Primary, Secondary, and Tertiary Prevention Strategies in Justice

Adverse Childhood Experiences (ACEs) are very common and highly consequential for health and well-being. There are deep connections between ACEs and the justice system, given that family member incarceration is one of the ACE criteria that increases risk of developing toxic stress in children, and that many symptoms of the toxic stress response (such as impairment of impulse control or mental health disturbances) significantly increase risk of justice involvement. Thus, the justice system plays an essential role in primary, secondary, and tertiary prevention of ACEs and toxic stress and is a key partner in a public health response.

Recent estimates suggest that 62% of California adults have experienced at least one ACE, and 16% have experienced four or more ACEs (2011-2017 data). A key mechanism by which ACEs increase risk for negative health, behavioral, and social outcomes is through biological changes known as the toxic stress response, which is defined by the National Academies of Sciences, Engineering, and Medicine (NASEM) as “prolonged activation of the stress response systems that can disrupt the development of brain architecture and other organ systems, and increase the risk for stress-related disease and cognitive impairment, well into the adult years.”

In a dose-response fashion, ACEs can lead to serious health risks, including heart disease, stroke, cancer, dementia, mental health and substance use disorders, and premature mortality, including by suicide.

While most individuals with significant ACEs do not encounter the criminal justice system, exposure to ACEs is a well-documented risk factor for justice involvement, which may be an important indicator of severe and untreated toxic stress. This increased risk is mediated through a complex interaction of biological and social factors, including biological susceptibility, family and social supports, income, race, education and access to treatment services.

The neurobiological impact of trauma begins before birth and contributes to what is known as the “cradle-to-prison pipeline.” As discussed in The Biology of Toxic Stress in Part I, children repeatedly exposed to adversity are at increased risk of developing the toxic stress response, which involves disruption of the neurobiological systems responsible for learning, memory, impulse control,
attention, and emotional regulation, and of endocrine, immune, metabolic, and genetic regulatory domains.\textsuperscript{6,125,330,1359,1430} Without the protective effect of adequate supportive environments and other interventions, impairments in these areas can lead to poor health and social outcomes.

And as discussed in the \textit{Intergenerational Transmission of Adversity} section in Part I, the toxic stress response not only affects the life course of an individual, but acting through biological pathways, including genetic and genetic regulatory mechanisms, it may influence the health and social outcomes of succeeding generations. For example, a person with dysregulation of the biological stress response may pass on epigenetic markers associated with increased stress reactivity and poorer modulation of the stress response, glucose and lipid metabolism, and the regulation of telomere length (a part of the chromosome whose shorter length is associated with cellular aging), and increased health risks throughout life, including psychiatric and neurodevelopmental disorders.\textsuperscript{302,303,351,414,433,468,472-481} Of note, animal and human studies suggests that these genetic regulatory markers are malleable from generation to generation in response to environments. And research suggests that an individual born with markers of stress reactivity, but raised in a highly nurturant environment, may be more likely to pass on markers of stress tolerance and self-regulation.\textsuperscript{492,41,306,544,545,551}

