ACEing Residency: Implementing ACEs Screenings and Trauma-Informed Care in California Residency Programs

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Abstract

Research shows that California currently spends \$112.5 billion to treat the consequences of Adverse Childhood Experiences (ACEs), in what are known as ACE-Associated Health Conditions (Miller et al., 2020). Research indicates that individuals with six or more ACEs have a life expectancy about 19-20 years shorter than those without ACEs (Brown et al., 2019; California Department of Public Health [CDPH] & California Department of Social Services [CDSS], 2020). If the burden of ACEs can be mitigated early with supportive follow-up, there can be a significant improvement in the burden of chronic medical conditions in the California population. The Office of the California Surgeon General and the California Department of Health Care Services created a new statewide initiative entitled "ACE Aware" (www.acesaware.org) in response to this worsening situation.

In June 2020, Saint Agnes Medical Center's (SAMC) Community Health and Wellbeing Department launched an ACE Aware training and implementation program. In partnership with its Family Medicine Residency Program, this pilot program was launched to reduce the burden of chronic diseases in the patient population and create an interdisciplinary model that can be scaled to residency programs across California and later extended into other clinical settings. The SAMC model initially covered education on ACEs, toxic stress, Trauma-Informed Care, followed by formal training using "Becoming ACE Aware in California" and certification. Further refinement resulted in solutions and strategies for time management, necessary resources, and a streamlined process with the interdisciplinary team. This pilot program illustrates training around ACEs and Trauma-Informed care that can be implemented in California primary care residency programs to address this healthcare crisis. As this project matures, it will be expanded to other SAMC residency programs and all SAMC primary care offices. The benefits of the ACE Aware program can have a significant and positive mental, physical, and financial impact on communities throughout the State of California.

The Problem: ACE-Associated Health Conditions and Related Challenges

In January 2019, California Governor Gavin Newsom appointed California's first Surgeon General, Dr. Nadine Burke Harris, MD, who initiated, with the California Department of Health Care Services, an ACE Aware Initiative. This decision was based on the overwhelming research on Adverse Childhood Experiences (ACEs) induced toxic stress and their financial repercussions, with one study showing that California spends \$112.5 billion on treated ACE-Associated Health Conditions (Miller et al., 2020). The ACE Aware Initiative's goals were to promote screening, awareness, and interventions of ACEs to help mitigate this public health crisis. Healthcare providers can offer trauma-informed care and evidence-based toxic stress interventions to treat toxic stress in clinical practice.

The ACE Aware Initiative seeks to address this rapidly growing healthcare concern. Effective solutions are needed to provide consistent training, proper payment, streamlined clinical implementation, and full access/integration of vital resources.

Introduction and Background

What are ACEs?

A groundbreaking research trial published initially by Felitti, Anda, Nordenberg, Williamson, Spitz, Edwards, Koss, and Marks (1998), and later by the Centers for Disease Control and Prevention (2020), depicted a correlation between health conditions and 10 categories of adversities appearing during childhood, broken up into three broader categories, (abuse, neglect, and household challenges), which include:

1. Abuse:

- a. physical,
- b. emotional,

- c. sexual
- 2. Neglect:
 - a. physical,
 - b. emotional
- 3. Household challenges:
 - a. growing up in a home/environment with incarceration,
 - b. mental illness,
 - c. substance abuse,
 - d. parental separation/divorce, or
 - e. intimate partner violence (Center for Disease Control and Prevention [CDC],
 2020; Felitti et al., 1998).

Research indicates that ACEs have a dose-dependent association with nine of the ten most common causes of death, such as heart disease, cancer, and suicide attempts, as well as early mortality (Brown et al., 2009; CDC, 2021; Felitti et al., 1998; Waehrer et al., 2009). For those who experienced any of the above Adverse Childhood Events before the age of 18, the study showed a dose-dependent increase in health care issues later in life (Gordon et al., 2020). Additionally, the life expectancy of those that experience six or more of these ACE-Associated Health Conditions was shortened by 20 years (CDC, 2017).

