to calculate an estimated level of utilization (21.2%)[28] for those modalities in the first year after enactment of SB 289, assuming provider offices quickly adapt and begin billing for telephone and e-mail services. However, while Kaiser's rate of telephone and e-mail use serves as a good benchmark, the integrated health system's experience could either over- or underestimate the use of a fully implemented system for telephone and e-mail.

- Kaiser may be an overestimate: At Kaiser, telephone, e-mail, and live videoconferencing services are already delivered as part of an integrated system where fee-for-service reimbursement does not occur. Enrollees do not pay any cost sharing for telephone or e-mail visits. The Kaiser Permanente model encourages savings and efficiencies from the creation and widespread use of telehealth to reduce in-person patient visits and to deliver care to enrollees in outlying areas who face access barriers due to transportation, disability, or work hours. Because of those incentives to deliver more efficient care, even if it is not reimbursed by a typical health insurer, Kaiser Permanente physicians may encourage telephone and e-mail at a higher rate than other health insurance carriers, which are paying providers fee-for-service based on the number of visits delivered to enrollees.
- Kaiser may be an underestimate: Conversely, health insurance carriers may decide that coverage of all four telehealth modalities would allow them to expand the network of physicians available,

[27] 2008 estimate was used because this was the year in which Kaiser Permanente Northern California introduced an inpatient and ambulatory care electronic health record system that includes a suite of patient-friendly internet, mobile, and video tools. Pearl (2014) shows that by 2013, utilization increased to 58.3% among all visits, which represents 50.3% of existing patient visits when fully implemented and used.

[28] This represents the percentage of telehealth visits out of Kaiser's existing patients. This value was calculated using Pearl's (2014) estimate of the level of utilization (22.8%) at Kaiser Permanente Northern California (KPNC) of virtual visits (alternatives to in-person visits conducted via secure e-mail, telephone, or live videoconference) in 2008 and estimates of new patient visits at Kaiser (which are not allowed to be reimbursed under SB 289), calculated by subtracting the average annual rate of new visits overall at KPNC (from Milliman's Health Cost Guidelines data) and subtracted from the total number of visits. The final percent increase for patient-initiated visits

deliver more timely care, and meet patient needs in a more efficient way to attract enrollees and cover a wider area. If there is an opportunity for providers to deliver additional services due to technology or other capacity, the additional reimbursement may serve as an incentive for additional use of telehealth in their practices. For this reason, Kaiser's experience in Northern California may underestimate the use of a fully implemented telehealth system.

CHBRP finds that the first-year (2016) impact of SB 289 would be influenced by a number of factors that differ from Kaiser's integrated, staff-based HMO system, such as (1) the level of patient cost sharing for using telehealth; (2) the rate of adoption by health providers who are contracted with health insurance carriers outside of an integrated salary-based system such as Kaiser; and (3) the ability of smaller provider practices and networks to adapt their technology to offer secure e-mail and videoconferencing services to patients, track and bill for telephonic visits, and participate in store-and-forward.

To estimate utilization postmandate, CHBRP made the following assumptions and adjustments to apply Kaiser's experience to the remainder of the insurance market:[29] (1) CHBRP's estimates include cost sharing based on the type of visit and underlying unit price of the service (the average copayment was $14, although the typical substitute visit was assumed to be for a service that was more expensive, with a $20 copayment, while supplemental services were assumed to be e-mail or telephone, with lower $10 or lower copayments); (2) CHBRP's estimates do not assume uniform implementation of the technologies across all health insurers or providers.

CHBRP modeled three separate estimates to provide a range of the variety of reactions anticipated from health plans and providers in terms of technology adoption and use by patients. The models are based on different rates of adoption of telehealth and different prices and levels of cost sharing for the four distinct telehealth modalities used by insurers and/or providers during 2016 (**Table 1**).

CHBRP estimates in the Low and Low-Enhanced scenarios, there is a dampened/modest 25% adoption of telehealth postmandate (the low-end estimate), and in the High scenario, there is full 100% adoption by both providers and patients of the four telehealth modalities postmandate. All of these scenarios assume enrollees would pay a range of copays between $0 and $20, proportional to the relative cost for each telehealth service, depending on the modality — less than an equivalent in-person visit of the same time and complexity. In the Low scenario, CHBRP assumes that of the 4.4% increase, 40% of the increase is substitute, while 60% is supplemental. In the Low-Enhanced scenario, CHBRP assumes that of the 7.0% increase in year 1, 90% of the increase is supplemental (Table 6). In the Low-Enhanced scenario, a higher increase in services is seen than in the Low scenario due to the share of supplemental services (90%), which tend to be added on to existing in-person visits and have lower out-of-pocket costs to the patient due to cost sharing. Because of that, the rate of increase is higher despite the same rate of adoption used in both scenarios.

Determining net change in overall office visits

CHBRP estimates there will be an increase in medical services provided via telehealth. Of these telehealth visits, it is important to distinguish whether the additional telehealth visits resulting from SB 289

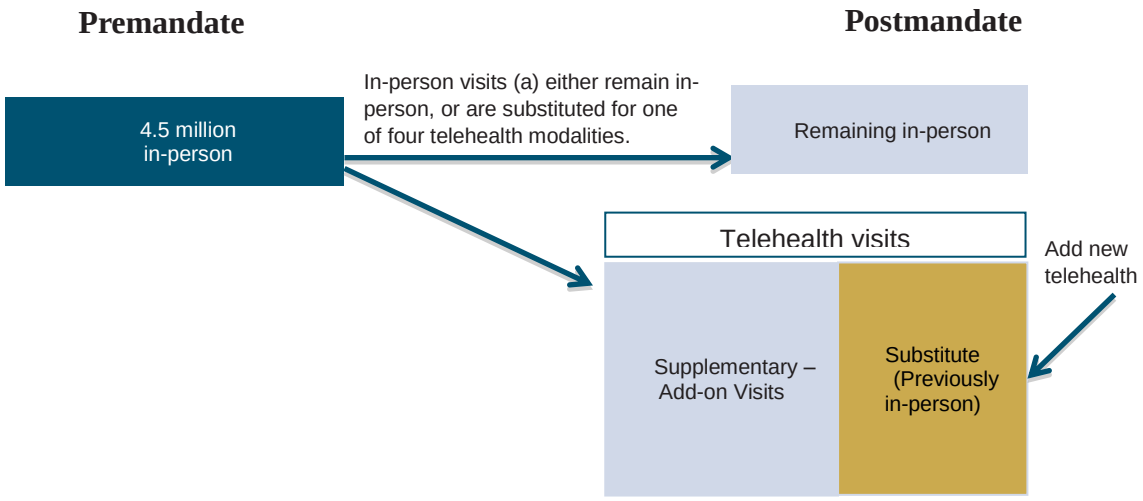
[29] As previously noted, CHBRP assumes that increases in utilization of telehealth services with the introduction of SB 289 would not occur for salary-based systems (such as Kaiser). For plans that contract with external physician groups, CHBRP assumed utilization of telehealth services would increase. CHBRP recognizes that capitation rates for specific physician groups might not increase immediately to reflect any anticipated increase in the total cost to provide physician services. However, to the extent CHBRP assumed an increase in the utilization of the four modalities of telehealth services, and, in particular, supplemental telehealth services, the 2016 cost and premium estimates in this report assume the impact will be reflected in all physician capitation rates for commercial HMOs.

are “substitute visits” — replacing existing in-person visits with telephonic or electronic visits, or “supplementary visits,” which are telehealth visits that would occur in addition to current in-person visits, and that would not have been apparent premandate because they were not billable or captured in billing data.

Figure 3 describes CHBRP’s framework to determine how SB 289 would affect patient E/M visits. These visits would either:

1. Continue to occur in a provider’s office in person; or
2. Occur via telehealth and substitute for current in-person visits with e-mail, telephone, live videoconferencing, or store-and-forward for patient-initiated encounters, thereby eliminating the need for an in-person visit; or
3. Occur via telehealth and supplement current in-person visits and include both services that: (1) would previously not have been delivered in person due to distance, inconvenience, and time; and (2) services that health providers have already been providing via telephone and e-mail, but were previously not billed or reimbursed because they were not covered.

Figure 3. Change in Patient Utilization Once Telehealth Modalities Are Reimbursed

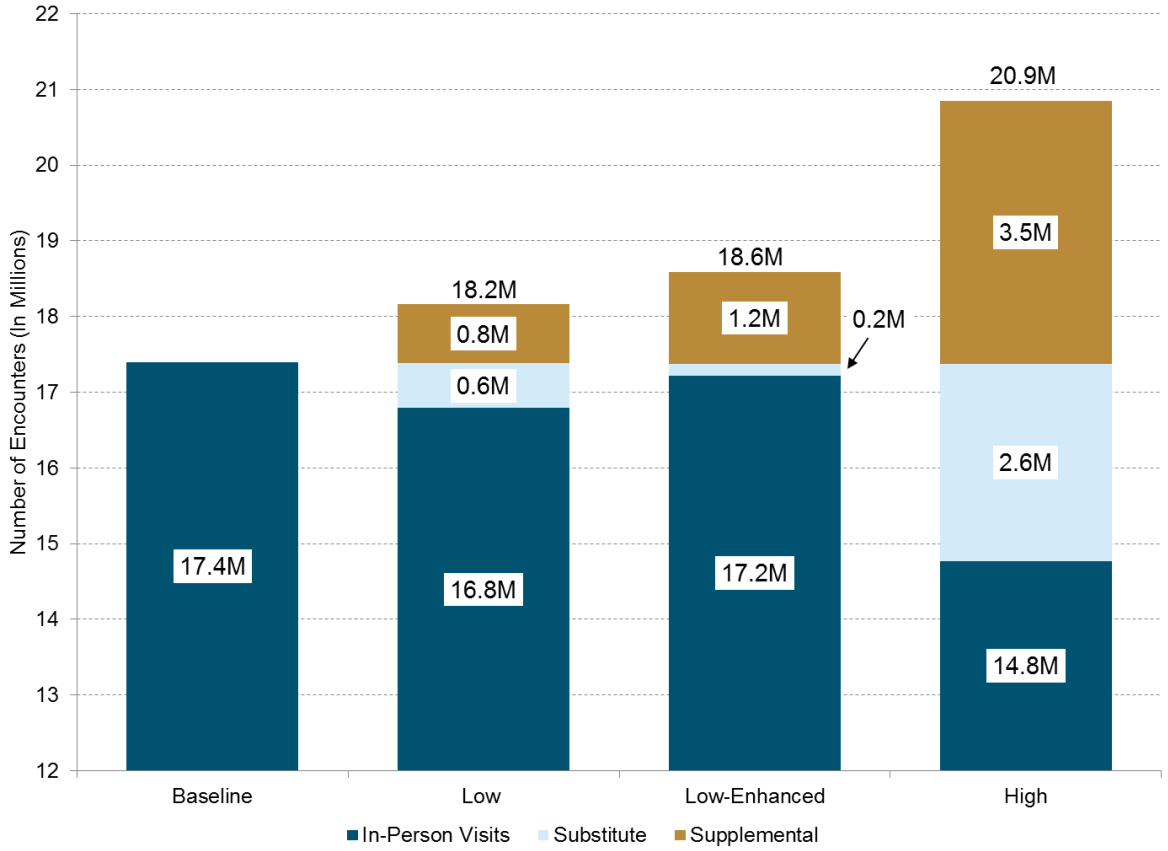


Source: California Health Benefits Review Program, 2015.

