California Health Benefits Review Program

Analysis of California Senate Bill 163 Autism

A Report to the 2019-2020 California State Legislature March 25, 2019

Key Findings:

Analysis of California Senate Bill 163 Autism

Summary to the 2019-2020 California State Legislature, March 25, 2019

CALIFORNIA HEALTH BENEFITS REVIEW PROGRAM

AT A GLANCE

Senate Bill (SB) 163 would alter the current law that requires coverage of behavioral health treatment (BHT) for autistic spectrum disorder (ASD). SB 163 would expand the definition of BHT to include treatment modalities based on developmental theory, would make technical changes to definitions related to network adequacy, would prohibit denial of coverage based on either lack of parental/caregiver involvement or treatment setting time, or location, and would end an exemption related to Medi-Cal. CHBRP estimates that of the 24.5 million Californians enrolled in state-regulated health insurance, all have insurance that would be subject to SB 163.

1. **Benefit coverage.** Postmandate, 66% of enrollees could no longer be denied BHT coverage due to lack of parental involvement and 63% could no longer be denied BHT coverage due to setting. In addition, all enrollees would gain coverage for BHT based on developmental theory.
2. **Utilization.** Average annual hours of BHT per 1,000 enrollees with ASD would increase from 127.0 to 129.1.
3. **Expenditures.** Average annual expenditures (premiums and enrollee expenses for covered and noncovered benefits) would increase by $4,317,000 (0.0027%).
4. **Medical effectiveness.** There is evidence of effectiveness for BHT modalities based on behavioral theory, based on developmental theory, or based on both. There is evidence of effectiveness for BHT delivered in multiple settings. Although outcomes may improve with parent/caregiver involvement, there is evidence that BHT is effective when furnished only by providers.
5. **Public health.** Increases in BHT hours may improve outcomes for some persons with ASD.

CONTEXT

Behavioral health treatment (BHT) for autistic spectrum disorder (ASD) is on a continuum — from modalities based on behavioral theory, like applied behavioral analysis (ABA)[1], to modalities based on developmental theory, like developmental social pragmatic model (DSPM). In the middle are modalities based on theory that is both behavioral and developmental, like naturalistic developmental behavioral interventions (NDBI).

A current California law[2] places requirements on plans and policies regulated by the California Department of Managed Care (DMHC) and the California Department of Insurance (CDI). The law:

- Requires coverage for BHT for ASD and specifies that BHT is inclusive of behavioral modalities, specifying those based on a behavioral theory, (ABA).
- Requires provider networks to include qualified autism service (QAS) providers supervising/ employing QAS professionals or QAS paraprofessionals and provides definitions for all three.
- Exempts from compliance the health insurance of Medi-Cal beneficiaries enrolled in plans or policies regulated by DMHC.

Bill Language

SB 163 would alter the current law. SB 163 would:

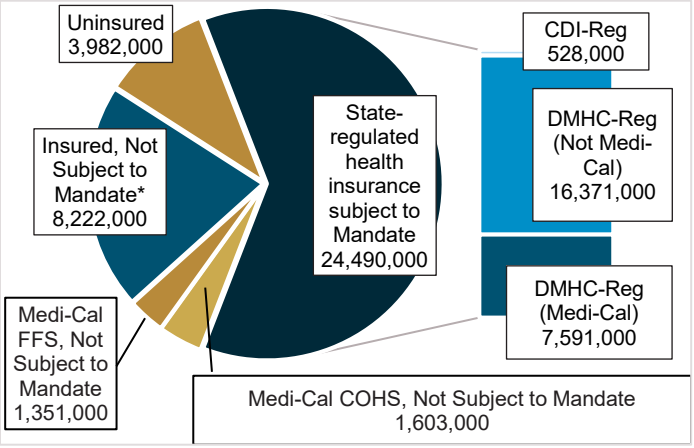
- Expand the definition of BHT to include modalities based on developmental theory, such as those based on developmental social pragmatic model (DSPM).
- Make technical changes to the definitions of QAS providers, professionals, and paraprofessionals.

[1] Modalities based on ABA are often referred to as "ABA," but each has its own name.[2] Health & Safety Code 1374.73 and Insurance Code 10144.51.

[2] Health & Safety Code 1374.73 and Insurance Code 10144.51.

- End the exemption related to Medi-Cal beneficiaries enrolled in DMHC-regulated plans.
- Prohibit denial of coverage for BHT based on:
  - Lack of parental involvement.
  - Setting, location, or time of treatment.

Figure A. Health Insurance in CA and SB 163



Source: CHBRP, 2019
Notes: *includes Medicare beneficiaries and enrollees in self-funded products

Medical Effectiveness

Most studies of BHT are observational studies that compare a specific treatment modality to usual care. This makes it difficult to assess the relative effectiveness of modalities based on behavioral versus hybrid versus developmental theory.

More studies of BHT modalities based on behavioral theory have been published than studies of BHT based on developmental theory or hybrid theories. However, regardless of the theoretical framework underpinning a BHT modality, most studies are observational studies which limits the ability to determine whether changes in outcomes experienced by people with ASD are due to receipt of the BHT modality the study assesses versus other factors that may affect outcomes.

For the modalities based on behavioral theory (ABA):

- There is a *preponderance* of evidence that Discrete Trials Training improves intelligence quotient and adaptive behavior.
- There is *limited* evidence that Pivotal Response Training improves language and communication.

For modalities based on both behavioral and developmental theory (NDBI):

- There is a *preponderance* of evidence that Early Start Denver Model improves language.
- There is a *preponderance* of evidence that Social Skills Group therapy improves social behavior.
- There is *limited* evidence that Project ImPACT improves communication.

For modalities based on developmental theory (DSPM):

- There is a *preponderance* of evidence that DIR®/ Floortime™ improves communication, engagement, and relationships.
- There is a *preponderance* of evidence that TEACCH improves adaptive behavior and motor skills.
- There is *limited* evidence that Relationship Developmental Intervention improves communication, social interaction, and academic placement.

Although parent and caregiver involvement in BHT may result in greater improvements, BHT improves outcomes regardless of whether parents or caregivers are involved.

There is a *preponderance* of evidence that BHT can be delivered effectively in multiple settings.

Benefit Coverage, Utilization and Cost Impacts

CHBRP estimates no measurable change in benefit coverage among enrollees with health insurance that would be subject to SB 163 in regards to definitions of qualified providers. Provider networks are compliant with the current mandate. Although the bill's provisions could change provider networks due to the alterations in QAS definitions SB 163 would make, CHBRP does not anticipate measurable change within the first year of implementation.

Benefit Coverage

Currently, 100% of enrollees with health insurance that would be subject to SB 163 have coverage for modalities of BHT based on behavioral theory, 95% have coverage for hybrid modalities (behavioral and developmental), and 54% have coverage for modalities based on developmental theory. Postmandate, 100% of enrollees would have coverage for BHT that is compliant with SB 163.

Currently, 34% of enrollees with health insurance that would be subject to SB 163 have coverage for BHT that does not deny coverage for BHT based on lack of parental involvement. Additionally, 37% of enrollees currently have coverage for BHT regardless of the setting for the BHT. Postmandate, 100% of enrollees would have coverage for BHT that is compliant with SB 163.

Utilization

Currently, the average annual hours of BHT per 1,000 enrollees with ASD is 127.0.

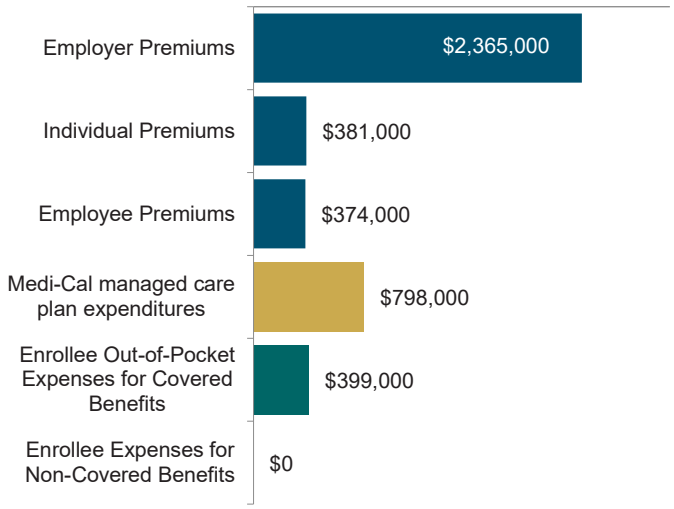
The change in the definition of BHT may alter the mix of used modalities, but is not expected to alter the total number of hours used.

However, CHBRP projects an increase in BHT utilization due to SB 163's prohibition of denials related to parent/caregiver involvement and denials related to treatment setting, time, or location. Since BHT is most commonly used by children with ASD who are under 8 years old, CHBRP projects that the increase in average annual number of hours of BHT will derive from an increase in the moderate users of BHT (10-25 hours per week) in that age range. Each provision will separately increase the overall usage hours of BHT among enrollees with ASD under 8 years. Combined, they will raise the overall average annual hours of BHT per 1,000 enrollees with ASD to 129.1 hours.

Expenditures

As noted in Figure B, SB 163 would increase total net annual expenditures (premiums and enrollee expenses for covered and noncovered benefits) by $4,317,000 (0.0027%) for enrollees with DMHC-regulated plans and CDI-regulated policies.

Figure B. Expenditure Impacts of SB 163



Source: CHBRP, 2019

Medi-Cal

SB 163 would end a current exemption and so require compliant coverage for Med-Cal beneficiaries enrolled in DMHC-regulated plans.

CalPERS

SB 163 would alter the benefit coverage of CalPERS enrollees in DMHC-regulated plans.

Number of Uninsured in California

As the change in average premiums does not exceed 1% for any market segment, CHBRP would expect no measurable change in the number of uninsured persons due to the enactment of SB 163.

Public Health

Enrollees with ASD who already use BHT would increase their utilization by an *average* of 2.1 hours per year per BHT user in 2020. Based on the evidence, CHBRP finds that such an increase would not likely have a public health impact in the first year, postmandate. However, the increase in BHT hours may improve BHT outcomes such as intelligence quotient (IQ), language skills, socialization, and adaptive behaviors on an individual basis for some persons with ASD.

Long-term Impacts

After the small increase in utilization in the first 12 months, there is no indication in the research literature that the trends will change much over time. And the overall number of enrollees in DMHC-regulated plans or CDI-regulated policies using BHT with ASD is expected to remain generally constant over time. CHBRP therefore does not estimate any change in long-term impacts in utilization, as the rate of using BHT will also remain generally consistent over time.

Over the long-term, the first-year cost increase findings would apply annually thereafter. However, the research literature has shown that BHT in children with autism improves their overall health and functioning over time, including gains made for adolescents. Therefore, it is likely that the health outcome gains in BHT in younger children with ASD will result in overall lower health care costs over their lifetimes, although this cannot be quantified.

As more BHT is generally associated with better outcomes, it stands to reason that long-term outcomes of cognitive functioning, language, social functioning, and adaptive behaviors may be improved, on an individual basis, for those enrollees who make use of additional BHT hours due to the removal of alternative setting and parent participation barriers; however, CHBRP projects no public health impact in the long term due to the small increase in new hours of BHT per year (2.8 hours).

Essential Health Benefits and the Affordable Care Act

For two reasons, SB 163 would not trigger financial costs to the state for exceeding EHBs. First, SB 163 alters the terms and conditions of an existing benefit mandate law, but does not require an additional benefit to be covered. Second, the current law that SB 163 would alter expressly indicates that it ceases to function if it exceeds EHBs and SB 163 does not eliminate this clause of the current law. Thus, neither the current law nor the version SB 163 would create would function if deemed to exceed EHBs.

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Analysis of California Senate Bill 163
Autism

March 25, 2019

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

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

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

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Table 1. SB 163 Impacts on Benefit Coverage, Utilization, and Cost, 2020

	Baseline	Postmandate	Increase/ Decrease	Percentage Change
Benefit coverage				
Total enrollees with health insurance subject to state benefit mandates (a)	24,489,000	24,489,000	0	0%
Number of enrollees with coverage for BHT for ASD	24,489,000	24,489,000	0	0%
Percentage of enrollees with coverage for BHT for ASD	100%	100%	0%	0%
Total enrollees with health insurance subject to SB 163 and coverage for	24,489,000	24,489,000	0	0%
Behavior-based modality, such as Pivotal Response Training	100%	100%	0%	0%
Hybrid modality, such as Early Start Denver Model	95%	100%	5%	5%
Developmental-based modality, such as DIR®/ Floortime™	54%	100%	46%	87%
BHT for ASD regardless of parental involvement	34%	100%	66%	191%
BHT for ASD regardless of setting/time/location	37%	100%	63%	168%
Utilization and unit cost				
Number of enrollees with ASD	68,000	68,000	0	0%
Number of enrollees with ASD using BHT	26,000	26,000	0	0%
Average annual hours of BHT per 1,000 enrollees	127.0	129.1	2.1	2%
Average annual hours of BHT per user	126.1	128.2	2.1	2%
Average unit cost (per hour BHT for ASD)	$71.45	$71.45	$0.00	0%
Expenditures				
Premiums by payer				
Private employers for group insurance	$86,438,375,000	$86,440,656,000	$2,281,000	0.0026%
CalPERS HMO employer expenditures (b) (c)	$3,098,551,000	$3,098,635,000	$84,000	0.0027%
Medi-Cal Managed Care Plan expenditures	$28,492,273,000	$28,493,071,000	$798,000	0.0028%
Enrollees with individually purchased insurance	$12,045,324,000	$12,045,705,000	$381,000	0.0032%
Individually Purchased – Outside Exchange	$2,486,222,000	$2,486,283,000	$61,000	0.0025%
Individually Purchased – Covered California	$9,559,102,000	$9,559,422,000	$320,000	0.0033%
Enrollees with group insurance, CalPERS HMOs, Covered California, and Medi-Cal Managed Care (c)	$14,476,394,000	$14,476,768,000	$374,000	0.0026%
Enrollee expenses				
For covered benefits (deductibles, copayments, etc.) (b)	$14,750,880,000	$14,751,279,000	$399,000	0.0027%

For noncovered benefits (f)	--	--	--	--
Total expenditures	$159,301,797,000	$159,306,114,000	$4,317,000	0.0027%

Source: California Health Benefits Review Program, 2019.
Notes: (a) This population includes persons with privately funded 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 employment sponsored insurance.
(b) Premium expenditures by enrollees include employee contributions to employer-sponsored health insurance and enrollee contributions for publicly purchased insurance.
(c) Of the increase in CalPERS employer expenditures, about 56.4% would be state expenditures for CalPERS members who are state employees or their dependents. It should be noted, however, that should CalPERS choose to make similar adjustments for consistency to the benefit coverage of enrollees associated with CalPERS' self-insured products, the fiscal impact on CalPERS could be greater.
(d) Does not include enrollees in COHS.
(e) Enrollee premium expenditures include contributions to employer-sponsored health insurance, health insurance purchased through Covered California, and contributions to Medi-Cal Managed Care.
(f) Not measurable. 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. Although enrollees with newly compliant benefit and, therefore, cannot estimate the total noncovered expenses. Postmandate, such expenses would be gone, though enrollees with newly compliant benefit coverage might pay for some treatments for which coverage is denied. Again, CHBRP cannot estimate the frequency with which such situations might occur, and/or the total expense.
(g) Applied behavioral analysis (ABA) is a behavioral theory. It one of the sources for behavior-based treatment modalities, such as Pivotal Response Training. It is not a treatment modality – though related treatment modalities are often called "ABA."
Key: ASD = autism spectrum disorder; BHT = behavioral health treatment; CalPERS = California Public Employees' Retirement System; CDI = California Department of Insurance; DMHC = Department of Managed Health Care; HMO = Health Maintenance Organizations

POLICY CONTEXT

The California Senate Committee on Health has requested that the California Health Benefits Review Program (CHBRP)[3] conduct an evidence-based assessment of the medical, financial, and public health impacts sf Senate Bill (SB) 163 Autism.

Bill-Specific Analysis of SB 163 Autism

SB 163 would apply to the benefits of all enrollees in health plans regulated by the California Department of Managed Health Care (DMHC) and all enrollees in health policies regulated by the California Department of Insurance (CDI). SB 163 would alter a current benefit mandate law.

Current law (H&S Code 1374.73 and Ins Code 10144.51):

- Requires coverage for behavioral health treatment (BHT) for autism spectrum disorder (ASD) and specifies that BHT is inclusive of evidence-based behavioral treatments like modalities based on applied behavioral analysis (ABA);
- Requires plan/policy networks to include qualified autism service (QAS) providers supervising/employing QAS professionals or QAS paraprofessionals;
- Offers definitions for QAS providers, QAS professionals, and QAS paraprofessionals; and
- Exempts from compliance the health insurance of:
    - Enrollees in specialized health plans/policies; and
    - Medi-Cal beneficiaries enrolled in plans or policies regulated by DMHC.

