California Health Benefits Review Program

Analysis of California Senate Bill 428
Adverse Childhood Experiences Screenings

A Report to the 2021–2022 California State Legislature

April 18, 2021

CALIFORNIA
HEALTH BENEFITS REVIEW PROGRAM

Key Findings

Analysis of California Senate Bill 428 Adverse Childhood Experiences Screenings

Summary to the 2021–2022 California State Legislature, April 18, 2021

SUMMARY

California Senate Bill 428 analyzed by CHBRP would require DMHC- and CDI-regulated plans and policies to provide coverage for adverse childhood experiences (ACEs) screenings.

In 2022, of the 21.9 million Californians enrolled in state-regulated health insurance, 21.9 million of them would have insurance subject to SB 428.

Benefit Coverage: Currently, 36% of enrollees with state-regulated health insurance (that would be subject to SB 428) have coverage for ACEs screening. These are enrollees in Medi-Cal Managed Care Programs. DHCS provides reimbursement to providers completing ACEs screenings in Medi-Cal Fee for Service and Managed Care. Postmandate, 100% of all enrollees with health insurance that would be subject to SB 428 would have coverage for ACEs screening. CHBRP does not believe that SB 428 requires coverage for a new state benefit mandate that would exceed essential health benefits in California.

Medical Effectiveness: There is limited evidence that ACEs screening tools overall are valid and/or reliable, and limited evidence that suggests screening for ACEs improves health outcomes. There is a preponderance of evidence that there are effective interventions for adults and children who have experienced ACEs. There is limited evidence that ACEs screening affects referrals. There is insufficient evidence to determine whether ACEs screening affects health care services utilization.

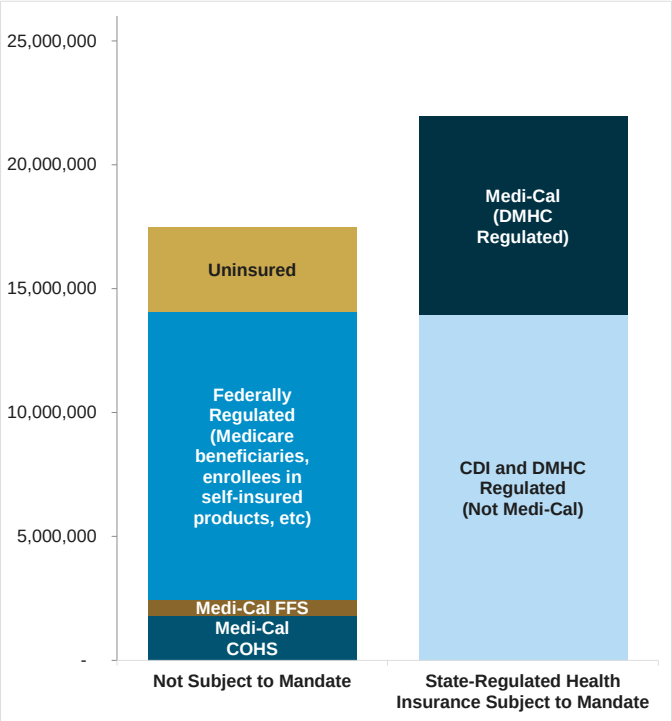
CONTEXT

ACEs are common throughout the United States; 61% of American adults report having experienced at least one ACE, and approximately one in six American adults has had four or more ACEs. Commonly considered ACEs are: abuse (physical, sexual or emotional), neglect (emotional or physical), and household dysfunction (including parental substance abuse). Though legislatures across the country have shifted focus to respond to COVID-19, more than 35 states introduced legislation on ACEs. The presence of ACEs in California/the United States has direct and indirect economic and societal costs. The Centers for Disease Control and Prevention estimates that the economic and social costs of ACES are "hundreds of billions of dollars each year."[1]

BILL SUMMARY

SB 428 would require DMHC and CDI-regulated plans and policies to provide coverage for ACEs screening.

Figure A. Health Insurance in CA and SB 428



Source: California Health Benefits Review Program, 2021.

IMPACTS

Benefit Coverage, Utilization, and Cost

[1] Refer to CHBRP's full report for full citations and references.

For this analysis, CHBRP used data published by the California Office of the Surgeon General and Department of Health Care Services (DHCS) on its ACEs Aware program for Medi-Cal providers to estimate potential utilization change among providers in commercial plans/policies. The ACEs Aware program provides Medi-Cal providers training, clinical protocols, and payment for screening children and adults for ACEs. SB 428 appears to be structured similar to the ACEs Aware program in terms of providing reimbursement for ACEs screening. CHBRP has made an overarching assumption in this analysis that commercial plans/policies would cover ACEs screening the same way it is covered for Medi-Cal providers in the ACEs Aware program. Utilization data from the rollout of the ACEs Aware program in 2020 provide a basis for estimating utilization for the commercial plans/policies impacted by SB 428.

CHBRP has assumed that reimbursement for ACEs screenings by DMHC- and CDI-regulated plans and policies would be made at the same level as that set by DHCS in its ACEs Aware program at $29 per screening. CHBRP has also assumed that ACEs screenings would be conducted via in-person and telehealth visits.

Benefit Coverage

Currently, 36% of enrollees with health insurance that would be subject to SB 428 have coverage for ACEs screening — all of these are enrollees in Medi-Cal Managed Care Programs. DHCS provides reimbursement to providers completing ACEs screenings in Medi-Cal Fee-for-Service and Managed Care. Postmandate, 100% of all enrollees with health insurance that would be subject to SB 428 would have coverage for ACEs screening

Utilization

CHBRP has assumed the following postmandate utilization of ACEs screening due to SB 428 among enrollees in commercial plans/policies: 15% of enrollees under 18 years and 5% of adults 18 to 65 years screened in year 1. Under this assumption, CHBRP estimates an increase in 1,038,648 enrollees receiving ACEs screening postmandate.

Expenditures

CHBRP has assumed $29 reimbursement per each ACEs screening for commercial plans/policies. Under this assumption, SB 428 would increase total net annual expenditures by $36,060,000, or 0.03%, with no projected cost offsets.

Medi-Cal

CHBRP has assumed no new fiscal impact to Medi-Cal Managed Care Plans due to the present availability of reimbursement for ACEs screening through DHCS, which is funded via an annual state appropriation.

CalPERS

CHBRP projected an estimated $1,983,000 impact, or 0.03%, for CalPERS HMO employer expenditures.

Number of Uninsured in California

No measureable impact is projected. CHBRP would expect no measurable change in the number of uninsured persons due to the enactment of SB 428.

Medical Effectiveness

The Medical Effectiveness review reached the following conclusions regarding ACEs screening:

Psychometric Properties of ACEs Screening Tools

- There is *limited evidence* that ACEs screening tools that screen children demonstrate face validity and concurrent validity.
- There is *insufficient evidence* that ACEs screening tools that screen children demonstrate predictive validity.
- There is *insufficient evidence* that ACEs screening tools that screen adults demonstrate convergent validity.
- There is *limited evidence* that ACEs screening tools that screen adults demonstrate predictive validity.
- There is *limited evidence* that ACEs screening tools that screen adults demonstrate internal consistency reliability.
- There is *limited evidence* that ACEs screening tools that screen adults demonstrate test-retest reliability.
- There is *insufficient evidence* to determine whether shorter versions of ACEs screening tools that screen adults or children have levels

of sensitivity and specificity that are similar to those of longer screening tools.

Availability of Effective Interventions to Address the Effects of ACEs

- There is a *preponderance of evidence* that there are effective home visiting interventions for children who experience ACEs.
- There is *limited evidence* that there are effective low-intensity interventions for children who experience ACEs.
- There is *insufficient evidence* that there are effective interventions for adults who experience ACEs.

Impact of ACEs Screening on Referrals and Use of Services

- There is *limited evidence* that ACEs screening increases referrals to community resources and decreases Child Protective Services (CPS) reports for children.
- There is *insufficient evidence* on the impact of ACEs screening on referrals to community resources for adults.
- There is *insufficient* evidence on the impact of ACEs screening on referrals to health services for children and adults.
- There is *insufficient evidence* to determine whether ACEs screening affects health care services utilization for children or adults.

Impact of ACEs Screening on Health Outcomes

- There is *limited evidence* that ACEs screening improves health outcomes for high-risk children, and *insufficient evidence* on the impact of ACEs screening on the health outcome of low-risk children and adults.

Harms Associated With ACEs Screening

- There is *insufficient evidence* to determine whether ACEs screening harms children or adults.

Public Health

In the first year postmandate, a public health impact of SB 428 is expected for the subset of the children aged 0–5 years who are able to access effective interventions after ACEs screening. CHBRP is unable to estimate patterns of ACEs screening or access to effective interventions by individual gender, race, or sexual orientation. For this reason, CHBRP concludes that the impact of SB 428 on disparities in health outcomes by gender, race/ethnicity, or sexual orientation is unknown.

There is not enough evidence available to determine whether the process of screening for ACEs has an effect on public health outcomes or health care utilization. Although utilization of ACEs screening will likely rise, it is unclear whether those who do receive screening and are considered high risk will have access to effective interventions.

When data are available, CHBRP estimates the marginal change in relevant harms associated with interventions affected by the proposed mandate. Potential harms associated with the use of ACEs screening include discomfort sharing sensitive information and concerns about potential risks from disclosing ACEs. Qualitative studies have demonstrated that pediatric screening for ACEs is acceptable to families, as long as an integrated model of care with relevant and accessible services is in place prior to screening.

Long-Term Impacts

It is possible that screening will increase over time as provider and patient awareness of ACEs and interest in trauma-informed care and addressing social needs grows. However, CHBRP posits that ACEs screening uptake is likely to be curbed by the limitations of ACEs screening and the ability to refer to effective interventions as discussed in the *Background* and *Medical Effectiveness* sections.

Given that the body of literature on potential harms and benefits is still growing, CHBRP is unable to estimate the degree to which ACEs screening will be taken up by providers over time. The long-term public health impacts are unknown.

Essential Health Benefits and the Affordable Care Act

Currently, there is no requirement in the federal Medicaid statute to screen for trauma in adults. Medicaid-eligible children are entitled to interperiodic

screenings in order to identify a suspected illness or condition not present or discovered during the periodic exam.

CHBRP does not believe that SB 428 requires coverage for a new state benefit mandate that exceeds the definition of essential health benefits in California. This conclusion is based on two considerations: the first being that SB 428 would affect the terms and conditions of existing coverage (additional reimbursement for a specific completion of the screening tool for a visit already covered); and second, SB 428 impacts reimbursement for a habilitative screening tool that is used to assess referral for needed mental health and ambulatory care services.

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California Health Benefits Review Program
MC 3116; Berkeley, CA 94720-3116
www.chbrp.org

Suggested Citation: *California Health Benefits Review Program (CHBRP). (2021). Analysis of California Senate Bill 428 Adverse Childhood Experiences Screenings. Berkeley, CA.*

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 428 Impacts on Benefit Coverage, Utilization, and Cost, 2022

	Baseline	Postmandate	Increase/ Decrease	Percentage Change
Benefit coverage				
Total enrollees with health insurance subject to state-level benefit mandates (a)	21,945,000	21,945,000	0	0.00%
Total enrollees with health insurance subject to SB 428	21,945,000	21,945,000	0	0.00%
Total percentage of enrollees with coverage for adverse childhood experiences (ACEs) screening	36%	100%	64%	174.11%
Total enrollees with coverage for ACEs screening	8,006,000	21,945,000	13,939,000	174.11%
Utilization and unit cost of ACEs screening				
Number of members receiving screening	663,850	1,702,498	1,038,648	156.46%
Average cost per screening	$29	$29	$0	0.00%
Total cost for screening	$19,251,650	$49,372,442	$30,120,792	156.46%
Expenditures				
Premiums (expenditures) by payer				
Private employers for group insurance	$55,032,803,000	$55,053,924,000	$21,121,000	0.04%
CalPERS HMO employer expenditures (b) (c)	$5,765,017,000	$5,767,000,000	$1,983,000	0.03%
Medi-Cal Managed Care Plan expenditures	$24,150,529,000	$24,150,529,000	$0	0.00%
Enrollee premiums (expenditures)				
Enrollees with individually purchased insurance	$15,847,507,000	$15,852,528,000	$5,021,000	0.03%
Enrollees with group insurance, CalPERS HMOs, Covered California, and Medi-Cal Managed Care (c)	$20,753,446,000	$20,761,381,000	$7,935,000	0.04%
Enrollee out-of-pocket expenses				
Cost-sharing for covered benefits (deductibles, copayments, etc.)	-	-	-	-
Expenses for noncovered benefits (d) (e)	-	-	-	-
Total expenditures	$134,717,334,000	$134,753,394,000	$36,060,000	0.03%

Source: California Health Benefits Review Program, 2021.

Notes: (a) 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.[2]

(b) Approximately 54.1% of CalPERS enrollees in DMHC-regulated plans are state retirees, state employees, or their dependents.

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

[2] For more detail, see CHBRP's *Estimates of Sources of Health Insurance in California for 2021*, a resource available at http://chbrp.org/other_publications/index.php.

(d) Includes only expenses paid directly by enrollees (or other sources) to providers for services related to the mandated benefit that are not covered by insurance at baseline or where the enrollee has purposefully chosen to pay directly for the benefit. 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.

(e) Although enrollees with newly compliant benefit coverage may have paid for some screenings before SB 428, CHBRP cannot estimate the frequency with which such situations may have occurred and therefore cannot estimate the related expense. Postmandate, such expenses would be eliminated, though enrollees with newly compliant benefit coverage might, postmandate, pay for some screenings for which coverage is denied (through utilization management review), as some enrollees who always had compliant benefit coverage may have done and may continue to do, postmandate.

Key: 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 Assembly/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 of SB 428, Adverse Childhood Experiences Screenings (ACEs).

Bill-Specific Analysis of SB 428, Adverse Childhood Experiences Screenings

Bill Language

SB 428 would require California Department of Managed Health Care (DMHC) - and California Department of Insurance (CDI)-regulated plans and policies to provide coverage for ACEs screening. The full text of SB 428 can be found in Appendix A.

Relevant Populations

If enacted, SB 428 would apply to the health insurance of approximately 21.9 million enrollees (56% of all Californians). This represents 100% of the 21.9 million Californians who will have health insurance regulated by the state that may be subject to any state health benefit mandate law, which includes health insurance regulated by the DMHC or the CDI.

Analytic Approach and Key Assumptions

All DMHC- and CDI-regulated plans and policies would be required to provide reimbursement for ACEs screenings, regardless of market segment, and grandfather versus nongrandfather status.

Children and adults would be eligible.

CHBRP has assumed no new fiscal impact to Medi-Cal Managed Care Plans due to the present availability of reimbursement for ACEs screening through DHCS, which is funded via an annual state appropriation. Additionally, Federal Medicaid rules require children to have the Early, Periodic, Screening, Diagnosis and Treatment (EPSTD) benefit, which may extend to the ACEs screening. Should the state's appropriation be discontinued, the requirements of SB 428 could then apply to Medi-Cal Managed Care Plans, resulting in additional costs being absorbed by Plans.

CHBRP has assumed that ACEs screenings can be conducted via telehealth, like current practice in Medi-Cal.

CHBRP has assumed that reimbursement for ACEs screenings by DMHC- and CDI-regulated plans and policies would be paid to credentialed providers at the same reimbursement level as DHCS ($29 per screening).

CHBRP has assumed that plans and policies would adopt similar requirements as DHCS, including the requirement that providers would need to self-certify completion of the free training for continuing medical education (CME) credits).[4]

CHBRP does not project any interaction with EHBs.

[3] CHBRP's authorizing statute is available at www.chbrp.org/about_chbrp/faqs/index.php.
[4] Providers receive 2.0 Continuing Medical Education (CME) credits and 2.0 Maintenance of Certification (MOC) credits upon completion. The training is available to providers online, free of charge.

Interaction with Existing State and Federal Requirements

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

California Policy Landscape

California law and regulations

In 2017, California passed Assembly Bill 340 (Statues of 2017, Arambula)[5]. With its enactment, AB 340 effectively added screening for childhood trauma to the other Early and Periodic Screening, Diagnosis and Treatment (EPSDT) screenings covered by Medi-Cal for those under 21 years of age. The bill contemplated trauma screening at least once every 5 years for children. AB 340 required the Department of Health Care Services (DHCS) to convene an advisory group to review tools and protocols for screening children for trauma as defined within EPSDT, a Medi-Cal benefit for individuals under age 21 years.

The AB 340 Workgroup recommended to DHCS that Medi-Cal providers be given the following three options for screening pediatric populations (children and youth under the age of 21) for exposure to trauma:

> (1) Utilize the Bay Area Research Consortium on Toxic Stress and Health (BARC) screening tool, called PEARLS, alongside the existing state-required Staying Healthy Assessment (SHA), Bright Futures, or another state-approved Individual Health Education Behavior Assessment (IHEBA) to improve screening for trauma in children, and examine formal integration of this tool within the SHA.
>
> (2) Use the Whole Child Assessment (WCA), an existing State-approved IHEBA that incorporates screening for exposure to trauma along with required elements of the SHA.
>
> (3) Request approval from DHCS to use an alternative tool to screen for trauma that includes, at a minimum, all of the items contained in the PEARLS tool.

The ACEs Aware is an initiative led by the Office of the California Surgeon General and the Department of Health Care Services to give Medi-Cal providers training, clinical protocols, and payment for screening children and adults for ACEs. The California Department of Health Care Services (DHCS) is responsible for implementing Medi-Cal payments to providers to deliver ACEs screenings for children and adults under age 65 in the Medi-Cal program. The AB 340 Workgroup recommended that DHCS include the PEARLS tool as a complementary screening component along with the existing Staying Healthy Assessment (SHA), Bright Futures, or another approved IHEBA to improve trauma-screening practices immediately. The Workgroup encouraged the Legislature to explore systems that support trauma screening for adults in the future.

Effective for dates of service on or after January 1, 2020, screening for ACEs has become a Medi-Cal covered benefit. Medi-Cal has begun reimbursing for ACEs screenings for both children and adults up to 65 years of age, except for those dually eligible for Medi-Cal and Medicare Part B, with Proposition 56 funds. Individuals under 21 years of age may receive periodic rescreening as determined appropriate and medically necessary, but screenings will not be paid more than once per year, per provider. Screenings for individuals 21 years of age and older will be paid once in their lifetime, per provider.[6]

[5] Codified in Section 14132.19 of the California Welfare and Institutions Code.