	Cause of Death	Odds Ratio (>/= 4 ACES compared to 0)
1	Heart Disease	2.1
2	Cancer	2.3
3	Accidents (unintentional injuries)	2.6

Leading Cause of Death with ACEs Odds Ratio

4	Chronic Lower Respiratory Disease	3.1
5	Stroke	2.0
6	Alzheimer's or Dementia	11.2
7	Diabetes	1.4
8	Influenza and Pneumonia	Risk Unknown
9	Kidney Disease	1.7
10	Suicide (attempts)	37.5

Note: Figure 1 adapted from Leading Causes of Death in the U.S. Source of Causes of Death: CDC, 2017. Sources of odds ratios adapted from Hughes et al., 2017; Petruccelli et al., 2019; Center for Youth Wellness, 2014; Center for Youth Wellness, 2014; and Merrick et al., 2019.

Subsequently, research shows 62% of the population has experienced at least one ACE and about 16% have experienced four or more ACEs (ACE Aware, 2021a.; Anda et al., 2006; Dube et al., 2003; Merrick et al., 2018; Merrick et al., 2019). Additionally, those with lower income, in communities of color, the LGBTQ+ population, and other marginalized communities face these ACEs at much higher rates (Baglivio et al., 2014; Liu, 2018; Liu et al., 2019; Maguire-Jack et al., 2019; Merrick et al., 2018; Merrick et al., 2019). The CDC suggests that prevention of ACEs may reduce common illnesses, such as depression, by 21 million cases, heart disease by 1.9 million cases, and obesity by 2.5 million cases (CDC, n.d.).

Toxic Stress and its Relation to ACEs

A growing body of literature is demonstrating that ACEs lead to increased health risk through the toxic stress response (Bhushan et al., 2020, p. xxviii). The National Academies of Sciences, Engineering, and Medicine (2019) defines toxic stress response as "The 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... For children, the result is the disruption of the development of brain architecture and other organ systems and an increase in lifelong risk for physical and mental health disorders (p.14)." The development and perpetuation of toxic stress has been noted as creating ongoing effects that negatively impact social, mental, and physical health, both short and long term. Although this risk has not been stratified in the data, toxic stress response can be seen from infancy into adulthood as:

- <u>Infancy</u>: failure to thrive, growth delay, sleep disturbances, and/or developmental delay;
- <u>School-Age Children</u>: increased viral infections, asthma/atopy, pneumonia, and/or difficulties with learning/behavior;
- <u>Adolescents:</u> somatic symptoms (i.e., headaches), high-risk behavior (including teen pregnancies, STDs, substance abuse) and/or mental health disorders; and
- <u>Adults</u>: the 10 most common health problems; anxiety, depression, PTSD, substance abuse, chronic pain, cardiovascular disease, stroke, COPD, diabetes, and cancer (Bhushan et al., 2020; Brown et al., 2009).

If one examines five of the ACE-Associated health conditions (cardiovascular disease, COPD, depression, asthma, and arthritis) with associated health risk factors (lifetime smoking, heavy drinking, and obesity), the annual total cost of these health-related impacts of ACEs in California is \$112.5 billion U.S. dollars. The direct healthcare expenditures (about \$10.5 billion), coupled with the cost in disability and/or years of productive life lost is estimated at a staggering \$102 billion (Burke et al., 2020).

The Benefits of Trauma-Informed Care

Trauma-Informed Care is a framework of recognizing signs, symptoms, and risks from trauma to better support the patients experiencing toxic stress/ACEs (Bhushan et al., 2020; Substance Abuse and Mental Health Services [SAMHSA], 2014). This framework involves:

- Understanding the prevalence of trauma and adversity and their impacts on health and behavior;
- Recognizing the effects of trauma and adversity on health and behavior;
- Training leadership, providers, and staff on responding to patients with best practices in trauma-informed care;
- Integrating knowledge about trauma and adversity into policies, procedures, practices, and treatment planning; and
- Avoiding re-traumatization by approaching patients who have experienced ACEs and/or other adversities with non-judgmental support (ACE Aware, 2021b).