SB 163 would alter the existing law in the following ways:

- Expand the definition BHT to include any “program based on behavioral, developmental, behavior-based, or other evidence-based models” and would specify that coverage is required for ABA “and other behavior-based intervention programs,” thereby requiring coverage of additional forms of BHT. As applied behavioral analysis (ABA) is a behavioral theory, the expansion would require the coverage of treatments based on developmental theory.
- Make technical changes to the definitions of QAS providers, professionals, and paraprofessionals, including the elimination of reference to the Welfare and Institutions Code
- Prohibit denial of BHT coverage based on setting, location, time, or lack of parental or caregiver involvement.
- Eliminate the compliance exemption for coverage of Medi-Cal beneficiaries enrolled in DMHC-regulated plans.

The full text of SB 163 can be found in Appendix A.

[3] CHBRP’s authorizing statute is available at http://chbrp.org/faqs.php.

Relevant Populations

If enacted, SB 163 would affect the health insurance of approximately 24.5 million enrollees (63% of all Californians). This represents 100 percent of Californians who will have health insurance regulated by the state that may be subject to any state health benefit mandate law — health insurance regulated by DMHC or CDI.

Analytic Approach and Key Assumptions

For the purposes of this analysis, CHBRP has assumed that the altered definition of BHT would require coverage of developmental-based modalities (such as DIR®/Floortime™) as well as behavior-based modalities (such as Pivotal Response Training) and hybrid modalities (such as Early Start Denver Model and Social Skills Group Therapy).

Please note, "applied behavioral analysis (ABA)" is not a treatment modality. ABA is the name of a behavior-based theory on which many behavior-based modalities (including Pivotal Response Training) are based. Hybrid modalities (including Early Start Denver Model) incorporate aspects of both behavior-based theory and developmental-based theory. Both behavior-based and hybrid modalities may include aspects of ABA and are sometimes referred to as "ABA." Developmental-based modalities do not do so and are not referred to in that way.

For the purposes of this analysis, CHBRP has also assumed that SB 163 would be applicable to the health insurance of Medi-Cal beneficiaries enrolled in DMHC-regulated plans.

Interaction With Existing Requirements

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

California Policy Landscape

California law and regulations

As noted, SB 163 would amend the current benefit mandate law[4] that addresses BHT for ASD.

Similar requirements in other states

At least 44 states and the District of Columbia (ASHA, 2019) have implemented health insurance benefit mandates related to treatment for ASD. Some states identify treatments for which coverage is specifically required. Over half of the benefit mandates specifically require coverage for treatments based on applied behavioral analysis (ABA), and so require coverage for some modality of behavior-based treatment for ASD.

CHBRP is unaware of any state with a mandate that defines QAS providers, QAS professionals, and QAS paraprofessionals.

[4] Health & Safety Code 1374.73 and Insurance Code 10144.51.

CHBRP is unaware of any state with a mandate that prohibits coverage denials related to parent/caregiver enrollment, setting, location, or time of treatment. CHBRP is aware of a court decision in Pennsylvania[5] that requires plan/insurer coverage of behavioral health treatment for ASD in schools, but the outcome of the ruling, which could be relevant to treatment setting, is too recent to be clear.

Federal Policy Landscape

Federal Mental Health Parity and Addiction Equity Act

Although neither the current law nor SB 163 would interact directly with it, it is worth noting that the federal Mental Health Parity and Addiction Equity Act (MHPAEA) addresses parity for mental health benefits.[6] The MHPAEA requires that if mental health or substance use disorder services are covered, cost-sharing terms and treatment limits be no more restrictive than the predominant terms or limits applied to medical/surgical benefits. The MHPAEA applies to the large group, but the ACA requires small-group and individual market plans and policies purchased through a state health insurance marketplace to comply with the MHPAEA. This federal requirement is similar to the California mental health parity law,[7] although the state law applies to some plans and policies not captured in the MHPAEA.

Affordable Care Act

A number of Affordable Care Act (ACA) provisions have the potential to or do interact with state benefit mandates. Below is an analysis of how SB 163 may interact with requirements of the ACA as presently exists in federal law, including the requirement for certain health insurance to cover essential health benefits (EHBs).[8]

Any changes at the federal level may impact the analysis or implementation of this bill, were it to pass into law. However, CHBRP analyzes bills in the current environment given current law.

Essential Health Benefits

State health insurance marketplaces, such as Covered California, are responsible for certifying and selling qualified health plans (QHPs) in the small-group and individual markets. QHPs are required to meet a minimum standard of benefits as defined by the ACA as essential health benefits (EHBs). In California, EHBs are related to the benefit coverage available in the Kaiser Foundation Health Plan Small Group Health Maintenance Organization (HMO) 30 plan, the state's benchmark plan for federal EHBs.[9,10]

States may require QHPs to offer benefits that exceed EHBs.[11] However, a state that chooses to do so must make payments to defray the cost of those additionally mandated benefits, either by paying the

[5] Burke et al. v. Independence Blue Cross, case number 2299 EDA 2011, in the Superior Court of the State of Pennsylvania.
[6] Mental Health Parity and Addiction Equity Act of 2008 (MHPAEA), as amended by the ACA.
[7] H&SC Section 1374.72; IC Section 10144.5 and 10123.15.
[8] The ACA requires nongrandfathered small-group and individual market health insurance — including but not limited to QHPs sold in Covered California — to cover 10 specified categories of EHBs. Resources on EHBs and other ACA impacts are available on the CHBRP website: http://www.chbrp.org/other_publications/index.php.
[9] The U.S. Department of Health and Human Services (HHS) has allowed each state to define its own EHBs for 2014 and 2015 by selecting one of a set of specified benchmark plan options. CCIIO, Essential Health Benefits Bulletin. Available at: cciio.cms.gov/resources/files/Files2/12162011/essential_health_benefits_bulletin.pdf.
[10] H&SC Section 1367.005; IC Section 10112.27.
[11] ACA Section 1311(d)(3).

purchaser directly or by paying the QHP.[12,13] State rules related to provider types, cost-sharing, or reimbursement methods would *not meet* the definition of state benefit mandates that could exceed EHBs.[14]

For two reasons, SB 163 would not trigger financial costs to the state for exceeding EHBs. First, SB 163 would alter the terms and conditions of an existing benefit mandate, but does not require an additional benefit to be covered. Second, the current law that SB 163 would alter expressly indicates that it ceases to function if it exceeds EHBs and SB 163 does not eliminate this clause of the current law. Thus, neither the current law nor the version that SB 163 would create would function if deemed to exceed EHBs.

[12] State benefit mandates enacted on or before December 31, 2011, may be included in a state's EHBs, according to the U.S. Department of Health and Human Services (HHS). Patient Protection and Affordable Care Act: Standards Related to Essential Health Benefits, Actuarial Value, and Accreditation. Final Rule. Federal Register, Vol. 78, No. 37. February 25, 2013. Available at: www.gpo.gov\fdsys\pkg\FR-2013-02-25\pdf\2013-04084.pdf.
[13] However, as laid out in the Final Rule on EHBs HHS released in February 2013, state benefit mandates enacted on or before December 31, 2011, would be included in the state's EHBs and there would be no requirement that the state defray the costs of those state mandated benefits. For state benefit mandates enacted after December 31, 2011, that are identified as exceeding EHBs, the state would be required to defray the cost.
[14] Essential Health Benefits. Final Rule. A state's health insurance marketplace would be responsible for determining when a state benefit mandate exceeds EHBs, and QHP issuers would be responsible for calculating the cost that must be defrayed.

BACKGROUND ON AUTISM SPECTRUM DISORDER

Autism spectrum disorder (ASD)[15] is a developmental disability characterized by deficits in social interactions and communication, sensory processing, stereotypic (repetitive) behaviors or interests, and sometimes cognitive function (APA, 2013). As reflected by the phrase "autism spectrum disorder," the symptoms of ASD fall along a continuum, ranging from mild impairment to profound disability.

To receive an ASD diagnosis, individuals often demonstrate symptoms in early childhood, with children typically becoming symptomatic as early as age 1 (CDC, 2018). The Centers for Disease Control and Prevention (CDC) supports the Autism and Developmental Disabilities Monitoring (ADDM) Network, an ongoing autism surveillance program of 11 sites across the United States. According to its 2014 findings, about 42% of U.S. children diagnosed with ASD were evaluated for developmental concerns by age 3 years. Those diagnosed with autistic disorder (AD) tended to be formally diagnosed at an earlier age (3 years, 10 months) than those with pervasive developmental disorder not-otherwise-specified (PDD-NOS) and Asperger's syndrome (~5 years and ~6 years, respectively) (CDC, 2018). However, updates to the Diagnostic and Statistical Manual of Mental Disorders in 2013 to its Fifth Edition (DSM-5) defined ASD to include AD, PDD-NOS, and Asperger's syndrome (APA, 2013; Nevison et al., 2018). Note that individuals whose symptoms do not manifest until later in life may receive a retroactive diagnosis, but may not receive critical early interventions (APA, 2013).

The cause (or causes) of ASD is unknown, and research into genetic etiology, as well as environmental factors, continues to be explored. There is no cure for ASD; however, there is evidence that treatment, including behavioral health treatment (BHT), may improve some symptoms (see the *Medical Effectiveness* section).

Prevalence of Autism Spectrum Disorders in California

Ascertaining the true prevalence of ASD in California is challenging without a registry system. Counts of persons diagnosed with ASD may be obtained from a variety of sources such as private insurance claims data, Medi-Cal (including Medi-Cal managed care plans) reports or claims and encounter data, the public school system, and Department of Developmental Services (DDS). Counts from these sources likely overlap, but it is unknown to what degree.

CHBRP's following statewide estimate of ASD prevalence is based on data from the DDS. DDS frequently provides the initial ASD diagnosis and treatment referrals for those children meeting certain disability criteria (including ASD), regardless of income level (DDS, 2018a). This estimate may be an undercount since families of children with ASD may access care through private insurance or payment out of pocket; thus, they may not have interacted with DDS.

CHBRP estimates that in 2016, the prevalence of ASD in California children (aged 0 to 9 years) is about 160 in 10,000. This figure is close to the 2014 national prevalence estimates of 168 in 10,000 children aged 8 years (Baio et al., 2018; CHBRP, 2015).

[15] Previously referred to as "pervasive developmental disorder / autism (PDD/A)," CHBRP now uses "ASD" to align with the most current clinical diagnostic designation in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) and ICD-10 classification systems.

Social Determinants of Health[16] and Disparities[17] in Autism Spectrum Disorder

CHBRP includes a discussion of disparities under the broader umbrella of social determinants of health (SDoH). Although SDoH generally occur prior to or outside of the health care system and are highly correlated with downstream events such as avoidable illnesses and premature death, the relationship between SDoH and health status/outcomes is complex, and periodically, health insurance can influence SDoH.[18] In the case of SB 163, CHBRP found a dearth of literature discussing the effects of gender, race, and income on the parental involvement in BHT.

Differences and Disparities in ASD Prevalence

Gender differences

In 2018, the CDC reported that the ASD prevalence rate among 8-year-old males in the 11 ADDM network sites was four times higher than in females (CDC, 2018) compared to 4.3 times according to the California DDS report in 2018 (DDS, 2018b). DDS also reported that the male-dominated prevalence crossed all races and geographic regions in California (DDS, 2009). Gender differences in ASD are not attributable to social causes, and so are not considered disparities.

Race/ethnicity differences

Although U.S. surveys report a greater prevalence of ASD among white children than among black and Hispanic children, these estimates are known to be influenced by disparities in access to health care for diagnosis, data source (e.g., self-report, medical record review, etc.), and patient geographic location (Baio et al., 2018; Hill et al., 2016). In California, among those with ASD served by DDS (the largest California-specific dataset for ASD), Hispanics outnumbered whites. Specifically, DDS reported that among those receiving DDS services for ASD, Hispanics accounted for 37% of recipients, followed by whites (30%), Asians (9%), and blacks (7%) (DDS, 2018b). However, the proportion of individuals receiving DDS services who are enrollees in DMHC-regulated plans or CDI-regulated policies is unknown. The racial/ethnic distribution of children with ASD within the privately insured population is also unknown.

Disparities in Access to Behavioral Health Treatment for ASD

Treatments for ASD include a number of theoretical models and treatment modalities (see the *Medical Effectiveness* section). Studies of children with ASD consistently show that children from low-income, less educated, and more rural families are less likely to receive BHT than their higher income, better educated, and urban counterparts. One study revealed that parents with a lower educational level accessed less intensive therapies compared to parents with higher educational levels who accessed

[16] CHBRP defines social determinants of health as conditions in which people are born, grow, live, work, learn, and age. These social determinants of health (economic factors, social factors, education, physical environment) are shaped by the distribution of money, power, and resources and impacted by policy (adapted from Healthy People 2020, 2015). See SDoH white paper for further information.

[17] 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).

[18] For more about SDoH, see *Incorporating Relevant Social Determinants of Health into CHBRP Benefit Mandate Analyses*, available at http://www.chbrp.org/analysis_methodology/public_health_analysis.php.

higher intensity services, even when provided in a school setting (Siller et al., 2014). A similar pattern was observed with geographic location with children in rural areas accessing less intensive services and individual treatment (Monz et al., 2019). Another study using data from the 2009/2010 National Survey of Children with Special Health Care Needs indicated that parents of Latino and black children with ASD were 45% less likely than whites to report that providers spent adequate time with their children, and were about 40% less likely to feel that their child's special needs provider was sensitive to their values and customs (Magana et al., 2015). Latino children in families whose primary language was not English also were less likely to utilize individual treatment with 32.5% indicating they did not receive services compared to 24.3% who did (Nguyen et al., 2016).

Qualified autism service (QAS) provider shortages are less well documented, but literature suggests that provider shortages create unique barriers to BHT for low-income and rural families. For example, interviews with stakeholders in five states with autism insurance mandates, including California, reported that families were better able to access treatment services after the mandates were enacted, but that both consumer advocates and insurance companies reported shortages of licensed providers (Baller et al., 2016). To further complicate matters, stakeholders reported that low insurance reimbursement rates discourage QAS providers from accepting private insurance (Baller et al., 2016). A recent literature review found three of six studies on geographic variation in age of autism diagnosis (the start of autism treatment services) identified barriers for rural compared to urban families (Daniels and Mandell, 2014). Additionally, two qualitative studies (with sample sizes of 96 and 35 respondents, respectively) also found rural families had more difficulty than urban families in accessing ASD providers for timely diagnosis and treatment of ASD (Elder et al., 2016; Murphy and Ruble, 2012).

MEDICAL EFFECTIVENESS

As discussed in the *Policy Context* section, SB 163 would alter an existing mandate to require DMHC-regulated health plans and CDI-regulated policies to cover a more expansive definition of behavioral health therapy (BHT) for people diagnosed with autism spectrum disorder (ASD). SB 163 would also change the definitions of qualified autism service (QAS) providers, professionals, and paraprofessionals and prohibit denial of coverage based on setting, location, time, and lack of parent or caregiver involvement.

BHT aims to modify the behavior of individuals with ASD and improve their cognitive, language, and social functioning by assessing environmental stimuli and reinforcing appropriate responses. These services are generally delivered by QAS providers, professionals, and paraprofessionals. As illustrated in Figure 1. Continuum of Behavioral Theories and Treatment Modalities below, BHT treatment can also be described as a continuum from treatment modalities based primarily on behavioral theory (often referred to as applied behavioral analysis [ABA]) to treatments based primarily on developmental theory. This section discusses examples of treatment modalities that fall to the ends of the continuum, as well as hybrid modalities, which draw from both behavioral theory and developmental theory. Existing law explicitly requires coverage for BHT treatment modalities based on behavioral theory. SB 163 would amend existing law to explicitly require coverage for BHT treatment modalities based on developmental theory.

Figure 1. Continuum of Behavioral Theories and Treatment Modalities

Examples of Modalities	Theoretical Model		
	Behavioral	Hybrid	Developmental
	Applied Behavioral Analysis (ABA)	**Naturalistic Developmental Behavioral Interventions (NDBI)**	**Developmental Social Pragmatic Model (DSPM)**
	• Discrete Trial Training (DTT), also known as Lovaas method • Pivotal Response Therapy (PRT)	• Early Start Denver Model (ESDM) • Project ImPACT • Social Skills Groups	• DIR®/Floortime™ • Relationship Developmental Intervention®

Source: California Health Benefits Review Program, 2019.