[6] The required screening tool for use by providers is the top portion of the Pediatric ACEs and Related Life-Events Screener (PEARLS) for individuals under 18 years of age and the ACEs questionnaire for individuals 20 years of age and older. For individuals 18 and 19 years of age, either tool may be utilized. If an alternative version of the ACEs questionnaire for individuals 20 years of age and older is used, it must contain questions on the 10 original categories of ACEs to qualify.

ACEs screenings will be reimbursed at $29 per screening in both the fee-for-service and managed care delivery systems when billed with either of the two HCPCS codes below:

- G9919 – High-risk, patient score of 4 or greater
- G9920 – Lower-risk, patient score of 0–3

In the fee-for-service delivery system, providers will be reimbursed up to the maximum Medi-Cal rate of $29, subject to Medi-Cal policy. In the managed care delivery system, Medi-Cal Managed Care Plans will reimburse network providers no less than $29, for each qualifying ACEs screening. Billing requires that the completed screen was reviewed, the appropriate tool was used, results were documented and interpreted, results were discussed with the beneficiary and/or family and any clinically appropriate actions were taken. This documentation should remain in the beneficiary's medical record and be available upon request.[7]

A Trauma-Informed Primary Care Implementation Advisory Committee (TIPC) is intended to advise the Office of the California Surgeon General and the Department of Health Care Services on the ACEs models, best practices, evolving science, and clinical expertise for the implementation of trauma-informed care systems in California.

Similar requirements in other states

Though legislatures across the country have shifted focus to respond to COVID-19, more than 35 states introduced legislation on ACEs in 2020 (NCSL, 2020). Since January 2019, at least 26 states enacted or adopted legislation to address childhood trauma, child adversity, toxic stress or ACEs specifically. Many bills create a new task force or commission, implement workforce training on ACEs or trauma-informed practices, or strengthen behavioral health supports for children.

A half dozen states have introduced legislation to require coverage mandates for their Medicaid programs and/or commercial health insurers to provide coverage for ACEs screenings/assessments.

Several states formed task forces or similar groups to consider strategies that fit their communities. For example, Indiana established a behavioral health commission to assess mental health issues, including childhood trauma and suicide, and to identify barriers to treatment. Last year, Hawaii established a task force to create a system for evaluating and assessing all children and those who are exhibiting emergent or persistent behaviors, academic challenges, or chronic absenteeism and are in need of appropriate supports and interventions accessible within the continuum of a multi-tiered system of supports (Hawaii, SB 388)[8]. West Virginia and Washington created similar groups.

Other states are targeting treatment to lessen the harms of ACEs and help children build healthy coping strategies. In 2019, Colorado enacted the K-5 Social and Emotional Health Act, which places a social worker in each grade in up to 10 pilot program schools. Due to COVID-19, its implementation has been delayed. A 2019 Oklahoma law directed state departments to develop training guidelines to help school employees recognize and address the mental health needs of students, including information about the impact ACEs can have on a student's ability to learn, and resources on mental health services. For additional information, please see Appendix I.

Federal Policy Landscape

The Coronavirus Aid, Relief and Economic Security (CARES) Act passed by Congress in March 2020 included $2.2 trillion to address the health, human services, educational, and economic impacts of COVID-19. Some of this funding offered flexibility to address mental health and provide resources to

[7] https://files.medi-cal.ca.gov/pubsdoco/newsroom/newsroom_30091_02.aspx.
[8] https://www.capitol.hawaii.gov/session2019/bills/SB388_SD2_.HTM.

those experiencing homelessness and behavioral health programs including community behavioral health clinics, suicide prevention and family violence prevention.

Currently, there is no requirement in federal Medicaid statute to screen for trauma in adults.

Federal Medicaid rules require children to have the Early, Periodic, Screening, Diagnosis and Treatment (EPSTD) benefit.[9] This benefit uniquely covers screenings for trauma. Specifically, a 2013 Guidance Letter[10] states that in addition to the required periodic screenings, Medicaid-eligible children are entitled to interperiodic screenings[11] in order to identify a suspected illness or condition not present or discovered during the periodic exam (Section 5140(B), State Medicaid Manual).

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 428 may interact with requirements of the ACA as presently exist in federal law, including the requirement for certain health insurance to cover essential health benefits (EHBs).[12,13]

Essential Health Benefits

Nongrandfathered plans and policies sold in the individual and small-group markets 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.[14,15] CHBRP estimates that approximately 4.2 million Californians (11%) will have insurance coverage subject to EHBs in 2022.[16]

States may require plans and policies to offer benefits that exceed EHBs.[17] However, a state that chooses to do so must make payments to defray the cost of those additionally mandated benefits, either by paying the purchaser directly or by paying the qualified health plan.[18,19] Health plans and policies sold

[9] Existing federal law provides that EPSDT services include periodic screening services, vision services, dental services, hearing services, and other necessary services to correct or ameliorate defects and physical and mental illnesses and conditions discovered by the screening services, whether or not the services are covered under the state plan.
[10] https://www.medicaid.gov/federal-policy-guidance/downloads/smd-13-07-11.pdf.
[11] In addition to covering scheduled, periodic checkups or health services, visits to a health care provider outside of the periodicity schedule to determine whether a child has a condition that needs further care are called "interperiodic screenings."
[12] 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. Policy and issue briefs on EHBs and other ACA impacts are available on the CHBRP website: www.chbrp.org/other_publications/index.php.
[13] Although many provisions of the ACA have been codified in California law, the ACA was established by the federal government, and therefore, CHBRP generally discusses the ACA as a federal law.
[14] CCIIO, Information on Essential Health Benefits (EHB) Benchmark Plans. Available at: https://www.cms.gov/cciio/resources/data-resources/ehb.html.
[15] H&SC Section 1367.005; IC Section 10112.27.
[16] CHBRP, *Estimates of Sources of Health Insurance in California in 2021*. Available at: www.chbrp.org/other_publications/index.php.
[17] ACA Section 1311(d)(3).
[18] 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: https://www.gpo.gov/fdsys/pkg/FR-2013-02-25/pdf/2013-04084.pdf.
[19] 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.

outside of the health insurance marketplaces are not subject to this requirement to defray the costs. State rules related to provider types, cost sharing, or reimbursement methods would not meet the definition of state benefit mandates that could exceed EHBs.[20]

CHBRP does not believe that SB 428 requires coverage for a new state benefit mandate that exceeds the definition of EHBs in California. This conclusion is based on two considerations: The first being that SB 428 would affect the terms and conditions of existing coverage (additional reimbursement for specific completion of the screening tool for a visit already covered); and second, SB 428 impacts reimbursement for (what can be) a habilitative screening tool that is used to assess referral for needed mental health and ambulatory care services.[21]

Federally Selected Preventive Services

The ACA requires that nongrandfathered group and individual health insurance plans and policies cover certain preventive services without cost sharing when delivered by in-network providers and as soon as 12 months after a recommendation appears in any of the following:[22]

- The United States Preventive Services Task Force (USPSTF) A and B recommendations;
- The Health Resources and Services Administration (HRSA)-supported health plan coverage guidelines for women's preventive services;
- The HRSA-supported comprehensive guidelines for infants, children, and adolescents, which include:
    - The Bright Futures Recommendations for Pediatric Preventive Health Care; and
    - The recommendations of the Secretary's Advisory Committee on Heritable Disorders in Newborns and Children; and
- The Advisory Committee on Immunization Practices (ACIP) recommendations that have been adopted by the Director of the Centers for Disease Control and Prevention (CDC).

Comprehensive screenings for children, as recommended by Bright Futures, are covered without cost sharing for nongrandfathered group and individual health insurance plans and policies. SB 428 addresses whether the provider will be reimbursed specifically (and separately) for the ACEs screening tool, as part of a covered visit. While an ACE screenings for an adult would not be considered a USPSTF Preventive Service, it is possible that the pediatric screenings for ACEs may be considered part of the Bright Futures Recommendations for Pediatric Preventive Health Care.

[20] 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.
[21] "Habilitative services" as defined by CMS for California's benchmark plan means "medically necessary health care services and health care devices that assist an individual in partially or fully acquiring or improving skills and functioning and that are necessary to address a health condition, to the maximum extent practical. These services address the skills and abilities needed for functioning in interaction with an individual's environment". https://www.cms.gov/CCIIO/Resources/Data-Resources/Downloads/Updated-California-Benchmark-Summary.pdf
[22] More information is available on CHBRP's website under "Resources": www.chbrp.org/other_publications/index.php.

BACKGROUND ON SCREENING FOR ADVERSE CHILDHOOD EXPERIENCES

This *Background* section provides context for CHBRP's analysis of SB 428, which would require health plans and health insurance policies to reimburse providers for completing ACEs (adverse childhood experiences) screening for adult and pediatric patients. This section presents definitions and incidence of ACEs, screening approaches, and the social determinants of health that may influence screening behaviors in California. Note that the following discussion broadly applies to the general population and includes persons with insurance subject to SB 428, as well as uninsured and those with health insurance not subject to state-regulated mandates, unless otherwise stated.

What Are Adverse Childhood Experiences (ACEs)?

Adverse childhood experiences are potentially traumatic events that occur any time before adulthood (CDC, 2021). They were first described by Felitti et al. in 1998 through the ACEs Study, which found associations between the number of ACEs experienced during childhood, and the development of health problems later in life (Felitti et al., 1998).

There are a large number of events that may qualify as an adverse childhood experience. The original ACE Study Questionnaire examines the impact of originally 7, then expanded to 10 ACEs in the 3 categories below (abuse, neglect, and household dysfunction) with later modification (Dube et al., 2003a, 2003b; Felitti et al., 1998; Thakur et al., 2020) (Appendix E and Appendix G).

The 10 ACEs commonly described are events or patterns of:

- Abuse (3: physical, emotional/psychological, and sexual)
- Neglect (2: physical and emotional)
- Household dysfunction (5: parental loss by divorce, abandonment or death; parental incarceration; adult-on-adult violence; adult mental illness; adult substance use disorder)

Recent studies have identified additional possible ACEs to include for screening, such as peer victimization, isolation from peers, peer rejection, property victimization, racial discrimination, exposure to community violence, death or serious illness of a close relative, low socioeconomic status and experience with the foster care system while growing up (Cronholm et al., 2015; Finkelhor et al., 2015).

ACEs and Health Outcomes

ACEs include potentially traumatic events that could contribute to the development of a toxic stress response. While it is unclear exactly how toxic stress impacts the brain and body, there is evidence that suggests that ACEs make the individual more susceptible to later illness (CDC, 2019; Shonkoff and Garner, 2012).

A number of studies have associated high ACE scores with a range of outcomes at the population level. ACEs have been described as having a dose-response effect where higher ACE scores were more strongly associated with poor health outcomes (Felitti et al., 1998). In adults, having 4 or more ACEs was associated with increased levels of: depression, post-traumatic stress disorder (PTSD), smoking, alcohol and drug abuse, chronic obstructive pulmonary disease, asthma, kidney disease, stroke, coronary heart disease, and lower levels of employment (Bucci et al., 2016; Chang et al., 2019; Merrick et al., 2018, 2019). For children, having 2 or more ACEs has been associated with poor health, sleep disturbance, somatic complaints, reduced cognitive ability, childhood obesity, asthma symptoms and hospitalization,

higher likelihood of being bullied, higher probability of affected males perpetrating bullying, reduced levels of school engagement, and being more likely to repeat a grade in school (Bethell et al., 2014; Flaherty et al., 2013; Forster et al., 2020; Oh et al., 2018). Children with special health care needs were twice as likely to report experiencing two or more ACEs than children without such needs (Bethell et al., 2014).

Although ACEs are associated with a high number of negative health outcomes at a population level, screening for ACEs has not yet shown an ability to predict risk for negative health outcomes on an individual basis (Baldwin et al., 2021). Health conditions associated with ACEs can precede, coincide with, or follow ACEs occurring; it is important to note that none of these studies have identified a direct, causal link between an ACE and health outcome. Without a causal link, it is difficult to determine to what degree ACEs alone have an impact on individual health, as opposed to other potential factors such as socioeconomic status, poverty, pre-existing conditions, etc. Additionally, the health consequences of ACEs may not become apparent in an individual until many years after the experience has occurred (Anda et al., 2010).

Screening Tools for ACEs (Clinical, Research and Population Health Use)

Although discussion of ACEs and social determinants of health are part of comprehensive care according to the biopsychosocial model (Engel, 1977), ACEs screening, as covered in this mandate, is by structured screening using an ACEs screening tool during a clinical visit for the purpose of identifying individual patients who might be at risk for poor health outcomes due to ACEs, and were not otherwise noted to have ACEs.

ACEs tools are designed to identify specific ACEs, however which ACEs are screened for depends on the tool used at the time of the visit. Available structured screening tools vary in the types and number of ACEs assessed, but generally are derived from the original 10 ACEs identified by the original ACEs Study (Felitti et al., 1998): psychological or emotional abuse, physical abuse, sexual abuse, neglect, and household dysfunction. Tools are available that are primarily designed for clinical use, population health surveillance, research use, or a combination

Screening tools have been developed for adult patients to self-report certain experiences from their childhoods. Screening tools for children under the age of 12 are completed via parent report, and for teenagers aged 12-19 through combined self and parent report. All of the tools listed below use a raw total for each individual item experienced (regardless of frequency, severity, or number of possible ACEs available in the tool) to determine whether or not a person may be at higher risk for later negative health outcomes (ACEs Aware, 2019). Each item is weighted equally (counted as one ACE.) Scores between different tools are not necessarily equivalent as each tool handles ACE types differently; sometimes splitting or merging topics or including expanded options; which can result in different numbers of ACE items included depending on the tool being used.

Screening for ACEs can occur at any time, however currently, the California Department of Health Care Services recommends that questionnaires be completed by adult patients at least once in their lifetime for each primary care provider they interact with (ACEs Aware, 2021). For children and teenagers, screening is recommended annually (ACEs Aware, 2021; Thakur et al., 2020). For children, the screening form is completed by the caregiver at the visit, and this caregiver might be responsible for the ACEs. Completing the questionnaire also requires that the caregiver have knowledge and/or insight of the ACEs occurring (such as knowing that sexual abuse by another adult is occurring, parent choice of punishment constitutes physical abuse, or the child feels emotionally neglected) plus a willingness to disclose this to the provider. In the case of teenagers, both the caregiver and the child can complete the screening forms. Pediatric screening for ACEs reflects either what has occurred or is actively occurring, with the goal to prevent future ACEs by improving parenting and household dynamics.

Screening for adults reflects what occurred during childhood, with the goal of better understanding potential causes for current health status, future health risks, and potential referral to interventions targeted at healing trauma rather than biomedical care only.

The following tables show a number of tools used to screen for ACEs in a variety of settings. Where indicated, they have been used in clinical practice.

Table 2. Adult ACEs Screening Tools (Self-Report; Clinical and Research Use)

Tool	ACEs Domains	Development
ACE Study Questions 17 questions (7 ACEs) (b) Expanded to 28 questions (10 ACEs) (c)	Abuse: Emotional, physical, and sexual. Neglect: Physical or emotional (a) Household dysfunction: - Maternal violence - Household substance use - Mentally ill household member - Incarceration of household member - Parental divorce or separation (c)	Research study on childhood experiences and leading causes of death. Surveyed 9,508 adult patients who came through a Kaiser clinic and linked responses to medical records in 1998 covering 7 ACEs. Later expanded to 17,337 patients and 10 ACEs.
Adverse Childhood Experiences Questionnaire for Adults (d) (From ACEs Aware website) 10 Questions (10 ACEs)	Abuse: Emotional, physical, and sexual. Neglect: Physical or emotional. Household dysfunction: - Domestic violence - Household alcohol abuse - Mentally ill household member. - Parental loss through divorce, imprisonment, or abandonment	The California Attorney General's Office convened focus groups to collapse multiple ACE Study Questionnaire questions for 10 ACEs into 1 question per ACE. This tool is covered for ACEs screening by Medi-Cal through ACEs Aware.
BRFSS ACE Module (e) 11 Questions (11 ACEs)	Abuse: Emotional, physical, and sexual. Household dysfunction: - Domestic violence - Household substance use - Mentally ill household member - Parental divorce - Parental imprisonment	Adapted from the ACE Study Questionnaire. Used for national population screening via anonymized interview. Recent study to adapt and shorten it to 2 ACEs for clinical use (Wade et al., 2017).
PHL ACEs Survey (f) 40 Questions (21 ACEs)	Abuse: Emotional, physical, and sexual. Neglect: Emotional and physical. Household dysfunction: - Domestic violence - Household substance use - Mentally ill household member - Parental imprisonment - Witnessed violence - Experienced discrimination - Unsafe neighborhood - Experienced bullying - Lived in foster care	Developed to be more applicable to diverse population by adding questions to the original ACEs on racism and other topics to better fit racially and socioeconomic diverse populations. Supplemental phone interview conducted by gender-matched interviewers with 2,181 adults in the Philadelphia 2012 that assessed for intercorrelations between conventional 10 ACEs and expanded 14 ACEs.
Childhood Experiences Survey (CES) (g) 17 Questions (17 ACEs)	Abuse: Emotional, physical, and sexual. Neglect: Emotional and physical. Household dysfunction: - Domestic violence - Household substance use - Mentally ill household member - Parental imprisonment - Parent divorce or absence - Death of parent or sibling - Victim of violent crime	Includes BRFSS ACE modules questions and newly developed items. Administered to 667 adults with children. Assessed for prevalence of ACEs and intercorrelations between conventional and expanded ACEs.

- Experienced bullying
- Financial problems
- Food insecurity
- Homelessness

Source: California Health Benefits Review Program, 2021.

Notes: (a) Dube et al, 2003b.

(b) Felitti et al., 1998, Appendix E, and Appendix G.

(c) Dube et al., 2003a.

(d) State of California Department of Health Care Services (DHCS, 2021), Appendix F and Appendix G.

(e) CDC, 2021; Appendix I.

(f) Cronholm et al., 2015.

(g) Choi et al., 2020.