Cumulative adversity is also associated with poorer educational and social outcomes, including learning, developmental, and behavior problems, high school noncompletion, unemployment, low life satisfaction, and poverty—many of which increase risk of incarceration and also serve to transmit adversity to the next generation.\textsuperscript{2,16,17,34-38} Many ACE-Associated Health Conditions (AAHCs), including substance dependence, school failure, and mental illness, predispose for exposure to the justice system and higher risk of incarceration.\textsuperscript{1431-1433} Undertreated substance dependence, depression, anxiety, and other mental health disorders are not only risk factors for justice involvement, but also represent ACEs for the next generation.\textsuperscript{1434,1435} For those who have faced early adversity, because of the dose-response relationship between ACEs, these AAHCs, and the known biological impacts of toxic stress, entry into the justice system can lead to a difficult-to-break cycle of further trauma, impaired judgment and decision-making, and health and relational problems.\textsuperscript{6,125,330,1359,1430}
The same populations that are disproportionately impacted by ACEs also are more likely to interact with the justice system.\textsuperscript{1436,1437} Social and structural inequities disproportionately concentrate ACEs, toxic stress, their precursors, and their consequences in racially, socially, and economically marginalized communities. Studies have found a higher prevalence of ACEs among groups who are racially marginalized (Black, Latinx, Native American, or multiracial), high school nongraduates, unemployed or unable to work, in lower income brackets, uninsured or underinsured, involved in the justice system, women, and/or identify as lesbian, gay, bisexual, or transgender.\textsuperscript{10,13-22,1051} At the same time, there exist significant disparities by race and ethnicity in likelihood of disciplinary action, arrest, and incarceration for youth and adults. Between 1972 and 2000, the annual percentage of White students suspended for more than one day increased from 3.1% to 5.1%. In that same time period, the percentage for Black students increased from 6.0% to 13.2%.\textsuperscript{1438} In a 2017 sample of United States (US) adults, Black and Latinx adults were 5.7 and 3.0 times as likely to be incarcerated as White adults, respectively.\textsuperscript{1439} In addition, some estimates suggest that as many as 40% of those in the juvenile justice system identify as lesbian, gay, or bisexual, compared to only 12% in the general population.\textsuperscript{1440} As such, sociodemographic disparities in exposure to childhood adversity are compounded by disparities in rates of referral to the criminal justice system to give rise to a chicken-egg cycle of trauma and harm in vulnerable communities.

Thus, research reveals a very high prevalence of ACEs among incarcerated populations, demonstrating dose-response relationships between ACEs and juvenile and adulthood arrest, felony charges, and incarceration.\textsuperscript{34,35,38} One study found that half of incarcerated youth had experienced four or more ACEs,\textsuperscript{1441} while data from the United States and Wales suggest that greater than 90% of incarcerated adults have experienced at least one ACE, and almost 50% have experienced four or more.\textsuperscript{1442-1444}

One aspect of toxic stress physiology that is of particular relevance to the justice system is the notion of stress sensitization. Individuals with a dysregulated stress response may be more sensitive to subsequent stressors in terms of risk of...
manifesting the neuro-endocrine-immune-metabolic consequences of cumulative adversity. Once inside the justice system, those with a history of childhood trauma may have increased risk of AAHCs, which are as much as twice as prevalent among state and federal inmates as in the general population. Rates of hypertension, cardiovascular problems, stroke, diabetes, depression, and post-traumatic stress disorder (PTSD) that are higher among those who are incarcerated. In addition, behavioral health needs associated with compromised impulse control and emotional dysregulation among those with a history of ACEs may lead greater conflict with other inmates and law enforcement officers. For this reason, it is important for criminal and juvenile justice systems to have the necessary resources and infrastructure to address the health and mental health needs of those with ACEs, especially in ways that are trauma-informed.

Individuals exiting the justice system face significant challenges accessing the educational, employment, housing, and financial resources necessary to support well-being and prevent transmission of ACEs to the next generation. Together, the significant challenges faced by individuals with ACEs within the justice system may place this vulnerable population at greater risk of re-traumatization and recidivism, perpetuating the cycle of trauma and adversity for disadvantaged communities.

Given these greater impacts among those with histories of ACEs and toxic stress, justice systems have an important role in accounting for or seeking to prevent the effects of ACEs and toxic stress. Factors that underlie connections between victimization or trauma and later criminal justice involvement provide a window into areas for primary and secondary intervention strategies—reducing exposure to adversity and identifying those individuals with risk factors.

In implementing policies and practices to appropriately address ACEs and associated disparities among justice-involved youth and adults, the justice system has an important opportunity to help break the multigenerational cycle of ACEs and toxic stress. The rest of this section outlines primary, secondary, and tertiary prevention methods for reducing ACE-associated risks within the justice system.

**PRIMARY PREVENTION STRATEGIES**

As defined in previous sections, *primary prevention* generally refers to efforts to prevent harmful exposures from ever occurring. This concept is particularly relevant in the juvenile justice system, where the opportunity is to prevent cumulative adversity among youth. Encounters with law enforcement and the justice system are intrinsically stressful and potentially traumatic, especially for at-risk populations such as youth who have had ACEs, and may disrupt
supportive relationships, increasing risk of developing a toxic stress response. Though not everyone entering the justice system has had ACEs, given the greater than 90% prevalence of ACEs in youth and adult carceral populations, primary prevention in this context aims to identify individuals who have had ACEs (and are likely manifesting symptoms of toxic stress) and offer evidence-based supportive interventions in order to prevent any exposure to the justice system.