Treatments based on behavioral theory (ABA) fall at the behavioral end of the continuum. These treatments are grounded in B.F. Skinner's research on the use of rewards or punishments to incentivize desirable behaviors. Treatments based on behavioral theory (ABA) use reinforcement to teach people with ASD basic social skills such as attention, compliance, and imitation (Howlin et al., 2009; Tchaconas and Adesman, 2013). During the 1970s and 1980s, Ivar Lovaas, a professor at the University of California, Los Angeles, drew upon behavioral theory (ABA) to develop discrete trial training (DTT), a treatment through which children with ASD are taught individual skills through drill-based, repetitive trials initiated by a therapist. Pivotal Response Treatment (PRT) is another treatment based on behavioral theory (ABA) that incorporates features that are associated with better response to treatment, including giving children a choice of activities, varying tasks, and interspersing training aimed at maintaining skills and training aimed at acquiring new skills (Mohammadzaheri et al., 2014).

Other BHTs are based on the developmental social pragmatic model (DSPM), which is grounded in developmental theory. This theory holds that poor attachment to parents and caregivers is the primary cause of problematic behaviors associated with ASD. The goals of treatments based on this theory are to

strengthen emotional bonds between people with ASD and their parents or caregivers and encourage children to learn through guided exploration (Thompson, 2013). Examples of BHTs based on developmental social pragmatic theory include the Developmental, Individual Differences, Relationship-Based model (DIR®/Floortime™), and Relationship Development Intervention (RDI™). Both of these treatments involve training parents to provide therapy and consultation with a therapist trained to provide the particular treatment. Treatment and Education of Autistic and Communications-Handicapped Children (TEACCH) is another treatment modality based on developmental theory that emphasizes the use of visual cues to help children with ASD improve attention, executive function, and motivation for social communication (Thompson, 2013).

Other forms of BHT are characterized as naturalistic developmental behavioral interventions (NDBI). These interventions combine elements based on behavioral theory (ABA) with elements based on the DSPM. The Early Start Denver Model (ESDM), a comprehensive, play-based intervention, is the most widely studied hybrid model (Dawson et al., 2010; Tchaconas and Adesman, 2013). Therapists provide treatment to children and also train parents or cargivers to use ESDM strategies during everyday activities with children, such as feeding, bathing, and play. Social Skills Groups (SSGs) are an intervention that focuses on improving the social skills of people with ASD that is often used to treat people with less severe forms of ASD or to augment more intensive BHT treatments. The methods that therapists use to train children in SSGs are based on behavioral theory (ABA) but the specific social skills taught are tailored to the level of development of the children participating in a group. For example, an SSG that enrolls elementary school children would emphasize different social skills than an SSG that enrolls adolescents. Other examples of treatment modalities based on NDBI include Project ImPACT, which aims to improve the communication and social skills of children with ASD through daily activities and routines.

Research Approach and Methods

Studies were identified through searches of MEDLINE (PubMed), the Cochrane Database of Systematic Reviews, the Cochrane Register of Controlled Clinical Trials, PsycInfo, Web of Science, Embase, ERIC, and Scopus. Because CHBRP's medical effectiveness review had previously conducted thorough literature searches on this topic in 2011, 2013, 2014, 2015, 2016, and 2017 for reports on bills relevant to ASD, the search was limited to studies published from 2017 to present. Of the 846 articles found in the literature review, 45 were reviewed for potential inclusion in this report as were older articles about BHT modalities based on NDBI or DSPM that content experts recommended. Sixteen additional articles were included in the medical effectiveness review for this report. The medical effectiveness review also presents findings from the studies that were included in CHBRP's earlier reports on bills relevant to SB 163. A more thorough description of the methods used to conduct the medical effectiveness review and the process used to grade the evidence for each outcome measure is presented in Appendix B.

Key Questions

CHBRP's medical effectiveness review addressed the following questions:

1. Does BHT improve behavior and cognitive, language, and social functioning among people with ASD?

2. What is the comparative effectiveness of BHT based on behavioral theory (ABA), developmental theory, or both?

3. Do the qualifications of personnel who provide BHT affect the effectiveness of BHT?

4. Does involvement of parents or caregivers affect the effectiveness of BHT?

5. Does the setting in which BHT is provided affect the effectiveness of BHT?

Methodological Considerations

The amount of evidence regarding effectiveness varies across BHT based on behavioral theory (ABA), BHT based on developmental theory, and hybrid BHT modalities. Many more studies of BHT modalities based on behavioral theory (ABA) have been published than have studies of BHT modalities based on developmental theory and hybrid BHT modalities.

The strength of evidence regarding the effectiveness of BHT also varies across BHT modalities based on different theoretical models. Researchers have published several RCTs of a hybrid treatment modality (ESDM), one RCT of a BHT modality based on behavioral theory (ABA), and one RCT of a BHT modality based on developmental theory. In contrast, CHBRP did not identify any controlled studies of RDI. RCTs provide the strongest evidence of the efficacy of BHT because participants are randomly assigned to receive the BHT treatment the researchers are testing or to a control group. Random assignment increases the likelihood that any differences that are found between the treatment and control groups are due to the BHT treatment being tested and not to differences between the people with ASD in the treatment and control groups.

Most studies of BHT compare outcomes for people with ASD who receive a specific BHT treatment to people with ASD who receive "usual care," which often consists of a mix of BHT treatments with different theoretical foundations. This research design is understandable because people with ASD often exhibit challenging behaviors and have limitations in cognitive, language, and social skills. These needs make it difficult to justify conducting studies in which no intervention is provided to people in the comparison group. Comparing people with ASD who receive a specific form of BHT to those who receive usual care ensures that all people participating in the study receive some form of BHT. A few studies use a "wait list" control design in which all persons receive both usual care and an additional form of BHT but outcomes of the additional treatment are assessed only for people who are assigned to receive treatment first (i.e., people not on the waitlist). This research design enables everyone who participates in the study to receive the BHT modality that is being studied but allows for assessment of the impact of adding this treatment to usual care. CHBRP did not identify any studies that directly compared BHT treatments based on ABA to BHT treatments based on DSPM and only a few studies that compared treatments modalities based on ABA to hybrid modalities.

Some studies compare intensive BHT based on behavioral theory (ABA), often defined as BHT provided for 25 or more hours per week to less intensive BHT based on other theoretical frameworks. For example, treatments based on behavioral theory (ABA), particularly Discreet Trials Training (DTT), are often provided for more hours per week than treatments based on developmental theory. The difference in intensity makes it difficult to assess whether differences in outcomes between treatment and control groups are due to differences in the treatments provided or in the amount of treatment provided.

Outcomes Assessed

The outcomes assessed by studies included in this review included measures of cognitive functioning (such as IQ), as well as language, social functioning, treatment fidelity, and changes in symptomatology.

Study Findings

Effectiveness of BHT

Treatment modalities based on behavioral theory (ABA)

Discrete Trials Training (DTT)

For its report on SB 126, CHBRP reviewed studies of early intensive behavioral interventions (EIBI) for ASD that utilize DTT as the primary treatment modality that were published prior to 2013[19] (CHBRP 2013). These studies compared DTT to different treatments or usual care, or compared more intensive to less intensive DTT treatments. CHBRP concluded that the preponderance of evidence from these studies indicates that receipt of EIBI that emphasizes DTT is associated with larger increase in intelligence quotient (IQ) and greater improvement in adaptive behavior than the to which it has been compared which in most cases was treatment as usual. CHBRP also concluded that the impact of EIBI that emphasizes DTT on language outcomes and academic placement is inconclusive.

Since CHBRP published its report on SB 126, the Agency for Healthcare Research and Quality (AHRQ) and the Cochrane Collaboration published updates to the systematic reviews that CHBRP reviewed for the SB 126 report (Reichow et al., 2018; Weitlauf et al., 2014). The authors of the updated AHRQ systematic review concluded that EIBI that emphasizes DTT increases IQ and improves language outcomes (Weitlauf et al., 2014).[20] The authors of the updated Cochrane review concluded that EIBI that emphasizes DTT is associated with larger increases in IQ and with greater improvement in adaptive behavior and expressive and receptive language than the treatments to which it was compared (in most cases treatment as usual). They found that receipt of EIBI that emphasizes DTT was not associated with a greater reduction in autism severity (Reichow et al., 2018).[21]

Summary of findings regarding the effectiveness of EIBI that emphasizes DTT: There is a preponderance of evidence from over 50 RCTs and controlled observational studies that EIBI that emphasizes DTT improves IQ and adaptive behavior relative to the treatments to which it has been compared. The evidence regarding the impact of EIBI that emphasizes DTT on language outcomes and academic placement is inconclusive.

Figure 2. Impact of DTT on Intelligence Quotient and Adaptive Behavior

[19] CHBRP's literature review for SB 126 encompassed nine meta-analyses and systematic reviews that included 42 RCTs and nonrandomized studies as well as findings from eight individual articles that presented findings from nonrandomized studies with comparison groups which were published after the studies included in the meta-analyses and systematic reviews.

[20] The updated AHRQ systematic review included 48 RCTs and 17 observational studies with comparison groups, many of which addressed EIBI that emphasize DTT.

[21] The updated Cochrane review included four of the studies that CHBRP included in its literature review for SB 126 (3 RCTs plus one observational study with a comparison group) and one observational study with a comparison group that was published after CHBRP published the SB 126 report.

Figure 3. Impact of DTT on Language Outcomes and Academic Placement

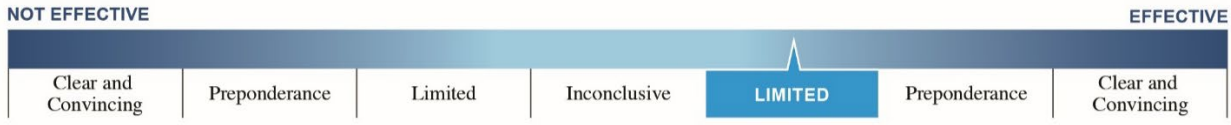
Pivotal Response Treatment (PRT)

Multiple studies have evaluated PRT. A systematic review published in 2013 identified 25 studies of PRT as well as five studies of treatment modalities that were not expressly described as PRT which incorporated motivational techniques used to provide PRT (Verschuur et al., 2013). There was substantial variation in the PRT techniques assessed by each of the studies included in the systematic review. Most of these studies found that PRT improves language, communication, and play skills and reduces maladaptive behavior. However, most studies had small sample sizes and did not include a comparison group, which limits ability to determine whether the findings observed are due to PRT versus other factors.

CHBRP identified two studies of PRT that were published after the studies included in the systematic review. One study was an RCT that compared PRT to an intervention based on ABA that emphasized DTT (Mohammadzaheri et al., 2014). The authors found that children who received PRT had greater improvement in expressive verbal communication than children who received a structured intervention based on behavioral theory (ABA). Children who received PRT also had a greater increase in scores on an instrument that assesses children's communication skills (15 points vs. 2 points). An observational study compared PRT to treatment as usual (Duifhuis et al., 2017). The authors found that receipt of PRT was associated with greater reduction in autism symptoms than receipt of treatment as usual but that the size of the effect is small.

Summary of findings regarding the effectiveness of PRT: There is limited evidence from 27 studies, most of which are observational studies that do not have comparison groups, that PRT improves language, communication, and play skills among children with ASD.

Figure 4. Impact of PRT on Language, Communication, and Play Skills



Treatment modalities based on both behavioral and developmental theories

Early Start Denver Model (ESDM)

Several RCTs have assessed the impact of the ESDM intervention, which combines treatments based on behavioral theory (ABA) and developmental theory. The original RCT on the effects of this intervention enrolled 48 children with ASD between 18 and 30 months old (Dawson et al., 2010). Children were randomized to participate in the ESDM intervention or were referred to providers in the community to

obtain treatments commonly provided to children with ASD in the community. The children who received the ESDM intervention experienced a larger increase in IQ than children in the control group (17.6 points vs. 7.0 points) and greater improvement in receptive language (18.9 vs. 10.2 points) and expressive language (12.1 points vs. 4.0 points). The adaptive behavior of children who received the ESDM intervention improved whereas children in the control group showed greater delays in adaptive behavior.

A multi-site RCT of ESDM was published in early 2019 (Rogers et al., 2019). The study enrolled 118 children aged 14 to 24 months who lived in three different communities. The children were randomized to receive ESDM or referred to providers in the community who treat children with ASD. The authors found that receipt of ESDM was associated with greater improvement in language outcomes when site differences were taken into account but that there were no differences between the two groups of children with regard to developmental quotient (DQ), adaptive behavior, or autism severity.

Summary of findings regarding the effectiveness of ESDM: There is a preponderance of evidence from two RCTs that enrolled 166 children that receipt of ESDM improves language outcomes. Findings regarding effects of ESDM on IQ, adaptive behavior, and autism severity are inconclusive.

Figure 5. Impact of ESDM on Language Outcomes

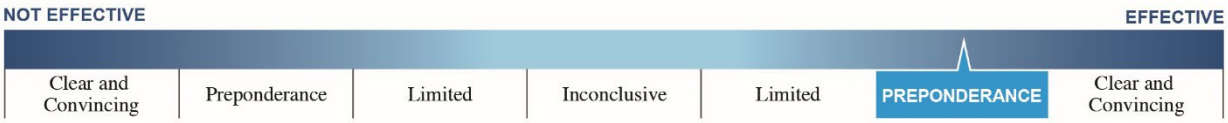


Figure 6. Impact of ESDM on IQ and Adaptive Behavior

Social Skills Groups (SSGs)

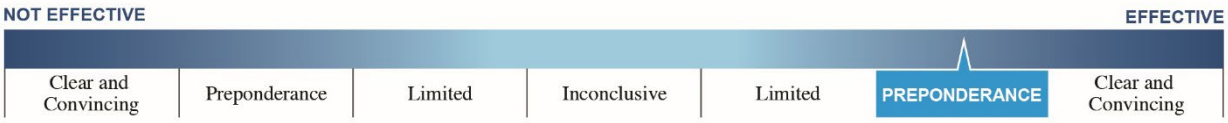
In 2012 the Cochrane Collaboration published a systematic review of five RCTs of Social Skills Group (SSG) interventions for people with ASD (Reichow et al., 2012). Most of the five RCTs enrolled children aged 7 to 12 years. The Cochrane review found participation in an SSG intervention increased social competency and improved the quality of friendships but did not improve emotional recognition or social communication. A subsequent systematic review synthesized findings from 19 RCTs published prior to January 2016 that enrolled persons aged 5 to 21 years (Gates et al., 2017). The authors concluded that participating in an SSG increased knowledge of social skills but did not improve enactment of these skills in social situations.

Two RCTs and one observational study with a comparison group that were published after the two systematic reviews have examined SSG interventions based on the principles of behavioral theory (ABA). The observational study compared 26 preschool children who received one of two social skills interventions plus usual care to 26 preschool children who received usual care. The authors found that children who received the social skills intervention plus usual care developed better social skills than children who only received usual care (Szumski et al., 2017). One RCT of 15 children examined an SSG intervention implemented by teachers and found social behavior improved significantly among participants compared to children in the control group. The behavior was maintained up to 32 weeks after the intervention ended (Leaf et al., 2017). Another RCT that enrolled 122 verbally fluent pre-adolescent

children with ASD compared three groups of children: (1) children who received SSG alone, (2) children who received SSG with parent or teacher involvement to enhance skills, and (3) children who received treatment as usual. The study found that children who received SSG alone or SSG with parent or teacher involvement had greater improvement in socialization than children who received usual care (Dekker et al., 2018).

Summary of findings regarding the effectiveness of SSG: There is a preponderance of evidence from two systematic reviews of RCTs, two RCTs, and one observational study with a comparison group that participation in SSGs improves knowledge of social skills and social behavior.

Figure 7. Impact of SSGs on Knowledge of Social Skills and Social Behavior

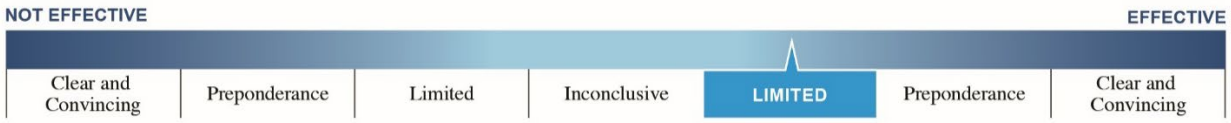


Project ImPACT

One observational study with a comparison group has assessed Project ImPACT (Stadnick et al., 2015). The study enrolled 30 children with ASD aged 18 months to 8 years. Children who received Project ImPACT were compared to children who received usual care for ASD available in the community in which the study took place. The authors found that participation in Project ImPACT was associated with greater improvement in communication skills than receipt of usual care but that there was no difference in improvement in social skills between the two groups. The authors noted that one limitation of their study is that the outcomes they assessed were based on parent-report, which may not be consistent with assessments completed by professionals with expertise in ASD. The small sample size also limited statistical power to detect differences between the treatment and comparison groups and lack of randomization limited ability to control differences between the children in the intervention and comparison groups that may have affected the outcomes studied.