Note: All physician/nonphysician–patient evaluation and management visits in person or via a telehealth modality are for established patients.

CHBRP estimates that in-person visits would decline slightly in all scenarios modeled, but that overall patient-provider encounters would increase (**Figure 4**).

Figure 4. SB 289 Impact on Patient Encounters



Overall increase in capacity

One of the central hypotheses about telehealth is that it will increase access to physician and nonphysician services because of increased efficiencies, thereby increasing access: (1) for patients in rural areas; (2) for in-demand specialists; and (3) to meet increased demand due to an increase in insured populations covered by the Affordable Care Act (ACA).

CHBRP finds limited evidence that SB 289 would increase the capacity of physicians and nonphysicians to see additional patients because the bill:

- Limits coverage and reimbursement to encounters with “similar complexity and time expenditure” as in-person visits (i.e., face-to-face). Based on this language, CHBRP assumes that the majority of visits that occur via telephone, e-mail, live videoconferencing, or store-and-forward would be replacing a similarly timed in-person visit, thereby having a limited impact on capacity, and therefore access.
- Limits coverage and reimbursement to physicians and nonphysicians who are part of a practice with an existing relationship with the patient. CHBRP assumes that physicians’ and nonphysicians’ personal bandwidth to respond using any of the telehealth modalities (i.e., developing infrastructure and systems to adopt the technologies' use) is also limited, especially in busy practices.

- Requires reimbursed telehealth services to have “similar complexity and time expenditure” as in-person services; the providers will not necessarily have additional time to see more patients or deliver more services.
- Does not require reimbursement for telehealth to be the same as reimbursement for in-person services with "similar complexity and time expenditure." It is not anticipated that telehealth services covered by SB 289 would be considered more lucrative than in-person services.

Per-Unit Cost

Premandate (Baseline) and Postmandate Per-Unit Cost

Although health insurance carriers indicated coverage — to varying degrees — of each of the four telehealth modalities, the definition of covered telehealth services differs by health insurance carrier.

SB 289 does not set a reimbursement rate for telehealth services paid for by state-regulated health insurance plans, but does indicate that reimbursement should be based upon complexity and time. Therefore, CHBRP assumes that telehealth service reimbursement would vary among providers for each insurance carrier and product, and is likely to be priced lower than equivalent in-person visits ($102). CHBRP assumes a lower rate of reimbursement and proportional cost sharing ($0 to $20 based on type of service) than a typical in-person visit for the equivalent procedure code. CHBRP assumes that visits that met the criteria for being substitutes for in-person visits would have higher copayments than those that were supplemental, which is reflected in the type of services delivered based on CPT codes. Average costs per visit for the modalities are as follows:

- Telephone: $67.62($0-10 copayment)
- E-mail: $57.71($0-$10 copayment)
- Live Videoconferencing: $101.66 ($0-20 copayment)
- Store-and-Forward: $82.75 ($0-$20 copayment)

Premiums and Expenditures

Premandate (Baseline) Premiums and Expenditures

Table 7 on page 37 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: $537.63 and $646.64.
- Small group: $451.81 and $558.76.
- Individual market: $422.03 and $334.65.

Total current annual expenditures for all DMHC-regulated plans and CDI-regulated policies is $136.0 billion.

Postmandate Expenditures

Changes in total expenditures

SB 289's impact on total net annual expenditures depends on a variety of assumptions, including the take-up rate by both patients and providers, whether there are more overall encounters — both in person and via telehealth — or whether patients use telehealth as a means to substitute in-person visits. Depending on the scenario, CHBRP estimates that total expenditures would increase by $46.7 million to $207.3 million (Table 1).

CHBRP further assumes that services like telephonic nurse advice lines and standalone physician advice provided currently through third-party vendors (i.e., Teladoc) would not be reimbursable due to SB 289. In the case of nurse advice lines, it is because the services provided are protocol-based and focus on self-management and triage of urgent conditions delivered by nurses (who cannot bill for services unless ordered by a physician and delivered under physician supervision). And, in the case of Teladoc, while the services are patient-initiated, the patients are not seeking care from a provider or medical group where they are an established patient.

Postmandate premium expenditures and PMPM amounts per category of payer

Increases in insurance premiums as a result of SB 289 would vary by market segment. Note that the total population in Table 8 and Table 9, reflects the full 24.6 million enrollees in DMHC-regulated plans and CDI-regulated policies subject to SB 289.

CHBRP assumes insurance carriers could realize cost savings resulting from either new telehealth services, or telehealth services that substitute for in-person visits because:

Providers would receive reimbursement for telehealth visits at a lower rate (for a given time and complexity) when compared to reimbursement for in-person visits (according to the lack of required reimbursement levels in SB 289 bill language); and providers' capacity remains approximately the same whether devoted to in-person or equivalent telehealth visits (per bill language and CPT code definitions).

CHBRP uses analysis by Milliman of Truven Analytics® data on claims to estimate current utilization of in-person encounters and the unit costs of phone, e-mail, live videoconferencing, and store-and-forward.

Among publicly funded DMHC-regulated health plans, California's Media-Cal Managed Care plans include coverage for live videoconferencing and store-and-forward technology within their capitated rates. The plans do not currently reimburse separately for telephone and e-mail encounters, but given the nature of capitation to the health plan, carriers or providers could decide to provide telehealth services although not separately reimbursable under current law.

CHBRP assumes that any cost offsetting or savings is unlikely to occur in the first 12 months following implementation. Although some substitute services will be delivered at a lower price than the equivalent in-person visits, those savings will be offset by increases in supplemental visits in all three scenarios. Those estimates are sensitive to specific assumptions about the rate of increase in use and the share of visits that are replaced versus added. The three scenarios with various adoption rates and mixes of replacement and supplemental services are helpful in understanding the range of impact expected. If telehealth reimbursement rates were closer to in-person rates, the reaction by physicians and patients could be very different (see Analysis of AB 1771 (2014) for estimates of that scenario).

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 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.

Related Considerations for Policymakers

Cost of exceeding Essential Health Benefits

As explained in the *Policy Context* section (page 9), SB 289 does not appear to require coverage for new services, but merely requires payment for services rendered in a different setting. Therefore, SB 289 does not appear to exceed EHBs or trigger the requirement for California to defray additional costs.

SB 289 and Actuarial Value

SB 289 would require health plans to reimburse physicians for services provided through telehealth, but is silent about the cost sharing provisions that carriers and plans can assign to these services. As a result, SB 289 would not have a direct impact on the actuarial value (AV) for a particular plan or policy. Instead, the carrier/plan would have to define the cost sharing for telehealth services as they do for any other service, and consider that when determining the actuarial value.

The service categories represented in the federal AV calculator generally represent the most material service categories needed for calculating AV. Copaymentss for other service categories are unlikely to have a material impact on the calculated AV. Telehealth services are not represented in the current AV calculator. As such, CHBRP believes SB 289 would not have a material impact on AV for plans and policies associated with Covered California.

Postmandate Changes in Uninsured and Public Program Enrollment

Changes in the number of uninsured persons

Under the most aggressive and costly scenario (High scenario), CHBRP estimates the highest premium increase, of approximately 0.45% (Table 9), to affect the CDI-regulated individual market; 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 benefits 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.

How Lack of Coverage Results in Cost Shifts to Other Payers

It appears unlikely that the current benefit coverage prompts enrollees to seek care from public programs or other payers, including charities, and other state departments. However, insofar as county health departments, clinics, nonprofit organizations, hospitals, or foundations currently fund telehealth activities to provide unreimbursed care to their patients to overcome access barriers, there may be a shift from those external funding sources providing telehealth due to the availability of reimbursement for telehealth services covered by SB 289. That would mean the postmandate premium increases could result in savings to other organizations that have been providing telehealth already, without insurance reimbursement.