Often cited in criminological research, the “school-to-prison pipeline” largely focuses on “zero-tolerance policies” implemented by school districts to delineate specific punishments for specified violations. Weapons and drugs on campus were the original target of these regulations, but they were later expanded to include behaviors like fighting, bulling, and noncompliance with school personnel.\textsuperscript{1464,1465} These policies often lead to academic failure, suspension, and eventual school dropout.\textsuperscript{1408,1409,1464,1466} Research has shown, however, that problems at school often start before a student faces these zero-tolerance policies, including having experienced ACEs and other traumas.\textsuperscript{1409,1464,1467}

Coordination between healthcare and education to ensure that students are screened for ACEs in the healthcare setting and receive the appropriate supportive interventions helps ensure that toxic stress does not take hold.\textsuperscript{1441,1467} Collaboration between the justice system, schools, and local communities can work to reduce risk factors and enhance protective factors, but also empower youth to address the impact that trauma has on communities at large. A study by McNeely and colleagues found that school connectedness—or the feeling of being part of a community or cared for while at school—was linked to lower levels of substance use, violence, suicide attempts, and emotional distress.\textsuperscript{1468} Improving school connectedness and resiliency helps to empower youth who have had ACEs and trauma by reducing risk factors and enhancing protective factors.\textsuperscript{1409,1441} Youth centers, such as the \textit{RYSE Center in Richmond, California}, help to create safe spaces for youth to increase social connectedness, and can also improve access to primary care and mental health services.\textsuperscript{1469} As important, the RYSE Center has programs that help youth build leadership skills in order to advocate for the services they believe are necessary to thrive.

Empowering youth not only increases their resiliency when addressing their own trauma, but also encourages them to advocate for systemic changes. The Center at Sierra Health Foundation’s Positive Youth Justice Initiative, for example, partners with 11 nonprofit organizations to promote youth well-being by treating trauma, providing wraparound services, and promoting systemic changes such as:

- Preventing children from entering adult criminal courts;
- Ending mandatory minimum sentences;
• Increasing the age of “youth offender parole”;
• Increasing police accountability;
• Ensuring youth access to counsel; and
• Increasing opportunities for people re-entering the community following interaction with the criminal justice system.

Just as in the education sector, a more trauma-informed justice system requires that the professionals interacting with youth and adults receive training on how ACEs and toxic stress impact health and behavior. Virginia’s recently passed HB 744 exemplifies systems-level change by requiring “the court, when sentencing a juvenile as an adult, to consider the juvenile's exposure to adverse childhood experiences, early childhood trauma, or any child welfare agency and the differences between juvenile and adult offenders.” This policy helps judges to make trauma-informed sentencing decisions and allows them to consider childhood adversity as a mitigating factor when sentencing a child as an adult. This policy change can be adopted and expanded to incorporate considerations about ACEs and toxic stress into all sentencing decisions, allowing juveniles and adults to receive restorative care and prevent further trauma from incarceration. Training in trauma-informed justice practices requires ongoing education on the effects of trauma on development and behavior, de-escalation techniques, and restorative justice strategies.

Fostering the health and well-being of staff who are charged with the care of those involved in the justice system is a critical component of trauma-informed justice practices, as many workers have had their own ACEs and also have high levels of stress in their jobs. This is especially true among justice-sector employees like police officers, social workers, and probation officers, who experience trauma, vicarious trauma, and burnout at very high rates. One in nine report suicidal ideation (compared to one in 33 in the general population), and 27% of correctional officers have PTSD symptoms (compared to 6% of the general population). Providing staff with sufficient training before and after potentially traumatic experiences can mitigate negative impacts on their health and well-being and reduce empathy fatigue; see programs such as Desert Waters. Training on trauma-informed approaches for everyone working in the justice system—from first responders and court employees to peace officers and probation officers—may mitigate stress, trauma, and re-traumatization. The Gather, Assess, Integrate, Network, and Stimulate (GAINS) Center of the Substance Abuse and Mental Health Services Administration (SAMHSA) provides resources for education and specific training of criminal justice professionals.
SECONDARY PREVENTION STRATEGIES

For individuals with a history of ACEs and symptoms of toxic stress who end up being justice-involved, secondary prevention aims to minimize additional stress-response dysregulation and to prevent further involvement with the justice system. Minimizing encounters with the justice system and ensuring the least restrictive environment promotes the most positive outcomes for both youth and adult offenders.