Summary of findings regarding the effectiveness of Project ImPACT: There is limited evidence from one observational study with a comparison group that enrolled 30 children that Project ImPACT improves communication skills among children with ASD relative to usual care.

Figure 8. Impact of Project ImPACT on Communication Skills



Treatment modalities based on the developmental theory

Developmental, Individual Differences, Relationship-based Model (DIR®)

CHBRP identified four studies of treatment modalities based on DIR®. Two of these studies were pre-post studies of DIR®/Floortime™ that did not have comparison groups (Greenspan and Wieder, 1997; Reis et

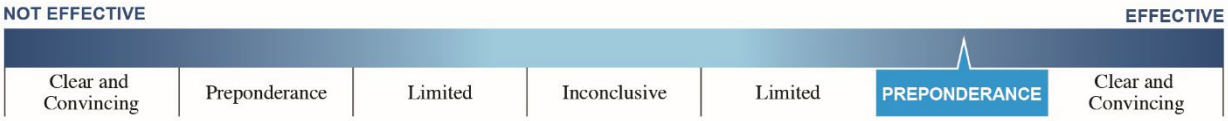
al., 2018). Findings from these studies suggest that children with ASD who receive DIR®/Floortime™ can develop creative thinking, empathy, reciprocate affection, and form healthy relationships with peers (Greenspan and Wieder, 1997) and that DIR®/Floortime™ improves social communication and sensory processing skills (Reis, Pereria, and Almeida, 2018). However, the absence of a comparison group makes it difficult to determine whether the improvements that these children experiences were due to DIR®/Floortime™ or other circumstances that may have changed over time.

Two RCTs of interventions based on DIR® have been published (Pajareya and Nopmaneejumruslers, 2011; Solomon et al., 2014). The first RCT, which was conducted in Thailand, compared children who received DIR®/Floortime™ and usual care for ASD to children who only received usual care (Pajareya and Nopmaneejumruslers, 2011). The authors found that children who received DIR®/Floortime™ and usual care had better communication, better relationships, and greater engagement with parents and caregivers than children who only received usual care. For the primary outcome, a measure of emotional development, the scores of children who received DIR®/Floortime™ increased by 7.0 points versus an increase of 1.9 points among children in the control group. This study has some important limitations. The sample size was small (n = 28) and some parents had difficulty implementing the DIR®/Floortime™ intervention. Others stopped or reduced hours of usual care which meant that all children in the DIR®/Floortime™ group did not receive the same interventions at the same intensity.

The other RCT assessed the impact of Play and Language for Autistic Youngsters (PLAY), another intervention based on DIR®. PLAY is a parent-mediated treatment that encompasses coaching, modeling, and video feedback from consultants with expertise in PLAY. The consultants were occupational therapists, speech-language therapists, or special educators. The RCT analyzed data on 122 children with autism or PDD-NOS who were age 2 to 6 years and lived in four different states. The children were randomized to receive the PLAY intervention or usual care for children with ASD in the communities in which the children lived. The authors found that children who received PLAY had greater improvement in parent-child interaction and greater reduction in autism severity than children who received usual care. Children who received PLAY were more than twice as likely to experience a decrease in autism severity as children in the control group (Solomon et al., 2014). However, there was no difference in language outcomes or developmental quotient between the two groups.

Summary of findings regarding the effectiveness of DIR®: There is a preponderance of evidence from two uncontrolled studies and two RCTs that interventions based on DIR® improve the communication, engagement, and relationships of children with ASD.

Figure 9. Impact of DIR® on Communication, Engagement, and Relationships



Relationship Development Intervention

CHBRP identified one study of RDI (Gutstein et al., 2007). This study had a pre-post design and enrolled 16 children age 21 to 96 months who received RDI for 33 to 79 months and whose IQ score was at least 70. Five children were diagnosed with autism, four with PDD-NOS, and seven with Asperger's syndrome. The children experienced statistically significant improvement in communication and social interaction as measured by scores on the Autism Diagnostic Observation Schedule (ADOS) and the Autism Diagnostic Interview – Revised (ADI-R). Following treatment, 10 of the 16 children were able to function in a

mainstream classroom without an aide. The lack of a comparison group limits the strength of evidence this study provides. Without a comparison group, one cannot be certain that the changes observed were due to RDI or to other factors.

Summary of findings regarding the effectiveness of RDI: There is insufficient evidence to assess the impact of RDI on communication, social interaction, and academic placement, or other outcomes. The only published study of RDI is an uncontrolled study with a small sample size. The lack of a comparison group limits ability to determine whether these improvements were due to RDI or other factors that changed over time.

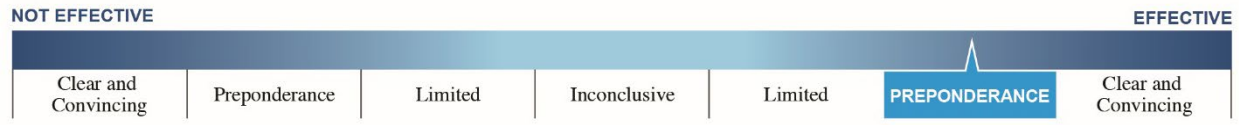
Figure 10. Impact of RDI on Communication, Social Interaction, and Academic Placement

Treatment and Education of Autistic and Related Communication-handicapped Children (TEACCH)

A review of studies of TEACCH summarized findings from nine studies of TEACCH, including one RCT, three observational studies with comparison groups, and five uncontrolled studies (Mesibov and Shea, 2009). The observational studies with comparison groups found that compared to receipt of usual care, receipt of TEACCH was associated with greater improvement in adaptive behavior and cognitive, fine motor, gross motor, and imitation skills. The author of the RCT, which enrolled 20 children, concluded that TEACCH is associated with improvement in adaptive behavior, fine motor skills, visual receptive skills, and independence relative to usual care.

Summary of findings regarding the effectiveness of TEACCH: There is a preponderance of evidence from one RCT, three observational studies with comparison groups, and five uncontrolled studies that TEACCH improves adaptive behavior and motor skills.

Figure 11. Impact of TEACCH on Adaptive Behavior and Motor Skills



Impact of Qualifications of BHT Providers

As described in the *Policy Context* section, SB 163 would alter the definitions of qualified autism service (QAS) providers, QAS professionals, and QAS paraprofessionals. Studies of BHT for patients with ASD have evaluated treatments provided by a wide range of personnel, including: certified applied behavioral

therapists, child care workers, counselors, early childhood educators, nurses, occupational therapists, psychologists, speech and language therapists, students, teachers, teachers' aides/paraprofessionals, and parents. CHBRP's report on SB 399 summarized findings from two systematic reviews regarding the provision of BHT by "nonspecialized" personnel who are trained and supervised by persons with expertise in providing BHT based on ABA. One systematic review concluded that behavioral health treatments based on ABA that were delivered by "nonspecialized" personnel (e.g., nurse practitioner, teacher, teacher's aide, parent) who were trained and supervised by persons with expertise in ABA improved IQ, language, daily living skills, and motor skills among lower functioning children with autism relative to usual care (Reichow et al., 2013).[22] Another systematic review summarized the evidence from studies of studies of BHT interventions in which clinicians experienced in the interventions (e.g., clinic supervisor) train the personnel who deliver the services in the community (e.g., home interventionist). Overall, the authors report that treatments delivered by these trained community personnel result in positive outcomes in cognition, language, and symptoms of ASD, particularly among higher-functioning children (Shire and Kasari, 2014).[23]

One RCT (N=113) of the impact of supervising personnel who provide BHT was published after the systematic reviews. Teacher assistants were supervised by on-site supervisors and remote consultants. The study concluded that supervised teacher assistants delivering a BHT treatment modality based on developmental theory to toddlers with ASD for 10 weeks were able to implement the intervention and that children made significant gains in outcomes including increased initiation of play and engagement in social communication (Shire et al., 2017).

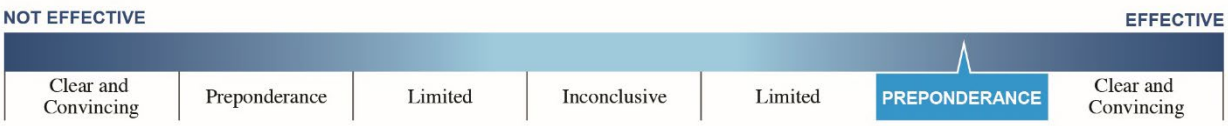
The literature described above has limitations with regard to some specifics that would be impacted by SB 163. Persons who did not have graduate degrees in behavior analysis or a related field were typically supervised by personnel with graduate degrees. Descriptions of the credentials of personnel providing BHT were inconsistent across studies, which limits the ability to determine which treatments utilized personnel similar to QAS professionals or QAS paraprofessionals. Additionally, CHBRP did not identify any studies of the impact of allowing QAS professionals and QAS paraprofessionals who are supervised by but not necessarily employed by QAS providers.

Summary of findings regarding BHT delivered by persons with training similar to QAS professionals and paraprofessionals: Based on two systematic reviews describing 41 studies of varying design quality with 2,169 participants and one RCT with 113 participants, there is a *preponderance of evidence* that BHT delivered by persons with training similar to QAS professionals and paraprofessionals, as well as a variety of other specialized and nonspecialized types of personnel, improve cognition, language, daily living skills, and motor skills and reduce symptoms of ASD when carried out under the training and supervision of a QAS provider.

[22] The systematic review included 34 articles describing 29 studies (15 randomized controlled trials and 14 prospective non-randomized controlled studies).

[23] Of the 12 articles included in the review, one was a randomized controlled trial, whereas the others had moderate-to-low-quality experimental designs, such as a pre-post design.

Figure 12. Effectiveness of BHT delivered by persons with training similar to QAS professionals and paraprofessionals



Impact of Parent or Caregiver Involvement

SB 163 prohibits denial of health insurance coverage for BHT in the case of a lack of parental or caregiver involvement. Parental or caregiver involvement is an original and integral component of treatments based on both behavioral theory (ABA) and developmental theory. Degrees of involvement can vary greatly from transportation support, to presence during treatment by a qualified autism service (QAS) professional, to obtaining training and delivering treatment. The general purpose of parent or caregiver involvement is to increase continuity of treatment outside of treatment hours and to generalize skills (i.e., transfer behaviors learned in one social setting to multiple social settings). Parents, family members, and other caregivers are also able to provide important history and background on their child, and parental or caregiver involvement further provides contextual information that guides appropriate treatment to reflect the family dynamics (BACB, 2014). Recommendations for best practices in BHT for children with ASD call for parents/caregivers to be actively engaged in providing treatment, especially for young children (National Research Council, 2001; Volkmar at el., 2014; Zwaigenbaum et al., 2015).

To assess the impact of this provision, the medical effectiveness review searched for two types of literature: (1) literature comparing outcomes of BHT with parental or caregiver involvement to usual care; and (2) literature comparing outcomes of BHT with parental or caregiver involvement to outcomes of equivalent BHT without parental involvement. CHBRP identified some studies that addressed parental involvement in BHT, but these studies did not compare outcomes of involvement with equivalent BHT programs, which limits ability to isolate the impact of parent or caregiver involvement on outcomes. It should be noted that the sparseness of literature regarding lack of parent involvement is reasonable, given that the target population is children and thus there is inherent involvement of parents or caregivers in many aspects of the overall treatment plan.

For its report on SB 399, CHBRP identified a synthesis of six meta-analyses (including a total of 21 retrospective, prospective, and experimental studies, N = 894) of varying early intensive BHT based on behavioral theory (ABA) that were published between 2009 and 2011 (Strauss et al., 2013). The authors concluded that early intensive BHT interventions that involved parents in providing treatment had larger positive effects on outcomes including intellectual functioning, language skills, and adaptive behaviors, than interventions that were provided solely by professionals and/or paraprofessionals but that early intensive BHT was effective regardless of variation in parent involvement or other variables, such as specific treatment characteristics, and child characteristics. However, these findings are a result of comparisons between nonequivalent BHT programs. It should be noted that most of the studies included in the synthesis were not RCTs, which limits the strength of their findings about the effects of treatment. In addition, few studies have directly assessed the impact of adding parent/caregiver treatment to a behavioral health treatment provided by professionals and/or paraprofessionals.

One of the most relevant studies is an RCT that compared a BHT modality that replicated the UCLA intensive behavioral treatment (Lovaas, 1987) directed by professionals and paraprofessionals to a treatment directed by parents in which professionals and paraprofessionals did not provide as many

hours of treatment. Parents were involved in both groups and instructed to practice treatment strategies at home with their child. The authors found that cognitive function, language use, and adaptive behavior improved for children with ASD in both groups (Sallows et al., 2005). These findings of improved outcomes in both groups, with fixed treatment times, suggest that BHT modalities are effective in improving outcomes regardless of variations in the amount of parent involvement.

One RCT published after Strauss' study (2013) compared groups of children receiving SSG alone to SSG with a parent or teacher involvement to enhance skills to treatment as usual (Dekker et al., 2018). Children in the SSG and the SSG with parent or teacher involvement improved significantly more on socialization scores than children in the control group, who experienced no significant improvement. For the primary outcome of socialization scores, there was no significant difference between the groups who participated in SSGs with and without parental and teacher involvement. However, there was a significant difference in the secondary outcome of teacher reported cooperation, assertion, and self-control. Thus, the study's findings suggest that SSGs improve socialization scores regardless of parent involvement but that parent involvement may improve other measures of socialization.

Summary of findings regarding parent/caregiver involvement in BHT: Multiple studies, most of which are not RCTs, have found that parental or caregiver involvement improves outcomes of BHT for persons with ASD but that BHT improves outcomes relative to usual care regardless of the level of parent or caregiver involvement. However, the strength of this evidence for assessing the impact of SB 163 is limited because most of these studies do not directly evaluate the impact of adding parent/caregiver treatment to BHT provided by professionals and/or paraprofessionals. In addition, no studies have examined the impact of prohibiting denial of coverage based on lack of parent or caregiver involvement on outcomes.

Figure 13. Effectiveness of parent involvement in BHT

Effectiveness of Behavioral Health Treatment Delivery in Different Settings

BHT can be delivered in a variety of settings such as in the home, hospitals, or other inpatient facilities, outpatient clinics (e.g., autism treatment centers, other provider offices), in schools of all levels, or in other community settings. The importance of generalizability in ASD therapies (i.e., the principle that learned behaviors are transferrable to multiple social settings) requires flexibility to treat in locations where behaviors are most likely to occur and to practice these skills in a variety of places. Additionally, once children enter school, the available hours during which to engage in BHT are limited unless some therapy is conducted in locations outside the home. The setting in which BHT is furnished will be driven in large part by treatment intensity, the combination of treatment goals, and accessibility.[24]

CHBRP did not identify any studies that compared the same treatment across different settings. However, as CHBRP noted in its report on SB 399, there is a preponderance of evidence from high-quality studies that intensive BHT is effective in improving outcomes for cognitive and social functioning across the various settings studied (Anagnostou et al., 2014). Not only does varying the setting promote

[24] Personal communication, D. Mandell, March 2017.

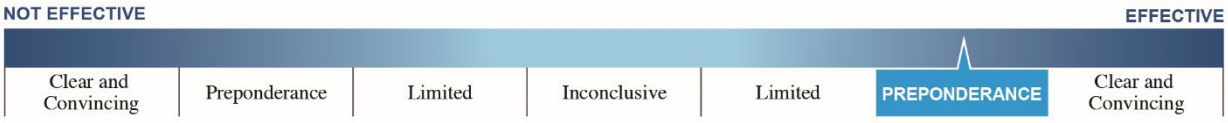
generalization of treatment and help to maintain progress (BACB, 2014; Peters-Scheffer et al., 2013), it enables those who require more intensive treatment to receive the number of hours of BHT prescribed without being limited to one treatment location.

Additionally, it is recommended that treatment be delivered in a setting where there will be frequent interactions with typically developing children for purposes of modelling behavior and allowing the child to practice learned skills (Camargo et al., 2014; National Research Council, 2001). Finally, treatment setting may also benefit from variation due to co-occurring conditions such as anxiety. Desensitization to certain stimuli may be an appropriate treatment goal and require some sessions to occur in naturalistic environments outside of a typical treatment center. Therefore, CHBRP concludes that treatment is both effective and instructive across different settings, though the lack of research on relative effectiveness in different settings does not allow for determination of whether the same treatment would be more effective in one setting than another.