This Trauma-Informed Network of care encompasses a multidisciplinary team of welltrained physicians, community health workers, among other necessary members who offer understanding, support, and use collaborative approaches to incorporate the trauma into healing/care plans. The overarching goal of Trauma-Informed Care is to avoid re-traumatization by offering a supportive, nonjudgmental environment (ACE Aware, 2021b). This network of care provides "evidence-based buffering supports that help regulate the stress response" including supportive relationships, quality sleep, balanced nutrition, physical activity, mindfulness practices, experiencing nature and mental healthcare (Ace Aware, 2021a).

To sustain a healthcare facility that responds to and incorporates this Trauma-Informed Care, it is important for providers and staff members to have knowledge of ACEs, understand

their relationship to toxic stress, and be adequately trained (with documentation) to help streamline the best possible treatment options for patients. Interestingly, having experienced ACEs does not mean that a person will have a toxic stress response. In fact, if acted upon correctly, toxic stress may be avoided and patients who suffer significant ACEs may still overcome their predispositions to adverse health events later in life.

ACEs Training

The *Becoming ACE Aware in California* (https://training.acesaware.org), part of the California Surgeon General's ACE Aware Initiative, is a two-hour online training that providers and staff can complete on their own time covering general education on ACEs, toxic stress, and Trauma-Informed Care, as well as Medi-Cal payment requirements and schedules. Further, the training explains the various screening forms available for different age groups, and the recommendation that adults over the age of 18 should be screened once before the age of 65 and children be screened annually. These recommendations and payment criteria also provide motivation for training as it allows providers to be reimbursed for their work. The training is well-established and meets the needs of providers and staff.

Why ACE Aware Matters to Family Medicine Residency Programs

In Family Medicine, the scope of practice includes babies and children, who developmentally are most affected by social determinants of health, and who may also be suffering from ACEs. If these ACEs are not identified and go untreated, they could lead to undiagnosed toxic stress , which could negatively impact the patient and their offspring's future health including the risk of vertical transmission of toxic stress, and increased healthcare utilization (Bhushan et al., 2020). Caring for the whole family allows Family Medicine physicians a unique perspective on how adverse childhood events can impact the entire family,

as well as the community they live in. In addition to the annual ACEs screenings available for children, Family Medicine providers can also offer a one-time screen for their adult patients. Screening adults help Family Medicine physicians better understand the root causes for certain chronic conditions that the patients' experience, such as depression, diabetes, heart disease, chronic lung disease, obesity, among others. It also allows the opportunity to develop patientcentered care plans that incorporate traditional medical treatment, trauma-informed care, and holistic treatment modalities.

Incorporating ACE Awareness training and screenings into a Family Medicine Residency program ensures proper training of new physicians, enabling them to focus on preventative care and interventions that could help treat these chronic conditions from the root causes. Screening younger patients allows the implementation of Trauma-Informed Care at an earlier age, which could help provide resources, support, understanding, and ultimately help prevent the chronic negative ACE's related effects. (ACE Aware, 2021b). If enacted correctly, this could have a lasting impact on our approach to patient and disease management.

The SAMC Response: Developing the Solution

In response to the California ACE Aware Initiative, in June of 2020, Saint Agnes Medical Center (SAMC) in Fresno, California, was selected to be a part of the ACE Aware Initiative Grant to help promote knowledge of, and eventually, screening, intervention, and prevention of the long-term effects of ACEs and toxic stress. Several locations in Fresno County were selected considering the California Department of Public Health's research indicating the population of Fresno County has a greater percentage (18%) of residents that suffer from greater than four ACEs, as compared to the state average of 16% (Population Reference Bureau, n.d.).

The SAMC Family Medicine Residency program, a growing physician training program seeing patients of all ages "from the cradle to the grave," was deemed the most appropriate partner to implement ACEs screenings into their day-to-day practices. Further, Graduate Medical Education leaders at SAMC saw ACEs Aware as an asset to residency training.

Other residency programs regionally, such as UCSF Fresno Pediatrics, have also taken initiatives to increase awareness of ACEs, pilot ACEs screening protocols, and provide training. Additionally, ACEs training is being provided to other medical providers in Fresno County, with the goal being to link patients to resources and to inform all physicians of the resources available.

Solution: A Training Model for Residents and Attendings

Although ACEs and their potential impact have been known for over two decades and physicians are increasingly aware of their detrimental effects on patient health outcomes, healthcare systems struggle to train physicians on how to appropriately implement a screening and treatment method into their medical practices.