Table 3. Pediatric ACEs Screening Tools (Caregiver Report Except PEARLS Teen; Clinical and Research Use)

Tool	ACEs Domains	Development Process
PEARLS (a) (Child, 12 or under) 17 Questions (17 ACEs)	Abuse: Emotional, physical, and sexual. Neglect: Physical or emotional. Household dysfunction: - Domestic violence - Household substance use - Mentally ill household member. - Parental change in relationship status - Parental jailing or imprisonment - Victim of violence - Experienced discrimination - Housing instability - Food insecurity - Parental illness - Parental death - Experience in foster care or immigration	Developed from the ACEs Study questionnaire, Center for Youth Wellness ACE-Q and other items. The tool was tested in 28 caregivers of child patients over seven rapid cycles, in both English and Spanish. Covered by Medi-Cal through ACEs Aware.
PEARLS (a) (Teen, 13–18) 19 Questions (19 ACEs)	Abuse: Emotional, physical, and sexual. Neglect: Physical or emotional. Household dysfunction: - Domestic violence - Household substance use - Mentally ill household member. - Parental change in relationship status - Parental jailing or imprisonment - Victim of violence - Experienced discrimination - Housing instability - Food insecurity - Parental illness - Parental death - Experience in foster care or immigration - Child jailing or incarceration - Abuse from romantic partners	Same as PEARLS child.
TESI for ACEs (b) (17 and under)	24 items on potentially traumatic events (bad accident, hospitalization, kidnapping, family violence, etc.)	Developed from the Traumatic Events Screening Inventory Child Report Form

28 Questions	Additional items on: - Bullying - Self-harm of someone close - Needed health care for physical punishment - Any other stressful event	– Revised (TESI-CRF-R) and TESI Parent Report Revised (TESI-PRR) 24 item survey on potentially traumatic events with community partner feedback over the course of 6 adaptations. Tested in 261 children 3–16 years old who screened positive on the Pediatric Symptoms Checklist. ACE responses were mapped by zip code and neighborhood crime data.
Whole Child Assessment (WCA) (c) (Child, 5–11) 10 Questions (10 ACEs)	Abuse: Emotional, physical, and sexual. Neglect: Physical or emotional Household dysfunction: - Domestic violence - Household substance use - Mentally ill household member - Parental divorce or separation - Parental jailing or imprisonment	Feedback was collected over 6 cycles from caregivers via waiting room questionnaire, and from physicians via focus groups.

Source: California Health Benefits Review Program, 2021.

Notes: (a) Kadiatou et al., 2018 (see Appendix H).

(b) Choi et al., 2019.

(c) Marie-Mitchell et al., 2019.

National Recommendations for Screening

USPSTF: Although the U.S. Preventative Services Task Force has not provided guidance on screening for ACEs, it concluded in 2018 that there was insufficient evidence to support the use of primary care interventions to prevent child maltreatment (USPSTF, 2018).

AAP: Although the American Academy of Pediatrics has not provided guidance on screening specifically for ACEs, it does endorse surveilling for social determinants of health (which lists the PEARLS questionnaire as a relevant screener to fulfill that objective), and regular screening for social-emotional concerns (using such tools as the Ages and Stages Questionnaire: Social-Emotional tool) (AAP, 2016, 2017, 2021; Garner et al., 2012).

AAFP: The American Academy of Family Physicians encourages physicians to learn about ACEs and their health impacts and supports programs to prevent ACEs and mitigate the long-term effects. Regarding ACEs screening specifically, the AAFP supports, and advocates for public policies and legislation to support, research on the effectiveness of screening and mitigation strategies to improve health outcomes (AAFP, 2019).

Clinical Processes for ACEs Screening

The ACEs Aware Initiative is the current program operating under DHCS and the Office of the California Surgeon General that offers provider training and reimbursement for ACEs screening (see *Policy Context* for more information) for patients with Medi-Cal. ACEs Aware recommends the following clinical processes for administering and processing responses for both the PEARLS and Adverse Childhood Experiences (ACEs) questionnaires (ACEs Aware, 2019):

Training: Training for both the PEARLS (Appendix H) and Adverse Childhood Experiences (ACE-Q) (Appendix F) questionnaires through acesaware.org is required by providers for Medi-Cal reimbursement for screening. It is a 2 hour online no-cost module that is eligible for CME. The training covers trauma-informed care principles, the toxic-stress model, health outcomes associated with ACEs, the adverse

childhood events included on both screens and how to bill for screening using clinical cases and a clinical workflow.

Screening Workflow: Clinic staff provide the questionnaire to the patient prior to the patient seeing the provider (PEARLS to the caregiver if aged 0–19 years, PEARLS teen to the patient if aged 12–19, ACE-Q to adult patients). During the visit, the provider reviews the questionnaire score and determines the risk category for toxic stress (low: 0 for children and 0–3 for adults; intermediate: 1–3 for children and 1–3 with associated health conditions for adults; high risk: 1–3+ associated health conditions for children or 4+ for children or adults). The provider then documents this in the chart and provides education about ACEs, toxic stress, and resilience, and refers those at intermediate or high risk to appropriate services. If relevant, provider determines and discusses the appropriate referrals for the patient (ACEs Aware, 2019) (see Appendix J for details).

Adverse Childhood Experience Prevalence in California

ACEs are common throughout the United States; 61% of American adults report experience having had at least one ACE, and approximately one in six American adults has had four or more ACEs (CDC, 2019). The following table describes the prevalence of ACEs by race/ethnicity and gender.

Table 4. Prevalence of ACEs in the California Medi-Cal Population by Sex and Race/Ethnicity, as Measured by the PEARLS for Children or ACE-Q for Adults During Clinical Encounters, January to June 2020

	High Risk Score Prevalence (4 or More ACEs Reported)	Lower Risk Score Prevalence (0–3 ACEs Reported)
Sex		
Female	8% (n = 5,520)	92% (n = 67,250)
Male	5% (n = 2,770)	95% (n = 54,680)
Race/ethnicity		
Hispanic	4% (n = 3,480)	96% (n = 73,800)
White	15% (n = 2,430)	85% (n = 13,690)
Asian	3% (n = 240)	97% (n = 7,940)
Black	11% (n = 820)	89% (n = 6,510)
American Indian or Alaska Native	28% (n = 50)	72% (n = 140)
Not reported	6% (n = 1,270)	94% (n = 19,850)
Age		
Ages 0-5	1% (n=630)	99% (n=46,390)
Ages 6-11	3% (n=880)	97% (n=24,760)
Ages 12-17	7% (n=1,710)	93% (n=22,910)
Ages 18-44	15% (n=3,450)	85% (n=19,970)
Ages 45-64	17% (n=1,630)	83% (n=7,900)
Total (N=146,750)		
Adults	15% (n=5,080)	85% (n=27,870)
Children	3% (n=3,220)	97% (n=94,060)
Total	17% (n=24,820)	83% (n=121,930)

Source: ACEs Aware, 2021.

Table 5. Prevalence of ACEs in California by Race/Ethnicity, as Measured by the BRFSS-ACE Module for Adults during Research Interviews, 2011–2017

	High-Risk Score Prevalence (4 or More ACEs Reported)	Lower Risk Score Prevalence (0–3 ACEs Reported)
Race/ethnicity		
Hispanic	18.0%	82.0%
White	16.4%	83.6%
Black	20.6%	79.4%
Other (including Californians who are Asian, Pacific Islander, American Indian, Alaska Native, and other race/ethnicity).	10.8%	89.2%
Total (N=21,183)	16%	84%

Source: Essentials for Childhood Initiative, 2020 (CDPH, 2020).

Disparities[23] and Social Determinants of Health[24] in ACEs

Per statute, CHBRP includes discussion of disparities and social determinants of health (SDoH) as it relates to screening for ACEs. ACEs overlap with social determinants of health as ACEs are events that arise from and are influenced by factors in an individual's life outside of the traditional medical care system that influence health status and health outcomes (e.g., income, education, geography, etc.). For example, the social determinant of health, economic instability, can overlap with the ACE of physical neglect. Disparities are noticeable and preventable differences between groups of people.

CHBRP found literature identifying disparities in ACE prevalence by gender, sexual orientation, and race.

Disparities

Race or ethnicity

A national survey utilizing the BRFSS ACE Module found that multiracial respondents reported higher levels of childhood emotional abuse (49.11% of respondents) and household substance use during childhood (40.54% of respondents). They had a higher average number of ACEs reported than any other racial/ethnic group [2.52 ACEs (2.36–2.67)]. Black and Hispanic respondents both had higher average ACEs than White respondents or other race respondents [1.69 ACEs (1.62–1.76) and 1.80 (1.70–1.91) respectively vs. 1.52 ACEs (1.50–1.54) and 1.51 ACEs (1.42–1.59)] (Merrick et al., 2018).

[23] Several competing definitions of "health disparities" exist. CHBRP relies on the following definition: Health disparity is defined as the differences, whether unjust or not, in health status or outcomes within a population. (Wyatt et al., 2016).

[24] 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, and physical environment) are shaped by the distribution of money, power, and resources and impacted by policy (adapted from: CDC, 2014; Healthy People 2020, 2019). See CHBRP's SDoH white paper for further information: http://chbrp.com/analysis_methodology/public_health_impact_analysis.php.

Sex or gender[25]

The same study found that adult women reported experiencing a higher average ACE score than adult men [1.68 ACEs (1.65–1.70), versus 1.46 ACEs (1.44–1.49) for men] (Merrick et al., 2018). Specifically, women were more likely to report childhood sexual abuse than men (16.33% of respondents, versus 6.7% of male respondents) (Merrick et al., 2018).

Gender identity or sexual orientation[26]

For the above study, the strongest association for higher ACEs scores appears to be linked with sexual orientation. Respondents who identified as gay or lesbian and bisexual reported significantly higher average ACE counts of 2.19 ACEs (1.95–2.43) and 3.14 ACEs (2.82–3.46), respectively, compared to those identifying as heterosexual. Members of the gay/lesbian and bisexual communities reported more experiences ACEs compared to heterosexuals: childhood emotional (47.15% and 59.16% vs. 34.48%), physical (30.76% and 34.93% vs. 16.60%), and sexual abuse (23.22% and 34.54% vs. 12.09%), as well as household substance abuse (37.14% and 46.28% vs. 26.38%) and having an incarcerated household member (12.56% and 18.65% vs. 7.10%) (Merrick et al., 2018).

Societal Impact of ACEs in California

The presence of ACEs in California/the United States has direct and indirect economic and societal costs. CHBRP is unable to find specific data that displays the larger societal impact of ACEs specifically. The CDC estimates that the economic and social costs of ACES are “hundreds of billions of dollars each year” (CDC, 2019). The *Benefit Coverage, Utilization, and Cost Impacts* estimates direct cost impacts on payers, including enrollees. Such figures represent a subset of the total societal impact related to ACEs.

[25] CHBRP uses the NIH distinction between “sex” and “gender:” “‘Sex’ refers to biological differences between females and males, including chromosomes, sex organs, and endogenous hormonal profiles. ‘Gender’ refers to socially constructed and enacted roles and behaviors which occur in a historical and cultural context and vary across societies and over time.” (NIH, 2019).

[26] CHBRP defines gender identity as one’s internal sense of one’s own gender, or the gender in which a person identifies, whether it be male, female, or nonbinary. Gender identity and sexual orientation are different facets of one’s identity; an individual’s gender does not determine a person’s sexual orientation (i.e., a person’s emotional, romantic, or sexual attraction to other people) (ACOG, 2021; CDC, 2020).

[5] The societal impact discussed here is relevant to a broader population than SB 428 impacts.

MEDICAL EFFECTIVENESS

As discussed in the *Policy Context* section, SB 428 would mandate coverage of screening for adverse childhood experiences (ACEs) in children and adults. Additional information on ACEs is included in the *Background* section. The medical effectiveness review summarizes findings from evidence[27] from 2015 to present, although some older studies were also identified and included.

Research Approach and Methods

Studies of ACEs were identified through searches of PubMed, the Cochrane Library, Web of Science, Embase, Scopus, and PsycINFO. Websites maintained by the following organizations that produce and/or index meta-analyses and systematic reviews were also searched: the Agency for Healthcare Research and Quality (AHRQ), the American Academy of Pediatrics, the National Health Service (NHS) Centre for Reviews and Dissemination, the National Institute for Health and Clinical Excellence (NICE), the Scottish Intercollegiate Guideline Network, the Substance Abuse and Mental Health Services Administration, and the World Health Organization.

The search was limited to abstracts of studies published in English. The search was limited to studies published from 2015 to present, although the content expert identified some older studies that the CHBRP team determined were relevant and were thus included. Of the 635 articles found in the literature review, 45 were reviewed for potential inclusion in this report on SB 428. Our content expert identified an additional 12 studies which were also reviewed for potential inclusion. A total of 24 studies were included in the medical effectiveness review for this report. The other articles were eliminated because they did not focus on ACEs screening (i.e., measured other and/or additional stressors, such as posttraumatic stress disorder) or did not focus on screening for adverse events that occurred during childhood. 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.

The conclusions below are based on the best available evidence from peer-reviewed and grey literature.[28] Unpublished studies are not reviewed because the results of such studies, if they exist, cannot be obtained within the 60-day timeframe for CHBRP reports.

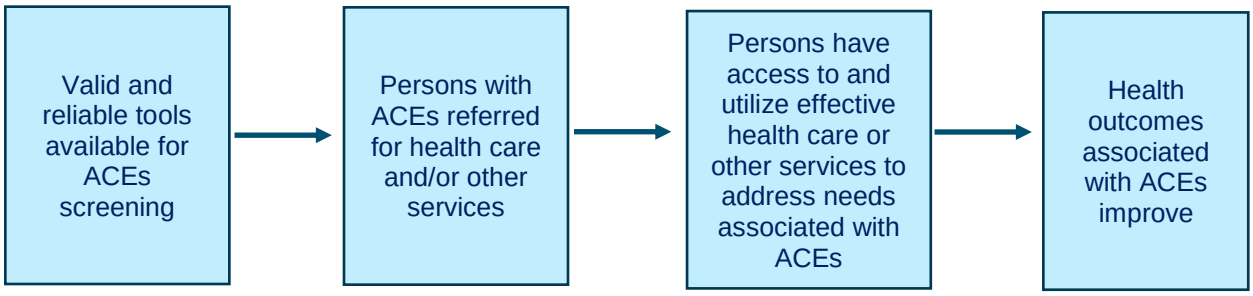
Key Questions

To assess the impact of screening for ACEs, CHBRP examined several bodies of evidence as Figure 2 illustrates. First, CHBRP assessed whether there is any evidence that there are screening tools that can accurately and consistently identify people. Second, CHBRP examined whether there is any evidence that screening for ACEs leads to an increase in referrals for health care and other types of services that could help people cope with ACEs. Third, CHBRP investigated whether there is evidence that the types of services to which people are referred are effective. Fourth, CHBRP examined whether there is evidence that an increase in receipt of effective services leads to improvements in health outcomes.

[27] Much of the discussion in this section is focused on reviews of available literature. However, as noted in the section on Implementing the Hierarchy of Evidence on page 11 of the *Medical Effectiveness Analysis and Research Approach* document (posted at http://chbrp.com/analysis_methodology/medical_effectiveness_analysis.php), in the absence of fully applicable to the analysis peer-reviewed literature on well-designed randomized controlled trials (RCTs), CHBRP's hierarchy of evidence allows for the inclusion of other evidence.

[28] Grey literature consists of material that is not published commercially or indexed systematically in bibliographic databases. For more information on CHBRP's use of grey literature, visit http://chbrp.com/analysis_methodology/medical_effectiveness_analysis.php.

Figure 1. Conceptual Framework for Assessing Evidence of Effectiveness of ACEs Screening



In light of this framework, CHBRP's review of the literature sought to answer the following questions.

1. Is there any evidence about the psychometric properties (e.g., validity, reliability, sensitivity, specificity) of different ACEs screening tools?
    a. For adults or children?
2. Is there any evidence that screening for ACEs affects health services utilization or referrals for other types of services?
    a. For adults or children?
3. Is there any evidence that there are effective interventions to help people who experience ACEs?
    a. For adults or children?
4. Is there any evidence that screening for ACEs affect health outcomes?
    a. For adults or children?
5. Is there any evidence of harms of using different ACEs screening tools?
    a. For adults or children?

Methodological Considerations

The literature regarding the impact of ACEs screening tools is limited. CHBRP was not able to identify any head-to-head comparisons of ACEs screening tools. The lack of such comparisons prevents CHBRP from assessing whether some ACEs screening tools are better than others. Additionally, there is very little literature on the impact of screening programs for referrals for services, use of services, or health outcomes.

Outcomes Assessed

CHBRP assessed the validity, reliability, sensitivity, and specificity of ACEs screening tools; evidence of effective interventions for people who experience ACEs; the impact of ACEs screening on the utilization of health care services or referrals; the impact of ACEs screening on health outcomes, and the harms of

using ACEs screening tools. Studies that assessed the validity and reliability of ACEs screening tools were included because ACEs screening is only beneficial if it can accurately (validity) and consistently (reliability) identify people at elevated risk for bad outcomes and if there are effective interventions to reduce risk. The gold standard for screening is demonstrating that screening improves health outcomes by identifying and treating people at an elevated risk before they develop illnesses or their symptoms become severe.

Study Findings

This following section summarizes CHBRP's findings regarding the strength of evidence for the effectiveness of ACEs screening, for which SB 428 would mandate coverage. Each section is accompanied by a corresponding figure. The title of the figure indicates the test, treatment, or service for which evidence is summarized. The statement in the box above the figure presents CHBRP's conclusion regarding the strength of evidence about the effect of a particular test, treatment, or service based on a specific relevant outcome and the number of studies on which CHBRP's conclusion is based. Definitions of CHBRP's grading scale terms is included in the box below, and more information is included in Appendix B.

The following terms are used to characterize the body of evidence regarding an outcome:

Clear and convincing evidence indicates that there are multiple studies of a treatment and that the large majority of studies are of high quality and consistently find that the treatment is either effective or not effective.

Preponderance of evidence indicates that the majority of the studies reviewed are consistent in their findings that treatment is either effective or not effective.

Limited evidence indicates that the studies have limited generalizability to the population of interest and/or the studies have a fatal flaw in research design or implementation.

Inconclusive evidence indicates that although some studies included in the medical effectiveness review find that a treatment is effective, a similar number of studies of equal quality suggest the treatment is not effective.

Insufficient evidence indicates that there is not enough evidence available to know whether or not a treatment is effective, either because there are too few studies of the treatment or because the available studies are not of high quality. It does not indicate that a treatment is not effective.

More information is available in Appendix B.

Psychometric Properties of ACEs Screening Tools

"Psychometric properties" is an umbrella term used to describe the attributes of a screening instrument or other measurement tool. It encompasses validity – the extent to which an instrument measures the concept or trait it is intended to measure and reliability – the consistency with which an instrument measures a concept or trait. Table 6 presents definitions of the four types of validity and two types of reliability that studies of ACEs screening tools have assessed. It also presents definitions of sensitivity and specificity, attributes of a screening instrument that describe its ability to identify true positives and true negatives.