PREMANDATE AND POSTMANDATE PREMIUMS AND EXPENDITURES

Table 7. Baseline (Premandate) Per Member Per Month Premiums and Total Expenditures by Market Segment, California, 2015

	DMHC-Regulated						CDI-Regulated			
	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*	**Total**
Enrollee counts										
Total enrollees in plans/policies subject to state mandates[e]	8,651,000	2,094,000	3,757,000	836,000	6,891,000	533,000	534,000	690,000	571,000	24,557,000
Total enrollees in plans/policies subject to SB 289	8,651,000	2,094,000	3,757,000	836,000	-	-	534,000	690,000	571,000	17,133,000
Premium costs										
Average portion of premium paid by employer	$423.58	$304.59	$0.00	$437.75	$179.24	$445.00	$511.84	$421.06	$0.00	$80,452,488,000
Average portion of premium paid by employee	$114.05	$147.22	$422.03	$109.44	$0.76	$0.00	$134.80	$137.71	$334.65	$40,023,653,000
Total premium	**$537.63**	**$451.81**	**$422.03**	**$547.19**	**$180.00**	**$445.00**	**$646.64**	**$558.76**	**$334.65**	**$120,476,140,000**
Enrollee expenses										
Enrollee expenses for covered benefits (deductibles, copays, etc.)	$36.95	$89.15	$141.84	$29.78	$0.00	$0.00	$99.91	$166.51	$105.38	$15,510,004,000
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	**$574.58**	**$540.97**	**$563.87**	**$576.98**	**$180.00**	**$445.00**	**$746.55**	**$725.28**	**$440.03**	**$135,986,144,000**

Source: California Health Benefits Review Program, 2015.

Notes: (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 Health Families, which was moved into Medi-Cal Managed Care in 2013 as part of the 2012–13 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.

Table 8. Postmandate Impacts of the Mandate on Per Member Per Month Premiums and Total Expenditures by Market Segment, California, 2015 — Low Estimate

	DMHC-Regulated						CDI-Regulated			
	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*	**Total**
Enrollee counts										
Total enrollees in plans/policies subject to state mandates[e]	8,651,000	2,094,000	3,757,000	836,000	6,891,000	533,000	534,000	690,000	571,000	24,557,000
Total enrollees in plans/policies subject to SB 289	8,651,000	2,094,000	3,757,000	836,000	6,891,000	533,000	534,000	690,000	571,000	24,557,000
Premium costs										
Average portion of premium paid by employer	$0.10	$0.12	$0.00	$0.12	$0.00	$0.00	$0.25	$0.25	$0.00	$18,045,000
Average portion of premium paid by employee	$0.03	$0.06	$0.29	$0.03	$0.00	$0.00	$0.07	$0.08	$0.34	$21,219,000
Total premium	**$0.12**	**$0.18**	**$0.29**	**$0.15**	**$0.00**	**$0.00**	**$0.32**	**$0.34**	**$0.34**	**$39,264,000**
Enrollee expenses										
Enrollee expenses for covered benefits (deductibles, copays, etc.)	$0.02	$0.03	$0.05	$0.03	$0.00	$0.00	$0.06	$0.06	$0.06	$7,451,000
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	**$0.15**	**$0.22**	**$0.35**	**$0.17**	**$0.00**	**$0.00**	**$0.38**	**$0.40**	**$0.40**	**$46,716,000**
Postmandate percentage change										
Percent change insured premiums	0.0228%	0.0406%	0.0698%	0.0267%	0.0000%	0.0000%	0.0492%	0.0605%	0.1010%	0.0326%
Percent change total expenditures	0.0256%	0.0402%	0.0618%	0.0302%	0.0000%	0.0000%	0.0509%	0.0551%	0.0909%	0.0344%

Source: California Health Benefits Review Program, 2015.

Notes: (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 Health Families, which was moved into Medi-Cal Managed Care in 2013 as part of the 2012–13 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.

Table 9. Postmandate Impacts of the Mandate on Per Member Per Month Premiums and Total Expenditures by Market Segment, California, 2015 — Low-Enhanced Estimate

	DMHC-Regulated						CDI-Regulated			
	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*	**Total**
Enrollee counts										
Total enrollees in plans/policies subject to state mandates[e]	8,651,000	2,094,000	3,757,000	836,000	6,891,000	533,000	534,000	690,000	571,000	24,557,000
Total enrollees in plans/policies subject to SB 289	8,651,000	2,094,000	3,757,000	836,000	6,891,000	533,000	534,000	690,000	571,000	24,557,000
Premium Costs										
Average portion of premium paid by employer	$0.15	$0.19	$0.00	$0.18	$0.00	$0.00	$0.40	$0.40	$0.00	$28,407,000
Average portion of premium paid by employee	$0.04	$0.09	$0.46	$0.05	$0.00	$0.00	$0.10	$0.13	$0.53	$33,403,000
Total premium	**$0.19**	**$0.29**	**$0.46**	**$0.23**	**$0.00**	**$0.00**	**$0.50**	**$0.53**	**$0.53**	**$61,810,000**
Enrollee expenses										
Enrollee expenses for covered benefits (deductibles, copays, etc.)	$0.05	$0.07	$0.12	$0.06	$0.00	$0.00	$0.13	$0.13	$0.13	$16,132,000
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	**$0.25**	**$0.36**	**$0.58**	**$0.29**	**$0.00**	**$0.00**	**$0.63**	**$0.67**	**$0.67**	**$77,942,000**
Postmandate percentage change										
Percent change insured premiums	0.0360%	0.0639%	0.1099%	0.0420%	0.0000%	0.0000%	0.0774%	0.0952%	0.1590%	0.0513%
Percent change total expenditures	0.0429%	0.0670%	0.1030%	0.0505%	0.0000%	0.0000%	0.0850%	0.0918%	0.1514%	0.0573%

Source: California Health Benefits Review Program, 2015.

Notes: (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 Health Families, which was moved into Medi-Cal Managed Care in 2013 as part of the 2012–13 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.

Table 10. Postmandate Impacts of the Mandate on Per Member Per Month Premiums and Total Expenditures by Market Segment, California, 2015 — High Estimate

	DMHC-Regulated						CDI-Regulated			
	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*	**Total**
Enrollee counts										
Total enrollees in plans/policies subject to state mandates[e]	8,651,000	2,094,000	3,757,000	836,000	6,891,000	533,000	534,000	690,000	571,000	24,557,000
Total enrollees in plans/policies subject to SB 289	8,651,000	2,094,000	3,757,000	836,000	6,891,000	533,000	534,000	690,000	571,000	24,557,000
Premium costs										
Average portion of premium paid by employer	$0.43	$0.55	$0.00	$0.52	$0.00	$0.00	$1.12	$1.13	$0.00	$80,090,000
Average portion of premium paid by employee	$0.12	$0.27	$1.31	$0.13	$0.00	$0.00	$0.29	$0.37	$1.50	$94,176,000
Total premium	**$0.54**	**$0.81**	**$1.31**	**$0.65**	**$0.00**	**$0.00**	**$1.41**	**$1.50**	**$1.50**	**$174,266,000**
Enrollee expenses										
Enrollee expenses for covered benefits (deductibles, copays, etc.)	$0.11	$0.15	$0.24	$0.13	$0.00	$0.00	$0.27	$0.27	$0.27	$33,072,000
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	**$0.65**	**$0.97**	**$1.55**	**$0.77**	**$0.00**	**$0.00**	**$1.69**	**$1.77**	**$1.77**	**$207,338,000**
Postmandate percentage Change										
Percent change insured premiums	0.1014%	0.1803%	0.3100%	0.1183%	0.0000%	0.0000%	0.2184%	0.2685%	0.4483%	0.1446%
Percent change total expenditures	0.1138%	0.1784%	0.2745%	0.1341%	0.0000%	0.0000%	0.2259%	0.2447%	0.4033%	0.1525%

Source: California Health Benefits Review Program, 2015.

Notes: (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 Health Families, which was moved into Medi-Cal Managed Care in 2013 as part of the 2012–13 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

As discussed previously, SB 289 would require state-regulated health insurance to cover patient-initiated telephonic and electronic patient management and evaluation services provided to existing patients by physicians and nonphysicians. The public health impact analysis includes estimates on mandate-relevant health outcomes, potential treatment harms, gender and racial disparities, financial burden, premature death, and economic loss in the short and long term. This section estimates the short term impact[30] of SB 289 on overall morbidity, mortality, access to care, potential harms, patient experience, financial burden, and disparities. See the *Long Term Impacts* section, page 53, for a discussion of outcomes beyond the first 12 months of the bill implementation.

Estimated Public Health Outcomes

As presented in the *Medical Effectiveness* section, page 20, the scope of SB 289 applies to virtually all diseases and conditions. The evidence in support of the medical effectiveness of telephone or email communication is either ambiguous or insufficient, with the exception of email for diabetes management, for which the *Medical Effectiveness* review found a preponderance of evidence that the use of secure email as part of a multifaceted web portal is associated with better glycemic control. The *Medical Effectiveness* review also found a preponderance of evidence across multiple diseases that both live videoconferencing and store-and-forward are at least as effective in terms of health outcomes and diagnostic accuracy as in-person care and that these telehealth modalities can shorten wait times for specialty care, diagnosis, and treatment.

As presented in the *Benefit Coverage, Utilization, and Cost Impacts* section, page 26, CHBRP estimates that the number of enrollees newly covered for telephone- and email-based evaluation and management, live videoconferencing, and store-and-forward would increase by 109% (12,830,000 enrollees) for each modality. Overall, CHBRP estimates that between 7.4% and 29.2% of all evaluation and management visits would occur through telehealth.

To show the magnitude of difference between its model assumptions, CHBRP presents low-end, mid-range, and high-end scenarios estimating the update of various technologies in the first year postmandate (

[30] CHBRP defines short term impacts as changes occurring within 12 months of bill implementation.

Table **11**). CHBRP estimates that the use of the four modes of telehealth would increase between 30% and 132%. Patient-initiated telephone communication would increase by approximately 821,000 to 3,645,000 encounters and email communication would increase by approximately 274,000 to 1,215,000 encounters. Likewise, the use of live videoconferencing would increase by approximately 68,000 to 304,000 encounters and store-and-forward would increase by approximately 205,000 to 911,000 encounters. In the scenario's representing low- and high-end estimates of health provider and patient uptake, CHBRP assumes that without cost sharing, 40% of these new encounters would be *substitutes* for in-person visits (encounters already occurring, but unreimbursed) and 60% are *supplemental* visits (new encounters with patients who would have previously avoided in-person visits due to distance or inconvenience). Scenario Low-Enhanced assumes the same low-end uptake as the low scenario, but assumes 10% of these new encounters would be *substitutes* for in-person visits and 90% would be *supplemental* visits, meaning there would be a larger proportion of "new" telehealth visits.