When the ACE Aware Initiative was brought to SAMC, an interdisciplinary group of physicians and community health resource providers formed the ACE Aware Committee and worked to provide consistent training of staff and providers, while addressing the main barriers such as proper payment, streamlined clinical implementation and full access and integration of vital resources. The ACE Aware Committee serves as a guiding coalition which provides "the right composition, level of trust, and shared objective" (Kotter, 2012, p. 54). Building a formidable team with internal champions is essential in implementing change in a large organization like SAMC. After careful consideration, ACE Aware Champions were selected

from the Family Medicine residents to work collaboratively to design and lead this ambitious project towards completion.

Training Model and Addressing Barriers

Identifying Participants and Timing

The first tasks at hand were to (1) identify those to be trained and who would actually be screening; (2) assess baseline knowledge regarding ACEs and Trauma-Informed Care; (3) understand the learning preferences for uniform training using ACE Aware Online training; and (4) track and monitor trainees who self-attested (found at https://www.acesaware.org/learn-about-screening/billing-payment/request-attestation-data) to meet the goal of 90% provider training number by May 30, 2021. The main goal was to implement ACEs screening in the Family Medicine Clinic by the academic year beginning July 1, 2021.

Of note, the initial goal based on the ACE Aware Committee's progress was to start screenings on August 1, 2021. As the Family Medicine program grew with an additional eight residents and two new clinic faculty, new deadlines were made to strive for 100% of residents and clinical faculty to be trained by August 15, 2021. This goal was met and currently the Family Medicine program is working on fully training the Medical Assistants (MAs) and other ancillary staff to help implement Trauma-Informed Care. Although the initial implementation of screenings in the clinic was slated for August 1, 2021, given unforeseen hurdles discussed later in this document, the date was changed to October 1, 2021.

Training on ACEs and Trauma-Informed Care

Training was launched first with the Family Medicine clinic providers and staff. This included 16 existing residents, their attending physicians (also referred to as faculty), the MAs and front desk staff. Each of these providers is involved in direct patient communication and care. A second round of training was needed when the new class of residents, eight in total, arrived in July 2021. This second round of training also included two new faculty members.

Pre-Training Assessment and Analysis Regarding ACEs and Trauma-Informed Care

Each attending, resident physician, MA, and staff member within SAMC had a different background or baseline knowledge regarding ACEs: some were completely unaware, some were aware but were not trained, and a few had previously been trained. To assess the foundation or baseline knowledge prior to training, a pre-training questionnaire (also referred to as survey) was designed to be given to all trainees. The brief 10 question survey covered basic knowledge expected to be accomplished from training. To encourage compliance with completion of the pre-training survey, a gift card was offered as a prize for completion within the initial group of participants. The gift card was a motivating factor, as it allowed us to reach a total of 27 total respondents: six staff members, four attendings, three MAs, and 14 residents. Two residents, the ACE Aware Champions who helped create the survey, were excluded from the respondents. Out of the 27 respondents, 20 (74%) individuals had not started or completed the ACE Aware Training. A second training series was conducted with eight new resident physicians in July and August of 2021, as well as two new clinical faculty.

After nine months of training, which included 100% of our residents and faculty, 37 respondents participated in the pre-survey questionnaire. This included residents, attendings, and staff members. Out of those, eight (26.2%) individuals had previously been trained in ACEs. Out of those who responded, 31 (83%) individuals could name ACEs (Adverse Childhood Experiences) but only 13 (35%) of them knew the true extent of the number of people affected (62% of the population with at least one ACE and 16% with four or more ACEs). Only 10 (27%) individuals knew the correct cut off for when ACEs should be experienced to screen positive (18 years or younger).

The pre-training questionnaire given at the start of training also served the dual purpose

of bringing awareness of ACEs to those previously unaware and helping trainees focus on the most significant features of training.