Table 6. Definitions of Psychometric Properties

Face Validity: "The apparent soundness of a test or measure," or "the extent to which the items or content of the test appear to be appropriate for measuring something, regardless of whether they actually are" (APA, 2020d).
Construct Validity: "The degree to which a test or instrument is capable of measuring a concept, trait, or other theoretical entity" (APA, 2020b).
Convergent Validity: "The extent to which responses on a test or instrument exhibit a strong relationship with responses on conceptually similar tests or instruments. This is one of two aspects of construct validity" (APA, 2020c).
Concurrent Validity: "The extent to which one measurement is backed up by a related measurement obtained at or about the same point in time" (APA, 2020a).
Predictive Validity: "Evidence that a test score or other measurement correlates with a variable that can only be assessed at some point after the test has been administered or the measurement made" (APA, 2020f).
Internal Consistency Reliability: "The degree of interrelationship or homogeneity among the items on a test, such as they are consistent with one another and measuring the same thing" (APA, 2020e).
Test–Retest Reliability: "A measure of the consistency of results on a test or other assessment instrument over time, given as the correlation of scores between the first and second administrations" (APA, 2020g).
Sensitivity (True Positive Rate): Measures the proportion of positives that are correctly identified (usually in the context of correctly classifying an individual as "diseased") (Parikh et al., 2008).
Specificity (True Negative Rate): Measures the proportion of negatives that are correctly identified (usually in the context of correctly classifying an individual as "disease-free") (Parikh et al., 2008).

Validity

Ten studies assessed the validity of ACEs screening tools. Five of these studies assessed tools that screen children for ACEs, three of these studies assessed tools that screen adults for ACEs, and two of these studies assessed tools that screen both children and adults for ACEs.

Children

Studies have assessed the validity of the following tools for screening children for ACEs: Pediatric ACEs and Related Life-Events Screener, Traumatic Events Screening Inventory for ACEs, Whole Child Assessment. Two studies assessed face validity and three studies assessed concurrent validity

Pediatric ACEs and Related Life-Events Screener (PEARLS)

Two separate studies assessed face validity and concurrent validity of the Pediatric ACEs and Related Life-Events Screener (PEARLS), a tool comprised of 17 items that assess the 10 traditional ACEs as defined by the original ACEs study (Felitti et al., 1998). PEARLS is described in more detail in the *Background* section. One study assessed the face validity of PEARLS as part of tool development (i.e., did not test face validity of the final tool). Study participants included a convenience sample of caregivers (n = 28) whose children aged 12 years and under received care at either the UCSF Benioff Children's Hospital in Oakland or the Claremont Primary Care Clinic and a convenience sample of primary care providers and staff (n = 16) at the hospital and primary care clinic. Cognitive interviews with study participants were conducted in several phases. Participants were asked which parts of the tool were confusing and were asked for suggestions as to how to clarify areas that were confusing. Researchers made changes to the questionnaire accordingly to improve face validity and item understanding. Some items were also combined or separated for further clarity. Through this iterative process, the researchers revised the questionnaire seven times and achieved high face validity with their eighth version (Koita et al., 2018). Koita et al. do not clearly indicate how many participants reviewed the eighth and final version of the tool.

The study that assessed the concurrent validity of PEARLS examined the correlation between PEARLS scores and measures of health outcomes that previous literature suggests are associated with ACEs. Study participants included children aged 0–11 years (n = 367) who received care from the University of California San Francisco Benioff's Children Hospital Oakland Primary Care Clinic and participated in a research study for pediatric primary care patients. Ten ACE categories were assessed, including abuse, neglect, and household challenges. Participants were randomized into one of three groups: the item-level response group (caregivers reported specific adversities that their child had experienced), the aggregate-level response group (caregivers reported the total number of adversities that their child experiences), and the control group (no ACEs screening occurred). The authors found that, among both the item-level response and aggregate-level response groups, higher PEARLS scores were associated with poorer perceived child general health and Global Executive Functioning, and greater odds of stomachaches (Thakur et al., 2020).

Traumatic Events Screening Inventory (TESI) for ACEs

One study assessed the face validity of an ACEs screening tool, TESI for ACEs, that was adapted for a primary care setting from a tool called the Traumatic Events Screening Inventory (TESI), a broad and comprehensive trauma-history assessment tool. The adapted version studied contained 28 items and was used to assess ACEs among children aged 3 to 16 years (n = 261) who participated in a research study for pediatric patients with behavioral health symptoms. The authors found that the TESI tool adapted for primary care had face validity because crime occurrence in studied zip codes (Chicago) overlapped with all ACEs reported by youth and by parents (Choi et al., 2019).

In addition to assessing face validity, Choi et al. (2019) also tested the adapted tool's concurrent validity for behavioral dysfunction. The authors classified respondents into three subgroups: 1) people with a high likelihood of multiple ACEs, 2) people with a moderate likelihood of direct or witnessed exposure to violence or death, and 3) people with a low likelihood of ACEs. The authors compared the ACE scores to scores from the Pediatric Symptom Checklist (PSC), a 35-item general psychosocial screening instrument that measures emotional, cognitive, and behavioral symptoms in children s. Overall, children in the high-ACE subgroup had higher odds of having a clinically significant score on the PSC and clinically significant attention problems after accounting for both child resilience and parent depression (Choi et al., 2019).

Whole Child Assessment (WCA)

One study assessed the concurrent validity of the Whole Child Assessment (WCA) at well-child visits by examining associations between poor outcomes in pediatric patients (based on medical charts) and responses to questions in the WCA questionnaire that are based on the questions asked in the original

ACEs study (Felitti et al., 1998). Study participants were children aged 5-11 (n = 499) who received care at one of two university-affiliated clinics in California. The WCA, was completed by the child's caregivers during a well-child visit. The WCA consisted of 50 questions, 10 of which asked about exposure to ACEs, and an additional six of which asked about risk of ACEs.[29] Child-ACE scores based on the ten exposure questions showed trends toward increasing risk for the following health and psychosocial problems: autism, depression or anxiety, aggression, attention deficit hyperactivity disorder (ADHD), enuresis, stomachaches, constipation, school problems, and any developmental delays. There was a trend toward decreasing risk for asthma, overweight, and underweight. These exposure scores were also significantly associated with an increased risk of caregiver-reports of child sadness, anger, sleep problems, and bullying, as well as medical record documentation of enuresis and school problems. When the six risk questions were added to the total score, the predictive value of the ACE scale increased. Because the authors found multiple relationships between child-ACEs reported on the WCA and the odds of poor child health and psychosocial outcomes, they determined that the WCA is a valid assessment tool for well-child visits (Marie-Mitchell et al., 2020).

Summary of findings regarding validity of ACEs screening tools for children: There is limited evidence that ACEs screening tools that screen children demonstrate face validity based on two studies. There is limited evidence that ACEs screening tools that screen children demonstrate concurrent validity based on three studies. There is insufficient evidence to assess the predictive validity of ACEs screening tools for children because none of these studies examined predictive validity. CHBRP could not assess whether any of the ACEs screening tools assessed is more valid than the others because none of the studies compared them to one another.

Figure 2. Face Validity of ACEs Screening Tools for Children

Figure 3. Concurrent Validity of ACEs Screening Tools for Children

Figure 4. Predictive Validity of ACEs Screening Tools for Children

[29] Example measures for risk of ACEs included risk of abuse because the caregiver considered the child to be "difficult," risk of abuse because the caregiver determined that they needed to hit or spank their child, risk of caregiver mental illness due to symptoms of anxiety or depression, and risk of alcohol abuse due to binge drinking.

Adults

CHBRP identified three studies that assessed the validity of three ACEs screening tools administered to adults: Expanded ACEs Questionnaire, Childhood Experiences Survey, and an adaptation of the Childhood Trauma Questionnaire. One study examined convergent validity and three examined predictive validity.

Expanded ACEs Questionnaire

Karatekin and Hill (2019) conducted two studies that examined convergent and predictive validity of a 31-item expanded ACEs questionnaire The authors tested the predictive validity of an expanded version of the original ACEs scale (Felitti et al., 1998) that included items from the Juvenile Victimization Questionnaire by comparing responses to responses to questionnaires used to measure physical well-being, mental health, and perceived stress. The questionnaire included 31 items that assessed moderate to severe adversity between ages 0 and 18. In Study 1, participants were drawn from undergraduates at a large, Midwestern public university (n = 1,479). Regression analyses showed that there were strong, statistically significant associations between measures of ACEs and measures of mental wellbeing, anxiety and depression, and perceived stress. The association between ACEs measures and physical well-being was smaller but remained statistically significant (Karatekin and Hill, 2019). These findings suggest that high scores on the expanded ACE questionnaire are associated with poorer mental and physical well-being among young adults.

In Study 2, the authors tested the convergent validity of the same 31-item ACE questionnaire. Participants were recruited from psychology classes at the same university. Seventy-five students completed the fully survey at Time 1, and 69 of those students completed the survey at Time 2. At Time 1, there were significant correlations between the expanded ACE questionnaire and measures of stressful events and trauma as well as the original ACEs scale.

Childhood Experiences Survey

Choi et al. (2020) assessed the predictive validity of an expansion of the Childhood Experiences Survey (CES). The CES expansion retrospectively assessed adults' ACE history for 17 different ACEs and has demonstrated concurrent validity in previous research (unpublished). Study participants included three samples of adults: individuals with a record of child protective services involvement (CPS) due to suspected child abuse and neglect (n=1,087), low-income women who received voluntary home visiting services (n = 659), and a convenience sample that participated in a study of psychological health (n = 667). Researchers used a two-factor structure (child maltreatment, household dysfunction) for the 10 conventional ACEs and a four-factor structure (direct victimization/household dysfunction, neglect, poverty, and family separation/loss) for the expanded 17 ACEs to test the association between factors and adult mental health outcomes. All factors in the two- and four-factor structures were significantly associated ($p < 0.05$) with depressive symptoms and anxiety symptoms among all three population samples, suggesting that high scores on the CES expansion are associated with higher scores on instruments that measure symptoms of anxiety and depression (Choi et al., 2020).

Adaptation of Childhood Trauma Questionnaire

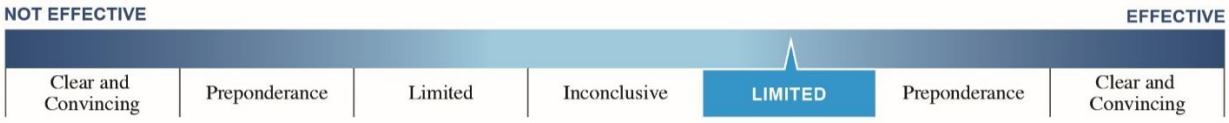
Another study assessed the predictive validity of ACEs screening for cardiovascular disease risk and self-reported illnesses via prospective and retrospective measures of ACEs. Study participants were African Americans (n = 454) residing in Iowa and Georgia. Data collection began when participants were children (mean age: 11 years) and was collected in six additional waves to target the participants at ages 12–13, 14–15, 17–18, 20–21, 23–24 years, and 29 years. Data collected during these waves included systolic blood pressure, body mass index (BMI), hemoglobin A1c, diabetes status, and a 10-item ACE questionnaire that was an adaptation of the Childhood Trauma Questionnaire (CTQ). Prospective measures, or children's responses to questions about ACEs that they were experiencing, were compared to their responses to the same questions as adults, as well as measures of their health as adults. The

authors found that, after controlling for sociodemographic and health-related covariates, that children's responses to questions about ACEs were significantly associated with higher cardiovascular disease risk in adulthood. Retrospective measures, or adults' responses to questions about adversities they experienced as children, were also significantly associated with higher cardiovascular disease risk. However, the authors also found that the correlation between prospective and retrospective measures of ACEs was weak (Berg et al., 2020).

Summary of findings regarding validity of ACEs screening tools for adults: There is insufficient evidence that ACEs screening tools that screen adults demonstrate convergent validity based on one study. There is limited evidence that ACEs screening tools for adults demonstrate predictive validity based on three studies.

Figure 5. Convergent Validity of ACEs Screening Tools for Adults

Figure 6. Predictive Validity of ACEs Screening Tools for Adults



Reliability

Three studies assessed the reliability of two ACEs screening tools: the original ACEs questionnaire and the expanded ACEs questionnaire. Two studies assessed internal consistency reliability and two studies assessed test-retest reliability, two of which specifically assessed recall consistency. All three studies assessed the reliability of tools that screened adults for ACEs (none of the studies of reliability that CHBRP identified addressed tools used to screen children for ACEs).

Original ACEs Questionnaire

Another study examined the test-retest reliability of the ACE questionnaire from original ACE Study. Kaiser Permanente's Health Appraisal Center (HAC) in San Diego, California administers a standardized questionnaire to adult members of Kaiser Health Plan in San Diego. Study participants (n=658) included people who completed the HAC standardized questionnaire and who were sent the ACE study questionnaire two weeks after completed the HAC questionnaire at Wave 1 of two waves of data collection. These participants were also given the same ACE questionnaire during Wave 2 of data collection. These two waves of data collection occurred about 20 months apart from each other. The authors found weak agreement between responses to questions about physical abuse during the two waves and moderate agreement between responses to questions about emotional abuse, sexual abuse, household substance abuse, and witnessing interpersonal violence while growing up. The frequency of discordance between Wave 1 and Wave 2 was also measured and was uncommon. Discordance of physical abuse was highest, but even so, was relatively small. The authors concluded that the test-retest reliability of the ACE questionnaire questions to be moderate to substantial, suggesting that retrospective

responses to childhood abuse and related forms of serious household dysfunction are generally stable over time (Dube et al., 2004).

Another study assessed the reliability of retrospective reports of ACEs. Frampton et al. (2018) examined if the development of depression influenced ACEs recall among a sample of adults (n = 284) aged 19–85 years across 11 primary care clinics in Canada. Participants completed the original ACEs questionnaire and the PHQ-9, a nine-question instrument, often administered in a primary care setting to measure depression symptoms, twice, 3 months apart. Internal consistency of the original ACE questionnaire was high, and the test-retest reliability between Time 1 and 2 was also high. These authors calculated odds ratios to test whether study participants' recollections of ACEs varied over time. The authors found that that changes in symptoms of depression did not correspond to changes in ACE scores among adults. Additionally, results indicated that depression symptoms at Time 1 were not predictive of changes in ACE scores at Time 2. Thus, the authors concluded that adults' recollections of ACEs are stable over time, regardless of whether they experience symptoms of depression. (Frampton et al., 2018). However, 3 months is a relatively short amount of time over which to measure whether adults' recollections of ACEs change.

Expanded ACEs Questionnaire

In their two separate studies, Karatekin and Hill examined internal consistency reliability and test–retest reliability of their expanded 31-item ACE questionnaire. The 31-item scale demonstrated good internal consistency. They also found that, even if other items on the scale were dropped, that reliability would not improve. The test–retest reliability was good for both the expanded ACEs scale and for the original ACEs scale (Karatekin and Hill, 2019).

Summary of findings regarding reliability of ACEs screening tools for adults: There is limited evidence that ACEs screening tools that screen adults demonstrate good-to-high internal consistency reliability and test-retest reliability based on three studies. No studies about the reliability of tools that screen children for ACEs were identified. CHBRP could not assess whether any of the ACEs screening tools assessed is more reliable than the others because none of the studies compared them to one another.

Figure 7. Internal Consistency Reliability of ACEs Screening Tools for Adults

Figure 8. Test–Retest Reliability of ACEs Screening Tools for Adults

Studies of Potential for Streamlining ACE Screening Tools

CHBRP identified one study that assessed the feasibility and validity of shortening the 11-item measure of ACEs that is part of the Behavioral Risk Factor Surveillance System (BRFSS) to create an instrument that could be used to screen adults to identify those who experienced significant adversity during childhood (Wade 2017). Shorter instruments may be easier for providers to administer during office visits.

The authors created a 2-item instrument that consisted of questions about childhood emotional abuse and living in a household in which an adult abused alcohol. These ACEs are common and are strongly correlated with other ACEs. The sensitivity and specificity of the 2-item instrument was determined using the 11-item measure as a standard. If one ACE was used as a threshold for identifying people at risk for toxic stress, the sensitivity of the 2-item measure was 99% but specificity was only 66%. Using two ACEs as a threshold, increased specificity to 94% but decreased sensitivity to 70%.

Summary of findings regarding potential to streamline ACE screening tools: There is insufficient evidence to determine whether shorter versions of ACEs screening tools have levels of sensitivity and specificity (i.e., ability to distinguish between people who have experienced ACEs and those who have not) that are similar to those of longer screening tools.

Figure 9. Potential to Streamline ACEs Screening Tools

Interventions for People Who Experience ACEs

CHBRP identified one systematic review that evaluated effective interventions for children exposed to ACEs (Marie-Mitchell and Kostolansky, 2019). A total of 22 articles describing results of 20 randomized control trials were included in the review. Studies that screened patients for ACEs and studies that recruited pediatric patients based upon exposure to ACEs were included. Parent mental illness or depression was the most common ACE recorded, followed by parent alcohol or drug abuse, then domestic violence. All studies also involved pediatric health care services, with six directly involving a pediatric primary care provider. Each study offered an intervention program addressing the impact of ACEs and was assigned an intensity level: high-intensity interventions were multicomponent and included home visits that extended over 3–5 years, medium-intensity interventions were multicomponent and included home visits or multiple follow-ups over 4–18 months, and low-intensity interventions had a minimum of one intervention component and included follow-up assessments.

Nine articles in the review described interventions that were effective in improving child health outcomes (physical and chronic health problems, behavioral and mental health problems, cognitive and developmental function, and emergency care and hospitalizations). All nine studies involved interventions of parenting education, mental health counseling, or both. For example, in one intervention, community health nurses provided home visits over 18 months for toddlers aged 24–36 months, and included parenting curriculum based on parental need. The children in this intervention had reduced emotional or behavior problems (14% vs. 31%) and anxiety or depression (10% vs. 31%). The extent to which interventions involved services from the health care system varied from study to study. All but one study assessed services that were delivered through home visits by health care professionals and paraprofessionals. Four interventions involved additional mental health counseling for the parent.

Twelve articles in the review described interventions that were effective in improving “intermediate outcomes” which the authors described as the parent-child relationship, community services utilization, and primary care utilization. Effective interventions involved parenting education, social support, social service referrals including for mental health treatment, or a combination of these interventions. These interventions led to outcomes of more positive parenting, reduced harsh punishment, improved mother-child interactions, and increased maternal sensitivity. One study that involved parenting education along with community service referrals and home visits by paraprofessionals demonstrated improvements in the parent-child relationship measured by reduced poor quality home (20% vs. 31%), lower partner psychological aggression (β −1.9) and mild physical assault (β −2.4), less likely to report mild form of

physical discipline (β −4.7). The extent to which interventions involved services from the health care system also varied from study to study. Five studies involved interventions that delivered services through home visits by paraprofessionals, and two studies involved mental health counseling.

