

# Looking Ahead: California's Next Steps

The California ACEs Aware initiative is founded on the best scientific evidence on addressing the impacts of ACEs and toxic stress on the health of California's people. ACEs Aware is intended as an engine to advance evidence-informed interventions in healthcare and to drive more precise targeting and effectiveness of the cross-sector approaches needed to prevent and mitigate the health effects of ACEs and toxic stress. This initiative provides an unprecedented opportunity to execute a cautiously scaled statewide approach to reduce medical, mental health, behavioral, and social consequences of ACEs and toxic stress, in a way that proactively uplifts families and communities. The science and policy landscape are aligning in powerful ways to reveal the possibilities for preventing and healing impacts of ACEs and toxic stress, and fostering community and individual flourishing.

The state of California has set a bold goal to cut the burden of toxic stress and ACEs in half in the next generation by implementing a well-formulated public health approach to prevention, early detection, treatment and cross-sectoral action. To do this, California is addressing upstream factors, supporting family and community resilience, and prioritizing equity in achieving health and social outcomes. The keystone of this initiative is a statewide effort to detect and intervene on toxic stress in primary care and to deploy cross-sector expertise to ensure the availability, quality, and success of interventions. Screening for ACEs and toxic stress in primary care is essential and a foundational step toward coordinating robust cross-sector systems of prevention and healing to reduce the negative impacts of toxic stress on health and social outcomes. The focus on primary care screening and intervention is being implemented in ways that engage and align the cross-sector expertise needed to both reduce health impacts of toxic stress once they have occurred (secondary and tertiary prevention), and ultimately, to reduce the incidence of ACEs and toxic stress in the first place (primary prevention).

Development of **clinical diagnostic criteria for toxic stress** is a key milestone that has the potential to greatly improve quality, efficacy, and coordination of care, and reimbursement for services. Shifts in diagnostic and billing codes for ACE-Associated Health Conditions (AAHCs) and more precision tools for assessment of treatment efficacy and prognostication of risk, combined with enhanced payment

models to support brief interventions, care coordination, referrals, and more frequent follow-up, can catalyze more effective and coordinated action to prevent and heal the impacts of ACEs.

Primary prevention efforts promote the sustainable presence of safe, stable, nurturing relationships and environments and co-address the social and structural determinants of health and well-being. Primary prevention-oriented policies and programs include connecting parents and caregivers to high-quality, family-focused physical and mental healthcare and establishing strong networks of buffering resources for children, families, and adults, in order to prevent toxic stress from ever occurring and from worsening once in place. This includes linkages to high-quality home visitation, child care, preschool and school enrichment with family engagement, optimizing social-emotional learning at home, promoting healthy relationship norms, parenting and family relationship skill-building, connecting youth to caring adults and activities, and economic and legal supports.<sup>23,31,41,42,44,45,100,564,604,755,1606</sup> Providing this cross-sector network of care will require **strengthening linkages** to social services and mental/behavioral healthcare in the primary care setting, either through integrated care models or through strong partnerships. Preventing interpersonal and structural discrimination and oppression of all types is also critical to interrupt a significant contributor of toxic stress for individuals and communities.

California already has rich resources in a growing number of communities, with cross-sector partnerships promoting well-being and equity by addressing ACEs and associated social determinants of health. Today, California hosts a wide array of city, county, regional, and statewide efforts engaging in sustainable cross-agency and cross-sector collaboration to integrate trauma-informed health, education, social services, and other allied work. Increasingly, these efforts recognize and seek to heal the collective adversity faced by the community due to toxic stress from ACEs, as well as from related adversities like racism, poverty, lack of equitable opportunities, and housing insecurity. They also aspire to promote the transformational resilience needed to meet existing and emerging adversities in an engaged, creative, and connected manner. Nearly all seek to foster citizen engagement in making the cultural shifts required to integrate the science of toxic stress and resilience amid adversity.

Other key components of this cross-sector effort should be increasingly integrated and **sustained collaborations** between the healthcare, public health, social services, education, justice, and other allied sectors—undergirded by a shared vision, responsive iteration of best practices, and shared data integration systems.<sup>623</sup> These strategies should be paired with and may be reinforced by a **coordinated public education campaign** to raise awareness about impacts of ACEs and toxic

stress, as well as effective intervention and prevention tactics. Changing common narratives and social norms can help promote healthy relationships, enhance public knowledge about how to thrive despite having faced these challenges, and can improve the efficacy of cross-sector initiatives.<sup>31</sup>

Decades of research and innovation have informed California's collaborative ACEs Aware initiative to integrate best science into practice to improve the early and lifelong health of children, youth, families, and communities. Next steps for the movement include advancing a **robust toxic stress research agenda**. Key objectives should include:

1. Development of **clinically relevant biomarkers** to help more precisely diagnose, classify, and assess treatment efficacy for toxic stress in clinical settings. These biomarkers could greatly improve clinicians' ability to risk-stratify and assess prognosis for patients experiencing toxic stress and its potential subtypes (e.g., immune, metabolic, neuropsychiatric, and/or endocrine).
2. **Guidelines for clinical management of ACE-Associated Health Conditions (AAHCs)** in the setting of toxic stress. For instance, in asthma, toxic stress can alter expression and function of beta-adrenergic and glucocorticoid receptors, and lead to changes in inflammatory cytokines and stress reactivity in ways that render traditional treatments such as beta-agonists and corticosteroids less effective (see **Tertiary Prevention Strategies in Healthcare**, in Part II, for details).<sup>230</sup> However, current stepwise treatment algorithms for asthma do not take these biological differences into account.
3. **Identification of therapeutic targets** for regulating the toxic stress response. Just as antiretroviral medications were a critical tool for public health efforts to stem the human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS) epidemic, therapeutic agents to regulate the stress response and avert or mitigate the neuro-endocrine-immune-metabolic and genetic regulatory derangements of toxic stress are needed.
4. Elucidation of the complex interactions of how **individual differences** in underlying biological susceptibility or exposures (including timing, severity, duration and developmental interactions) might affect clinical presentation of toxic stress or inform individualized treatment strategies.
5. **Longitudinal studies** to better understand the specific and longer-term impacts of clinical interventions that target the toxic stress response, especially for metrics like prevalence and severity of AAHCs, social

outcomes, healthcare utilization, systems-level costs, and health equity. Tracking and preventing unanticipated harms will be of paramount importance.

6. As a first step in advancing these goals, the Office of the California Surgeon General has partnered with the California Initiative to Advance Precision Medicine of the California Governor's Office of Planning and Research to launch a \$9 million initiative to investigate precision medicine approaches to detect and mitigate toxic stress.<sup>337</sup>

ACEs Aware and allied cross-sector efforts across the state of California represent policy innovation to intervene on a challenging public health crisis, through a carefully scaled approach to primary, secondary, and tertiary prevention of ACEs and toxic stress. As this report has shown, to enable lasting change, healthcare-based innovations must be closely coordinated with cross-sector response, practice transformation, research and innovation, and public education efforts. In California, education and capacity-building within healthcare was prioritized as an important first phase, to ensure that providers were prepared to act in advance of public education. By deploying a well-formulated public health approach to prevention, screening, and treatment, ACEs Aware and related programs seek to cut toxic stress and ACEs in half in the next generation. For California and states with similar ambitions, this is an unprecedented opportunity to execute a visionary, data-driven, and evidence-informed set of clinical and public health interventions, using a cautiously scaled approach to enable clinical and population-level promotion of mitigation of toxic stress and building resilience, while generating a data-driven approach to understanding and propagating best practices and avoiding unintended harms.

## NEXT STEPS FOR THE ACEs AWARE MOVEMENT

1. Enhanced policy efforts to support prevention of and early intervention for ACEs and toxic stress, including access to treatment based on risk of toxic stress rather than diagnosis of downstream harms.
2. Coordination of a robust network of clinical and community interventions, including clear guidelines for response to clinical risk of toxic stress, and technology and data infrastructure for bidirectional communication (within the appropriate protection of patient privacy rights).
3. Adequate mental and behavioral health treatment infrastructure integrated or closely aligned with primary care.
4. Cross-sector training for recognition and trauma-informed response to ACEs and toxic stress in every sector, including law enforcement, education, judicial system, early care and education, business and economic sectors, public health, social services, immigration, legal services, and healthcare.
5. Scaling of promising cross-sector efforts to address ACEs and toxic stress, such as Handle With Care, Adverse Childhood Experiences Response Team (ACERT), Healthy Environment and Response to Trauma in Schools (HEARTS), as highlighted in previous sections of the report (especially Part II).
6. A public education campaign on:
  - How ACEs and toxic stress impact well-being,
  - The structural and systemic conditions that can make ACEs and toxic stress more or less likely to occur, and
  - Strong messages of hope, including practical strategies for buffering factors and scaffolding protective factors that can improve outcomes for a child or adult at risk for or experiencing toxic stress to prevent further harm—and how to break the intergenerational cycle of adversity.
7. Implementation of a robust research agenda for improved detection and treatment of toxic stress including development of clinically relevant biomarkers, therapeutic targets, clinical guidelines, individualized treatment strategies and longitudinal studies.