SB 163 would not require health care service plans to reimburse for services delivered by school personnel as part of an enrollee's individualized educational program, despite the provision in the same bill to not restrict coverage of treatment regardless of setting. There is a preponderance of evidence that school-based interventions are effective for treatment of symptoms related ASD such as social communication and engagement, due in large part to the opportunity to engage with typically developing children (Chang and Locke, 2016; Kamps et al., 2015; Tanet et al., 2016).

Summary of findings regarding the settings in which treatment is provided: Based on the results of seven recent studies of 430 participants, there is a *preponderance of evidence* from six RCTs and one pre- and post-test design that BHT can be delivered effectively in multiple settings, including schools.

Figure 14. Lack of Impact of Setting on Effectiveness of BHT



Harms of BHT for ASD

CHBRP did not identify any studies that discussed harms associated with any BHT treatment modalities for ASD.

Summary of Findings

CHBRP's review of literature pertinent to the provisions of SB 163 found evidence that BHT modalities based on behavioral theory (ABA), developmental theory, and both of these theories improve outcomes for people with ASD. Receipt of BHT modalities based on both behavioral and developmental theories is associated with improvement in communication and social interaction relative to receipt of usual care for ASD. BHT modalities based on behavioral theory have also yielded improvement in IQ, adaptive behavior, and language outcomes.

CHBRP's literature review also found that BHT can be delivered effectively by people with training similar to QAS professionals when supervised by a QAS provider. Parent or caregiver involvement in BHT improves outcomes but treatment can be effective regardless of whether parents or caregivers are involved. In addition, CHBRP found that BHT can be delivered effectively in multiple settings.

The number of studies of BHT modalities based on behavioral theory is much larger than the number of studies of BHT modalities based on developmental theory and hybrid modalities. However, all three bodies of literature have important limitations. Regardless of the theory on which BHT modalities are based, most studies of them are observational studies that do not randomly assign participants to the intervention or control condition. Some do not include any sort of comparison group. Lack of random assignment decreases confidence that any differences that are found between the treatment and control groups are due to the BHT treatment being tested and not to differences between the people with ASD in the treatment and control groups. Lack of a control group further decreases confidence in a study's findings because one cannot rule out the possibility that any differences observed over time are due to factors other than the BHT modality.

BENEFIT COVERAGE, UTILIZATION, AND COST IMPACTS

As discussed in the *Policy Context* section, SB 163 would alter an existing mandate to require DMHC-regulated health plans and CDI-regulated policies to cover a more expansive definition of behavioral health therapy (BHT) for enrollees diagnosed with autism spectrum disorder (ASD). For this analysis, CHBRP has assumed that SB 163 would mandate coverage for BHT that includes not only behavioral therapy — often based on applied behavioral analysis (ABA) — such as Pivotal Response Training but also developmental therapy such as DIR®/Floortime™, as long as the modality is considered to be "evidence-based." CHBRP has also assumed that coverage for hybrid therapy modalities (based on behavioral and developmental theory), such as Early Start Denver Model and Social Skills Groups therapy, would also be mandated by SB 163. These three categories of modalities of BHT treatment (behavioral, developmental, and hybrid) are consistent with the wording in SB 163, and have been confirmed by both the research literature (see the *Medical Effectiveness* section) and content experts as the relevant types of BHT that would be covered if SB 163 were enacted.[25] Additionally, SB 163 would prohibit denials of coverage for these evidence-based BHT modalities, if the denial was related to either setting/time/location of the BHT or lack of parent/guardian/caregiver involvement.

This section reports the potential incremental impacts of SB 163 on estimated baseline benefit coverage, utilization, and overall cost. Although the coverage of different BHT modalities (behavioral, hybrid, or developmental) could be determined based on responses from the carriers, CHBRP was not able to disaggregate the separate utilization of the different modalities of BHT, due to the procedure codes used for billing purposes that informed CHBRP's estimates (for a full discussion of data sources, see Appendix C). The procedure codes do not specify the type of BHT for which the provider is billing the carrier. Therefore, CHBRP could not estimate the shifting in billing from one modality of BHT to another.

CHBRP was able, however, to determine coverage of BHT that included denials of coverage due to setting/time/location or lack of parent/guardian/caregiver involvement based on the carrier survey responses. For these reasons, CHBRP was able to estimate changes in total hours of BHT used due to increased coverage based on the prohibition of denials due to location/setting or parental involvement.

To estimate increases in utilization of BHT expected due to the changes in benefit coverage, CHBRP developed a logic model that assumes that the potential increase in utilization would be among children with ASD under age 8 years, as this is the age range of the population that uses BHT at a high number of hours per week and is most likely to have a developmental method be determined to be medically necessary. CHBRP assumes that enrollees who use BHT are most often limited in their number of hours by medical necessity, and therefore neither the low-end users of BHT (less than 10 hours per week) nor the highest users of BHT (more than 25 hours per week) will increase their usage; the former because of lack of medical appropriateness and the latter because of having their medical needs already addressed. Any pent-up demand that would drive an increase in utilization when obtaining an increase in coverage would be concentrated among the moderate-users of BHT, under 8 years old, which would entail a 10% increase in utilization among those users. Following this logic model, CHBRP applied an overall combined 3% increase in utilization for all users aged 0 to 7, which translates to a 2% increase for the overall population (see Table 1).

The following discussion of benefit coverage, utilization, and unit cost focuses on the health insurance of all enrollees in DMHC-regulated plans, including DMHC-regulated plans enrolling Medi-Cal beneficiaries, and CDI-regulated policies. For further details on the underlying data sources and methods used in this analysis, please see Appendix C.

[25] Personal communication with Dr. Mandel and Dr. Lord.

Baseline and Postmandate Benefit Coverage

Current coverage of BHT including behavioral, developmental, and hybrid modalities was determined by a survey of the largest (by enrollment) providers of health insurance in California. Responses to this survey represent 89% of enrollees with private market health insurance that can be subject to state mandates. The largest (by enrollment) DMHC-regulated plans enrolling Medi-Cal beneficiaries were also surveyed, as these beneficiaries benefit coverage can be subject to mandates written into California's Health and Safety Code.

Currently, 100% of enrollees with health insurance that would be subject to SB 163 have coverage that includes BHT based on behavioral models such as Pivotal Response Training (see Table 1), which is consistent with the current mandate. Hybrid modality BHT, such as Early Start Denver Model, had similarly high rates of current coverage, with 95% of enrollees having coverage. In contrast, 54% of enrollees in DMHC-regulated plans or CDI-regulated policies subject to SB 163 have coverage for developmental modalities of BHT, such as DIR®/Floortime™. Currently, 34% of enrollees have coverage that does not deny coverage due to lack of parental involvement, and 37% of enrollees have coverage that does not deny on setting or location of the treatment. DMHC-regulated plans with Medi-Cal enrollees have similar coverage rates to private DMHC-regulated plans and CDI-regulated policies.

Postmandate, 100% of enrollees in DMHC-regulated plans or CDI-regulated policies subject to SB 163 would have coverage for behavioral, developmental, and hybrid modalities of BHT. Enrollees would maintain the existing 100% coverage for ABA, while coverage for hybrid modality BHT would increase by 5% and coverage for developmental BHT would increase by 46% (see Table 1), with current coverage rates increasing to 100%. Additionally, 100% of enrollees would have coverage that would prohibit denials based on setting/time/location or lack of parent/guardian/caregiver involvement.

Baseline and Postmandate Utilization

Using Milliman's proprietary 2016 Consolidated Health Cost Guidelines Sources Database (CHSD) data for prevalence of ASD in the insured population and utilization of BHT among enrollees with ASD, CHBRP estimates that 26,000 enrollees with ASD in DMHC-regulated plans and CDI-regulated policies have health insurance that would be subject to SB 163 and currently use BHT (see Table 1). Postmandate, CHBRP assumes the number of enrollees with ASD using BHT will not increase, because the use of this type of treatment overall is based on clinical diagnosis and determination that BHT is medically necessary.[26] However, the number of hours used by each enrollee with ASD could change.

Currently, the average annual number of hours of BHT per 1,000 enrollees with ASD is 127.0 hours (see Table 1). CHBRP projects no change in in the number of hours due to increased coverage for developmental-based modalities or hybrid modalities, as utilization of all modalities is driven by medical necessity. However, CHBRP projects that the average annual number of hours of BHT per 1,000 enrollees will increase because of the prohibition of previously allowable denials of coverage. Because BHT is most commonly used by children with ASD who are under 8 years old, CHBRP projects that the increase in average annual number of hours of BHT will derive from an increase in the moderate users of BHT in that age range (Barry et al., 2017). Including developmental modalities in the mandate under SB 163 will increase the overall usage hours of BHT among enrollees with ASD under 8 years old by 3% (see Appendix C for further discussion). This will raise the overall average annual number of hours of BHT per 1,000 enrollees with ASD to 129.1 hours (see Table 1). Per user with ASD, the number of BHT hours will increase annually from 126.1 to 128.2, due the prohibition of previously allowable denials of

[26] Personal communications, D. Mandell. February 2019

coverage (see Table 1). CHBRP is unable to determine the change in utilization of different modalities of BHT (see Appendix C).

Note that this estimate of average utilization spreads the impact over all enrollees with ASD for purposes of estimating the societal impact in this report. However, the increase in utilization will actually be concentrated among enrollees with ASD under age 8 years in DMHC-regulated plans or CDI-regulated policies who did not have mandate-compliant coverage prior to SB 163.

Baseline and Postmandate Per-Unit Cost

CHBRP estimates that the current average per hour cost of BHT ASD is $71.45, a figure derived from the Milliman CHSD dataset, trended forward to 2020 dollars. Postmandate, CHBRP estimates that this per-unit cost will remain constant, because the projected increase in utilization is not enough to cause a change in unit cost prices.

Baseline and Postmandate Expenditures

Table 3 and Table 4 present baseline and postmandate expenditures by market segment for DMHC-regulated plans and CDI-regulated policies. The tables present per member per month (PMPM) premiums, enrollee expenses for both covered and noncovered benefits, and total expenditures (premiums as well as enrollee expenses).

SB 163 would increase total net annual expenditures by $4,317,000 or 0.0027% for enrollees with DMHC-regulated plans and CDI-regulated policies. This is due to a $3,918,000 increase in total health insurance premiums paid by employers and enrollees for newly covered benefits, adjusted by an increase of $399,000 in enrollee expenses for covered and/or noncovered benefits (see Table 1).

Premiums

Changes in premiums as a result of SB 163 would vary by market segment. Note that such changes are related to the number of enrollees (see Table 1, Table 3, and Table 4), with health insurance that would be subject to SB 163. Increases in private insurance premiums range from a high of $0.0160 PMPM among DMHC-regulated large-group plans to a low of $0.0130 PMPM among CDI-regulated individual policies.

Among publicly funded DMHC-regulated plans with Medi-Cal enrollees, premiums would increase by $0.0088 PMPM, for both enrollees under aged 65 and those aged 65+. CHBRP estimates an $84,000 increase in premium expenditures for the 7.6 million Medi-Cal beneficiaries enrolled in DMHC-regulated plans.

Enrollee Expenses

SB 163-related changes in enrollee expenses for covered benefits (deductibles, copays, etc.) and enrollee expenses for noncovered benefits would vary by market segment. Note that such changes are related to the number of enrollees (see Table 3 and Table 4) with health insurance that would be subject to SB 163 expected to use BHT during the year after enactment. Enrollee expenses for covered benefits in private plans are expected to increase by a high of $0.0044 PMPM among CDI-regulated individual policies. At the low end, CHBRP estimates that enrollee expenses for covered benefits will increase by $0.0012 among DMHC-regulated large-group policies.

Among publicly funded DMHC-regulated health plans, there would be no impact on enrollee expenses in Medi-Cal plans. CalPERS enrollees are estimated to see an increase in enrollee expenses of $0.0013 PMPM.

Although enrollees with newly compliant benefit coverage may have paid for some treatments prior to enactment of SB 163, CHBRP cannot estimate the frequency with which such situations may have occurred and so cannot estimate the total expense such situations might have incurred. Postmandate, such expenses would be shifted to premiums, though enrollees with newly compliant benefit coverage might, postmandate, pay for some treatments for which coverage is denied. Again, CHBRP cannot estimate the frequency with which such situations might occur, and or the total expense such situations might incur.

Out-of-Pocket Spending for Covered and Non-Covered Expenses

When possible, CHBRP estimates the marginal impact of the bill on out-of-pocket spending for covered and noncovered expenses, defined as uncovered medical expenses paid by the enrollee as well as out-of-pocket expenses (e.g., deductibles, copayments, and coinsurance). CHBRP estimates are based on claims data and may underestimate the cost savings for enrollees due to carriers' ability to negotiate discounted rates that are unavailable to patients and their families.

As noted in Table 1, SB 163 would increase total enrollee out-of-pocket spending for covered benefits (cost sharing) by less than 0.1%. For enrollees with ASD who use BHT, SB 163's coverage requirements would create varied impacts. As noted in Table 2 cost-sharing impacts among enrollees using BHT would range from no impact (for Medi-Cal beneficiaries, who have no premandate cost sharing) to an average annual increase of $57.89 among enrollees in individual market plans and policies.

Table 2. Cost-Sharing Impact of SB 163

	Large Group	Small Group	Individual	CalPERS HMO	MediCal HMO
% of Enrollees with Cost-Sharing Impact from the Mandate (a)	0.1%	0.1%	0.1%	0.1%	0.0%
Avg Annual Cost-Sharing Impact Enrollees using BHT (b)	$12.10	$34.60	$57.89	$12.44	$ -

Source: California Health Benefits Review Program, 2019
Notes: (a) Not including impacts on premiums; (b) Benefit coverage for Medi-Cal beneficiaries does not generally include any cost sharing, which would not be changed by SB 163.

It is possible that some enrollees incurred expenses related to BHT for which coverage was denied, but CHBRP cannot estimate the frequency with which such situations occur and so cannot offer a calculation of impact.

Potential Cost Offsets or Savings in the First 12 Months After Enactment

CHBRP does not project any cost offsets or savings in health care that would result because of the enactment of provisions in SB 163.

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.

Other Considerations for Policymakers

In addition to the impacts a bill may have on benefit coverage, utilization, and cost, related considerations for policymakers are discussed below.

Postmandate Changes in the Number of Uninsured Persons[27]

Because the change in average premiums does not exceed 1% for any market segment (see Table 1, Table 2 and Table 3), CHBRP would expect no measurable change in the number of uninsured persons due to the enactment of SB 163.

Changes in Public Program Enrollment

CHBRP estimates that the mandate would produce no measurable impact on enrollment in publicly funded insurance programs due to the enactment of SB 163. Additionally, the research literature has shown that enrollees with ASD in publicly funded programs are significantly less likely to have out-of-pocket costs, and more likely to have benefit coverage that meets their child's needs (Zhang and Baranek, 2016). These factors will remain in place, and make any movement of children with ASD from public to private coverage unlikely.

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

CHBRP estimates that the current lack of these specific provisions of benefit coverage under the existing BHT mandate for enrollees with ASD does not result in any measureable cost shifting to other payers.

[27] See also CHBRP's *Uninsured: Criteria and Methods for Estimating the Impact of Mandates on the Number of Individuals Who Become Uninsured in Response to Premium Increases (December 2015)*, available at http://chbrp.com/analysis_methodology/cost_impact_analysis.php.

Table 3. Baseline Per Member Per Month Premiums and Total Expenditures by Market Segment, California, 2020

	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+) (c)*	*Large Group*	*Small Group*	*Individual*	**Total**
Enrollee counts										
Total enrollees in plans/policies subject to state mandates (d)	10,565,000	3,099,000	2,184,000	523,000	6,796,000	795,000	318,000	108,000	102,000	24,490,000
Total enrollees in plans/policies subject to SB 163	10,565,000	3,099,000	2,184,000	523,000	6,796,000	795,000	318,000	108,000	102,000	24,490,000
Premiums										
Average portion of premium paid by employer	$555.35	$341.99	$0.00	$493.71	$268.13	$694.55	$710.92	$462.84	$0.00	$118,029,198,000
Average portion of premium paid by employee	$39.66	$205.44	$437.39	$94.04	$0.00	$0.00	$250.37	$202.64	$475.67	$26,521,718,000
Total premium	**$595.01**	**$547.43**	**$437.39**	**$587.76**	**$268.13**	**$694.55**	**$961.29**	**$665.48**	**$475.67**	**$144,550,916,000**
Enrollee expenses										
For covered benefits (deductibles, copays, etc.)	$46.18	$121.03	$115.38	$48.33	$0.00	$0.00	$162.44	$186.84	$168.51	$14,750,880,000
For noncovered benefits (e)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0
Total expenditures	**$641.19**	**$668.46**	**$552.77**	**$636.08**	**$268.13**	**$694.55**	**$1,123.73**	**$852.31**	**$644.17**	**$159,301,796,000**

Source: California Health Benefits Review Program, 2019.