Alternatives to traditional justice proceedings and incarceration are commonly available for individuals who commit non-violent offenses. One alternative to traditional criminal court proceedings is restorative justice, which is defined as an approach to justice that emphasizes repairing the harms caused by a crime, and often involves victim-offender mediation. Restorative justice programs aim to prevent additional traumas and maintain community supports and buffering, and have shown effectiveness in reducing recidivism. A meta-analysis on the effects of restorative justice programs found that victim-offender mediation reduced juvenile recidivism by 34%.

Neighborhood Courts, which utilize a restorative justice approach to case resolution, involve the District Attorney's Office referring misdemeanor cases to settings in which residents and volunteers are trained in restorative justice and problem-solving. Volunteers hear from both the offender and the victim to discuss the case and its impact on the community. Directives such as community service or restitution are used to resolve each individual case. By participating in a Neighborhood Court, the individual not only bypasses traditional criminal court proceedings, but also avoids further trauma and exposure to the justice system, such as incarceration. Participants who completed the program between 2013 and 2015 had, on average, only an 8% recidivism rate.

Because of the eligibility requirements, not all individuals can take part in alternatives like Neighborhood Courts. California has taken steps to expand on alternatives to incarceration by finding alternatives to pretrial detention, increasing pretrial diversions, increasing use of alternative sentencing options such as home monitoring, and expanding early release of low-risk offenders. Alternatives to traditional criminal court proceedings, such as drug courts and mental health courts, focus on connecting individuals to needed services rather than incarceration. Mental health courts, for example, are a collaborative, treatment-focused alternative to traditional courts that refer participants to rehabilitative services and support networks rather than prison. In one study of a San Francisco “mental health court” program, the intervention led to a 26% reduction in new charges and a 55% reduction in new violent charges among participants over 18.
months, compared to a control group.\textsuperscript{1486}

Pretrial diversion programs offer valuable avenues to avoid the additional traumas associated with incarceration. In 2005, San Francisco launched the Back on Track program, which allowed which allowed pretrial low-level offenders to be referred by charging attorneys. During the 12-to-18-month program, individuals received job training, mental health services, parenting support, intensive case management, and educational opportunities, among other services. The program had a less than 10% reoffending rate over two years, compared to a rate of 53% among those who did not take part in the program.\textsuperscript{1487}

These alternatives help prevent the further accumulation of adversity that may result from further exposures to the justice system, removal of youth and adults from their communities, and disconnection from support systems.\textsuperscript{1446,1488-1491}

It is estimated that there are 48,000 individuals, or two-third of California's jail population, awaiting sentence. This number includes individuals that are eligible for cash bail, but cannot afford it.\textsuperscript{1492} In California, Senate Bill 10\textsuperscript{1493} made changes to pretrial release by shifting the pretrial release of an individual from a monetary-based system to a system that is based on risk—essentially eliminating cash bail or bail bonds.

In California, all local juvenile detention facilities are required to include trauma-informed approaches as part of their policies and procedures.

For individuals who are placed in and remain in custody, implementation of systemic trauma-informed justice practices can further reduce trauma and mitigate toxic stress symptomatology. Multiple groups, including the US Department of Justice, SAMHSA, the National Association of State Mental Health Program Directors, and others, have recommended changes to make the justice system more trauma-informed.\textsuperscript{1494-1500} Trauma-informed practice in the justice sector relies on the integration of a deep understanding of the consequences of trauma and toxic stress into all interventions, services, and organizational structure and functioning. Extending these principles to all sectors of the justice system may reduce individuals’ overall dose of adversity and trauma and promote better outcomes by maintaining support systems, decreasing stress, and providing evidence-based treatment interventions.\textsuperscript{1501}