Training: Creating Equal Opportunity for all Providers

Within our pre-training questionnaire, questions were added regarding individual learning preferences. The residents and faculty surveyed indicated a preference for a hybrid (combination of in-person and online) lecture format for future ACE Aware meetings. With this information, a date was selected for when the greatest number of residents would be available for the online lecture, during academic half-day. The online method was chosen for this lecture as in person restrictions were in place due to COVID-19. Faculty were notified in advance of the date and time of online training, to ensure greater participation.

A concise 30-minute PowerPoint presentation, standardized from the ACE Aware Initiative and website, was created, and presented online that explained how best to complete the online training. The residents and faculty members, if available, were provided with a designated two-hour period to complete training. Everyone was requested to self-attest to certification on the website at the completion of training. These numbers were tracked on the online database until all the physicians had completed attestation. Faculty and residents who were unable to attend the online half day didactic session were given a mandatory deadline (May 30, 2021) by the Family Medicine Program Director to complete the training with self-attestation.

Training: Incoming Residents and Faculty

After meeting our initial training goal on May 30, 2021, the ACE Aware Champions, along with the ACE Aware Committee, brainstormed how to train the additional residents and faculty starting on July 1, 2021. Given the time constraints presented by resident orientation, the eight new residents (interns) were divided into two groups of four and were scheduled to meet with a designated ACE Aware Champion for a 30-minute PowerPoint Presentation, then were given two to three weeks from that date of the presentation to complete the online training. The presentations occurred on July 15, 2021, and July 29, 2021. These interns were expected to complete training by August 12, 2021. In the interim, the ACE Aware Champions ensured that the two new clinic faculty were fully trained and self-attested. The program was able to meet our 100% training and self-attestation goal on August 15, 2021.

Post-Training Assessment and Analysis

Before ACEs screening could begin at the clinic site, assurances needed to be made that all physicians who completed their training did so thoroughly. To assess uniformity of understanding, the post-training questionnaire was administered repeating the same questions as the pre-training questionnaire. Given the fact that not all faculty or residents completed the training on the same day, despite our efforts, the post-training response rate was much less than the pre-training response rate. Further, the numbers were skewed in that the MAs and front desk staff had not yet completed their formal training and, as such, were not asked to complete the post-training questionnaire. With this understanding, the percentages cannot be accurately compared from the pre-test data and are offered anecdotally.

All trainees were asked to complete the post-training questionnaire and, out of the 36 residents and faculty trained, only 14 completed the post-training questionnaire (100% of the respondents were resident physicians). Out of these responses, 14 (100%) had knowledge of ACEs as Adverse Childhood Experiences (up from the originally observed 82%). There was also an increase in the respondents' understanding of the impact of ACEs on our population (up to 56% from 34%) and 11 (78.6%) of respondents knew the benefits of Trauma-Informed Care, as compared to the 67.6% in the pre-training questionnaire. Although the survey results did not

show the degree of improvement predicted, knowledge increased across the board. The results also illustrated that the lecture followed by online training format was beneficial in increasing baseline knowledge.

Barrier: Clinical Payment

One of the earliest issues encountered was in the discussion of implementation of screening in the 2021-2022 academic year with clinical payment. Payment for ACEs screening provides an incentive to providers, so they can incorporate screening into their time with patients. As of January 1, 2020, Medi-Cal will reimburse certified clinical providers for ACEs screening. For the residents to screen for ACEs, all their attending physicians billing would need to be certified. To accomplish this task, a mandate was issued by the Program Director to complete training and self-attestation no later than May 30, 2021. By making certification mandatory, the clinics could be assured no gaps would occur in Medi-Cal payment once the screenings became implemented in our clinics. As of August 15, 2021, all clinic faculty (including the two new faculty) are trained, attested, and able to code for ACE screenings in the clinic.

Barrier: Community Health Care Resources and Clinic Implementation

When the ACE Aware Initiative began at SAMC, the goal was to implement the screening on August 1, 2021. The ACE Aware Committee also worked to hire a Community Health Care worker who would be physically in the clinic to streamline the referral process, so patients could be offered further assistance, resources, and appropriate intervention. However, the team faced an unforeseen problem when the Community Health Worker for the clinic resigned soon after hiring.