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

(b) Approximately 56.17% of CalPERS enrollees in DMHC-regulated plans are state retirees, state employees, or their dependents.

(c) Medi-Cal Managed Care Plan expenditures for members over 65 include those who are also Medicare beneficiaries. This population does not include enrollees in COHS.

(d) Enrollees in plans and policies regulated by DMHC or CDI aged 0 to 64 years as well as enrollees 65 years or older in employer-sponsored health insurance. This group includes commercial enrollees (including those associated with Covered California or CalPERS) and Medi-Cal beneficiaries enrolled in DMHC-regulated plans.[28]

(e) 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; COHS = County Organized Health Systems; DMHC = Department of Managed Health Care; MCMC = Medi-Cal Managed Care.

[28] For more detail, see *Estimates of Sources of Health Insurance in California*, available at http://chbrp.com/analysis_methodology/cost_impact_analysis.php.

Table 4. Postmandate Per Member Per Month Premiums and Total Expenditures by Market Segment, California, 2020

	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+) (c)*	*Large Group*	*Small Group*	*Individual*	**Total**
Enrollee counts										
Total enrollees in plans/policies subject to state mandates (d)	10,565,000	3,099,000	2,184,000	523,000	6,796,000	795,000	318,000	108,000	102,000	24,490,000
Total enrollees in plans/policies subject to SB 163	10,565,000	3,099,000	2,184,000	523,000	6,796,000	795,000	318,000	108,000	102,000	24,490,000
Premiums										
Average portion of premium paid by employer	$0.0149	$0.0091	$0.0000	$0.0134	$0.0088	$0.0088	$0.0107	$0.0095	$0.0000	$3,163,000
Average portion of premium paid by employee	$0.0011	$0.0055	$0.0140	$0.0025	$0.0000	$0.0000	$0.0038	$0.0042	$0.0130	$756,000
Total premium	$0.0160	$0.0145	$0.0140	$0.0159	$0.0088	$0.0088	$0.0145	$0.0137	$0.0130	**$3,919,000**
Enrollee expenses										
For covered benefits (deductibles, copays, etc.)	$0.0012	$0.0032	$0.0036	$0.0013	$0.0000	$0.0000	$0.0025	$0.0039	$0.0044	$399,000
For noncovered benefits (e)	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0
Total expenditures	$0.0172	$0.0177	$0.0176	$0.0172	$0.0088	$0.0088	$0.0170	$0.0176	$0.0174	**$4,318,000**
Percent change										
Premiums	0.0027%	0.0027%	0.0032%	0.0027%	0.0033%	0.0013%	0.0015%	0.0021%	0.0027%	0.0027%
Total expenditures	0.0027%	0.0027%	0.0032%	0.0027%	0.0033%	0.0013%	0.0015%	0.0021%	0.0027%	0.0027%

Source: California Health Benefits Review Program, 2019.

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

(b) Approximately 56% of CalPERS enrollees in DMHC-regulated plans are state retirees, state employees, or their dependents.

(c) Medi-Cal Managed Care Plan expenditures for members over 65 include those who are also Medicare beneficiaries. This population does not include enrollees in COHS.

(d) Enrollees in plans and policies regulated by DMHC or CDI aged 0 to 64 years as well as enrollees 65 years or older in employer-sponsored health insurance. This group includes commercial enrollees (including those associated with Covered California or CalPERS) and Medi-Cal beneficiaries enrolled in DMHC-regulated plans.[29]

(e) 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; COHS = County Organized Health Systems; DMHC = Department of Managed Health Care; MCMC = Medi-Cal Managed Care.

[29] For more detail, see *Estimates of Sources of Health Insurance in California*, available at http://chbrp.com/analysis_methodology/cost_impact_analysis.php.

PUBLIC HEALTH IMPACTS

As discussed in the *Policy Context* section, SB 163 would alter an existing mandate related to the coverage of treatment for autism spectrum disorder (ASD). ASD is a developmental disability for which there is no known cure. Behavioral health treatments (BHT) for ASD focus on ameliorating a variety of symptoms common across the spectrum such as limited communication (verbal skills, eye contact, etc.), repetitive motions, and/or acute sensory sensitivity. This section estimates the impact SB 163 may have on related health outcomes as well as racial/ethnic disparities.

As discussed in the *Benefit Coverage, Utilization, and Cost Impacts* section, CHBRP projects utilization impacts are expected for persons with benefit coverage newly compliant to SB 163's requirements.

Estimated Public Health Outcomes

As presented in the *Medical Effectiveness* section, there is convincing evidence that multiple modalities of BHT improve cognitive functioning, language, social functioning, and adaptive behaviors. Regarding the effectiveness of parental involvement in delivering BHT, evidence shows that parental involvement is associated with greater improvements in functioning as compared with treatment provided solely by a professional. However, treatment provided solely by trained professionals is effective in producing favorable outcomes when compared with no treatment. Additionally, there is a preponderance of evidence from studies with moderately strong research designs that BHT can be delivered effectively in any setting or location.

As presented in the *Benefit Coverage, Utilization, and Cost Impacts* section, CHBRP projects no new users of BHT, but estimates that the 26,000 enrollees with ASD who already use BHT would increase their utilization by an *average* of 2.1 hours per year per user in 2018.

Based on the evidence of effectiveness, CHBRP finds that such an increase would not likely have a public health impact in the first year, postmandate. However, the increase in BHT hours may improve BHT outcomes such as intelligence quotient (IQ), language skills, socialization, and adaptive behaviors on an individual basis for some persons with ASD.

Estimated Impacts on Disparities in Children with ASD

In the case of SB 163, evidence shows that ASD occurs disproportionately among California males and whites and Hispanics (see the *Background on Autism Spectrum Disorder* section). In addition, children from low-income, less educated, and rural families are less likely to receive behavioral health treatment than their higher income, better educated and urban family counterparts. Racial/ethnic disparities regarding perceptions of adequate provider time have been identified with parents of Latino and black children with ASD more likely than white parents to report inadequate provider time with their children. CHBRP identified no literature reporting disparities by BHT setting/location or parental involvement in BHT for children with ASD. Evidence presented in the *Background on Autism Spectrum Disorder* section suggests differences in the prevalence of autism spectrum disorder (ASD) by gender and race/ethnicity as well as differences in utilization of BHT by income, educational attainment, insurance status, and geographic proximity to urban areas with higher concentrations of qualified autism service providers. Although individual children with ASD would receive more BHT hours due to the removal of restrictions on settings and parental involvement, CHBRP estimates that SB 163 would have no impact on reducing *statewide* disparities with respect to access to BHT and ASD outcomes due to the marginal increase in new hours of BHT services for existing users.

LONG-TERM IMPACTS

In this section, CHBRP estimates the long-term impact[30] of SB 163, which CHBRP defines as impacts occurring beyond the first 12 months after 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.

Long-Term Utilization and Cost Impacts

Utilization Impacts

After the small increase in utilization in the first 12 months, there is no indication in the research literature that the trends will change over time. Therefore, CHBRP does not estimate any change in long-term impacts in utilization, because the rate of enrollees with ASD using BHT will also remain generally consistent over time.

Cost Impacts

Over the long term, the first-year cost increase findings would apply annually thereafter. However, the research literature has shown that BHT in children with autism improves their language functioning and adaptive skills over time, including gains made for adolescents (Storch et al., 2013, 2015; see the *Medical Effectiveness* section). Therefore, it is likely that gains in BHT in younger children with ASD will result in overall lower health care costs over their lifetimes, although this cannot be quantified.

Long-Term Public Health Impacts

Because more BHT is generally associated with better outcomes, it stands to reason that long-term outcomes of cognitive functioning, language, social functioning, and adaptive behaviors may be improved, on an individual basis, for those enrollees who make use of additional BHT hours due to the removal of alternative setting and parent participation barriers; however, CHBRP projects no overall public health impact in the long term due to the limited increase in hours of BHT per user per year.

Social Determinants of Health and Disparities

Per statute, CHBRP includes a discussion of disparities and social determinants of health (SDoH), when relevant. In the case of SB 163, evidence shows that ASD occurs disproportionately among California males and whites and Hispanics. Additionally, children living in rural and low-income areas experience greater barriers in access to behavioral health treatment for autism. As utilization impacts are expected for enrollees already using BHT, CHBRP estimates no long-term impact on reducing statewide disparities or potential social determinants of health on access to BHT or ASD outcomes due to the limited increase in hours of BHT services per year spread across existing users.

[30] See also CHBRP's *Criteria and Guidelines for the Analysis of Long-Term Impacts on Healthcare Costs and Public Health*, available at http://www.chbrp.org/analysis_methodology/cost_impact_analysis.php.

APPENDIX A TEXT OF BILL ANALYZED

On January 28, 2019, the California Senate Committee on Health requested that CHBRP analyze SB 163.

CALIFORNIA LEGISLATURE— 2019–2020 REGULAR SESSION

SENATE BILL **No. 163**

Introduced by Senator Portantino

January 24, 2019

An act to amend Section 1374.73 of the Health and Safety Code, and to amend Section 10144.51 of the Insurance Code, relating to healthcare coverage.

LEGISLATIVE COUNSEL'S DIGEST

SB 163, as introduced, Portantino. Healthcare coverage: pervasive developmental disorder or autism.

Existing law, the Lanterman Developmental Disabilities Services Act, requires the State Department of Developmental Services to contract with regional centers to provide services and supports to individuals with developmental disabilities and their families. Existing law defines developmental disability for these purposes to include, among other things, autism.

Existing law, the Knox-Keene Health Care Service Plan Act of 1975, provides for the licensure and regulation of health care service plans by the Department of Managed Health Care and makes a willful violation of the act a crime. Existing law also provides for the regulation of health insurers by the Department of Insurance. Existing law requires a health care service plan contract or a health insurance policy to provide coverage for behavioral health treatment for pervasive developmental disorder or autism, and defines "behavioral health treatment" to mean specified services and treatment programs, including treatment provided pursuant to a treatment plan that is prescribed by a qualified autism service provider and administered either by a qualified autism service provider or by a qualified autism service professional or qualified autism service paraprofessional who is supervised as specified. Existing law defines a "qualified autism service provider" to refer to a person who is certified or licensed and a "qualified autism service professional" to refer to a person who meets specified educational, training, and other requirements and is supervised and employed by a qualified autism service provider. Existing law defines a "qualified autism service paraprofessional" to mean an unlicensed and uncertified individual who meets specified educational, training, and other criteria, is supervised by a qualified autism service

provider or a qualified autism service professional, and is employed by the qualified autism service provider. Existing law also requires a qualified autism service provider to design, in connection with the treatment plan, an intervention plan that describes, among other information, the parent participation needed to achieve the plan's goals and objectives, as specified. Under existing law, these coverage requirements provide an exception for specialized health care service plans or health insurance policies that do not cover mental health or behavioral health services, accident only, specified disease, hospital indemnity, or Medicare supplement health insurance policies, and health care service plans and health insurance policies in the Medi-Cal program.

Existing federal law, the federal Paul Wellstone and Pete Domenici Mental Health Parity and Addiction Equity Act of 2008 (MHPAEA), requires group health plans and health insurance issuers that provide both medical and surgical benefits and mental health or substance use disorder benefits to ensure that financial requirements and treatment limitations applicable to mental health or substance use disorder benefits are no more restrictive than the predominant requirements or limitations applied to substantially all medical and surgical benefits. Existing state law subjects nongrandfathered individual and small group health care service plan contracts and health insurance policies that provide coverage for essential health benefits to those provisions of the MHPAEA.

This bill would revise the definition of behavioral health treatment to require the services and treatment programs provided to be based on behavioral, developmental, behavior-based, or other evidence-based models. The bill would remove the exception for health care service plans and health insurance policies in the Medi-Cal program, consistent with the MHPAEA.

This bill also would expand the definition of a "qualified autism service professional" to include behavioral service providers who meet specified educational and professional or work experience qualifications. The bill would revise the definition of a "qualified autism service paraprofessional" by deleting the reference to an unlicensed and uncertified individual and by requiring the individual to comply with revised educational and training, or professional, requirements. The bill would also revise the definitions of both a qualified autism service professional and a qualified autism service paraprofessional to include the requirement that these individuals complete a background check.

This bill would require the intervention plan designed by the qualified autism service provider, when clinically appropriate, to include parent or caregiver participation that is individualized to the patient and takes into account the ability of the parent or caregiver to participate in therapy sessions and other recommended activities. The bill would specify that the lack of parent or caregiver participation shall not be used to deny or reduce medically necessary services and that the setting, location, or time of treatment not be used as the only reason to deny medically necessary services. Because a willful violation of the bill's provisions by a health care service plan would be a crime, it would impose a state-mandated local program.

The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement.

This bill would provide that no reimbursement is required by this act for a specified reason.

DIGEST KEY

Vote: majority Appropriation: no Fiscal Committee: yes Local Program: yes

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BILL TEXT

THE PEOPLE OF THE STATE OF CALIFORNIA DO ENACT AS FOLLOWS:

SECTION 1.

Section 1374.73 of the Health and Safety Code, as amended by Chapter 385 of the Statutes of 2017, is amended to read:

1374.73.

(a) (1) Every health care service plan contract that provides hospital, medical, or surgical coverage shall also provide coverage for behavioral health treatment for pervasive developmental disorder or autism no later than July 1, 2012. The coverage shall be provided in the same manner and shall be subject to the same requirements as provided in Section 1374.72.

(2) Notwithstanding paragraph (1), as of the date that proposed final rulemaking for essential health benefits is issued, this section does not require any benefits to be provided that exceed the essential health benefits that all health plans will be required by federal regulations to provide under Section 1302(b) of the federal Patient Protection and Affordable Care Act (Public Law 111-148), as amended by the federal Health Care and Education Reconciliation Act of 2010 (Public Law 111-152).

(3) This section shall not affect services for which an individual is eligible pursuant to Division 4.5 (commencing with Section 4500) of the Welfare and Institutions Code or Title 14 (commencing with Section 95000) of the Government Code.

(4) This section shall not affect or reduce any obligation to provide services under an individualized education program, as defined in Section 56032 of the Education Code, or an individual service plan, as described in Section 5600.4 of the Welfare and Institutions Code, or under the federal Individuals with Disabilities Education Act (20 U.S.C. Sec. 1400 et seq.) and its implementing regulations.

(b) Every health care service plan subject to this section shall maintain an adequate network that includes qualified autism service providers who supervise or employ qualified autism service professionals or paraprofessionals who provide and administer behavioral health treatment. A health care service plan is not prevented from selectively contracting with providers within these requirements.

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

(1) "Behavioral health treatment" means professional services and treatment ~~programs,~~ *programs based on behavioral, developmental, behavior-based, or other evidence-based models,* including applied behavior analysis and *other* evidence-based behavior intervention programs, that develop or restore, to the maximum extent practicable, the functioning of an individual with pervasive developmental disorder or autism and that meet all of the following criteria:

(A) The treatment is prescribed by a physician and surgeon licensed pursuant to Chapter 5 (commencing with Section 2000) of, or is developed by a psychologist licensed pursuant to Chapter 6.6 (commencing with Section 2900) of, Division 2 of the Business and Professions Code.

(B) The treatment is provided under a treatment plan prescribed by a qualified autism service provider and is administered by one of the following:

(i) A qualified autism service provider.

(ii) A qualified autism service professional supervised by the qualified autism service provider.

(iii) A qualified autism service paraprofessional supervised by a qualified autism service provider or qualified autism service professional.