Overall, the review suggested that multicomponent medium- to high-intensity interventions that utilize professionals can reduce child behavioral and mental health problems associated with exposure to ACEs and improve parent-child relationships for children aged 1 to 5 years. The review supports the interventions of home visiting programs, parenting interventions, and connection to community resources including mental health treatment as effective interventions for children who experience ACEs. However, findings from studies in which authors assessed the effectiveness of interventions may not necessarily generalize to screening for ACEs outside of a research study. The authors also noted that only three studies involved ACEs screening in pediatric primary care, and indicated that more research was required to determine whether screening for ACEs could reduce poor outcomes.

Summary of findings regarding the effectiveness of interventions for people who experience ACEs: CHBRP identified one systematic review of 22 randomized control trials that evaluated interventions for children who experience ACEs. Based on the findings of this systematic review, CHBRP concludes that there is a preponderance of evidence that home visiting programs are effective for children age 0–5 years old who experience ACEs. There is limited evidence that low-intensity interventions involving screening for ACEs in pediatric primary care are effective for children age 0–5 years old who experience ACEs. CHBRP did not identify studies on effective interventions for adults. Therefore, there is insufficient evidence on the effectiveness of interventions for adults who experience ACEs.

Figure 10. Effectiveness of Home Visiting Interventions for Children Who Experience ACEs

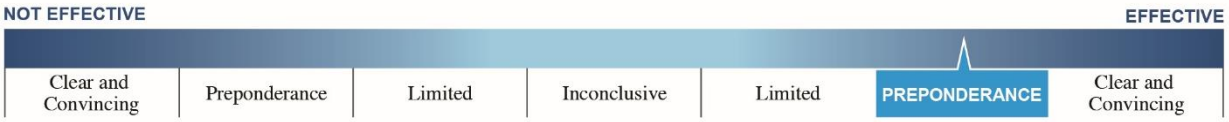


Figure 11. Effectiveness of Low-Intensity Interventions for Adults Who Experience ACEs

Figure 12. Effectiveness of Interventions for Adults Who Experience ACEs

Effects of ACEs Screening on Referrals

CHBRP identified four studies on the impact of ACEs screening on referrals to community or health care services (Dubowitz et al., 2009, 2012; Garg et al., 2007; Selvaraj et al., 2019). All four studies assessed referrals to community resources.

Of these four studies, one study directly assessed the impact of ACEs screening on referrals for parents of children aged 2 weeks to 17 years old who had experienced ACEs. Selvaraj et al. (2019) evaluated the effects of ACEs screening during well-child visits on referrals to community resources at four pediatric primary care sites serving urban, low-income, and racially diverse populations. The screening was completed using the Addressing Social Key (ASK) Questions for Health Questionnaire, a 13-item screening tool for ACEs, unmet social needs, and resilience. At one site, ACEs screening implementation increased community resource referrals to services such as food pantries and counseling centers over 6-fold, from 2.0% to 13.3%. Across all four sites, 12% of well-child visits with ACEs screenings led to community referrals for unmet social needs that were not related to ACEs, such as parental employment and child care. 2% of the well-child visits with ACEs screenings led to ACE-related community resource referrals, with bullying being the most common ACE-related reason for referral. No data was reported on whether referrals led to contact with the community services. An important limitation of this study is that it relied on a pre-post design. Without a contemporaneous comparison group of children who were not screened for ACEs, one cannot rule out the possibility that the increase in community referrals was due to another factor.

The other three studies were randomized controlled trials that assessed the impact of psychosocial interventions (which included ACEs screening) on referrals to community resources. Garg et al. (2007) evaluated the impact of the WE CARE (Well-child Care Visit, Evaluation, Community Resources, Advocacy, Referral, Education) intervention on the discussion of and referrals to community resources for a low-income population. Parents of children aged 2 months to 10 years old in the intervention group (n=100) were screened for ten family psychosocial problems during well-child care visits at a pediatric primary care resident clinic. The ACEs of parent depression, substance abuse, and intimate partner violence were included in the list family psychosocial problems. If the screening was positive and parents indicated they would like assistance, pediatric residents made referrals to community resources specific to the identified psychosocial problems by sharing a handout and resource book. Children in the control group (n=100) received standard care without screening, with the resource book made available to parents as well. Compared with the control group, those in the intervention group had more discussion of psychosocial topics (2.9 vs. 1.8), received more referrals to community resources (51% vs. 11.6%), and had greater odds of contacting a community resource (20% vs. 2.2%). However, it is important to note that relatively few ACE-related referrals were made. The majority of referrals were for other needs, including employment, education, and smoking cessation. Referrals addressing ACEs included programs for alcohol/drug treatment (6.6%), parent depression (5.8%), or intimate-partner violence (0.7%).

Two studies (Dubowitz et al., 2009, 2012) examined the effectiveness of the SEEK (Safe Environment for Every Kid) intervention at primary care sites in reducing Child Protective Service reports for children aged 0 to 5 in a high-risk population. In both studies, mothers who received the SEEK intervention were screened with the Parent Screening Questionnaire (PSQ) by health professionals trained to address risk factors. The PSQ is a 20-item self-report questionnaire screening for child maltreatment risk factors, including parental depression, substance abuse, and intimate partner violence. Mothers in the SEEK intervention also received patient education handouts with community resources (e.g. for depression or domestic violence) and had access to a social worker who could provide support and facilitate referrals. Mothers in the control arm were not screened and did not have access to a social worker. After the intervention was implemented, fewer Child Protective Services (CPS) reports were recorded amongst intervention families compared with the control families (13.3% vs. 19.2%). Prior to the intervention, 12% in both groups had CPS involvement. Of the 248 reports, 69% were for neglect, 21% for physical abuse, and 6% for sexual abuse. When controlling for the number of children per family, the control group was 1.5 times more likely to have had at least 1 CPS report (Dubowitz et al., 2009). When the SEEK intervention was implemented amongst a low-risk population, authors found no statistically significant differences in CPS reports between groups that received the SEEK intervention and the control group after 1 year, but other measures showed that the intervention was effective in reducing child maltreatment (Dubowitz et al., 2012).

Summary of findings regarding the effects of ACEs screening on referrals: There is limited evidence suggesting that screening for ACEs increases referrals to community resources, and may decrease Child Protective Services reports when combined with patient education, access to community resources and a social worker as needed. CHBRP identified four studies regarding the effects of such screenings on community resource referrals with one study showing weak evidence that ACEs screenings increased community referrals. Three more studies assessed interventions which included ACEs screenings. One study found that the WE CARE screening intervention increased referrals for community services although the majority of referrals were not for ACE-related problems. Two more studies found that the SEEK interventions decreased Child Protective Service reports in high-risk populations but had no effect in low-risk populations. Of note, the two studies of the SEEK intervention assessed the impact of providing screening with access to a social worker who could provide support facilitate referrals for community services. The availability of a social worker may have led this ACEs screening intervention to be more effective than screening interventions in which families do not have direct access to social workers or other personnel who could provide support or facilitate referrals. There is insufficient evidence on the impact of ACEs screening on referrals to community services for adults who have experienced ACEs.

CHBRP did not identify studies that assessed referrals to health care services. Therefore, there is insufficient evidence on the impact of ACEs screening on referrals to health services for adults and children.

Figure 13. Effects of ACEs Screening on Referrals to Community Resources for Children

Figure 14. Effects of ACEs Screening on Referrals to Community Resources for Adults

Figure 15. Effects of ACEs Screening on Referrals to Health Care Services for Children and Adults

Effects of ACEs Screening on Health Care Services Utilization

CHBRP did not identify any studies that examined the impact of ACEs screening on utilization of other health care services. One scoping review assessed outcomes of adult ACEs screenings including health care services utilization. Of the 15 studies reviewed in Ford et al. (2019), none examined outcomes for health care services utilization as a result of ACEs screening.

Summary of findings regarding the impact of ACEs screening on health care services utilization: There is insufficient evidence to determine whether screening for ACEs affects health care services utilization because CHBRP did not identify any studies on this topic.

Figure 16. Effects of ACEs Screening on Health Care Services Utilization

Effects of ACEs Screening on Health Outcomes

The literature review for SB 428 identified two studies that examined the effects of ACEs screening on health outcomes. The two studies (Dubowitz et al., 2009, 2012) evaluated the impact of psychosocial interventions at primary care sites (where ACEs screening was provided as one of several interventions) on child maltreatment for children aged 0 to 5 years. Both studies examined the effectiveness of the SEEK (Safe Environment for Every Kid) intervention in reducing child maltreatment documentation in medical reports. Mothers in the SEEK intervention arm were screened with the Parent Screening Questionnaire (PSQ) by health professionals trained to address risk factors, provided community resource handouts, and received support from a social worker. Responses to the PSQ helped identify topics for primary care providers to discuss with the mothers. Mothers in the control arm were not screened and did not have access to a social worker. The study assessed the impact of screening on nonadherence, delayed immunizations, injuries, and ingestions (constructed as potential markers of neglect). When implemented amongst a low-income, urban population (whom authors termed as “high-risk), medical reports of children in the SEEK intervention arm showed fewer instances of nonadherence to medical care (4.6% vs. 8.4%, p = 0.05) and fewer delayed immunizations (3.3% vs. 9.6%, p = 0.002) than the control arm (Dubowitz et al., 2009). Amongst a middle-income, suburban, “low-risk population”, instances of nonadherence, delayed immunizations, injuries, and ingestions occurred at too low of a base rate to evaluate at too low of a base rate to evaluate. However, there was a reduction in maternal aggression and minor physical assaults in this low risk population. (Dubowitz et al., 2012). While the results from Dubowitz et al. (2009) suggests that the SEEK intervention may lower the risk of some negative health outcomes associated with child maltreatment in high-risk groups, the intervention involved a social worker who provided families with guidance and referrals to community agencies. This intervention may have been more effective than providing screening without access to social workers or other personnel who could provide support or facilitate referrals.

Summary of findings regarding the impact of ACEs screening on health outcomes: There is limited evidence that suggests screening for ACEs in combination with patient education, community resources and access to a social worker reduces child maltreatment. CHBRP identified two studies that suggest the SEEK intervention with ACEs screening may improve the parent-child relationship and decrease child maltreatment. There is insufficient evidence on the impact of ACEs screening on the health outcome of adults.”

Figure 17. ACEs Screening on Health Outcomes for High-Risk Children

Figure 18. ACEs Screening on Health Outcomes for Low-Risk Children and Adults

Harms Associated with Using ACEs Screening Tools

CHBRP did not identify any studies that directly examined the harms of screening for ACEs. However, several commentators have raised concerns about the use of these screening tools. These concerns include: the potential of inducing excessive anxiety or poor decision making based on being stigmatized or labeled as high-risk for health and mental health outcomes (Anda et al., 2020; Campbell, 2020; Lacey and Minnis, 2020; McLennan et al., 2020c), the lack of evidence-based interventions that map onto high ACEs scores (Campbell, 2020; Finkelhor, 2018; Gillespie, 2019a; McLennan et al., 2020a), concerns about the ability of screening tools to accurately identify people whose exposure to ACEs could lead to adverse health outcomes (Anda et al., 2020; Finkelhor, 2018; Lacey and Minnis, 2020; McLennan et al., 2020a), concerns around the ability of primary care providers to have constructive conversations with patients or parents about ACEs, and potential negative consequences of mandatory reporting for children and families (Finkelhor, 2018; Gillespie, 2019).

Commentators have also raised concerns that some of the ACEs questions could cause inadvertent harm by evoking re-traumatization, erode trust between clinician and patient (or parent), or cause respondents to feel offended or uncomfortable by answering personal questions about ACEs (Barnes et al., 2020; Campbell, 2020). Studies have found that a majority of adult patients and parents report that they were comfortable being asked about ACEs, and few expressed any distress (Ford et al., 2019), but whether these responses to screening for ACEs generalize to more widespread routine screening is unclear.

Summary of findings regarding harms of using different ACEs screening tools: There is insufficient evidence to determine whether screening for ACEs generates harms for the child or adult being screened.

Figure 19. Harms of Using Different ACEs Screening Tools for Children and Adults

Summary of Findings

The Medical Effectiveness review reached the following conclusions regarding ACEs screening:

Psychometric Properties of ACEs Screening Tools

- There is *limited evidence* that ACEs screening tools that screen children demonstrate face validity and concurrent validity.

- There is *insufficient evidence* that ACEs screening tools that screen children demonstrate predictive validity.
- There is *insufficient evidence* that ACEs screening tools that screen adults demonstrate convergent validity.
- There is *limited evidence* that ACEs screening tools that screen adults demonstrate predictive validity.
- There is *limited evidence* that ACEs screening tools that screen adults demonstrate internal consistency reliability.
- There is *limited evidence* that ACEs screening tools that screen adults demonstrate test-retest reliability.
- There is *insufficient evidence* to determine whether shorter versions of ACEs screening tools that screen adults or children have levels of sensitivity and specificity that are similar to those of longer screening tools.

Availability of Interventions to Address the Effects of ACEs

- There is a *preponderance of evidence* that there are effective home visiting interventions for children who experience ACEs.
- There is *limited evidence* that there are effective low-intensity interventions for children who experience ACEs.
- There is *insufficient evidence* that there are effective interventions for adults who experience ACEs.

Impact of ACEs Screening on Referrals and Use of Services

- There is *limited evidence* that ACEs screening increases referrals to community resources and decreases Child Protective Services (CPS) reports for children.
- There is *insufficient evidence* on the impact of ACEs screening on referrals to community resources for adults.
- There is *insufficient* evidence on the impact of ACEs screening on referrals to health services for children and adults.
- There is *insufficient evidence* to determine whether ACEs screening affects health care services utilization for children or adults.

Effects of ACEs Screening on Health Outcomes

- There is *limited evidence* that ACEs screening improves health outcomes for high-risk children, and *insufficient evidence* on the impact of ACEs screening on the health outcome of low-risk children and adults.

Harms Associated with Using ACEs Screening Tools

- There is *insufficient evidence* to determine whether ACEs screening harms children or adults.

BENEFIT COVERAGE, UTILIZATION, AND COST IMPACTS

As discussed in the *Policy Context* section, SB 428 would require health plans and health policies regulated by the Department of Managed Health Care (DMHC) or the California Department of insurance (CDI) to provide coverage for ACEs screening.

In addition to commercial enrollees, more than 50% of enrollees associated with the California Public Enrollees' Retirement System (CalPERS) and more than 70% of Medi-Cal beneficiaries are enrolled in DMHC-regulated plans.[30] As noted in the *Policy Context* section, SB 428 would impact these CalPERS enrollees' and Medi-Cal beneficiaries' benefit coverage.

This section reports the potential incremental impacts of SB 428 on estimated baseline benefit coverage, utilization, and overall cost.

Approach and Assumptions

- CHBRP presents here a **potential scenario** of the fiscal impacts of SB 428 in the first year postmandate. This scenario is presented as a gauge of what the fiscal impacts might be under a set of assumptions which are described below.

- CHBRP notes that any fiscal impacts beyond conducting the ACEs screening, such as follow-up services and any other health care utilization after screening, are **not** included in this analysis due to insufficient evidence of impact of ACEs screening on health care utilization, see *Medical Effectiveness*. CHBRP was unable to determine credible estimates of health care utilization due to this insufficient evidence.

For this analysis CHBRP used data published by the California Office of the Surgeon General and Department of Health Care Services (DHCS) on its ACEs Aware program for Medi-Cal providers to estimate potential utilization change among providers in commercial plans/policies (ACEs Aware, 2021). As described in the *Policy Context*, DHCS' ACEs Aware program provides Medi-Cal providers training, clinical protocols, and payment for screening children and adults for ACEs. SB 428 appears to be structured similar to the ACEs Aware program in terms of providing reimbursement for ACEs screening. Thus, CHBRP has made an overarching assumption in this analysis that commercial plans/policies would cover ACEs screening the same way it is covered for Medi-Cal providers in the ACEs Aware Program. Utilization data from the roll-out of the ACEs Aware program in 2020 provides a basis for estimating utilization for the commercial plans/policies impacted by SB 428.

As SB 428 does not specify type of providers that would be eligible for reimbursement, whether training would be required prior to performing ACEs screening, whether only certain ACEs screening tools would be reimbursable, screening frequency, or reimbursement amount, utilization and cost estimates presented here could differ if commercial plans/policies decide to cover ACEs screening differently than the DHCS ACEs Aware program.

Key assumptions used in this approach are listed here:

- CHBRP has assumed there would be no new impact to Medi-Cal Managed Care Plans postmandate because there will continue to be availability of reimbursement for ACEs screening through DHCS' ACEs Aware program in 2022. Thus, the fiscal scenario provided here applies to only to commercial plans/polices regulated by DMHC and CDI.
- As mentioned in the approach above, CHBRP has assumed that plans and policies would adopt similar requirements as DHCS's ACEs Aware program, including provider eligibility for

[30] For more detail, see CHBRP's *Estimates of Sources of Health Insurance in California for 2021*, a resource available at http://chbrp.org/other_publications/index.php.

reimbursement (provider type and training/self-certification), screening frequency limits (for children under 21 years, once per year, no less than every 3 years, rescreening as medically necessary not more than once per year, per provider, per managed care plan and for adults 21–64 years, once per lifetime per provider, per managed care plan), and screening tool (PEARLS for children and ACE Questionnaire for adults, see *Policy Context* for more info on ACEs Aware).

- CHBRP has assumed that reimbursement for ACEs screenings by DMHC and CDI-regulated plans and policies would be made at the same level as that set by DHCS in its ACEs Aware program at $29 per screening.
- CHBRP has assumed that ACEs screenings would be conducted via in-person and telehealth visits.
- CHBRP has assumed there would be no cost-sharing for the ACEs screening. While there may be cost-sharing for the visit during which the screening is conducted, there would not be cost-sharing applied to the screening service itself.
- CHBRP has assumed providers who may be screening enrollees for ACEs in commercial plans/policies are not reimbursed specifically for the ACEs screening at baseline (but would be reimbursed postmandate due to SB 428). Thus, this scenario includes no utilization among enrollees in commercial plans/policies at baseline.
- CHBRP has assumed the following postmandate utilization of ACEs screening due to SB 428 among enrollees in commercial plans/policies: 15% of enrollees under 18 years and 5% of adults 18–65 years screened in year 1. In developing this scenario, CHBRP has assumed the launch of the ACEs Aware program in 2020 has prepped or primed providers in California to trauma-informed screening such that the first year postmandate would have a more robust uptake of screening than seen in the first year of the ACEs Aware launch (CHBRP estimates about 5% to 7% of Medi-Cal enrollees under 18 years and 1% to 2% of adults were screened in 2020 under the ACEs Aware program first year launch; further details on this assumption are provided in Appendix C). CHBRP has also assumed this uptake in ACEs screening postmandate stems in part from the increase in mental health, economic, and social life stressors associated with COVID-19 pandemic, among both children and adults, that may lead to an increase in utilization of screening.
    - While it is possible that more than the assumed value of 15% of children and 5% of adult enrollees in commercial plans/policies would be screened for ACEs in the first year postmandate, CHBRP assumes utilization is likely to be constrained by a number of issues, including: providers not having a robust trauma-informed system of care in place to conduct screening and referrals, provider concerns about the negative impacts of screening, limited resources for follow-up care, and time constraints and other practical challenges in obtaining proper training to conduct screenings and accommodating screenings into clinical workflow. See *Background* and *Medical Effectiveness* for more on these issues.