Table 11. Summary of type of patient service (Substitute or Supplemental) by type of Telehealth

	Low	Low-Enhanced	High
Provider/Patient Uptake	25%	25%	100%
% Substitute Visits	40%	10%	40%
% Supplemental Visits	60%	90%	60%
Telephone	**821,200**	**818,900**	**3,644,700**
Substitute	328,500	81,900	1,457,900
Supplemental	492,700	737,000	2,186,800
E-mail	**273,700**	**273,000**	**1,214,900**
Substitute	109,500	27,300	486,000
Supplemental	164,200	245,700	728,900
Live Videoconference	**68,400**	**68,200**	**303,700**
Substitute	27,400	6,800	121,500
Supplemental	41,100	61,400	182,200
Store-and-Forward	**205,300**	**204,700**	**911,200**
Substitute	82,100	20,500	364,500
Supplemental	123,200	184,300	546,700
Enrollee Out-of-Pocket Costs	**$7,451,000**	**$16,132,000**	**$33,072,000**

Source: California Health Benefits Review Program, 2015

Note: Numbers may not sum due to rounding

Potential Harms from the Use of Telehealth

When data are available, CHBRP estimates the marginal change in relevant harms associated with interventions affected by the proposed mandate. In the case of SB 289, CHBRP found that potential harms frequently mentioned in the telehealth literature include further fragmentation of care (especially when patients access out-of-network providers); misdiagnosis (which varies greatly with technology type and disease condition due in part to the lack of context and nonverbal clues obtained in an in-person visit) (Heinzelmann et al., 2005; Kassirer, 2000); higher rates of follow-up; and potential delays of immediate care seeking in the emergency department, which could pose a significant safety risk for patients with urgent or emergent conditions (Hall, 2014; Lewis et al., 2005; Nelson, 2014). Other potential harms associated with e-mail care include those associated with provider lack of adherence to security protocol, informed consent, breaches in patient privacy, and unauthorized access to and/or use of patient health care information (Hall and McGraw, 2014; Menachemi et al., 2011). Two of the barriers to the diffusion and utilization of telehealth in practice from a health provider's perspective are concerns about the medical responsibility of maintaining privacy during the exchange of sensitive data necessary to treatment (Timpano, 2013) and concern over increased physician liability. In addition, many physicians have predicted that their time would be under even greater demand with increased patient use of e-mail and appropriate reimbursement for this time would be lacking (Kassirer, 2000).

There is a concern that telehealth, especially store-and-forward and e-mail use, would increase the potential for fraud and abuse. This argument is based on the idea that upcoding would be used to bill for telehealth when it was not necessary. However, medical coding and documentation standards act as an impediment to that type of gaming and exploitation of telehealth billing. Alaska adopted telehealth in 2001

and has not experienced either problem based on a review of 1,300 providers and more than 50,000 billed store-and-forward telehealth visits between years 2001 and 2007 (Ferguson, 2008).

Health Outcomes

As previously mentioned, the scope of health conditions potentially affected by SB 289 is vast and measures of health outcomes are limited to those included in the literature (see the *Medical Effectiveness* section, page 20). Because telehealth modalities included in SB 289 require patient-initiated contact, inpatient hospitalization was excluded from this analysis; thus the literature reviewed rarely considered mortality outcomes since this is a rare occurrence in outpatient settings. CHBRP reviewed studies examining the effectiveness of telephone and e-mail on conditions such as coronary heart disease, congestive heart failure, asthma but found insufficient evidence to determine whether these modalities are as effective as in-person visits. However, CHBRP did find a preponderance of evidence that email communication within a multifaceted web portal is associated with better glycemic control for diabetic patients. CHBRP reviewed studies examining the effectiveness of store-and-forward and live videoconferencing on conditions including mental health and dermatology. CHBRP found clear and convincing evidence that live videoconferencing and in-person visits have similar effects on mental health outcomes for individuals treated for psychiatric conditions and evidence suggesting that store-and-forward yields similar dermatologic outcomes as in-person visits.

CHBRP found insufficient evidence to determine whether services provided via *telephone* or *e-mail* are as effective as in-person visits, with the exception of email communication for glycemic control among diabetic patients. Therefore, although telephone encounters would increase by approximately 821,000 to 3,645,000 encounters and email communication would increase by approximately 274,000 to 1,215,000 encounters, the public health impact of SB 289 is unknown. Note that the absence of evidence is not "evidence of no effect." It is possible that an impact — positive or negative — could result, but current evidence is insufficient to inform an estimate.

For mental health and dermatology, evidence indicates that outcomes for *live videoconferencing* and *store-and-forward* are equivalent to in-person care, and CHBRP estimates that utilization would increase by approximately 68,000 to 304,000 live videoconferencing encounters and by approximately 205,000 to 911,000 store-and-forward encounters. Therefore, CHBRP estimates that positive mental health and dermatologic outcomes could occur for some newly covered enrollees with these conditions.

Patient Experience

One key aspect to estimating the potential impact of SB 289 is gauging patient interest and uptake of technologies to communicate with their providers. Of the four technologies, CHBRP assumes that telephone and e-mail are the most common and simple modes of communication between patients and providers. Although patients are integral to the use of live videoconferencing, CHBRP only found literature addressing encounters occurring at medical facilities that were facilitated through another provider. CHBRP found no literature evaluating patient-initiated live videoconferencing encounters, but believes that these types of encounters are starting to occur and may become more common in the future (See *Long-Term Impact of SB 289*, page 53). Therefore, in the short term, CHBRP addresses issues pertaining to the patient experience and satisfaction related to telephone, e-mail, and other types of telehealth.

Patient interest and use

CHBRP found limited literature on e-mail, telephone, store-and-forward, or live videoconferencing from the patient perspective. There appears to be variation in patient interest in the use of telehealth services. The most recent data CHBRP found is several years old and out of date — especially for technology —

but does provide an indication of interest in this communication tool. A 2010 Harris poll reported that 88% of U.S. adults use the internet to get medical information online and 53% discuss their findings with their physicians (The Harris Poll, 2010). A previous Harris poll found that 90% of adults online were interested in some kind of online communication with their physician (Harris Interactive, 2008). Several studies have shown that patients would like to use e-mail to communicate with their physicians, if e-mail was available (Goodyear-Smith et al., 2005). Additionally, some patients reported that some of the communication currently taking place by telephone could be replaced by e-mail (Bhor and Mason, 2006).

Authors of a systematic review of 168 included articles, representing a wide variety of clinical settings, reported high and uniform patient satisfaction with telehealth regardless of the clinical setting (Heinzelmann et al., 2005). The studies measuring patient satisfaction with telehealth reported that between 20% and 73% of subjects preferred in-person visits to telehealth. (Heinzelmann et al., 2005). A 2004 Cochrane review also looked at patient satisfaction with telephone consultations. Of the four studies examined, three found that patients were satisfied with their care, and in one study, 84% of patients said they would be happy to use telehealth consultation again. However, the authors of the review note that patient satisfaction results must be interpreted with caution, due to low response rates and selection bias (Bunn et al., 2004)

In a systematic review limited to teledermatology, Warshaw et al. reported that in 3 of 5 studies (all of which were randomized controlled trials) that addressed patient satisfaction, patients expressed comparable levels of satisfaction between store-and-forward and in-person care (Warshaw et al., 2011). One nonrandomized study reported greater satisfaction with teledermatology. In the remaining study, patients that had already been seen via store-and-forward, reported greater satisfaction with clinic dermatology (Warshaw et al., 2011). Overall, preference for teledermatology ranged from 38% to 86%. One study reported slightly higher satisfaction with clinic dermatology but 76% of the patients preferred teledermatology over waiting to see a dermatologist (Warshaw et al., 2011).

In a study of adult caregivers of children cared for in an urban pediatric primary care clinic, 86.3% reported that they would like to communicate with their provider by e-mail, but only 10.7% reported doing so (Dudas and Crocetti, 2013). In a 2013 internal survey of Kaiser Permanente members who used the secure patient portal, 87% percent of respondents reported that their physicians did a very good or excellent job of meeting their needs (Pearl, 2014).

In a study of telehealth visits conducted as part of the Health e-Access Telemedicine Program (which provides telehealth visits in schools and neighborhood locations in low-income, inner-city neighborhoods), 84% of parents were highly satisfied with the care they or their children received and 79% to 83% would be interested in using telehealth for their or their child's routine health care. Additionally, over 95% of parents felt that the telehealth visit was more or much more convenient (McIntosh, 2014).

CHBRP estimates that, postmandate, patient experience would improve as physicians increase their email and telephone responses to patient-initiated inquiries. The improvement is partly attributable to increasing the overall convenience for patients, such as reducing wait times for some visits.

Impact on patient travel for health care

Patients must travel to obtain their health care, which can be a burden especially for those who live in rural areas or have limited transportation options, and CHBRP finds that telehealth may improve access from the patient's perspective. Patients who cannot take time from work, have difficulty traveling, or questions or problems occurring after usual office hours may find the convenience of e-mail, phone, and live videoconferencing to be beneficial. These advantages would also extend to those living in urban areas. As described in the *Background on Telehealth* section, page 16, the difference in health status and

health care access between urban and rural communities in California is large. Travel costs include the direct costs of transportation and the indirect costs such as lost productivity, loss of income, and delays in treatment. For patients (and their caregivers), traveling from home in a rural location to an urban-based health clinic for treatment can be a potential barrier, as public transportation is often limited. In urban areas, where public transportation is more likely to be available, patients must contend with traffic delays, indirect routes, related transportation costs (such as transportation fares, tolls, parking, etc.) and time (e.g., bus/train schedules, transfers, etc.).