Implementation barriers occurred throughout this process. The biggest barrier was, and still is, attributed to COVID-related restrictions which resulted in planning and implementation delays. Due to COVID-related matters, such as quarantining, certain staff members were not available when needed to complete the training in a timely manner. Like other medical facilities, the surge in Fresno County COVID infections resulted in staff members being directly exposed. Further, the clinic itself has also witnessed high staff turnover, specifically the MAs, due to COVID and financial issues.

Adding to the complications, the clinic site transitioned to an electronic check-in process with hopes that the ACE Awareness Screening Questionnaire would be provided in advance of an appointment. Although there were delays, the uploading of the electronic versions of the questionnaire was a success during brief piloting attempts in August and September 2021.

The current plan moving forward is to have the questionnaire administered during annual well-child visits and a one-time annual adult physical using three different forms: ACE Questionnaire for Adults; PEARLS (Pediatric ACEs and Related Life Events Screener) for parents/caregivers; and PEARLS Teen Self Reporting forms. These screening forms are administered to adults (ages 20-64), children (ages 0-11), and teenagers (age 12-19), respectively. Epion was selected as the digital patient platform to allow patients to access and prefill forms prior to their scheduled visit. During well-child visits and annual exams, the resident physicians will score the pre-completed questionnaire and provide referrals to our Community Health Hub, which already receives electronic copies of these ACEs questionnaires through Epion, to provide the necessary resources. The Saint Agnes Health Hub is a program that connects at-risk, underserved, vulnerable patients and community members to health and social services resources in an effort to improve health outcomes.

The only printed (paper) form will be the one for teenagers (PEARLS Teen Self Reporting). Allowing teenagers to complete the questionnaire by themselves will allow the provider to obtain accurate and confidential information that the teenager would like to share with the provider when it comes to sensitive topics such as emotional, sexual, and physical abuse. During their well child visit, the physician will give the paper questionnaire to the patient while the physician is completing the social history portion of the exam when the parent/caregiver has already been asked to leave the room for doctor-patient confidentiality. The patient will then fill out the form while the resident leaves the room to precept (discuss the case) with the attending physician. Upon returning to the room, the visit ends with the physician scoring the questionnaire in addition to assessing for ACE-Associated Health Conditions and protective factors. This will allow the provider to determine the risk level for toxic stress and an appropriate clinical response that includes education, clinical interventions (supportive relationships, sleep, nutrition, physical activity, mindfulness, nature), and a health hub referral if necessary.

Resources Available at SAMC

The ACE Aware Committee worked diligently at the institutional level to provide much needed resources and support. Starting July 2020, monthly to bimonthly meetings have been held to provide and monitor a workflow plan and assess progress towards the goals. SAMC has been working alongside community partners and has developed several methods to promote and sustain ACE Awareness, including its continued training and support of the Family Medicine Residency program, its residents, clinic faculty and staff.

Additionally, a Podcast has been created aimed at engaging the hospital population and developing a better understanding of ACEs and toxic stress. An ACE Aware online section has

also been added to the SAMC website available to SAMC colleagues which can be accessed while at the SAMC hospital. The committee also writes frequent posts on social media accounts, such as Facebook and Instagram, related to ACEs and toxic stress. The ACE Aware Committee has also partnered with Fresno County Health Improvement Partnership to create a Fresno County Network of Care site which will serve as an additional resource for patients and physicians.

The Community Health Hub, which although associated with SAMC, also has been providing resources for the Fresno population through self-referral. They have partnered with the Family Medicine Residency Clinic to provide social resources for the clinic patients. In fact, with the current online Epion setup, whenever a SAMC patient completes an online ACE Questionnaire/PEARLS assessment, the Hub is immediately notified so they can track and provide resources directly to the patients.

Future Plans

The Community Health Hub has been actively seeking three social workers for three of the SAMC clinic sites, one being the Family Medicine Residency Clinic, to streamline resources to the at-risk population. To better serve the needs of the culturally diverse patient population in the region, the intent is to provide resources in the three different languages most used in the Central Valley besides English: Spanish, Hmong, and Punjabi. Although the clinic social worker position is currently unfilled, the Community Health Hub continues to provide resources and much needed support to the Family Medicine Clinic and its patients.