For further details on the underlying data sources and methods used in this analysis, please see Appendix C.

Baseline and Postmandate Benefit Coverage

Currently, 36% of enrollees with health insurance that would be subject to SB 428 have coverage for ACEs screening — all of these are enrollees in Medi-Cal Managed Care Programs. Postmandate, 100% of all enrollees with health insurance that would be subject to SB 428 would have coverage for ACEs screening (Table 1).

Baseline and Postmandate Utilization

CHBRP estimates 663,850 Medi-Cal enrollees at baseline receive ACEs screening. CHBRP assumed no enrollees in commercial plans/policies are screened at baseline for the purposes of this scenario analysis.

Applying CHBRP's assumed postmandate utilization of ACEs screening in commercial plans/policies (15% of enrollees under 18 years and 5% of adults 18–65 years screened in year 1), CHBRP estimates 1,702,498 enrollees would be screened postmandate. This increase in 1,038,648 additional enrollees screened are those in commercial plans/policies (Table 1).

Baseline and Postmandate Per-Unit Cost

As CHBRP has assumed that reimbursement for ACEs screenings by DMHC- and CDI-regulated plans and policies would be made at the same level as that set by DHCS in its ACEs Aware program at $29 per screening, the unit cost for screening postmandate is $29.

Baseline and Postmandate Expenditures

SB 428 would increase total net annual expenditures by $36,060,000 or 0.03% for enrollees in commercial DMHC-regulated plans and CDI-regulated policies. This is all due to an increase in total health insurance premiums paid by employers and enrollees for the newly covered benefit. There would be no impact in enrollee expenses for covered and/or noncovered benefits given no cost-sharing for ACEs screening.

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

In this fiscal scenario, CHBRP does not project any cost offsets or savings in health care that would result because of the enactment of provisions in SB 428. As described in *Medical Effectiveness,* there is a lack of sufficient evidence to determine of effect of ACEs screening on health care utilization that would allow CHBRP to make a credible estimates of change in health care use postmandate that would result in cost offsets or savings.

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.

Potential Cost of Exceeding Essential Health Benefits

As explained in the *Policy Context* section, SB 428 does not require coverage for a new state benefit mandate that exceeds the definition of EHBs in California.

Postmandate Changes in the Number of Uninsured Persons

Because the change in average premiums does not exceed 1% for any market segment (see Table 1), CHBRP would expect no measurable change in the number of uninsured persons due to the enactment of SB 428.

Changes in Public Program Enrollment

CHBRP estimates that the mandate would produce no impact on enrollment in publicly funded insurance programs due to the enactment of SB 428.

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

CHBRP assumes that enrollees who do not have benefit coverage for ACEs screening do not pay for treatments/services directly (e.g., self-pay) nor do enrollee seek ACEs screening through public programs or alternative sources. Thus, SB 428 would not shift costs between different types of payers for ACEs screening.

PUBLIC HEALTH IMPACTS

As discussed in the *Policy Context* section, SB 428 would mandate coverage of provider reimbursement for ACEs screenings in the adult and pediatric patient populations.

The public health impact analysis includes estimated impacts in the short term (within 12 months of implementation) and in the long term (beyond the first 12 months postmandate). This section estimates the short-term impact[31] of SB 428 on access to ACEs screening, potential treatment harms, and potential disparities. For a discussion of potential impacts beyond the first 12 months of implementation, see *Long-Term Impacts*.

Estimated Public Health Outcomes

As presented in *Benefit Coverage, Utilization, and Cost Impacts*, 13,939,000 additional enrollees will receive coverage for ACEs screening (a 174.11% increase). It is expected that this increase in coverage will produce an additional 1,038,648 screenings for ACEs in California within the first year postmandate. Of these, 524,030 are children.

In the first year postmandate, a public health impact of SB 428 is expected among a subset of children aged 0–5 years who will newly receive reimbursed ACEs screening. As presented in the *Medical Effectiveness* section, there is a preponderance of evidence that there are effective home visiting interventions for children aged 0–5 who have experienced ACEs and limited evidence for low-intensity interventions for children. Of the 524,030 children who newly receive ACEs screening postmandate, a subset will be both aged 0–5 years and will be referred to services that constitute effective home visiting interventions. Of those, a further subset will be able to access and then choose to utilize those services. As presented in Medical Effectiveness, there is limited evidence that ACEs screening increases referrals and insufficient evidence to determine if ACEs screening impacts health care service utilization. The effective home visiting interventions were medium to high intensity behavioral health and/or social support interventions, and these can be harder to access than lower intensity interventions that had limited evidence or strictly medical interventions. There will be a public health impact due to improved health for the group of children aged 0-5 who receive effective interventions as a result of ACEs screening and adequate access to these interventions.

The public health impact of ACE screening for adults is largely unknown, due to insufficient evidence. While there is evidence to suggest that having a high number of ACEs is associated with greater risk for developing a health condition in adulthood, it remains unclear how screening for ACEs after the events have occurred could lead to improved health outcomes and which health outcomes could be improved within 12 months of the mandate (as discussed in this section). Adults who are actively experiencing a mental health conditions such as PTSD, depression, or anxiety (potentially as a result of childhood ACEs or other life event) may receive a referral for behavioral health services for care.

The public health impact of SB 428 on health from ACEs screening itself is unknown as there is limited evidence that ACEs screening improves some measures of health and only for lower-income, urban children aged 0–5 when combined with social work support, as presented in *Medical Effectiveness*.

Potential Harms from SB 428

When data are available, CHBRP estimates the marginal change in relevant harms associated with interventions affected by the proposed mandate. In the case of SB 428, there is a potential that an increase in ACEs screening could result in harm. Potential harms associated with the use of ACEs screening include discomfort sharing sensitive information and concerns about potential risks from disclosing ACEs, stigmatizing patients, or re-traumatization from discussing past ACEs. There are also

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

concerns about the development and use of ACE screening tools to identify ACEs and conducting universal screening for ACEs. These concerns are due to both the current tools available and the lack of adequate access to evidence-based interventions for treatment once ACEs are identified.

Some individuals expressed concerns that they could be at risk for disclosing ACEs. English and Spanish-speaking parents shared that while they understand the benefits of screening, they also have concerns about potential risks to disclosing ACEs (such as fear of legal or immigration consequences) and may choose not to disclose such information on the screener (Selvaraj et al., 2020). Qualitative studies have demonstrated that pediatric screening for ACEs is acceptable to families, as long as an integrated model of care with relevant and accessible services are in place prior to screening (Ford et al., 2019; Marie-Mitchell et al., 2019; Pathak and Grimes, 2019; Selvaraj et al., 2020; Williams II et al., 2020).

Another concern is the possibility of "labelling" a patient as at-risk based on disclosed ACEs who might not otherwise experience any related health problems (Campbell, 2020). Individuals identified as having higher risk for health problems based on ACEs might feel stigmatized, feel discriminated against, or hear a deterministic message rather than an opportunity to be helped (Anda et al., 2020; Finkelhor, 2018; Lacey and Minnis, 2020).

Few adult patients felt comfortable discussing all or most specific ACE items, but were more willing to participate in anonymized ACEs research (Williams et al., 2021). As presented in the *Background* section, the ACE prevalence data reported by ACEs Aware is different from that reported by BRFSS for overall prevalence and by demographic groups. ACEs Aware reports ACEs screening data from clinical encounters where the patient discloses ACEs directly to their doctor to be recorded into their medical records whereas BRFSS reports ACEs screening data collected by an unknown researcher during a research interview to be recorded into an anonymous database unconnected to the person's life. Differences in rates of ACEs reported by these two sources could reflect these differences in how the data is collected. A systematic review of 13 ACEs studies found that screening was generally accepted by patients, finding it an acceptable part of a health visit, a means to connect them to additional services, and a way for their provider to know them better (Rariden et al., 2021).

While there is currently no data available to confirm, re-traumatization has been suggested as a potential harm of ACEs screening by to asking the patient to think about and potentially describe past traumas (Barnes et al., 2020; Campbell, 2020; Hippolyte et al., 2021). This potential harm is of particular concern if there are no adequate services available to address the traumas (Dube, 2018). There is also concern that disclosing ACEs and potential toxic stress will generate anxiety (Anda et al., 2020; Campbell, 2020; Lacey and Minnis, 2020; McLennan et al., 2020c).

There are concerns about the use of screening tools in medical care themselves. While it is generally supported that discussion of patient life stressors is important as a part of medical care, some physicians and researchers site concerns about the use of universal structured ACEs screening. Concerns include a lack of predictive validity of the tools themselves, meaning that the screeners are unable to predict that a person with a high ACE score will actually develop a specific negative health outcome and that the ACE score provides no information about the frequency, intensity, or age of exposure to each "point" selected (Anda et al., 2020; Finkelhor, 2018; Lacey and Minnis, 2020; McLennan et al., 2020b; Murphey and Dym Bartlett, 2019). ACE screening tools weight all ACEs equally without evidence that each ACE has the same impact on each person's health outcomes. Researchers suggest that more work is needed to establish which ACEs should be included in screens that better capture the array of adversities a child can face in a more culturally competent manner and for diverse populations, and to identify better ways to weight and score these possible ACEs (Cronholm et al., 2015; Lacey and Minnis, 2020; Murphey and Dym Bartlett, 2019).

There are expert concerns that there are not enough adequate, effective interventions available for patients to access after an ACE screen (Finkelhor, 2018; Rariden et al., 2021). If there are no effective interventions, or individuals cannot access them, the time and potential risk of re-traumatization to complete the ACE screening will not benefit the individual (Finkelhor, 2018). There is also the possibility that individuals will be referred to costly and time-intensive interventions based on their ACE score, when

they may not have otherwise needed any intervention. There is also a concern that patients will be referred to an inappropriate service at the expense of another, more relevant service that focuses on a particular experience or clinical need (such as services specific to sexual abuse) (Anda et al., 2020; Finkelhor, 2018).

Impact on Disparities[32]

Insurance benefit mandates that bring more state-regulated plans and policies to parity may change an existing disparity. ACEs affect all populations, and the mandate would provide reimbursed ACE screening to commercial enrollees, bringing them into parity for reimbursed ACEs screening with Medi-Cal enrollees and increasing the number of individuals in California with reimbursed ACEs screening access.

As described in the *Background* section, disparities in ACE Prevalence exist by race, ethnicity, gender, and sexual orientation. Within the first 12 months postmandate, CHBRP estimates that the public health impact of SB 428 on racial, ethnic, gender and sexual orientation disparities in ACEs prevalence or health outcomes is unknown. CHBRP is unable to estimate the impact of ACEs screening on these health disparities among adults due to insufficient evidence of the impact of ACEs screening on health or for effective interventions for ACEs for adults. CHBRP is unable to estimate the impact of ACEs screening on these health disparities among children as it is unknown who among those children who newly receive ACEs screening will then be referred to and able to access effective interventions.

Impact on Racial or Ethnic Disparities

The impact of SB 428 on reducing documented disparities among racial and ethnic groups (see the *Background* section) is largely unknown. While the mandate would expand coverage of ACEs screenings beyond the Medi-Cal population which is already covered and could improve access to those with private insurance who are experiencing racial and ethnic disparities in ACEs screening, it is not known who among those with private insurance would receive ACEs screening post-mandate. It is possible that broadening screening to the commercially insured population beyond the Medi-Cal population could reduce possible stigmatization of the Medi-Cal population as one in need of ACEs screening more than the commercial population, and could thus improve acceptability and access to screening for all populations including those facing racial disparities.

However, it remains unclear what health impacts from ACEs screening are likely to occur and for whom. While ACEs screenings are likely to increase among both private enrollees (by new coverage and increased awareness of covered ACEs screening) and Medi-Cal enrollees (by increased awareness of covered ACEs screening), it is unclear for those screened that referral to appropriate services is likely to occur, or if referral does occur, that those services will be readily available and utilized for all covered enrollees. As noted in the *Medical Effectiveness* section, there was limited evidence suggesting that screening for ACEs increases referrals to community resources and decreases Child Protective Services reports. It also mentioned that having access to social workers to provide coordination and case management services were important for connecting patients with the appropriate services. It is important to note that this level of support is not available at all clinics across the state. If referrals after a positive screen do occur, it remains unclear whether patients will be able to access and then utilize appropriate services. As described in the *Medical Effectiveness* section, there is a lack of evidence available on health care utilization after ACEs screening.

[32] For details about CHBRP's methodological approach to analyzing disparities, see the *Benefit Mandate Structure and Unequal Racial/Ethnic Health Impacts* document here: http://chbrp.com/analysis_methodology/public_health_impact_analysis.php.

LONG-TERM IMPACTS

Utilization Impacts

For the first year postmandate, CHBRP assumed that given the mix of Medi-Cal and commercial enrollees in patient panels, providers who have been trained through the ACEs Aware program for their Medi-Cal enrollees would be ready to obtain reimbursement for screening their commercial enrollees in year 1 postmandate. It is also likely that awareness among providers regarding ACEs screening would grow such that providers who have not yet been trained, would obtain training or become ready to screen their patients for ACEs. If CHBRP's assumed utilization estimates for year one of 15% of children and 5% of adults screened for ACEs in the first year postmandate are true, CHBRP expects estimates to be similar to these initial estimates at regular intervals of about 1-3 years as children and adults may be screened at about this frequency in future years until screening reaches a steady state. CHBRP is unable to estimate how long it might take to reach that point and to what degree ACEs screening will be used by providers. Literature on developmental screening may help point to an estimate of screening uptake. In a 2016 National Survey of Children's Health, only about 26% of children 9 through 35 months of age in California received a developmental screening in the past year despite the availability of coverage for developmental screening (Hirai et al., 2018). Authors suggest provider training, prompts in electronic medical records, and learning collaboratives may be needed to improve adherence to screening recommendations.

It is possible that screening uptake will increase to a greater extent over time beyond the year 1 estimate. Awareness of ACEs and interest in creating trauma-informed care might grow, and demand might increase alongside demand for mental health services and programs addressing social needs. It is also possible that if providers are able to choose and be reimbursed for a screening tool that best fits their patient population and workflow that screening rates might grow. However, ACEs screening uptake might be curbed by provider hesitancy and concerns about the limitations of ACEs screening as discussed in *Background* and *Medical Effectiveness*. Literature on ACEs screening limitations suggest provider hesitancy may arise from concerns about: shortage of time to conduct the assessments, lack of confidence in managing conversations, and concerns about mandatory reporting and parent/patient resistance to assessments Finkelhor, 2018; Gillespie, 2019). Other concerns about ACEs screening that have been raised by various authors of commentaries in the peer reviewed literature include: the narrow list of topics or items covered in ACEs screening, concerns about validity, reliability, response interpretability and the scoring approach (Anda et al., 2020; Finkelhor, 2018; McLennan et al., 2020a).

Similar concerns about the negative impacts of screening for autism spectrum disorder have limited its utilization by providers, with U.S. Preventive Services Task Force (USPSTF) report on screening for Autism Spectrum Disorder (ASD) highlighting the need for further research that examines the harms potentially associated with screening before recommendations can be made for universal screening (Petruccelli et al., 2021). Beyond concerns about the potential harms of screening, other practical concern among providers includes challenges to follow-up care (Barnett et al., 2021), given the general shortage of behavioral and mental health providers in California (Coffman et al., 2018). Given the body of literature on potential harms and benefits is still growing, CHBRP is unable to estimate the degree to which ACEs screening will be taken up by providers over time.

Cost Impacts

CHBRP is unable to estimate to what degree utilization will change beyond Year 1, as described above. CHBRP is also unable to predict carrier reactions with regards to how the reimbursement for ACEs screening might increase or decrease over time.

Long-Term Public Health Impacts

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

In the case of SB 428, CHBRP estimates ACEs screenings would increase by 1,038,648 individuals (156.46%); however, the long-term public health impacts of an increase in ACEs screening are unknown due to insufficient evidence that screenings lead to referrals to appropriate, effective services and that those services when referred to are likely to be utilized.

As described in the Background Section, ACEs have long-term health outcomes, so interventions to mitigate the health impact of ACEs, or interventions to prevent ACEs, are expected to have long-term public health impacts, particularly for children aged 0–5 years who are able to access relevant, medium-to-high-intensity home visitor programs.

As described in the *Medical Effectiveness* section, no effective interventions were identified for adults with high ACE scores or for children older than 5 years. Available effective interventions appear to be limited primarily to children 0–5. For those children who are referred to, able to access and receive effective interventions, long-term health impacts are expected. However, effective interventions for children with high ACEs are medium to high-intensity and occur over the span of months or years before benefits begin to emerge. It is unknown how many child enrollees would be able to access these medium-to-high-intensity services and thus the scale of the long-term public health impact from those interventions after ACEs screening is unknown.

APPENDIX A TEXT OF BILL ANALYZED

On February 17, 2021, the California Senate Committee on Health requested that CHBRP analyze SB 428.

SENATE BILL **NO. 428**

Introduced by Senator Hurtado

February 12, 2021

An act to add Section 1367.32 to the Health and Safety Code, and to add Section 10123.51 to the Insurance Code, relating to health care coverage.

LEGISLATIVE COUNSEL'S DIGEST

SB 428, as introduced, Hurtado. Health care coverage: adverse childhood experiences screenings.

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 provides for the regulation of health insurers by the Department of Insurance. Existing law requires health care service plan contracts and health insurance policies to provide coverage for specified benefits, including for mental health services.

This bill would require a health care service plan contract or health insurance policy issued, amended, or renewed on or after January 1, 2022, to provide coverage for adverse childhood experiences screenings. Because a willful violation of these provisions by a health care service plan would be a crime, the bill 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.

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

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

SECTION 1. Section 1367.32 is added to the Health and Safety Code, to read:

1367.32. (a) A health care service plan contract issued, amended, or renewed on or after January 1, 2022, shall provide coverage for adverse childhood experiences screenings.