Wootton and colleagues (2011) performed a review of the teledermatology literature and found 20 studies (both U.S. and non-U.S.) that measured the percentage of avoided travel through telemedicine (n = 5,199 subjects). About 43% of patients were able to avoid travel through the use of store-and-forward compared to usual care ($p < 0.001$). In the seven live videoconferencing and one hybrid telehealth studies, an average of 70% of the patients avoided travel compared to usual care ($p = 0.014$) (Wootton et al., 2011). Cusack et al. estimated $736 million savings in travel costs for telehealth visits using store-and-forward technologies, $160 million for live videoconferencing, and $912 million for a hybrid approach (Cusack et al., 2007). These estimations are based on 2007 costs of $0.445 per mile and the assumption that the telehealth consult was successful, in that no additional in-person visits were required. The video and hybrid approaches were estimated to have a success rate of 75% and 33%, respectively (Cusack et al., 2007). Finally, a retrospective review of the use of store-and-forward telehealth in Alaska found that travel was avoided in one of five primary care visits and three of four specialist visits, saving over $14 million for 15,6000 patient encounters over 7 years (Ferguson, 2008).

CHBRP estimates that postmandate travel costs for some enrollees using telehealth services subject to SB 289 would decrease. As a result, some enrollees may have better outcomes because they are no longer delaying or avoiding in-person visits in favor of telephonic or electronic communications with physicians; however, CHBRP is unable to quantify the impact due to a lack of data.

Lost productivity

CHBRP found little literature addressing the prevention of loss of productively due to travel and in-person wait time. One employer with over 20,000 employees offered a contracted, independent telehealth service and self-reported saving almost $800,000 in direct health costs and averted lost productivity (Zappe, 2012). In Alaska, store-and-forward telehealth decreased the time to see a specialist, leading to earlier diagnoses and treatments. In this case, the specialty consults were provided largely within the same working day (Ferguson, 2008).

CHBRP estimates SB 289 would decrease lost productivity associated with travel; however, CHBRP is unable to quantify the effect due to lack of data.

Estimated Impact on Financial Burden

When possible, CHBRP estimates the marginal impact of mandates on financial burden, defined as uncovered medical expenses paid by the enrollee as well as out-of-pocket expenses (i.e., deductibles, copayments, and coinsurance). Depending on the change in the utilization for telehealth modalities, enrollee out-of-pocket expenses may increase by 0.05% (increase of $7.5 million) to 0.21% (increase of $33.1 million).

CHBRP estimates that SB 289 would modify coverage and, depending on postmandate utilization rates, could increase enrollees' net financial burden for additional telehealth services by over $7.5 million to $33.1 million. Postmandate, enrollees would now share in both the cost of substitute telehealth services and supplemental telehealth services (patient care that would not have occurred or been billed because telehealth was not covered or reimbursed.)

Impact on Gender and Racial Disparities

There are a variety of determinants of health that influence the health status of different groups. CHBRP estimates SB 289's impact on one of those determinants — access to care through insurance — on existing health disparities; other important determinants of health are generally outside the scope of health insurance mandates (e.g., biological, environmental, social, behavioral, and language barriers).

CHBRP analyses are limited to the insured population affected by a health benefit mandate. Coverage disparities can exist within the insured population and may contribute to gaps in access and/or utilization among those covered (Kirby et al., 2006; Lille-Blanton and Hoffman, 2005; Rosenthal et al., 2008). To the extent that racial/ethnic groups are disproportionately distributed among policies with more or less coverage, a mandate bringing all policies to parity may change an existing disparity. The baseline racial/ethnic distribution of the insured population is unknown and CHBRP is unable to calculate quantitative estimates. However, CHBRP will provide qualitative estimates of a mandate's possible impact on racial/ethnic disparities when possible.

The use of e-mail as a mode of patient–physician communication requires access to and familiarity with computers. Numerous studies have considered access to and use of computers by various sociodemographic categories including age, gender, income, education level, race, ethnicity, disability, and geography and have documented disparities in all categories (Baldassare, 2013; Gibbons, 2008). Specific to the use of e-mail for health care advice and treatment, CHBRP finds that older persons, low-income persons, and minorities (African Americans, Hispanics) are less likely to be interested in or use e-mail to communicate with a physician (Baldassare, 2013; Dudas and Crocetti, 2013; Mitchell et al., 2014; Moller, 2000). They are also less likely to have access to broadband Internet (Baldassare, 2013; Moller, 2000) and an e-mail account (Gibbons, 2008).

Another important topic related to internet use between patients and providers is health literacy. Internet use between a patient and a physician requires both the ability to read and interpret the other person's written word (Gibbons, 2008). CHBRP found little evidence on the impact of health literacy on health outcomes associated with telehealth. A 2006 study found that diabetes patients at Kaiser reporting limited health literacy were less likely to access and navigate an internet-based patient portal than those with adequate health literacy. Specifically, minorities (African American, Latino, and Filipino) and those with limited health literacy had higher odds of never signing on to the patient portal (odds ratio [OR]: 1.7]) compared with those who did not report any health literacy limitation (Sarkar, 2011). CHBRP found no body of literature regarding disparate use of or access to live videoconferencing or store-and-forward technologies.

Age, income, and racial/ethnic disparities exist in rural areas (see the *Background on Telehealth* section, page 16), and to the extent that health care access for the rural population is improved, telehealth may reduce disparities. The disparities gap could be widened by the extent that telehealth communication tools are disproportionately accessed by those not underserved, while improving health care outcomes for this group. CHBRP found no literature regarding use of telephone, store-and-forward or live videoconferencing by sociodemographic characteristics.

Although disparities in interest and/or use of email may exist, CHBRP is unable to estimate the impact of SB 289 on health disparities due to the lack of evidence in access to and use of all telehealth modalities by subpopulations.

LONG-TERM IMPACT OF SB 289

In this section, CHBRP estimates the long-term impact of SB 289, defined as impacts occurring beyond the first 12 months of implementation. These estimates are qualitative and based on the existing evidence available in the literature. CHBRP 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, and other unexpected factors.

In the long term, the number of Californians enrolled in DMHC-regulated plans or CDI-regulated policies subject to SB 289 would increase as providers and patients increasingly use telephonic and electronic communication tools to provide and receive medical services. Because telehealth services can be reimbursed at a lower rate than equivalent in-person services, it is unlikely that physicians operating in a fee-for-service environment would seek to substitute telehealth visits for in-person visits. However, if there is opportunity for providers to deliver supplemental (i.e. new) telehealth services due to technology, excess capacity, changes in reimbursement, or other supports and incentives, there could be a larger expansion in use of telehealth services over time.

Long-Term Utilization and Cost Impacts

Utilization Impacts

In the 12 months following enactment, CHBRP estimates that between 7.4% (Low-Enhanced) and 29.2% (High) of E/M services would be delivered using either telephone, e-mail, live videoconferencing, or store-and-forward telehealth modalities.

There is limited literature suggesting that application of telehealth for delivery of certain types of E/M visits would be as effective as in-person visits in the long term in improving patient health, reducing unnecessary health care use, and improving access to evaluation and management services.

CHBRP's review of the literature and expert interviews indicate that there is not sufficient evidence to determine that access to telehealth services specifically would decrease emergency department visits or inpatient discharges over time. However, there is evidence suggesting that outpatient office visits help to reduce emergency room use and inpatient stays for ambulatory care–sensitive conditions, so it is also reasonable to assume that improved access to telehealth services would lead to long-term reductions in avoidable emergency room use and hospitalizations, resulting in long-term reductions in spending growth. This argument hinges on the assumption that telehealth-based evaluation and management services would be equivalent in quality and utility to in-person visits that the patient may be currently unable to receive due to distance or transportation. The time and reimbursement on the physician side would be the same as an in-person visit, according to the requirements of SB 289.

Based on the Kaiser Permanente example (Pearl, 2014), CHBRP estimated that use of telehealth for E/M services would be 19.8% for services for established patients under the High scenario (i.e., full adoption), which reflects the overall 22.8% Kaiser utilization rate during its first year implementing telehealth technology, adjusted to reflect the requirement in SB 289 that visits are both patient-initiated and provided to an established provider.

Over time, the proportion of all visits in the Kaiser model increased from 22.8% to 50.3% within a five-year period of time. That finding indicates that from 2016 on, there is likely to be increased use of telehealth to conduct both substitute and supplementary evaluation and management visits. However, the adoption would be based upon patient preferences (since copayments are identical) and physician capacity (use of

technology for secure e-mail messaging, secure live videoconferencing, documentation, billing, and ability to collect copayments for remote visits). Based on the Kaiser study, CHBRP anticipates a commensurate increase due to access to telehealth. Once offered to enrollees, telehealth services would experience increases of 31.2% year-over-year. Although there has been a growth in third-party services providing telephonic physician consultation for $40 to $60, those services do not appear to be covered by this law due to the requirements about established patients. However, if these third-party services were able to partner with existing medical groups and use California-licensed physicians, the issue of an "established patient" would need to be interpreted by the courts or regulators to understand the potential impact of those third-party services.

Cost Impacts

The additional costs of reimbursing telephone and e-mail services are likely to increase with health care inflation and increased use of services. There is no evidence that health care costs would go down due to the reimbursement of telephone and e-mail services, as there is no evidence that expensive services such as emergency department visits or inpatient discharges would be reduced because of better access to telephone and e-mail services. However, as mentioned previously, if telephone and e-mail visits are assumed to replace in-person evaluation and management services, the supplementary telephone and e-mail visits that would have not occurred in the absence of the mandate could have a long-term impact, especially in chronically ill populations, rural areas, and ambulatory care–sensitive conditions.

In future years, there is the potential for gaming or fraud with supplemental visits because doctors could "encourage" additional patient-initiated interaction beyond what is needed. CHBRP's content expert on medical billing and coding indicated that coding standards and the specific requirements for billing telehealth and providing documentation equivalent to office visits that are based upon medical necessity would serve as an impediment to fraud, gaming, upcoding, or abuse. For this reason, CHBRP assumes that there will be no more incentive to commit fraud or provide inappropriate care via telehealth in contrast to in-person visits.

In estimating the long-term cost impacts of SB 289, CHBRP considers the following issues:

Adoption of telehealth: CHBRP assumed phased-in adoption in the Low and Low-Enhanced scenarios, with a 25% adoption rate by 2016 in both. In the High scenario, CHBRP assumed full 100% adoption. The High scenario represents an upper-bound in terms of adoption in 2016, but full adoption and increased use (based on the Kaiser experience) is likely to continue to increase spending on telehealth in subsequent years.