In California, all local juvenile detention facilities are required to include trauma-informed approaches as part of their policies and procedures (Cal. Code Regs., tit. 15, §§ 1302, 1322, 1324, 1329, 1350, 1354, 1358.5, 1370, & 1391). In addition, any
person hired into an entry-level corrections position must complete a core course of training, prescribed by the Board of State and Community Corrections (Cal. Code Regs., tit. 15, §§ 169-185). As part of this core training, juvenile corrections officers receive 24 hours, and adult corrections officers 21 hours, of training in behavioral health, which includes topics such as: foundation and definitions of behavioral health, signs and symptoms of substance abuse, trauma, and suicide prevention. Corrections officers are trained in identifying the specific behaviors associated with behavioral health issues, as well as recognizing how the behaviors and actions of officers may inflict trauma on individuals in custody. Ways in which these practices had been adapted for the coronavirus disease 2019 (COVID-19) pandemic are presented below (TRAUMA-INFORMED JUSTICE PRACTICES IN THE TIME OF COVID-19).

The coronavirus disease 2019 (COVID-19) outbreak has put a strain on the justice system and required rapid adaptation to maintain people’s health and well-being. During this time, trauma-informed justice practices are more difficult to provide but more important than ever. Nationwide, COVID-19 infection rates are higher in prisons than in the general population; 86% of correctional and detention facility jurisdictions nationally reported at least one COVID-19 case. Furthermore, the age-adjusted death rate from COVID-19 among prisoners is three times higher than in the general US population. The difficulty of maintaining health in congregate facilities during this time increases stress and prevents many forms of in-person buffering supports (like family visitation) and treatment. This may trigger or worsen toxic stress. Rapid adaptation is necessary to ensure that people involved in the justice system receive sufficient care and support during this pandemic. These adaptations include increasing access to technology that facilitates digital contact with family and healthcare providers. Parole, probation, home visitation, drug testing, and other systems have been adjusted to maintain safe, stable, and secure monitoring. The Division of Juvenile Justice has implemented virtual visitation at all of its sites to maintain contact between youth and their support systems. The Division has also converted youth discharge consideration hearings to videoconference and works with counties to arrange videoconferencing for local reentry hearings when requested. Between March and June 2020, the California Department of Corrections and Rehabilitation reduced the prison population by almost 10,000, mainly by early release of inmates who met certain criteria (including serving time for a nonviolent crime, not being a registered sex offender, and not being categorized as at high risk for violence).
A program in Manchester, NH, known as the Adverse Childhood Experience Response Team (ACERT) exemplifies the impact of trauma-informed training and evidence-based interventions by first responders in preventing further adversity and/or toxic stress. When children are seen to witness violence in the form of ACEs or other traumatic exposures, such as at the scene of an intimate partner violence episode or a drug overdose to which law enforcement is called, a trained multidisciplinary team consisting of a family advocate, a crisis advocate, and a plain-clothes detective perform a home visit immediately after the incident and provide education on ACEs and linkages to necessary health and support services. In the first three and a half years, 1,454 children, ages 0-17 years, from 994 families were contacted by the program, and 1,048 total referrals were made.

**TERTIARY PREVENTION STRATEGIES**

Tertiary prevention in the justice system aims to lessen the effects of toxic stress in people under the care of the justice system who are showing signs and symptoms consistent with toxic stress, and to ensure continuing supports following release. Improving the quality of life for justice-involved individuals and those re-entering society is the focus. This includes properly assessing not only their health and mental health needs prior to release, but also other considerations, such as family reunification, housing, and employment. Providing proper preventive and treatment-oriented physical and mental healthcare while an individual is justice-involved or incarcerated results in lower rates of delinquency and recidivism, higher employment, better social functioning, and other positive outcomes.

Assessing unmet mental health and physical health needs in addition to past adversity is vital to preparing an individual for their release back into the community. Screening for ACEs and other adversities may aid in identifying and intervening on toxic stress for justice-involved individuals, especially youth. Currently, the California Department of Juvenile Justice uses the Trauma Symptom Inventory and the ACE inventory to assess for exposure to trauma, track treatment progress, and inform clinical decision-making. The American Bar Association and the California Department of Justice have also released guidance on identifying trauma and victimization in justice-involved youth, as well as recommendations for addressing the needs of children exposed to violence.