(b) For purposes of this section, "adverse childhood experiences" means an event, series of events, or set of circumstances that is experienced by an individual as physically or emotionally harmful or threatening and that has lasting adverse effects on the individual's functioning and physical, social, emotional, or spiritual well-being.

SEC. 2. Section 10123.51 is added to the Insurance Code, to read:

10123.51. (a) A health insurance policy issued, amended, or renewed on or after January 1, 2022, shall provide coverage for adverse childhood experiences screenings.

(b) For purposes of this section, "adverse childhood experiences" means an event, series of events, or set of circumstances that is experienced by an individual as physically or emotionally harmful or threatening and that has lasting adverse effects on the individual's functioning and physical, social, emotional, or spiritual well-being.

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

This appendix describes methods used in the literature review conducted for this report. A discussion of CHBRP's system for medical effectiveness grading evidence, as well as lists of MeSH Terms, publication types, and keywords, follows.

Studies regarding the strength of evidence for the effectiveness of ACEs screening, for which SB 428 would mandate coverage, were identified through searches of Ovid MEDLINE; Embase; PsycInfo; Cochrane: Global Health; CINAHL; and Scopus. The search was limited to abstracts of studies published in English. The majority of identified literature examined the validity and/or reliability of ACEs screening tools, and the literature did not include any head-to-head comparisons of ACEs screening tools.

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.

Medical Effectiveness Review

The medical effectiveness literature review returned abstracts for 635 articles, of which 45 were reviewed for inclusion in this report. Our content expert identified an additional 12 studies which were also reviewed for potential inclusion. A total of 24 studies were included in the medical effectiveness review for SB 428.

Medical Effectiveness 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*.[33] To grade the evidence for each outcome measured, the team uses a grading system that has the following categories:

- Research design;
- Statistical significance;
- Direction of effect;
- Size of effect; and
- Generalizability of findings.

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

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

[33] Available at: http://chbrp.com/analysis_methodology/medical_effectiveness_analysis.php.

A grade of *preponderance of evidence* indicates that the majority of the studies reviewed are consistent in their findings that treatment is either effective or not effective.

A grade of *limited evidence* indicates that the studies had limited generalizability to the population of interest and/or the studies had a fatal flaw in research design or implementation.

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 of equal quality suggest the treatment is not effective.

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

Search Terms (* indicates truncation of word stem)

adverse childhood experiences
ACES
Childhood Adversity
adverse childhood experiences questionnaire
Adult Survivors Of Child Abuse
Childhood Trauma
Childhood Trauma Survivor
mass screening
screening
Surveys and Questionnaires
exp Social Validity, Research
validity.

The following article in Scopus was used to search for related articles:

Finkelhor, D. (2018). Screening for adverse childhood experiences (ACEs): Cautions and suggestions. *Child Abuse and Neglect, 85*, 174-179. doi:10.1016/j.chiabu.2017.07.016

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

With the assistance of CHBRP's contracted actuarial firm, Milliman, Inc, the cost analysis presented in this report was prepared by the faculty and researchers connected to CHBRP's Task Force with expertise in health economics.[34] 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.[35]

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

Analysis-Specific Data Sources

For SB 428, CHBRP prepared an illustrative scenario cost rather than an estimate of actual costs. This decision was made for a number of reasons:

- The screening tools are novel and the limited claim experience available did not provide a reliable basis for estimating utilization or cost under full coverage.
- Data provided by The California Department of Health Care Services (DHCS) regarding screenings during the first six months of a program in which DHCS reimburses Medi-Cal providers demonstrated significant ramp-up during the period reported (ACEs Aware, 2021). This data does not provide sufficient basis for projecting an ultimate utilization rate, but are used in an estimate described below under Analysis-Specific Caveats and Assumptions.
- Milliman's available data sources not include claims for the ACES-specific HCPCS codes (G9919 and G9920; see table below), as these codes were not valid prior to January 1, 2020.

CPT/HCPCS	Long Description
G9919	ACEs score of 4 or greater, high risk. Screening performed –result indicates patient at high risk for toxic stress; education and interventions (as necessary) provided
G9920	ACEs score of 0 to 3, lower risk. Screening performed –result indicates patient at lower risk for toxic stress; education and interventions (as necessary) provided

- A review of Commercial and Medi-Cal reimbursements for screening-related HCPCS codes (96127, 96160, 96161) did not provide a sufficient basis for estimation of potential Commercial or CalPERS reimbursement levels for these screenings.
- Certain screenings are reimbursed as part of a routine health care visit bundle. It is possible that Commercial reimbursement for ACEs are currently, and will be, treated similarly.

Without a credible basis for estimating utilization or reimbursement under this mandate, the estimates in this report should be viewed as illustrative of potential mandate impacts given a scenario of plausible assumptions.

[34] CHBRP's authorizing statute, available at https://chbrp.org/about_chbrp/index.php, requires that CHBRP use a certified actuary or "other person with relevant knowledge and expertise" to determine financial impact.
[35] See method documents posted at http://chbrp.com/analysis_methodology/cost_impact_analysis.php; in particular, see *2021 Cost Analyses: Data Sources, Caveats, and Assumptions*.

Analysis-Specific Caveats and Assumptions

ASSUMPTIONS FOR BASELINE BENEFIT COVERAGE

- The population subject to the mandated offering includes individuals covered by DMHC-regulated commercial insurance plans, CDI-regulated policies, CalPERS plans subject to the requirements of the Knox-Keene Health Care Service Plan Act, and DMHC-regulated Medi-Cal plans.
- DHCS already reimburses Medi-Cal providers ($29 for the screening) for administering the PEARLS assessment for children and the ACEs survey for adults[36].
- CHBRP estimates 36% of all enrollees subject to the mandate have coverage for ACEs screening through DHCS at baseline as they are covered by Medi-Cal (8,006,000 enrollees under 65 years in Medi-Cal out of 21,945,000 enrollees subject to SB 428).
- CHBRP assumed 0% of commercial plans and policies offer separate reimbursement for these screenings. It is possible that the service is being provided by some providers and reimbursed as a component of a bundled payment for office visit or other encounter.
- CHBRP did not conduct a bill-specific carrier survey for SB 428.

ASSUMPTIONS FOR BASELINE UTILIZATION, COST AND COST SHARING

- CHBRP used data provided by the ACEs Aware program to calculate a range of utilization (ACEs Aware, 2021). For this, CHBRP annualized the 6 month data as a low end and annualized the number of screening conducted in June as a high end of the range; these data were taken from Exhibits 1 and 2 of the ACEs Aware Initiative ACEs screening Medi-Cal Claims Data March 2021 Update (ACEs Aware, 2021). Assuming Medi-Cal enrollment of 5.3 million children and 7 million adults, CHBRP calculated a range of 5-7% of Medi-Cal enrollees under 18 years and 1-2% of adults were screened in 2020 under the ACEs Aware program first year launch.
- CHBRP notes that in the baseline, it is possible that some ACEs are billed and reimbursed under other screening codes, or reimbursed as part of a bundle for office visits or other encounters. This cost estimate assumes ACEs are billed as a separate service.
- The DHCS reimbursement for ACEs is $29. CHBRP assumed this as the baseline reimbursement for Medi-Cal plans.
- The bill does not mandate specific reimbursement requirements. CHBRP assumed that Commercial and CalPERS plans would reimburse ACEs would be reimbursed at the same rate as Medi-Cal, $29.
- The bill does not mandate specific cost sharing requirements. ACEs screenings are typically provided as a component of an office visit or other medical encounter. CHBRP assumed there would be no cost sharing for the screening.

ASSUMPTIONS FOR POSTMANDATE UTILIZATION, COST AND COST SHARING

- Postmandate, CHBRP assumed annual screening rates for commercial plans/policies in the first year would be higher than those annualized estimates as seen in the ACEs Aware program in 2020 (described in the previous section) and would vary by age group, as follows: 15% for ages 0-17 years and 5% for 18-64 years. Applying this assumed increase, CHBRP calculates an additional 1,038,648 enrollees in commercial plans/policies would be screened (Table 1). Broken down by age, this

[36] Information provided by the office of the bill author (Sen. Hurtado), March 3, 2021.

translates to 524,030 children 0-17 years and 514,618 adults 18-64 years in commercial plans/policies who would be newly screened for ACEs postmandate.

- CHBRP did not assume service costs would change as a result of SB 428.
- CHBRP did not assume cost sharing would change as a result of SB 428.

Determining Public Demand for the Proposed Mandate

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 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 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.

Second Year Impacts on Benefit Coverage, Utilization, and Cost

CHBRP has considered whether continued implementation during the second year of the benefit coverage requirements of SB 428 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. CHBRP reviewed the literature and consulted content experts about the possibility of varied second year impacts and determined the second year's impacts of SB 428 would be substantially the same as the impacts in the first year (see Table 1). Please also see the *Long Term Impacts* section. Minor changes to utilization and expenditures would be due to population changes between the first year postmandate and the second year postmandate.

CHBRP assumes the cost sharing reductions provided by California to enrollees receiving subsidized health insurance through Covered California set to expire in 2022 will continue through December 31, 2023. These subsidies are provided to enrollees with incomes between 200% and 600% of the federal poverty level and are provided in addition to the federal cost sharing reductions.[37]

[37] Program Eligibility by Federal Poverty Level for 2021, *Covered California*, 2020. Available at: https://www.coveredca.com/pdfs/FPL-chart.pdf.

APPENDIX D ACE STUDY QUESTIONS

ACE Study Questions	
Abuse by Category	
Psychological Abuse	
	Did a parent or other adult in the household often or very often swear at, insult, or put you down?
	Did a parent or other adult in the household often or very often act in a way that made you afraid that you would be physical hurt?
Physical Abuse	
	Did a parent or other adult in the household often or very often push, grab, shove or slap you?
	Did a parent or other adult in the household often or very often hit you so hard that you had marks or were injured?
Sexual Abuse	
	Did an adult or person at least 5 years older ever touch or fondle you in a sexual way?
	Did an adult or person at least 5 years older ever have you touch their body in a sexual way?
	Did an adult or person at least 5 years older ever attempt oral, anal, or vaginal intercourse with you?
	Did an adult or person at least 5 years older ever actually have oral, anal, or vaginal intercourse with you?
Household Dysfunction by Category	
Substance Abuse	
	Did you live with anyone who was a problem drinker or alcoholic?
	Did you live with anyone who used street drugs?
Mental Illness	
	Was a household member depressed or mentally ill?
	Did a household member attempt suicide?
Mother Treated Violently	
	Was your mother (or stepmother) sometimes, often, or very often pushed, grabbed, slapped, or had something thrown at her?
	Was your mother (or stepmother) sometimes, often, or very often kicked, bitten, hit with a fist, or hit with something hard?
	Was your mother (or stepmother) ever repeatedly hit over at least a few minutes?
	Was your mother (or stepmother) ever threatened with, or hurt by, a knife or gun?
Criminal Behavior in Household	
	Did a household member go to prison?

Source: Original Questions and ACE Categories in Felitti et al., 1998..

APPENDIX E ADVERSE CHILDHOOD EXPERIENCES QUESTIONNAIRE FOR ADULTS (FROM THE CALIFORNIA SURGEON GENERAL'S CLINICAL ADVISORY COMMITTEE)

Adult Self Report
Our relationships and experiences—even those in childhood—can affect our health and well-being. Difficult childhood experiences are very common. Please tell us whether you have had any of the experiences listed below, as they may be affecting your health today or may affect your health in the future. This information will help you and your provider better understand how to work together to support your health and well-being.
Instructions: Below is a list of 10 categories of Adverse Childhood Experiences (ACEs). From the list below, please place a checkmark next to each ACE category that you experienced prior to your 18th birthday. Then, please add up the number of categories of ACEs you experienced and put the total number at the bottom.
Did you feel that you didn't have enough to eat, had to wear dirty clothes, or had no one to protect or take care of you?
Did you lose a parent through divorce, abandonment, death, or other reason?
Did you live with anyone who was depressed, mentally ill, or attempted suicide?
Did you live with anyone who has a problem with drinking or using drugs, including prescription drugs?
Did your parent or adults in your home ever hit, punch, beat, or threaten to harm each other?
Did you live with anyone who went to jail or prison?
Did a parent or adult in your home ever swear at you, insult you, or put you down?
Did a parent or adult in your home ever hit, beat, kick, or physical hurt you in any way?
Did you feel that no one in your family loved you or thought you were special?
Did you experience unwanted sexual contact (such as fondling or oral/anal/vaginal intercourse/penetration)?
Do you believe that these experiences have affected your health? Not Much/Some/A Lot

Source: Bay Area Research Consortium on Toxic Stress and Health (BARC), 2021.

APPENDIX F COMPARISON OF ORIGINAL 10 ACES (ORIGINAL KAISER-CDC ACE STUDY) AND THE ACE QUESTIONNAIRE FOR ADULTS (ACES AWARE)

	Original 10 ACEs	ACE Questionnaire for Adults
	(Dube et al., 2003a, 2003b; Felitti et al., 1998)	ACEs Aware (DHCS, 2021)
Emotional Abuse	Did a parent or other adult in the household often or very often swear at, insult, or put you down? Did a parent or other adult in the household often or very often act in a way that made you afraid that you would be physical hurt?	Did a parent or adult in your home ever swear at you, insult you, or put you down?
Physical Abuse	Did a parent or other adult in the household often or very often push, grab, shove or slap you? Did a parent or other adult in the household often or very often hit you so hard that you had marks or were injured?	Did a parent or adult in your home ever hit, beat, kick, or physical hurt you in any way?
Sexual Abuse	Did an adult or person at least 5 years older ever touch or fondle you in a sexual way? Did an adult or person at least 5 years older ever have you touch their body in a sexual way? Did an adult or person at least 5 years older ever attempt oral, anal, or vaginal intercourse with you? Did an adult or person at least 5 years older ever actually have oral, anal, or vaginal intercourse with you?	Did you experience unwanted sexual contact (such as fondling or oral/anal/vaginal intercourse/penetration)?
Household Dysfunction – Substance Abuse	Did you live with anyone who was a problem drinker or alcoholic? Did you live with anyone who used street drugs?	Did you live with anyone who has a problem with drinking or using drugs, including prescription drugs?
Household Dysfunction – Mental Illness	Was a household member depressed or mentally ill? Did a household member attempt suicide?	Did you live with anyone who was depressed, mentally ill, or attempted suicide?
Household Dysfunction – Adult Violence	Was your mother (or stepmother) sometimes, often, or very often pushed, grabbed, slapped, or had something thrown at her? Was your mother (or stepmother) sometimes, often, or very often kicked, bitten, hit with a fist, or hit with something hard? Was your mother (or stepmother) ever repeatedly hit over at least a few minutes? Was your mother (or stepmother) ever threatened with, or hurt by, a knife or gun?	Did your parent or adults in your home ever hit, punch, beat, or threaten to harm each other?
Household Dysfunction – Criminal Behavior	Did a household member go to prison?	Did you live with anyone who went to jail or prison?
Parental Abandonment	Were your parents ever separated or divorced? (Dube et al., 2003b)	Did you lose a parent through divorce, abandonment, death, or other reason?

Emotional Neglect	“There was someone in my family who helped me feel important or special." "I felt loved." "People in my family looked out for each other." "People in my family felt close to each other." "My family was a source of strength and support." (Dube et al., 2003a)	Did you feel that no one in your family love you or thought you were special?
Physical Neglect	"I didn’t have enough to eat." "I knew there was someone there to take care of me and protect me." "My parents were too drunk or too high to take care of me." "I had to wear dirty clothes." "There was someone to take me to the doctor if I needed it." (Dube et al., 2003a)	Did you feel that you didn’t have enough to eat, had to wear dirty clothes, or had no one to protect or take care of you?

Source: California Health Benefits Review Program, 2021.

APPENDIX G PEDIATRIC ACES AND RELATED LIFE EVENTS SCREENER (PEARLS) (IDENTIFIED)

Child Report – Completed by the Child's Caregiver	
At any point in time since your child was born, has your child seen or been present when the following experiences happened? Please include past and present experiences. ***Please note, some questions have more than one part separated by "OR." If any part of the question is answered "Yes," then the answer to the entire question is "Yes."***	
Part 1:	Please check "Yes" where apply.
1. Has your child ever lived with a parent/caregiver who went to jail/prison?	
2. Do you think your child ever felt unsupported, unloved, and/or unprotected?	
3. Has your child ever lived with a parent/caregiver who had mental health issues? *(for example, depression, schizophrenia, bipolar disorder, PTSD, or an anxiety disorder)*	
4. Has a parent/caregiver ever insulted, humiliated, or put down your child?	
5. Has the child's biological parent or any caregiver ever had, or currently has a problem with too much alcohol, street drugs, or prescription medications use?	
6. Has your child ever lacked appropriated care by any caregiver?	
7. Has your child ever seen or heard a parent/caregiver being screamed at, sworn at, insulted, or humiliated by another adult? OR has your child ever seen or heard a parent/caregiver being slapped, kicked, punched, beaten up, or hurt with a weapon?	
8. Has any adult in the household often or very often pushed, grabbed, slapped, or thrown something at your child? OR has any adult in the household ever hit your child so hard that your child has marks or was injured? OR has any adult in the household ever threatened your child or acted in a way that made your child afraid that they might be hurt?	
9. Has your child ever experienced sexual abuse? *(for example, anyone touched your child or asked your child to touch that person in a way that was unwanted, or made your child feel uncomfortable, or anyone ever attempted or actually had oral, anal, or vaginal sex with your child)*	
10. Have there ever been significant changes in the relationship status of the child's caregiver(s)? (for example, a parent/caregiver got a divorce or separated, or a romantic partner moved in or out)	
Part 2:	Please check "Yes" where apply.
1. Has your child ever seen, heard, or been a victim of violence in your neighborhood, community, or school? *(for example, targeted bullying, assault, or other violent actions, war, or terrorism)*	
2. Has your child experienced discrimination? *(for example, being hassled or made to feel inferior or excluded because of their race, ethnicity, gender identity, sexual orientation, religion, learning differences, or disabilities)*	
3. Has your child ever had problems with housing? *(for example, being homeless, not having a stable place to live, moved more than two times in a sex-month period, faced eviction or foreclosure, or had to live with multiple families or family members)*	
4. Have you ever worried that your child did not have enough food to eat or that the food for your child would run out before you could buy more?	

5. Has your child ever lived with a parent/caregiver who has a serious physical illness or disability?

6. Has your child ever been separated from their parent or caregiver due to foster care, or immigration?

7. Has your child ever lived with a parent or caregiver who died?

Source: Bay Area Research Consortium on Toxic Stress and Health (BARC), 2021.