Provider network implications: Network expansion and access improvements could be encouraged through reimbursement for telehealth. However, because CHBRP assumed reimbursement is lower for telehealth than equivalent in-person visits, there is no incentive to completely substitute telehealth visits for existing in-person visits. In the short-term, CHBRP assumed that 40% of the new telehealth use would replace in-person visits (i.e., substitution), while 60% would be new supplementary services that could be effectively used in care coordination, follow-up care more than seven days after a billed visit, or to provide services to people with access barriers (like remote location or lack of convenient transportation). In the Low-Enhanced scenario, the phase-in assumption stayed the same as the Low scenario (25%), but the supplemental visits represents 90% of the increase, while substitutes only made up 10%. This may provide opportunities for health plans and providers to meet a diverse set of needs for more population groups, especially those in rural areas or those facing transportation problems.

Long-Term Public Health Impacts

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

CHBRP is unable to estimate the long-term impact of SB 289 on overall health outcomes and disparities due to the breadth of conditions telehealth affects and the unknown impact of future technology development. To the extent that advances in telehealth technology improve access and provider capacity, CHBRP projects some improvements in patient management and evaluation, especially for those enrollees with transportation barriers or chronic conditions.

Access to Telehealth

CHBRP assumes that technology will continue to drive changes in telehealth. This includes increased penetration of electronic health records (EHR), associated patient portals and office management systems; increased use of mobile and remote communication devices (such as cellular telephones and or medical devices); increased broadband coverage, which allows not only better internet coverage but easier and more rapid transfer of large data files; and increased demand for these types of services from consumers, insurers, and providers. CHBRP projects that this trend, along with changes in reimbursement, would likely increase use of telephone, e-mail, and other telehealth services between patients and providers.

In the future, as these services become more streamlined and technology improves, there is a potential to maximize access and provider capacity through improved patient evaluation and management. For example, remote monitoring is becoming a more common method for managing patients. The use of a small subcutaneous implanted device to detect heart rhythm disturbances is changing how health care providers evaluate and management patients with various heart conditions. It is expanding store-and-forward technologies traditionally used between physicians to now include direct patient-physician interaction (Brignole et al., 2006; Moya and Taylor, 2009). The first digestible monitoring device, approved in 2012, also has potential to change the evaluation and management relationship between patients and physicians. This sand-particle sized microchip, embedded in drugs to monitor a patients' response to treatment, sends signals from the device to a patch worn by the patient, which then transmits relevant information to other devices, such as the patient's and or physician's mobile device (Cressey, 2012). Patients armed with real-time information will have the ability to immediately contact their doctor with questions when abnormal readings arise.

Examples of California Telehealth Systems: Integrated and Contracted

Business models and strategies to maximize new reimbursement models and rules are expected to occur. As noted earlier, CHBRP found no studies of patient-initiated live videoconferencing, but there are several examples of models that provide a window into the potential available for patient management and evaluation.

Teladoc is a national telehealth provider that payers contract with to provide their enrollees with around-the-clock access to physicians via telephone or live videoconferencing through the Internet. In California, between April 2012 and February 2013, the leading reasons for Teladoc consults by CalPERS members were acute respiratory illnesses (31.1%), urinary tract infection and urinary symptoms (11.9%), and skin

problems (9.1%) (Uscher-Pines and Mehrotra, 2014). Only a small number of the total number of eligible members, 0.9 % (N = 2,718) used Teladoc for at least one visit, accounting for a very small proportion of CalPERS' health care use. Across the sample of 74,550 adult enrollees of both Teladoc users and nonusers, the average number of monthly visits for all conditions was 291 Teladoc visits as compared with 39,431 office visits and 883 emergency department visits.

RelayHealth is an online service that gives patients the ability to communicate online with health care providers and office staff 24 hours a day and provides access to more than 30 medical specialty categories. RelayHealth is being used in California by Aetna (Aetna, 2013), Blue Shield of California, ConnectiCare, Silicon Valley Employers Forum, 10 major employers, 5 major medical groups, and Cigna HealthCare. Company-sponsored surveys showed that the majority of doctors and patients found the service easy to use, satisfying, and preferable to an office visit for nonurgent health issues. Results of an unpublished and independent study commissioned by RelayHealth and conducted by University of California, Berkeley, and Stanford-based investigators reported that savings exceeded $1 per member per month (PR NewsWire, 2002).

LiveHealth OnLine owned and operated by WellPoint, was launched in California by Anthem Blue Cross in 2014. This program allows Anthem Blue Cross members to initiate online encounters from their home or workplace via live audio/video to speak with a physician. Currently, patients need access to a desktop or laptop computer with a webcam; however, they will soon be able to use a computer tablet or smartphone.

These are only a few examples of currently available systems, and as telehealth technology continues to evolve and diffuse across the state, the expansion of covered services may change dramatically in unforeseen ways. Issues concerning breeches in data security, informed consent, privacy, unauthorized access to patient health care information as well as billing fraud and abuse will need to be monitored continually.

APPENDIX A TEXT OF SENATE BILL SB 289

On February 25, 2015, the California Senate Committee on Health requested that CHBRP analyze SB 289.

SENATE BILL No. 289

Introduced by Senator Mitchell

February 23, 2015

SECTION 1.

Section 1374.14 is added to the *Health and Safety Code*, to read:

1374.14.

(a) A health care service plan shall, with respect to plan contracts issued, amended, or renewed on or after January 1, 2016, cover telephonic and electronic patient management services provided by a physician or nonphysician health care provider and reimburse those services based on their complexity and time expenditure.

(b) This section shall not be construed to authorize a health care service plan to require the use of telephonic and electronic patient management services when the physician or nonphysician health care provider has determined that those services are not medically appropriate.

(c) This section shall not be construed to alter the scope of practice of a health care provider or authorize the delivery of health care services in a setting, or in a manner, that is not otherwise authorized by law.

(d) All laws regarding the confidentiality of health information and a patient's rights to his or her medical information shall apply to telephonic and electronic patient management services.

(e) This section shall not apply to a patient under the jurisdiction of the Department of Corrections and Rehabilitation or any other correctional facility.

(f) Notwithstanding subdivision (a), a health care service plan shall not be required to reimburse separately for any of the following:

(1) A telephonic or electronic visit that is related to a service or procedure provided to an established patient within a reasonable period of time prior to the telephonic or electronic visit, as recognized by the American Medical Association, Current Procedural Terminology codes.

(2) A telephonic or electronic visit that leads to a related service or procedure provided to an established patient within a reasonable period of time, or within an applicable postoperative period, as recognized by the American Medical Association, Current Procedural Terminology codes.

(3) A telephonic or electronic visit provided as part of a bundle of services for which reimbursement is provided for on a prepaid basis, including capitation, or for which reimbursement is provided for using an episode-based payment methodology.

(4) A telephonic or electronic visit that is not initiated by the established patient, or the parents or guardians of a minor who is an established patient, or an established patient's legally recognized health care decisionmaker.

(g) Nothing in this section shall be construed to prohibit a health care service plan from requiring documentation reasonably relevant to a telephonic or electronic visit, as recognized by the American Medical Association, Current Procedural Terminology codes.

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

(1) "Established patient" means a patient who, within three years immediately preceding the telephonic or electronic visit, has received professional services from the provider or another provider of the exact same specialty and subspecialty who belongs to the same group practice.

(2) "Nonphysician health care provider" means a provider, other than a physician, who is licensed pursuant to Division 2 (commencing with Section 500) of the Business and Professions Code.

(3) "Telephonic and electronic patient management services" means the use of electronic communication tools to enable treating physicians to evaluate and manage established patients in a manner that meets all of the following criteria:

(A) Do not require a face-to-face visit with the physician or nonphysician health care provider.

(B) Are initiated by the established patient, the parents or guardians of a minor who is an established patient, or an established patient's legally recognized health care decisionmaker. For purposes of this section, "initiated by the established patient" excludes a visit for which a provider or staff contacts a patient to initiate a service.

(C) Are recognized by the American Medical Association, Current Procedural Terminology codes.

SEC. 2.

Section 10123.855 is added to the *Insurance Code*, to read:

10123.855.

(a) A health insurer shall, with respect to health insurance policies issued, amended, or renewed on or after January 1, 2016, cover telephonic and electronic patient management services provided by a physician or nonphysician health care provider and reimburse those services based on their complexity and time expenditure.

(b) This section shall not be construed to authorize a health insurer to require the use of telephonic and electronic patient management services when the physician or nonphysician health care provider has determined that those services are not medically appropriate.

(c) This section shall not be construed to alter the scope of practice of a health care provider or authorize the delivery of health care services in a setting, or in a manner, that is not otherwise authorized by law.

(d) All laws regarding the confidentiality of health information and a patient's rights to his or her medical information shall apply to telephonic and electronic patient management services.

(e) This section shall not apply to a patient under the jurisdiction of the Department of Corrections and Rehabilitation or any other correctional facility.

(f) Notwithstanding subdivision (a), a health insurer shall not be required to reimburse separately for any of the following:

(1) A telephonic or electronic visit that is related to a service or procedure provided to an established patient within a reasonable period of time prior to the telephonic or electronic visit, as recognized by the American Medical Association, Current Procedural Terminology codes.

(2) A telephonic or electronic visit that leads to a related service or procedure provided to an established patient within a reasonable period of time, or within an applicable postoperative period, as recognized by the American Medical Association, Current Procedural Terminology codes.

(3) A telephonic or electronic visit provided as part of a bundle of services for which separate reimbursement is not consistent with the American Medical Association, Current Procedural Terminology codes.

(4) A telephonic or electronic visit that is not initiated by the established patient, the parents or guardians of a minor who is an established patient, or an established patient's legally recognized health care decisionmaker.

(g) Nothing in this section shall be construed to prohibit a health insurer from requiring documentation reasonably relevant to a telephonic or electronic visit, as recognized by the American Medical Association, Current Procedural Terminology codes.