(C) The treatment plan has measurable goals over a specific timeline that is developed and approved by the qualified autism service provider for the specific patient being treated. The treatment plan shall be reviewed no less than once every six months by the qualified autism service

provider and modified whenever appropriate, and shall be consistent with Section 4686.2 of the Welfare and Institutions Code pursuant to which the qualified autism service provider does all of the following:
(i) Describes the patient's behavioral health impairments or developmental challenges that are to be treated.
(ii) Designs an intervention plan that includes the service type, number of hours, and parent ~~participation~~ *participation, when clinically appropriate,* needed to achieve the plan's goal and objectives, and the frequency at which the patient's progress is evaluated and reported. *When clinically appropriate, the plan shall include parent or caregiver participation that is individualized to the patient and that takes into account the ability of the parent or caregiver to participate in therapy sessions and other recommended activities.*
(iii) Provides intervention plans that utilize evidence-based practices, with demonstrated clinical efficacy in treating pervasive developmental disorder or autism. *"Evidence-based practice" means a decision-making process that integrates the best available scientifically rigorous research, clinical expertise, and individuals' characteristics. Evidence-based practice is an approach to treatment rather than a specific treatment. Evidence-based practice promotes the collection, interpretation, integration, and continuous evaluation of valued, important, and applicable individual- or family-reported, clinically observed, and research-supported evidence. The best available evidence, matched to consumer circumstances and preferences, is applied to ensure the quality of clinical judgment and facilitate the most cost-effective care.*
(iv) Discontinues intensive behavioral intervention services when the treatment goals and objectives are achieved or no longer appropriate.
(D) The treatment plan is not used for purposes of providing or for the reimbursement of respite, ~~day care,~~ *daycare,* or educational services and is not used to reimburse a parent for participating in the treatment program. The treatment plan shall be made available to the health care service plan upon request.
(2) "Pervasive developmental disorder or autism" shall have the same meaning and interpretation as used in Section 1374.72.
(3) "Qualified autism service provider" means either of the following:
(A) A person who is certified by a national entity, such as the Behavior Analyst Certification Board, with a certification that is accredited by the National Commission for Certifying ~~Agencies,~~ *Agencies or the American National Standards Institute,* and who designs, supervises, or provides treatment for pervasive developmental disorder or autism, provided the services are within the experience and competence of the person who is nationally certified.
(B) A person licensed as a physician and surgeon, physical therapist, occupational therapist, psychologist, marriage and family therapist, educational psychologist, clinical social worker, professional clinical counselor, speech-language pathologist, or audiologist pursuant to Division 2 (commencing with Section 500) of the Business and Professions Code, who designs, supervises, or provides treatment for pervasive developmental disorder or autism, provided the services are within the experience and competence of the licensee.
(4) "Qualified autism service professional" means an individual who meets all of the following criteria:
(A) Provides behavioral health treatment, which may include clinical case management and case supervision under the direction and supervision of a qualified autism service provider. *However, the services shall be consistent with the experience, training, or education of the professional.*
(B) Is supervised by a qualified autism service provider.

(C) Provides treatment pursuant to a treatment plan developed and approved by the qualified autism service provider.

~~(D)Is a behavioral service provider who meets~~

(D) Is a behavioral service provider who meets one of the following criteria:

(i) Meets the education and experience qualifications described in Section 54342 of Title 17 of the California Code of Regulations for an ~~Associate Behavior Analyst, Behavior Analyst, Behavior Management Assistant, Behavior Management Consultant,~~ *associate behavior analyst, behavior analyst, behavior management assistant, behavior management consultant,* or ~~Behavior Management Program.~~ *behavior management program.*

(ii) Possesses a bachelor of arts or science degree and meets one of the following qualifications:

(I) One year of experience in designing or implementing behavioral health treatment supervised by a qualified autism service provider and 12 semester units from an accredited institution of higher learning in either applied behavioral analysis or clinical coursework in behavioral health.

(II) Two years of experience in designing or implementing behavioral health treatment supervised by a qualified autism service provider.

~~(E)Has training and experience in providing services for pervasive developmental disorder~~

(III) The person is a registered psychological assistant or ~~autism~~ *registered psychologist* pursuant to ~~Division 4.5~~ *Chapter 6.6* (commencing with Section ~~4500)~~*2900)* of ~~the Welfare and Institutions Code or Title 14 (commencing with Section 95000) of the Government Code.~~ *Division 2 of the Business and Professions Code. A registered psychological assistant or registered psychologist may not supervise a qualified autism service paraprofessional until the registered psychological assistant or registered psychologist has obtained at least 500 hours of experience in designing or implementing behavioral health treatment.*

(IV) The person is an associate clinical social worker registered with the Board of Behavioral Sciences pursuant to Section 4996.18 of the Business and Professions Code. An associate clinical social worker may not supervise a qualified autism service paraprofessional until the associate clinical social worker has obtained at least 500 hours of experience in designing or implementing behavioral health treatment.

(V) The person is a registered associate marriage and family therapist with the Board of Behavioral Sciences pursuant to Section 4980.44 of the Business and Professions Code. A registered associate marriage and family therapist may not supervise a qualified autism service paraprofessional until the registered associate marriage and family therapist has obtained at least 500 hours of experience in designing or implementing behavioral health treatment.

(VI) The person is a registered associate professional clinical counselor with the Board of Behavioral Sciences pursuant to Section 4999.42 of the Business and Professions Code. A registered associate professional clinical counselor may not supervise a qualified autism service paraprofessional until the registered associate professional clinical counselor has obtained at least 500 hours of experience in designing or implementing behavioral health treatment.

(VII) The person is credentialed or certified by a national entity, including, but not limited to, the Behavior Analyst Certification Board, which is accredited by the National Commission for Certifying Agencies or the American National Standards Institute to provide applied behavior analysis or behavioral health treatment, which may include case management and case supervision under the direction and supervision of a qualified autism service provider.

(E) Has training and experience in providing services for autism spectrum disorders.

(F) Is employed by the qualified autism service provider or an entity or group that employs qualified autism service providers responsible for the autism treatment plan.

(G) Has completed a background check performed by a Department of Justice approved agency, with subsequent notification to the person's employer pursuant to Section 11105.2 of the Penal Code.

(5) "Qualified autism service paraprofessional" means an ~~unlicensed and uncertified~~ individual who meets all of the following criteria:

(A) Is supervised by a qualified autism service provider or qualified autism service professional at a level of clinical supervision that meets professionally recognized standards of practice.

(B) Provides treatment and implements services pursuant to a treatment plan developed and approved by the qualified autism service provider.

~~(C)Meets~~

(C) Meets one of the following:

(i) For applied behavioral analysis, the education and training qualifications described in Section 54342 of Title 17 of the California Code of Regulations.

(ii) For other evidence-based behavioral health treatments, all of the following qualifications:

(I) Possesses an associate's degree or has completed two years of study from an accredited college or university with coursework in a related field of study.

(II) Has 40 hours of training in the specific form of behavioral health treatment developed by a qualified autism service provider and administered by a qualified autism service provider or qualified autism service professional competent in the form of behavioral health treatment to be practiced by the paraprofessional.

(III) Has adequate education, training, and experience, as certified by a qualified autism service provider.

(iii) Is credentialed or certified in applied behavior analysis or behavioral health treatment for paraprofessionals or technicians by a national entity that is accredited by the National Commission for Certifying Agencies or the American National Standards Institute.

However, upon successful completion of the training and education necessary for certification or a credential described in this clause, if the applicant is otherwise qualified under this section, the applicant may provide treatment and implement services for up to 180 days while in the process of obtaining the certification or credential.

(D) Has adequate education, training, and experience, as certified by a qualified autism service provider or an entity or group that employs qualified autism service providers.

(E) Is employed by the qualified autism service provider or an entity or group that employs qualified autism service providers responsible for the autism treatment plan.

(F) Has completed a background check performed by a Department of Justice approved agency, with subsequent notification to the person's employer pursuant to Section 11105.2 of the Penal Code.

(d) This section shall not apply to ~~the following:~~ *a specialized health care service plan that does not deliver mental health or behavioral health services to enrollees.*

~~(1)A specialized health care service plan that does not deliver mental health or behavioral health services to enrollees.~~

~~(2)A health care service plan contract in the Medi-Cal program (Chapter 7 (commencing with Section 14000) of Part 3 of Division 9 of the Welfare and Institutions Code).~~

(e) This section does not limit the obligation to provide services under Section 1374.72.

(f) As provided in Section 1374.72 and in paragraph (1) of subdivision (a), in the provision of benefits required by this section, a health care service plan may utilize case management, network providers, utilization review techniques, prior authorization, copayments, or other cost sharing.

(g) (1) The setting, location, or time of treatment recommended by the qualified autism service provider shall not be used as the only reason to deny or reduce coverage for medically necessary services. The setting shall be consistent with the standard of care for behavioral health treatment. This subdivision does not require a health care service plan to provide reimbursement for services delivered by school personnel pursuant to an enrollee's individualized educational program for the purpose of accessing educational services, unless otherwise required or permitted by federal and state law. This subdivision does not require a health care service plan to cover services rendered outside of the plan's service area unless the services are urgently needed services, as described in subdivision (h) of Section 1345, or emergency services, as defined in Section 1317.1, or unless the benefit plan expressly covers out-of-area services.

(2) Parent or caregiver participation may be associated with greater improvements in functioning and should be encouraged. However, the lack of parent or caregiver participation shall not be used as a basis for denying or reducing coverage of medically necessary services.

SEC. 2.

Section 10144.51 of the Insurance Code, as amended by Chapter 385 of the Statutes of 2017, is amended to read:

10144.51.

(a) (1) Every health insurance policy shall also provide coverage for behavioral health treatment for pervasive developmental disorder or autism no later than July 1, 2012. The coverage shall be provided in the same manner and shall be subject to the same requirements as provided in Section 10144.5.

(2) Notwithstanding paragraph (1), as of the date that proposed final rulemaking for essential health benefits is issued, this section does not require any benefits to be provided that exceed the essential health benefits that all health insurers will be required by federal regulations to provide under Section 1302(b) of the federal Patient Protection and Affordable Care Act (Public Law 111-148), as amended by the federal Health Care and Education Reconciliation Act of 2010 (Public Law 111-152).

(3) This section shall not affect services for which an individual is eligible pursuant to Division 4.5 (commencing with Section 4500) of the Welfare and Institutions Code or Title 14 (commencing with Section 95000) of the Government Code.

(4) This section shall not affect or reduce any obligation to provide services under an individualized education program, as defined in Section 56032 of the Education Code, or an individual service plan, as described in Section 5600.4 of the Welfare and Institutions Code, or under the federal Individuals with Disabilities Education Act (20 U.S.C. Sec. 1400 et seq.) and its implementing regulations.

(b) Pursuant to Article 6 (commencing with Section 2240) of Subchapter 2 of Chapter 5 of Title 10 of the California Code of Regulations, every health insurer subject to this section shall maintain an adequate network that includes qualified autism service providers who supervise or employ qualified autism service professionals or paraprofessionals who provide and administer behavioral health treatment. A health insurer is not prevented from selectively contracting with providers within these requirements.

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

(1) "Behavioral health treatment" means professional services and treatment ~~programs,~~ *programs based on behavioral, developmental, behavior-based, or other evidence-based practice models,* including applied behavior analysis and *other* evidence-based behavior intervention programs, that develop or restore, to the maximum extent practicable, the functioning of an

individual with pervasive developmental disorder or autism, and that meet all of the following criteria:
(A) The treatment is prescribed by a physician and surgeon licensed pursuant to Chapter 5 (commencing with Section 2000) of, or is developed by a psychologist licensed pursuant to Chapter 6.6 (commencing with Section 2900) of, Division 2 of the Business and Professions Code.
(B) The treatment is provided under a treatment plan prescribed by a qualified autism service provider and is administered by one of the following:
(i) A qualified autism service provider.
(ii) A qualified autism service professional supervised by the qualified autism service provider.
(iii) A qualified autism service paraprofessional supervised by a qualified autism service provider or qualified autism service professional.
(C) The treatment plan has measurable goals over a specific timeline that is developed and approved by the qualified autism service provider for the specific patient being treated. The treatment plan shall be reviewed no less than once every six months by the qualified autism service provider and modified whenever appropriate, and shall be consistent with Section 4686.2 of the Welfare and Institutions Code pursuant to which the qualified autism service provider does all of the following:
(i) Describes the patient's behavioral health impairments or developmental challenges that are to be treated.
(ii) Designs an intervention plan that includes the service type, number of hours, and parent ~~participation~~ *participation, when clinically appropriate,* needed to achieve the plan's goal and objectives, and the frequency at which the patient's progress is evaluated and reported. *When clinically appropriate, the plan shall include parent or caregiver participation that is individualized to the patient and that takes into account the ability of the parent or caregiver to participate in therapy sessions and other recommended activities.*
(iii) Provides intervention plans that utilize evidence-based practices, with demonstrated clinical efficacy in treating pervasive developmental disorder or autism. *"Evidence-based practice" means a decision-nmaking process that integrates the best available scientifically rigorous research, clinical expertise, and individuals' characteristics. Evidence-based practice is an approach to treatment rather than a specific treatment. Evidence-based practice promotes the collection, interpretation, integration, and continuous evaluation of valued, important, and applicable individual- or family-reported, clinically observed, and research-supported evidence. The best available evidence, matched to consumer circumstances and preferences, is applied to ensure the quality of clinical judgment and facilitate the most cost-effective care.*
(iv) Discontinues intensive behavioral intervention services when the treatment goals and objectives are achieved or no longer appropriate.
(D) The treatment plan is not used for purposes of providing or for the reimbursement of respite, ~~day care,~~ *daycare,* or educational services and is not used to reimburse a parent for participating in the treatment program. The treatment plan shall be made available to the insurer upon request.
(2) "Pervasive developmental disorder or autism" shall have the same meaning and interpretation as used in Section 10144.5.
(3) "Qualified autism service provider" means either of the following:
(A) A person who is certified by a national entity, such as the Behavior Analyst Certification Board, with a certification that is accredited by the National Commission for Certifying ~~Agencies,~~ *Agencies or the American National Standards Institute,* and who designs,

supervises, or provides treatment for pervasive developmental disorder or autism, provided the services are within the experience and competence of the person who is nationally certified.
(B) A person licensed as a physician and surgeon, physical therapist, occupational therapist, psychologist, marriage and family therapist, educational psychologist, clinical social worker, professional clinical counselor, speech-language pathologist, or audiologist pursuant to Division 2 (commencing with Section 500) of the Business and Professions Code, who designs, supervises, or provides treatment for pervasive developmental disorder or autism, provided the services are within the experience and competence of the licensee.
(4) "Qualified autism service professional" means an individual who meets all of the following criteria:
(A) Provides behavioral health treatment, which may include clinical case management and case supervision under the direction and supervision of a qualified autism service provider. *However, the services shall be consistent with the experience, training, or education of the professional.*
(B) Is supervised by a qualified autism service provider.
(C) Provides treatment pursuant to a treatment plan developed and approved by the qualified autism service provider.
~~(D)Is a behavioral service provider who meets~~
(D) Is a behavioral service provider who meets one of the following criteria:
(i) Meets the education and experience qualifications described in Section 54342 of Title 17 of the California Code of Regulations for an ~~Associate Behavior Analyst, Behavior Analyst, Behavior Management Assistant, Behavior Management Consultant,~~ *associate behavior analyst, behavior analyst, behavior management assistant, behavior management consultant,* or ~~Behavior Management Program.~~ *behavior management program.*
(ii) Possesses a bachelor of arts or science degree and meets one of the following qualifications:
(I) One year of experience in designing or implementing behavioral health treatment supervised by a qualified autism service provider and 12 semester units from an accredited institution of higher learning in either applied behavioral analysis or clinical coursework in behavioral health.
(II) Two years of experience in designing or implementing behavioral health treatment supervised by a qualified autism service provider.
~~(E)Has training and experience in providing services for pervasive developmental disorder~~
(III) The person is a registered psychological assistant or ~~autism~~ *registered psychologist* pursuant to ~~Division 4.5~~ *Chapter 6.6* (commencing with Section ~~4500)~~*2900)* of ~~the Welfare and Institutions Code or Title 14 (commencing with Section 95000) of the Government Code.~~ *Division 2 of the Business and Professions Code. A registered psychological assistant or registered psychologist may not supervise a qualified autism service paraprofessional until the registered psychological assistant or registered psychologist has obtained at least 500 hours of experience in designing or implementing behavioral health treatment.*
(IV) The person is an associate clinical social worker registered with the Board of Behavioral Sciences pursuant to Section 4996.18 of the Business and Professions Code. An associate clinical social worker may not supervise a qualified autism service paraprofessional until the associate clinical social worker has obtained at least 500 hours of experience in designing or implementing behavioral health treatment.
(V) The person is a registered associate marriage and family therapist with the Board of Behavioral Sciences pursuant to Section 4980.44 of the Business and Professions Code. A registered associate marriage and family therapist may not supervise a qualified autism service paraprofessional until the registered associate marriage and family therapist has obtained at least 500 hours of experience in designing or implementing behavioral health treatment.