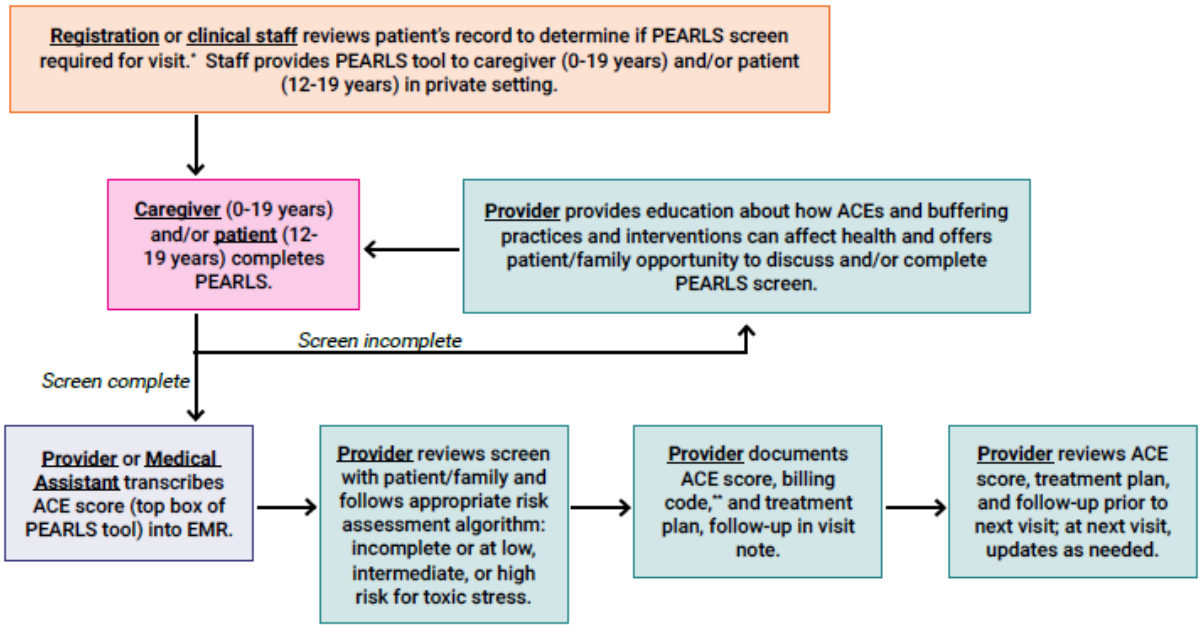
APPENDIX H BRFSS ADVERSE CHILDHOOD EXPERIENCE (ACE) MODULE

Adult Interview	
Prologue: I'd like to ask you some questions about events that happened during your childhood. This information will allow us to better understand problems that may occur early in life, and may help others in the future. This is a sensitive topic, and some people may feel uncomfortable with these questions. At the end of this section, I will give you a phone number for an organization that can provide information and referral for these issues. Please keep in mind that you can ask me to skip any question you do not want to answer. All questions refer to the time period before you were 18 years of age. Now, looking back before you were 18 years of age---.	
Questions:	***Response Options:***
1. Did you live with anyone who was depressed, mentally ill, or suicidal?	1=Yes 2=No 7=DK/NS 9=Refused
2. Did you live with anyone who was a problem drinker or alcoholic?	1=Yes 2=No 7=DK/NS 9=Refused
3. Did you live with anyone who used illegal street drugs or who abused prescription medications?	1=Yes 2=No 7=DK/NS 9=Refused
4. Did you live with anyone who served time or was sentenced to serve time in a prison, jail, or other correctional facility?	1=Yes 2=No 7=DK/NS 9=Refused
5. Were your parents separated or divorced?	1=Yes 2=No 8=Parents not married 7=DK/NS 9=Refused
6. How often did your parents or adults in your home ever slap, hit, kick, punch or beat each other up?	1=Never 2=Once 3=More than once 7=DK/NS 9=Refused
7. Before age 18, how often did a parent or adult in your home ever hit, beat, kick, or physically hurt you in any way? Do not include spanking. Would you say -	1=Never 2=Once 3=More than once 7=DK/NS 9=Refused
8. How often did a parent or adult in your home ever swear at you, insult you, or put you down?	1=Never 2=Once 3=More than once 7=DK/NS 9=Refused
9. How often did anyone at least 5 years older than you or an adult, ever touch you sexually?	1=Never 2=Once 3=More than once 7=DK/NS 9=Refused
10. How often did anyone at least 5 years older than you or an adult, try to make you touch sexually?	1=Never 2=Once 3=More than once 7=DK/NS 9=Refused
11. How often did anyone at least 5 years older than you or an adult, force you to have sex?	1=Never 2=Once 3=More than once 7=DK/NS 9=Refused

Source: CDC, 2020b.

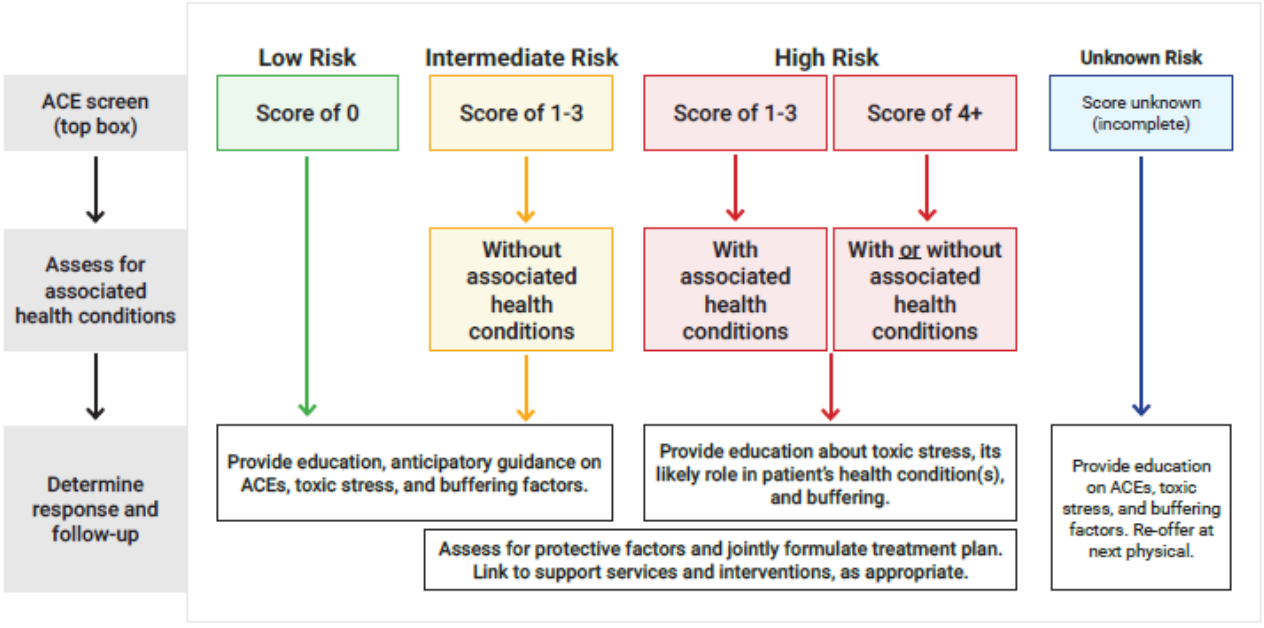
APPENDIX I CLINICAL PROCESSES FOR ACES SCREENING (AS RECOMMENDED BY ACES AWARE)

Figure 20. Pediatric ACEs Screening Clinical Workflow



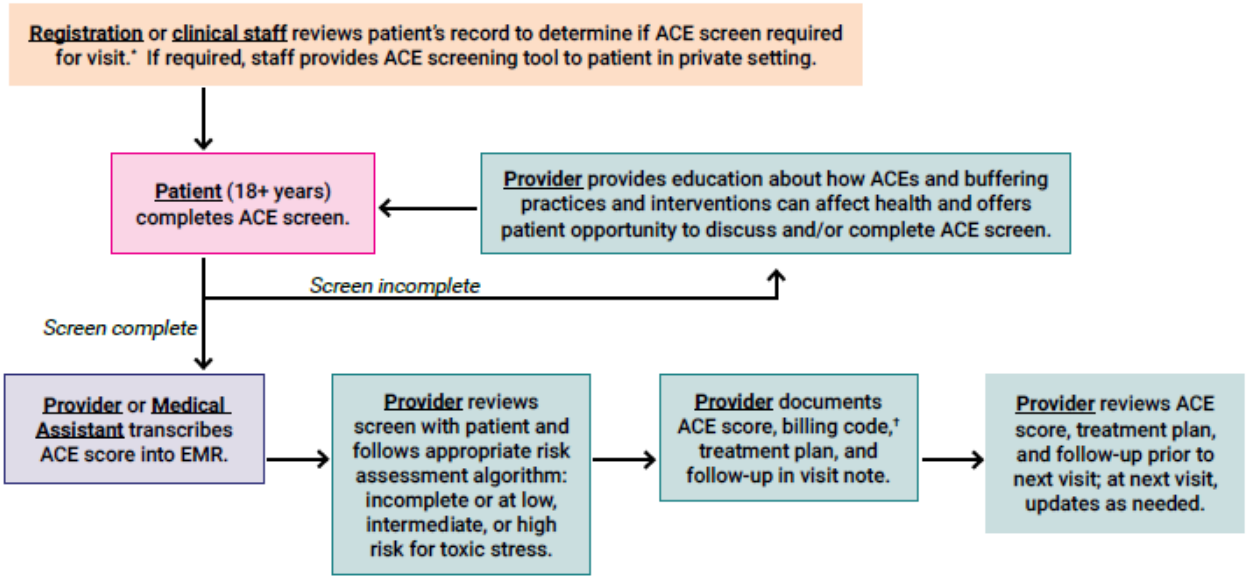
Source: ACEs Aware, 2019.

Figure 21. Pediatric ACE Toxic Stress Risk Assessment Algorithm



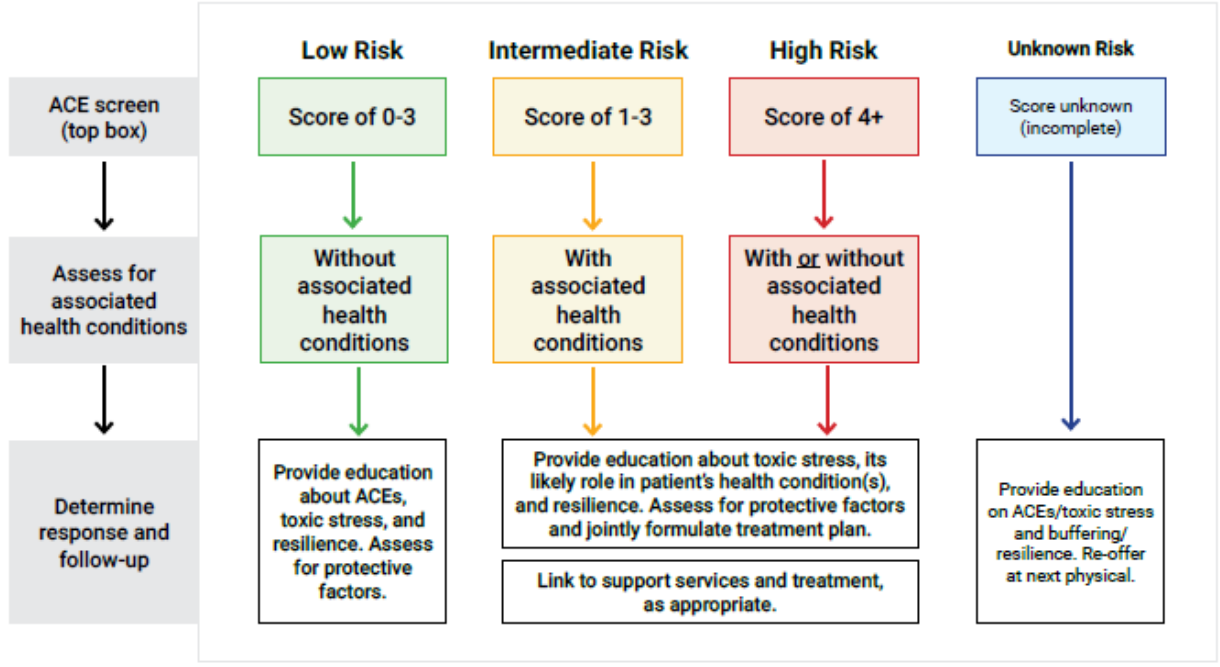
Source: ACEs Aware, 2019.

Figure 22. Adult ACEs Screening Clinical Workflow



Source: ACEs Aware, 2019.

Figure 23. Adult ACE Toxic Stress Risk Assessment Algorithm



Source: ACEs Aware, 2019.

APPENDIX J STATE LEGISLATION RELATED TO ACES

Table 7. Recent and Pending Health Insurance Coverage Bills in Other States Related to ACEs

State	Bill No.	Summary of Legislation	Status
West Virginia	HB 2664	Require all public and private health insurance to cover screening for ACEs Establish a program to provide school-based ACEs screening through local schools for uninsured children	2021 Regular Session: Currently Pending
New York	A3689	New York 2021-2022 Regular Session Require home health care providers to use the ACEs questionnaire (The Adverse Childhood Experience Questionnaire (ACE-IQ)[38] in assessing patients' health risks Makes Medicaid reimbursement of primary care providers contingent upon use	2021–2022 Regular Session: Currently Pending
Virginia	HB 1682	Requires each [health insurance] carrier that offers a health benefit plan that provides coverage for screening of covered persons for adverse childhood experiences that may impact a patient's physical or mental health or the provision of health care services to such patient shall utilize a coding system that enrolls a code for such screening services	2021 Currently Pending
Maryland	HB 774	Requires that physical examinations include ACEs screening for children entering the public school system for the first time Screening for ACEs using the Pediatric ACEs and Related Life Events Screener for children or adolescents, or an equivalent screening tool Require the Maryland Medical Assistance Program to provide reimbursement to providers for screening	2020 Regular Session

[38] The ACE International Questionnaire (ACE-IQ) developed by the World Health Organization is intended to measure ACEs in all countries, and the association between them and risk behaviors in later life. ACE-IQ is designed for administration to people aged 18 years and older. Questions cover family dysfunction; physical, sexual and emotional abuse and neglect by parents or caregivers; peer violence; witnessing community violence, and exposure to collective violence. Information may be found at: https://www.who.int/violence_injury_prevention/violence/activities/adverse_childhood_experiences/en/.

Table 8. Recent and Pending ACEs Taskforce-Related Bills in Other States Related to ACEs

State	Bill No.	Summary of Legislation	Status
Maryland	HB783/SB425	Establish the Workgroup on Screening Related to Adverse Childhood Experiences. Require the Workgroup to update/improve/develop screening tools, study actions and best practices, and develop recommendations for screening.	Pending 2021 Session Active
New York	A4908	Establish a task force to identify evidence-based solutions to reduce exposure among children to ACEs.	2021–2022 Regular Session: Pending
Hawaii	SB 1242/ HB 1322	Establish a task force to develop and make recommendations for childhood trauma-informed care.	2021–2022 Regular Session: Pending
Delaware	H 307	Requires coverage by all health insurance carriers of annual behavioral health well checks, which must include an evaluation of ACEs. Behavioral health well check: includes review of medical history, evaluation of ACEs, use of validated mental health screening tools. Reimbursement through common procedural terminology (CPT) codes at the same rate that such CPT codes are reimbursed for the provision of other medical care. An annual behavioral health well check may be incorporated into and reimbursed within any type of integrated primary care service delivery method.	2021–2022 Session: Pending

Table 9. Recent and Pending ACE-Related Bills in Other States

State	Bill No.	Summary of Legislation	Status
Tennessee	SB 1384	Require local boards of education to adopt a policy and develop plans to provide mental/behavioral health services to students who have had ACEs.	2021–2022 Regular Session: Pending

New York	S4692/ A4109	Provide supports and services for youth suffering from ACEs, including health and behavioral health services, preventive services, and enhancement of protective factors.	2021–2022 Regular Session: Pending
Georgia	HR 146	Create the House Study Committee on ACEs to improve the health of women and children.	2021–2022 Regular Session: Pending
Pennsylvania	HR 72	Direct the Joint State Government Commission to conduct a comprehensive study to find an age-appropriate measuring tool that could be used by all the school districts to measure childhood trauma/exposure to ACEs.	2021–2022 Regular Session: Pending
Texas	SB1528/ HB3493	Improve the delivery of prevention and early intervention services for children exposed to ACEs/at risk for exposure to ACEs while maximizing the efficient use of taxpayer dollars through a community-based/community awareness approach.	2021 Regular Session: Pending
Illinois	HR 4	Urge the General Assembly to enhance legislation through a trauma-informed lens and funding around early intervention services for children and families.	2021–2022 Regular Session: Pending
Mississippi	HB 427	Create the Trauma-Informed Schools Act and develop an evidence-based strategy to address ACEs.	2021 Regular Session: Pending
Massachusetts	SD 1919	Establish a screening subcommittee of the Childhood Trauma Task Force to review the benefits/risks of utilizing available tools for ACEs screening for all children and to make recommendations regarding how screening should be used with children.	2021–2022 Regular Session: Pending
Connecticut	HB 5698	Require local and regional boards of education, the Department of Education and the Office of Early Childhood to collect and report data related to ACEs among children.	2021 Regular Session: Pending
Massachusetts	HB 4679	Establish universal screening for ACEs	2019–2020 Regular Session.

Hawaii	SCR128/ SR88	Request the Departments of Education, Health, Human Services, and Public Safety to adopt policies and programs that support trauma-responsive practices and take ACEs into account.	2019–2020 Regular Session
Washington	SB 6191	Require that questions related to ACEs are included in the health youth survey to assess the prevalence of ACEs throughout the state and Engagement's responsibilities to include trauma-informed protocol and training.	2019–2020 Regular Session
District of Columbia	B 647	Create an ACEs prevention pilot program to provide access to trauma-informed, whole family supports for families with children exposed to ACEs. Expand the Office of Neighborhood Safety and Engagement's responsibilities to include trauma-informed protocol and training.	2019–2020 Council Period
Virginia	HB 41	Requires every health care practitioner who provides primary health care services to provide to patients information regarding the impact of ACEs on physical and mental health and the risks/benefits of screening for ACES, and to screen patients for ACEs that may impact a patient's physical or mental health. Payment not specified.	2020 Regular Session

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CALIFORNIA HEALTH BENEFITS REVIEW PROGRAM COMMITTEES AND STAFF

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

CHBRP gratefully acknowledges the efforts of the team contributing to this analysis:

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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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