Screenings and assessments help link justice-involved individuals with programs that address their unmet needs. Programs that are comprehensive and consider the medical, educational, vocational, and psychosocial needs of individuals and their families upon release encourage rehabilitation and recovery. Interventions such as multisystemic therapy, cognitive-behavioral therapy, and family-based therapies, such as functional family therapy, have succeeded in improving mental health.
and behavioral health in justice-involved individuals and also in reducing rates of recidivism.\textsuperscript{1441,1517-1520}

Family connection and reunification upon release is vital for the maintenance of physical and mental health while incarcerated, and has been shown to improve successful reintegration and reduce recidivism among both youth and adults.\textsuperscript{1508,1521-1525}

Social support is associated with lower blood pressure and a decreased risk for cardiovascular disease,\textsuperscript{764} decreased asthma symptoms, and improved immune responses, including inhibiting inflammation, providing protection against infection, and promoting wound healing.\textsuperscript{668-672}

Healthcare providers caring for formerly or currently incarcerated individuals should be skilled at assessing for signs and symptoms of toxic stress, and should be familiar with evidence-based interventions, including leveraging optimal sleep, healthy relationships, nutrition, exercise, access to nature, mindfulness practices, and when needed, mental and behavioral healthcare (see \textbf{Tertiary Prevention Strategies in Healthcare}, earlier in Part II). Additionally, cross-system collaboration between the justice system, the health system, the child welfare and other social service systems, the educational system, and community resources is key for maintaining youths' physical and mental health during and after release from custody.\textsuperscript{1498}

Programs that facilitate re-entry can improve reintegration, decrease recidivism, and increase future employment by providing care, expanding community partnerships, and bringing in positive role models with lived experiences to mentor at-risk youths. Programs may also take place in custody and aim to prepare incarcerated individuals for a successful re-entry into the community. These programs support restorative justice principles, healing from trauma, educational opportunities, vocational opportunities, and transition programming. Recently, as part of its Innovative Programming Grants, the California Department of Corrections and Rehabilitation's Division of Rehabilitative Programs selected nonprofit recipients of the \textbf{California Reentry and Enrichment grant awards}.\textsuperscript{1526}

These nonprofit organizations provide restorative justice programs that seek to address resiliency, reducing the impacts of toxic stress and trauma, and increase empathy and mindfulness, among other positive outcomes. Project Rebound, administered through San Francisco State University, is a program that supports incarcerated individuals in furthering their education. The project provides enrollment guidance, educational and logistical support, financial support, and career guidance following graduation. The Division of Rehabilitative Programs also offers In Prison Programs, including Career Technical Education, which aims to train and certify incarcerated individuals in six different career sectors, including building trade, construction, and energy and utilities.

Once returning individuals are in the community, re-entry programs aim to help
them in their transition back into society by providing comprehensive care that addresses past trauma and aim to support successful reintegration. One such organization is Homeboy Industries (see HOMEBOY INDUSTRIES), which offers formerly incarcerated individuals multiple services and care, including education and workforce training, mental health resources, and housing and food assistance. Similar to referral networks in clinical settings, individuals should be provided access to services and community resources. Data systems that function across sectors are necessary to track referrals and services, facilitate follow-up to ensure that each individual receives the necessary care, and assess outcomes. The California Department of Rehabilitation facilitates several such programs. Likewise, the San Francisco Department of Public health has begun to pilot the Shared Youth Database Initiative to construct a shared data early warning system for at-risk youth.

In sum, these strategies represent an important step towards dismantling the long-standing links between childhood adversity, toxic stress, related health outcomes, and involvement in the justice system. Prevention of these associations, and especially of their intergenerational transmission is the ultimate goal—with a particular focus on healing the families, neighborhoods, and communities who face disproportionate impacts from all of these outcomes.

**HOMEBOY INDUSTRIES**

Established in 1988 in East Los Angeles, Homeboy Industries was originally created to improve the lives of former gang members. It has since expanded beyond gang intervention to help formerly incarcerated individuals heal and successfully re-enter society. Homeboy Industries connects men and women with a wide variety of services, including trauma-informed mental health services, workforce development, educational services, case management, tattoo removal, and parenting classes, among many others. At the center is a focus on five key outcomes: reducing recidivism, reducing substance abuse, improving social connectedness, improving housing safety and stability, and reunifying families. Their advocacy and work in the community has been nationally recognized.