(VI) The person is a registered associate professional clinical counselor with the Board of Behavioral Sciences pursuant to Section 4999.42 of the Business and Professions Code. A registered associate professional clinical counselor may not supervise a qualified autism service paraprofessional until the registered associate professional clinical counselor has obtained at least 500 hours of experience in designing or implementing behavioral health treatment.
(VII) The person is credentialed or certified by a national entity, including, but not limited to, the Behavior Analyst Certification Board, which is accredited by the National Commission for Certifying Agencies or the American National Standards Institute to provide applied behavior analysis or behavioral health treatment, which may include case management and case supervision under the direction and supervision of a qualified autism service provider.
(E) Has training and experience in providing services for pervasive developmental disorder or autism.
(F) Is employed by the qualified autism service provider or an entity or group that employs qualified autism service providers responsible for the autism treatment plan.
(G) Has completed a background check performed by a Department of Justice approved agency, with subsequent notification to the person's employer pursuant to Section 11105.2 of the Penal Code.
(5) "Qualified autism service paraprofessional" means an ~~unlicensed and uncertified~~ individual who meets all of the following criteria:
(A) Is supervised by a qualified autism service provider or qualified autism service professional at a level of clinical supervision that meets professionally recognized standards of practice.
(B) Provides treatment and implements services pursuant to a treatment plan developed and approved by the qualified autism service provider.
~~(C)Meets~~
(C) Meets one of the following:
(i) For applied behavioral analysis, the education and training qualifications described in Section 54342 of Title 17 of the California Code of Regulations.
(ii) For other evidence-based behavioral health treatments, all of the following qualifications:
(I) Possesses an associate's degree or has completed two years of study from an accredited college or university with coursework in a related field of study.
(II) Has 40 hours of training in the specific form of behavioral health treatment developed by a qualified autism service provider and administered by a qualified autism service provider or qualified autism service professional competent in the form of behavioral health treatment to be practiced by the paraprofessional.
(III) Has adequate education, training, and experience, as certified by a qualified autism service provider.
(iii) Is credentialed or certified in applied behavior analysis or behavioral health treatment for paraprofessionals or technicians by a national entity that is accredited by the National Commission for Certifying Agencies or the American National Standards Institute.
However, upon successful completion of the training and education necessary for certification or a credential described in this clause, if the applicant is otherwise qualified under this section, the applicant may provide treatment and implement services for up to 180 days while in the process of obtaining the certification or credential.
(D) Has adequate education, training, and experience, as certified by a qualified autism service provider or an entity or group that employs qualified autism service providers.
(E) Is employed by the qualified autism service provider or an entity or group that employs qualified autism service providers responsible for the autism treatment plan.

(F) Has completed a background check performed by a Department of Justice approved agency, with subsequent notification to the person's employer pursuant to Section 11105.2 of the Penal Code.

(d) This section shall not apply to ~~the following:~~ *a specialized health insurance policy that does not cover mental health or behavioral health services or an accident only, specified disease, hospital indemnity, or Medicare supplement policy.*

~~(1)A specialized health insurance policy that does not cover mental health or behavioral health services or an accident only, specified disease, hospital indemnity, or Medicare supplement policy.~~

~~(2)A health insurance policy in the Medi-Cal program (Chapter 7 (commencing with Section 14000) of Part 3 of Division 9 of the Welfare and Institutions Code).~~

(e) This section does not limit the obligation to provide services under Section 10144.5.

(f) As provided in Section 10144.5 and in paragraph (1) of subdivision (a), in the provision of benefits required by this section, a health insurer may utilize case management, network providers, utilization review techniques, prior authorization, copayments, or other cost sharing.

(g) (1) The setting, location, or time of treatment recommended by the qualified autism service provider shall not be used as the only reason to deny or reduce coverage for medically necessary services. The setting shall be consistent with the standard of care for behavioral health treatment. This subdivision does not require a health insurer to provide reimbursement for services delivered by school personnel pursuant to an enrollee's individualized educational program for the purpose of accessing educational services, unless otherwise required or permitted by federal and state law. This subdivision does not require a health insurer to cover services rendered outside of the health insurer's service area unless the services are urgently needed services to prevent serious deterioration of a covered person's health resulting from unforeseen illness or injury for which treatment cannot be delayed until the covered person returns to the insurer's service area, or emergency services, as defined in Section 1317.1 of the Health and Safety Code, or unless the benefit plan expressly covers out-of-area services.

(2) Parent or caregiver participation may be associated with greater improvements in functioning and should be encouraged. However, the lack of parent or caregiver participation shall not be used as a basis for denying or reducing coverage of medically necessary services.

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 SB 163. A discussion of CHBRP's system for grading evidence, as well as lists of MeSH terms, publication types, and keywords, follows.

The literature search was limited to studies published in English, for which abstracts were available, from 2017 to present. The medical effectiveness team relied on previous CHBRP reports on BHT for ASD for summarizes of pertinent literature published prior to 2017.

The following databases of peer-reviewed literature were searched: MEDLINE (PubMed), he Cochrane Library (includes Cochrane Register of Controlled Clinical Trials, Cochrane Database of Systematic Reviews, Web of Science (includes Science Citation Index Expanded and the Social Science Citation Index), Embase, ERIC, PsycInfo, and Scopus. In addition, websites maintained by the following organizations that index or publish systematic reviews and evidence-based guidelines were searched: Agency for Healthcare Research and Quality and National Institutes of Health. Two reviewers screened the title and abstract of each citation retrieved by the literature search to determine eligibility for inclusion. The reviewers acquired the full text of articles that were deemed eligible for inclusion in the review and reapplied the initial eligibility criteria. Abstracts for 846 articles were identified. Eighteen meta-analyses, systematic reviews, narrative reviews, RCTs, and nonrandomized studies with comparison groups were retrieved and reviewed.

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

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

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

- Clear and convincing evidence;
- Preponderance of evidence;
- Limited evidence;
- Inconclusive 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 *inconclusive evidence* indicates that although some studies included in the medical effectiveness review find that a treatment is effective, a similar number of studies with equally strong research designs suggest the treatment is not effective.

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

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

Search Terms

The search terms used to locate studies relevant to SB 163 were as follows:

Major Subject Heading terms used to search PubMed:

- Applied behavioral therapy
- Autism
- Autism Spectrum Disorder
- Autistic disorder
- Behavior therapy

Keywords used to search PubMed, Cochrane Library, Web of Science, EconLit, and other relevant websites:

- Autis*
- Behavior therapy
- Child development disorders, pervasive
- Floortime
- Pervasive developmental disorder
- Social behavior

Keywords:

- Behavioral Health Therapy
- Autism
- Autism Spectrum Disorder
- Autistic
- Asperger
- PDD
- Pervasive Development Disorder
- Rett
- Applied Behavioral Analysis
- Therapies or treatments
- Parental or caregiver involvement
- Treatment settings
- School and treatment
- Behavioral health therapy and certification
- Autism service provider
- Autism service professional
- Autism service paraprofessional
- Medical expenditure
- Outpatient
- Health insurance claims
- Access
- Case management
- Supervisor involvement
- All above * treatments listed above
- All above * outcomes plus those listed below

Outcomes:

- Increased function
- Increased access to care

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

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]

Information on the generally used data sources and estimation methods, as well as caveats and assumptions generally applicable to CHBRP's cost impacts analyses are available at CHBRP's website.[33]

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

Analysis-Specific Caveats and Assumptions

This subsection discusses the caveats and assumptions relevant to an analysis of SB 163.

CHBRP projects that SB 163:

- Would not impact any forms of cost sharing, such as deductibles, copays, and coinsurance.
- Would not affect plan/insurer methods of utilization management that may impact the coverage of medical treatments between baseline and postmandate periods, such as use of prior authorization requirements and medical review for medical treatments. Although, as discussed in this section, the bill may spur plans/insurers to update medical necessity criteria to consider the most current evidence base related to the behavioral health treatment (BHT) of autism spectrum disorder (ASD). There may also be an increase in awareness of other BHTs appropriate for ASD besides behavioral based modalities such as ABA.

The following is a description of methodology and assumptions used to develop the estimates of cost impacts:

- Diagnosis code, F840 (ICD-10, (ASD)) was used to identify claims relevant for analysis. CHBRP also used CPT/HCPCS procedure codes that were available in Milliman's proprietary 2016 Consolidated Health Cost Guidelines Sources Database (CHSD), which contains both Commercial and Medi-Cal managed care claims and encounters to identify BHT procedures relevant to those individuals with ASD. Methods for identifying relevant codes were vetted by content experts and by relevant carrier responses.
- For the BHT procedure codes that were found in the 2016 CHSD, external research was performed to determine the number of minutes of service associated with each procedure code. If a procedure code did not have a time allocation in the description, CHBRP worked with a coding expert and clinician to assign reasonable time allotments to each procedure code. Milliman also assigned a percentage rate of BHT associated with each procedure code. For example, a procedure code may be used by a billing provider for BHT but may also be used for other services. Rather than assume that 100% of the time a procedure code was used it was used for

[32] CHBRP's authorizing statute, available at http://chbrp.com/CHBRP%20authorizing%20statute_2018_FINAL.pdf, requires that CHBRP use a certified actuary or "other person with relevant knowledge and expertise" to determine financial impact.

[33] See method documents posted here, http://chbrp.com/analysis_methodology/cost_impact_analysis.php; in particular, see *2019 Cost Analyses: Data Sources, Caveats, and Assumptions*.

BHT, Milliman reviewed each procedure code and assigned a percentage share for BHT based on coding and clinical expertise. These definitions were used to produce a field that calculated total hours of BHT services in 2016.

- Procedure codes do not map well to the unique modalities of BHT for ASD such as behavioral health, developmental, or hybrid categories. Certain CPT codes developed and adopted by the American Medical Association in 2014 were done so with the intent of capturing adaptive behavior assessment and treatment associated with applied behavioral analysis. Social Skills Group is associated with a specific CPT code (adaptive behavior treatment social skills group, administered by physician or other qualified health care professional face-to-face with multiple patients). However, given how recently these codes were introduced (CHBRP data is from 2016) and inconsistent billing practices or guidelines, it is not possible to map specific procedure codes with specific modalities of BHT, be it behavioral, developmental, or hybrid.
- CHBRP used the ASD diagnosis codes to produce a list of ASD diagnosed individuals in the 2016 CHSD. With those unique individuals, CHBRP was able to identify all individuals with ASD using BHT services throughout the year. From the 2016 CHSD utilization, hours of service, and baseline utilization, hours of service and baseline cost information were developed for those individuals with an ASD diagnosis using BHT services. The data were split into several age categories to allow insight into patterns of prevalence by age band: 0 to 7 years; 8 and 17 and 18 and over. Through this breakout, CHBRP determined that there was a higher prevalence of claims for individuals with an ASD diagnosis for those 0 to 7 years of age and that the level of service was higher in those age bands. See Table 5 below, for estimated ASD prevalence by age band.

Table 5. Prevalence of Autistic Spectrum Disorder Among California Enrollees

	Age Groups			
ASD Diagnoses per 10,000 Enrollees	**Ages 0-7**	**Ages 8-17**	**Ages 18+**	**Total**
With State-Regulated (Non-Medi-Cal) Health Insurance	73.9	67.0	4.1	18.7
With Medi-Cal Managed Care	75.4	57.1	15.2	37.3

Source: CHBRP, 2019

- Utilization is estimated to increase as a result from SB 163's provisions related to removal of parental involvement restrictions; setting restrictions; and expanded coverage for BHT for ASD, especially those modalities considered developmental or hybrid. It is not possible to separate out the utilization impacts of these individual provisions; instead CHBRP estimates a combined utilization increase resulting from SB 163 provisions in total. CHBRP estimates a combined 3% increase in utilization for users aged 0 to 7.

Determining Public Demand for the Proposed Mandate

This subsection discusses public demand for the benefits SB 163 would mandate. Considering the criteria specified by CHBRP's authorizing statute, CHBRP reviews public demand for benefits relevant to a proposed mandate in two ways. CHBRP:

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

On the basis of conversations with the largest collective bargaining agents in California, CHBRP concluded that unions currently do not include cost-sharing arrangements for treatment of autism. In general, unions negotiate for broader contract provisions such as coverage for dependents, premiums, deductibles, and broad coinsurance levels.

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

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

Second Year Impacts on Benefit Coverage, Utilization, and Cost

In order to develop Table 6, CHBRP has considered whether continued implementation during the second year of the benefit coverage requirements of SB 163 would have a substantially different impact on utilization of either the tests, treatments or services for which coverage was directly addressed, the utilization of any indirectly affected utilization, or both. To generate this table, CHBRP reviewed the literature and consulted content experts about the possibility of varied second year impacts and applied what was learned to a projection of a second year of implementation.

As displayed in Table 6, the second year's impacts of SB 163 would be substantially the same as the impacts in the first year (see Table 1).

Table 6. SB 163 Impacts on Benefit Coverage, Utilization, and Cost, 2021

	Baseline	Postmandate	Increase/ Decrease	Percentage Change
Benefit coverage				
Total enrollees with health insurance subject to state benefit mandates (a)	24,395,000	24,395,000	0	0%
Number of enrollees with coverage for BHT for ASD	24,395,000	24,395,000	0	0%
Percentage of enrollees with coverage for BHT for ASD	100%	100%	0%	0%
Total enrollees with health insurance subject to SB 163 and coverage for	24,395,000	24,395,000	0	0%
Behavior-based modality, such as Pivotal Response Training	100%	100%	0%	0%
Hybrid modality, such as Early Start Denver Model	95%	100%	5%	5%
Developmental-based modality, such as DIR®/ Floortime™	54%	100%	46%	86%
BHT for ASD regardless of parental involvement	34%	100%	66%	191%
BHT for ASD regardless of setting/time/location	37%	100%	63%	168%
Utilization and unit cost				
Number of enrollees with ASD	69,000	69,000	0	0%
Number of enrollees with ASD using BHT	27,000	27,000	0	0%
Average annual hours of BHT per 1,000 enrollees	129.1	131.3	2.1	2%
Average annual hours of BHT per user	128.3	130.4	2.1	2%
Average unit cost (per hour BHT for ASD)	$72.96	$72.96	$0.00	0%
Expenditures				
Premiums by payer				
Private employers for group insurance	$90,700,422,000	$90,702,807,000	$2,385,000	0.0026%
CalPERS HMO employer expenditures (b) (c)	$3,234,903,000	$3,234,991,000	$88,000	0.0027%
Medi-Cal Managed Care Plan expenditures	$29,186,401,000	$29,187,224,000	$823,000	0.0028%
Enrollees with individually purchased insurance	$13,111,153,000	$13,111,548,000	$395,000	0.0030%
Individually Purchased – Outside Exchange	$2,645,063,000	$2,645,125,000	$62,000	0.0023%
Individually Purchased – Covered California	$10,466,090,000	$10,466,423,000	$333,000	0.0032%
Enrollees with group insurance, CalPERS HMOs, Covered California, and Medi-Cal Managed Care (c)	$15,255,718,000	$15,256,109,000	$391,000	0.0026%
Enrollee expenses				
For covered benefits (deductibles, copayments, etc.) (b)	$15,636,259,000	$15,636,675,000	$416,000	0.0027%

For noncovered benefits (f)	--	--	--	--
Total expenditures	$167,124,856,000	$167,129,354,000	$4,498,000	0.0027%

Source: California Health Benefits Review Program, 2019.

Notes: (a) This population includes persons with privately funded 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 employment sponsored insurance.

(b) Premium expenditures by enrollees include employee contributions to employer-sponsored health insurance and enrollee contributions for publicly purchased insurance.

(c) Of the increase in CalPERS employer expenditures, about 56.4% would be state expenditures for CalPERS members who are state employees or their dependents. It should be noted, however, that should CalPERS choose to make similar adjustments for consistency to the benefit coverage of enrollees associated with CalPERS' self-insured products, the fiscal impact on CalPERS could be greater.

(d) Does not include enrollees in COHS.

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

(f) Not measurable. 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. Although enrollees with newly compliant benefit coverage may have paid for some treatments before SB 163, CHBRP cannot estimate the frequency with which such situations may have occurred and, therefore, cannot estimate the total noncovered expenses. Postmandate, such expenses would be gone, though enrollees with newly compliant benefit coverage might pay for some treatments for which coverage is denied. Again, CHBRP cannot estimate the frequency with which such situations might occur, and/or the total expense.

(g) Applied behavioral analysis (ABA) is a behavioral theory. It one of the sources for behavior-based treatment modalities, such as Pivotal Response Training. It is not a treatment modality – though related treatment modalities are often called "ABA."

Key: ASD = autism spectrum disorder; BHT = behavioral health treatment; CalPERS = California Public Employees' Retirement System; CDI = California Department of Insurance; DMHC = Department of Managed Health Care; HMO = Health Maintenance Organizations

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A group of faculty, researchers, and staff complete the analysis that informs California Health Benefits Review Program (CHBRP) reports. The CHBRP **Faculty Task Force** comprises rotating senior faculty from University of California (UC) campuses. In addition to these representatives, there are other ongoing researchers and analysts who are **Task Force 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**, 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 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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