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

(1) "Established patient" means a patient who, within the three years immediately preceding the telephonic or electronic visit, has received professional services from the provider, or another provider of the exact same specialty and subspecialty who belongs to the same group practice.

(2) "Nonphysician health care provider" means a provider, other than a physician, who is licensed pursuant to Division 2 (commencing with Section 500) of the Business and Professions Code.

(3) "Telephonic and electronic patient management services" means the use of electronic communication tools to enable treating physicians to evaluate and manage established patients in a manner that meets all of the following criteria:

(A) Do not require a face-to-face visit with the physician or nonphysician health care provider.

(B) Are initiated by the established patient, the parents or guardians of a minor who is an established patient, or an established patient's legally recognized health care decisionmaker. For purposes of this section, "initiated by the established patient" excludes a visit for which a provider or staff contacts a patient to initiate a service.

(C) Are recognized by the American Medical Association, Current Procedural Terminology codes.

SEC. 3.

No reimbursement is required by this act pursuant to Section 6 of Article XIII B of the California Constitution because the only costs that may be incurred by a local agency or school district will be incurred because this act creates a new crime or infraction, eliminates a crime or infraction, or changes the penalty for a crime or infraction, within the meaning of Section 17556 of the Government Code, or changes the definition of a crime within the meaning of Section 6 of Article XIII B of the California Constitution.

APPENDIX B LITERATURE REVIEW METHODS

Appendix B describes methods used in the medical effectiveness literature review conducted for this report. A discussion of CHBRP's system for grading evidence follows, along with lists of Medical Subject Headings (MeSH) terms, keywords, and publication types.

As previously detailed, SB 289 defines telehealth as the use of electronic communication tools, including telephone, e-mail, live videoconferencing, and store-and-forward.

The literature search was limited to studies published in English from January 2014 to present; these results were added to the literature search from proposed AB 1771 completed in 2014. Studies that enrolled persons of all ages in any country were included. The following databases of peer-reviewed literature were searched: MEDLINE (PubMed), the Cochrane Database of Systematic Reviews, the Cochrane Register of Controlled Clinical Trials, the Cumulative Index of Nursing and Allied Health Literature, EconLit, and Web of Science. 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, International Network of Agencies for Health Technology Assessment, National Health Service Centre for Reviews and Dissemination, National Guidelines Clearinghouse, National Institute for Health and Clinical Excellence, World Health Organization, and the Scottish Intercollegiate Guideline Network.

Studies were included in the medical effectiveness literature review if they addressed the use of telephone, e-mail, live videoconferencing, or store-and-forward technologies to provide patient care. Studies of other telehealth technologies, such as remote patient monitoring, were excluded, because SB 289 does not address them. CHBRP also excluded studies of the use of telehealth technologies for educational purposes because SB 289 concerns coverage and reimbursement for patient care.

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.

Of 315 articles found in the literature review, 88 were reviewed for potential inclusion in this report, and a total of 32 articles were included in the medical effectiveness review for SB 289.

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.*[31]. 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 a mandate; and

[31] Available at: www.chbrp.org/analysis_methodology/docs/medeffect_methods_detail.pdf.

- Cumulative impact of evidence.

CHBRP uses a hierarchy to classify studies' research designs by the strength of the evidence they provide regarding a treatment's effects. CHBRP classifies research by levels I–V. Level I research includes well-implemented randomized controlled trials (RCTs) and cluster RCTs. Level II research includes RCTs and cluster RCTs with major weaknesses. Level III research consists of nonrandomized studies that include an intervention group and one or more comparison groups, time series analyses, and cross-sectional surveys. Level IV research consists of case series and case reports. Level V represents clinical/ practical guidelines based on consensus or opinion.

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

Generalizability refers to the extent to which a study's findings can be generalized to a population of interest. For CHBRP, the population of interest is the segment of California's diverse population to which a proposed mandate or repeal would apply.

The grading system also contains an overall conclusion that encompasses findings in these four 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 *Medical Effectiveness*section of the text of the report. The statement is accompanied by a graphic to help readers visualize the conclusion. In the case of SB 289, the report includes two overall grades and two figures because the amount and strength of evidence differs for telephone calls and e-mails on the one hand and live videoconferencing and store-and-forward on the other.

Search Terms

The search terms used to locate studies relevant to SB 289 were as follows:

MeSH terms used to search PubMed

- Communication
- Cost-Benefit Analysis
- Costs and Cost Analysis
- Electronic Mail/utilization
- Emergency Health Service
- Emergency Medical Services/utilization
- Emergency Service, Hospital/utilization
- Health Services Accessibility
- Hospital/utilization
- Hospitalization
- Medication Compliance
- Office Visits/utilization
- Outcome Assessment (Health Care)
- Patient Satisfaction
- Physician-Patient Relations
- Primary Health Care/utilization
- Quality of Health Care
- Quality of Life
- Remote Consultation/utilization
- Rural population
- Telecommunication
- Teleconsultation
- Telehealth
- Telemedicine/economics/utilization
- Telephone
- Telepsychotherapy
- Time factors
- Treatment Outcome
- Utilization Review
- Videoconferencing

Keywords used to search PubMed, Cochrane Library, Scopus and Web of Science

- communication
- consultation
- costs
- effects
- e-mail
- emergency visits
- ER visits
- face-to-face
- hospitalization
- impacts
- Office visits
- outcomes
- patients and providers
- patient satisfaction
- phone consultation
- physician- patient
- primary care
- provider and patient
- quality of life
- secure messaging
- service use
- store-and-forward
- teleconsultation
- teledermatology
- telehealth
- telemedicine
- telephone consultation
- telepsychiatry
- utilization
- videoconference
- videoconferencing
- web messaging

Publication types

- Clinical Trial
- Comparative Study
- Controlled Clinical Trial
- Meta-Analysis
- Practice Guideline
- Randomized Control Trial
- Systematic Reviews

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

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

The cost analysis in this report was prepared by the members of the cost team, which consists of CHBRP task force members and contributors from the University of California, Los Angeles, and the University of California, Davis, as well as the contracted actuarial firm, Milliman, Inc.[32]

Data Sources

This subsection discusses the variety of data sources CHBRP uses. Key sources and data items are listed below, in Table 12.

Table 12. Data for 2016 Projections

Data Source	Items
California Department of Health Care Services (DHCS) administrative data for the Medi-Cal program, data available as of end of December 2014	Distribution of enrollees by managed care or FFS distribution by age: 0–17; 18–64; 65+ Medi-Cal Managed Care premiums
California Department of Managed Health Care (DMHC) data from the interactive website "Health Plan Financial Summary Report," August–October, 2014	Distribution of DMHC-regulated plans by market segment*
California Department of Insurance (CDI) Statistical Analysis Division data; data as of December 31, 2013	Distribution of CDI-regulated policies by market segment
California Health Benefits Review Program (CHBRP) Annual Enrollment and Premium Survey of California's largest (by enrollment) health care service plans and health insurers; data as of September 30, 2014; responders' data represent approximately 97.3% of	Enrollment by: • Size of firm (2–50 as small group and 51+ as large group) • DMHC vs. CDI regulated • Grandfathered vs. nongrandfathered Premiums for individual policies by:

[32] 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).

Data Source	Items
persons not associated with CalPERS or Medi-Cal with health insurance subject to state mandates — 98.0% of full-service (nonspecialty) DMHC-regulated plan enrollees and 97.0% of full-service (nonspecialty) CDI-regulated policy enrollees.	• DMHC vs. CDI regulated • Grandfathered vs. nongrandfathered
California Employer Health Benefits Survey, 2014 (conducted by NORC and funded by CHCF)	Enrollment by HMO/POS, PPO/indemnity self-insured, fully insured, Premiums (not self-insured) by: • 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
California Health Interview Survey (CHIS) 2012/2013/T7 ("T7" representing the first 6 months of 2014)	Uninsured, age: 65+ Medi-Cal (non-Medicare), age: 65+ Other public, age: 65+ Employer-sponsored insurance, age: 65+
California Public Employees' Retirement System (CalPERS) data, enrollment as of October 1, 2014	CalPERS HMO and PPO enrollment • Age: 0–17; 18–64; 65+ HMO premiums
California Simulation of Insurance Markets (CalSIM) Version 1.9.1 (projections for 2016)	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
Centers for Medicare and Medicaid (CMS) administrative data for the Medicare program, annually (if available) as of end of September	HMO vs. FFS distribution for those 65+ (noninstitutionalized)
Milliman estimate	Medical trend influencing annual premium increases

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

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

Further discussion of external and internal data follows.

Internal data

- CHBRP's Annual Enrollment and Premium Survey collects data from the seven largest providers of health insurance in California (including Aetna, Anthem Blue Cross of California, Blue Shield of California, CIGNA, Health Net, Kaiser Foundation Health Plan, and United Healthcare/PacifiCare) to obtain estimates of enrollment not associated with CalPERS or Medi-Cal by purchaser (i.e., large and small group and individual), state regulator (DMHC or CDI), grandfathered and nongrandfathered status, and average premiums. CalSIM and market trends were applied to project 2016 health insurance enrollment in DMHC-regulated plans and CDI-regulated policies.
- CHBRP's other surveys of the largest plans/insurers collect information on benefit coverage relevant to proposed benefit mandates CHBRP has been asked to analyze. In each report, CHBRP indicates the proportion of enrollees — statewide and by market segment — represented by responses to CHBRP's bill-specific coverage surveys. The proportions are derived from data provided by CDI and DMHC.

External sources

- California Department of Health Care Services (DHCS) data are used to estimate enrollment in Medi-Cal Managed Care (beneficiaries enrolled in Two-Plan Model, Geographic Managed Care, and County Operated Health System plans), which may be subject to state benefit mandates, as well as enrollment in Medi-Cal Fee For Service (FFS), which is not. The data are available at: www.dhcs.ca.gov/dataandstats/statistics/Pages/Monthly_Trend_Report.aspx. Medi-Cal enrollment is projected to 2016 based on CalSIM's estimate of the continuing impact of the Medi-Cal expansion implemented in 2014.
- California Employer Health Benefits Survey data are used to make a number of estimates, including: premiums for employment-based enrollment in DMHC-regulated health care service plans (primarily health maintenance organizations [HMOs] and point of service [POS] plans) and premiums for employment-based enrollment in CDI-regulated health insurance policies regulated by the (primarily preferred provider organizations [PPOs]). Premiums for fee-for-service (FFS) policies 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. More information on the CHCF/NORC data is available at: www.chcf.org/publications/2014/01/employer-health-benefits.
- California Health Interview Survey (CHIS) data are 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 data are 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. More information on CHIS is available at: www.chis.ucla.edu.
- California Public Employees Retirement System (CalPERS) data are used to estimate premiums and enrollment in DMHC-regulated plans, which may be subject to state benefit mandates, as well as enrollment in CalPERS' self-insured plans, which is not. CalPERS does not currently offer enrollment in CDI-regulated policies. Data are provided for DMHC-regulated plans enrolling non-Medicare beneficiaries. In addition, CHBRP obtains information on current scope of benefits from evidence of coverage (EOC) documents publicly available at: www.calpers.ca.gov. CHBRP

assumes CalPERS's enrollment in 2016 will not be affected by continuing shifts in the health insurance market as a result of the ACA.

- California Simulation of Insurance Markets (CalSIM) estimates are used to project health insurance status of Californians aged 64 and under. CalSIM is a microsimulation model that projects the effects of the Affordable Care Act on firms and individuals. More information on CalSIM is available at: http://healthpolicy.ucla.edu/programs/health-economics/projects/CalSIM/Pages/default.aspx.
- Milliman data sources are relied on to estimate the premium impact of mandates. Milliman's projections derive from the Milliman Health Cost Guidelines (HCGs). The HCGs are a health care pricing tool used by many of the major health plans in the United States. Most of the data sources underlying the HCGs are claims databases from commercial health insurance plans. The data are supplied by health insurance companies, HMOs, self-funded employers, and private data vendors. The data are mostly from loosely managed health care plans, generally those characterized as PPO plans. More information on the Milliman HCGs is available at: http://us.milliman.com/Solutions/Products/Resources/Health-Cost-Guidelines/Health-Cost-Guidelines---Commercial/.
- The MarketScan databases, which reflect the health care claims experience of employees and dependents covered by the health benefit programs of large employers. These claims data are collected from 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.
- Ingenix MDR Charge Payment System, which includes information about professional fees paid for health care services, based upon claims from commercial insurance companies, HMOs, and self-insured health plans.

Projecting 2016

This subsection discusses adjustments made to CHBRP's Cost and Coverage Model to project 2016, the period when mandates proposed in 2015 would, if enacted, generally take effect. It is important to emphasize that CHBRP's analysis of specific mandate bills typically addresses the *incremental* effects of a mandate — specifically, how the proposed mandate would impact benefit coverage, utilization, costs, and public health, *holding all other factors constant*. CHBRP's estimates of these incremental effects are presented in the *Benefit Coverage, Utilization, and Cost Impacts* section, page 26.

Baseline premium rate development methodology

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

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

For each market segment, CHBRP first obtained an estimate of the insurance premium PMPM by taking the 2014 reported premium from the abovementioned data sources and trending that value to 2016. CHBRP uses trend rates published in the Milliman HCGs to estimate the health care costs for each market segment in 2016.

The large-group market segments for each regulator (CDI and DMHC) are split into grandfathered and nongrandfathered status. For the small-group and individual markets, further splits are made to indicate association with Covered California, the state's health insurance marketplace. Doing so allows CHBRP to separately calculate the impact of ACA and of specific mandates, both of which may apply differently among these subgroups. The premium rate data received from the CHCF/NORC California Employer Health Benefits survey did not split the premiums based on grandfathered or exchange status. However, CHBRP's Annual Enrollment and Premium (AEP) survey asked California's largest health care service plans and health insurers to provide their average premium rates separately for grandfathered and nongrandfathered plans. The ratios from the CHBRP survey data were then applied to the CHCH/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 premium rates received from CHBRP's AEP survey were used directly.

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

- Health care costs paid by the health plan = insurance premiums PMPM × (1 − profit/administration load);
- Gross claims costs PMPM = health care costs paid by the health plan ÷ percentage paid by health plan; and
- Member cost sharing PMPM = gross claims costs × (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/insurer'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.

General Caveats and Assumptions

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

- Prevalence of mandated benefits before and after the mandate may be different from CHBRP assumptions.
- Utilization of mandated benefits (and, therefore, the services covered by the benefit) before and after the mandate may be different from CHBRP assumptions.

- Random fluctuations in the utilization and cost of health care services may occur.

Additional assumptions that underlie the cost estimates presented in this 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 *Criteria and Methods for Estimating the Impact of Mandates on the Number of Individuals Who Become Uninsured in Response to Premium Increases*, available at: www.chbrp.org/analysis_methodology/cost_impact_analysis.php.

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

- Population shifts by type of health insurance: If a mandate increases health insurance costs, some employer groups and individuals may elect to drop their health insurance. Employers may also switch to self-funding to avoid having to comply with the mandate.
- Changes in benefits: To help offset the premium increase resulting from a mandate, deductibles or copayments may be increased. Such changes would have a direct impact on the distribution of costs between health plans/insurers and enrollees, and may also result in utilization reductions (i.e., high levels of cost sharing result in lower utilization of health care services). CHBRP did not include the effects of such potential benefit changes in its analysis.
- Adverse selection: Theoretically, persons or employer groups who had previously foregone health insurance may elect, postmandate, to enroll in a health plan or policy because they perceive that it is now to their economic benefit to do so.
- Medical management: Health plans/insurers may react to the mandate by tightening medical management of the mandated benefit. This would tend to dampen the CHBRP cost estimates.

The dampening would be more pronounced on the plan/policy types that previously had the least effective medical management (i.e., PPO plans).

- Geographic and delivery systems variation: Variation exists in existing utilization and costs, and in the impact of the mandate, by geographic area and by delivery system models. Even within the health insurance plan/policy types CHBRP modeled (HMO, including HMO and POS plans, and non-HMO, including PPO and FFS policies), there are likely variations in utilization and costs. Utilization also differs within California due to differences in the health status of the local population, provider practice patterns, and the level of managed care available in each community. The average cost per service would also vary due to different underlying cost levels experienced by providers throughout California and the market dynamic in negotiations between providers and health plans/insurers. Both the baseline costs prior to the mandate and the estimated cost impact of the mandate could vary within the state due to geographic and delivery system differences. For purposes of this analysis, however, CHBRP has estimated the impact on a statewide level.
- Compliance with the mandate: For estimating the postmandate impacts, CHBRP typically assumes that plans and policies subject to the mandate will be in compliance with the benefit coverage requirements of the bill. Therefore, the typical postmandate coverage rates for persons enrolled in health insurance plans/policies subject to the mandate are assumed to be 100%.

Analysis Specific Caveats and Assumptions

This subsection discusses the caveats and assumptions relevant to specifically to an analysis of SB 289. For this analysis, CHBRP interpreted the bill as requiring coverage of telehealth when it was patient-initiated, and provided evaluation and management services (E/M) for an established patient. The codes used for the analysis included those specifically for telephone or e-mail services and those that were in-person that could be substituted or supplemented by live videoconferencing or store-and-forward (Table 13 and Table 14).

Table 13. Telephone and E-mail Evaluation and Management CPT Codes

CPT Codes for telephone and e-mail evaluation and management		Modifier
Telephone	Physician: 99441, 99442, 99443 Nonphysician: 98966, 98967, 98968	As Applicable
E-mail	Physician: 99444 Nonphysician: 98969	As Applicable

Table 14. General Evaluation and Management Codes

CPT Codes to Evaluate and Manage for patient evaluation and management					
99211	90791	96152	97804	99308	99336
99212	90792	96153	99231	99309	99347

99213	96116	96154	99232	99310	99348
99214	96150	97802	99233	99334	99349
99215	96151	97803	99307	99335	99406
99407	90957(a)	G0108	G0406	G0426	G0444
90951(a)	90958(a)	G0109	G0407	G0436	G0445
90952(a)	90959(a)	G0247	G0408	G0437	G0446
90954(a)	90960(a)	G0270	G0420	G0439	G0447
90955(a)	90961(a)	G0396	G0421	G0442	G0448
90956(a)	90962(a)	G0397	G0425	G0443	G0449

Source: American Medical Association, 2014

Notes: GT modifier for live videoconferencing and GQ modifier for store-and-forward, as applicable.

(a) Codes billed monthly and have monthly minimum requirements for in-person visits, ranging from one to four.

(b) M0064 was deleted 12/31/14. But because Milliman is relying on data from 2013, CHBRP still captured this code in the SB 289 analysis.

Several key assumptions used in this analysis relate to: (1) the growth in telehealth visits over time; (2) the share of telehealth visits that would be supplemental (i.e., newly delivered or paid for services that would not have occurred in the absence of SB 289) and substitute (i.e. replacements for existing in-person services); and (3) the cost-sharing for telehealth services. The assumptions for all three are laid out in the body of the report.

Determining Public Demand for the Proposed Mandate

This subsection discusses public demand for the benefits SB 289 would mandate. Considering the criteria specified by CHBRP's authorizing statute, CHBRP reviews public demand for benefits relevant to a proposed mandate by comparing the benefits provided by self-insured health plans or policies (which are not regulated by the DMHC or CDI and therefore not subject to state-level mandates) with the benefits that are provided by plans or policies that would be subject to the mandate.

Among publicly funded self-insured health insurance policies, the preferred provider organization (PPO) plans offered by CalPERS 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.

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CALIFORNIA HEALTH BENEFITS REVIEW PROGRAM COMMITTEES AND STAFF

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

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CHBRP assumes full responsibility for the report and the accuracy of its contents. All CHBRP bill analyses and other publications are available at www.chbrp.org.

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