Plans for expansion to additional SAMC residency program clinics will begin once the final stages of the Family Medicine implementation take shape and the team sustains short-term goals, such as complete training of the remaining staff members and full integration of the

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screening process within the clinics. In many cases, institutional changes, like the ACE Aware Initiative, can be difficult to fully integrate and sustain for the long term. Often this difficulty is due to insufficient training, not the right kind or type of training or the endeavor is ill-timed (Kotter, 2012, pp. 111-112). Therefore, the expansion to the Internal Medicine Residency Program will be planned thoughtfully, followed by full and consistent training and attestation of SAMC primary care providers.

Further, to maintain an interdisciplinary approach, the ACE Aware Committee plans on adding members so that this guiding coalition more accurately reflects the interdisciplinary make-up of the care team. There are also plans underway to add ACEs Champions representing the new groups trained. These plans and more are working to ensure SAMC is a vibrant and sustainable ACE Aware site.

Conclusion

The ACE Aware Initiative, started by the Office of the California General Surgeon and the Department of Health Care Services, is a vital link connecting people's social health with their physical and mental health. It provides physicians and other interprofessional providers with a crucial tool to reach their most vulnerable populations and the opportunity to improve their care. Implementing a new Initiative into a busy clinic setting proves difficult for many clinics and even more so with the added challenges of managing a health care/training clinic during an international pandemic; however, with strong institutional support, a solid leadership team and careful planning, these tools can reach the population at risk.

For the ACE Aware Committee and Champions, the unique scope of practice and learning environment within the Family Medicine Residency program at SAMC made it the perfect pilot site for ACEs screenings and related training. Their development of assessment, training, payment, and workflow processes have paved the way for expanding ACE Aware into other scopes of medicine and practice within SAMC, with the hopes of eventually becoming a model program for other Family Medicine programs in California.

To meet the goals, a systematic approach was developed to train residents, faculty, and staff to make SAMC a viable ACE Aware site. There are many different methodical ways to provide education and knowledge to medical professionals and, with most trainees choosing "in person lecture/online lecture," the method used in this model provided the best outcome. Key components of this model included pre and post-test assessment, specialized 30-minute lecture times for residents, engaging online training, dedicated time to complete the online training, and mandatory deadlines. To engage and enable faculty training, and self-attestation to enable prompt payment with flexible but mandatory training proved beneficial and helped create a 100% training rate within the SAMC Family Medicine Residency program and its clinic. The Family Medicine Residency program strives to benefit its patients by catching ACEs early and smoothly implementing Trauma-Informed Care. Although the SAMC team has not fully integrated the ACE Aware screenings and Trauma-Informed Care approaches, in the last year this project has created, supported, and maintained significant awareness regarding ACEs. Based on the results provided from the pre-and post-training questionnaire, it is evident training promotes knowledge of ACEs and Trauma-Informed Care. This 18-to-24-month project will be most effective and reach its full potential once ACE screening and Trauma-Informed Care practices are fully integrated and implemented in the clinic setting thus allowing ACEs to be addressed early for intervention and care in a timely manner.

Through the continued work of the ACE Aware Committee, an organized approach to implementing ACEs screenings in the clinic setting was planned to begin September 1, 2021, but

at this time, the screenings are delayed until the MAs are fully trained. The MAs formal training began on September 22, 2021. The new goal is to begin clinic screenings at all well-child visits and annual visits by October 1, 2021. The Family Medicine program believes that clinic staff are integral in allowing ACEs screening to be thorough and integrated into the flow of a busy Family Medicine clinic. The continued interdisciplinary support of the IT department, front office staff, MAs, administration, and Community Health departments will allow providers to maximize the benefit of ACEs screening. Given limited resources during the COVID pandemic, frequent communications across all groups is key. If a data collection system is down, if the clinic is short-staffed, or if new health care providers are added, then the team can step in immediately to find an effective system. As Family Medicine navigates through this introductory phase, the team will create a Best Practices policy guide that can inform other SAMC clinics, and, later, to other Family Medicine and primary care residency programs throughout California. In the future and with the support of California's ACE Aware team, the SAMC ACE Aware Committee and the ACE Aware Champions hope to collaborate with other programs and host an ACE Aware Forum to expand and grow our collective knowledge base in support of the patients in our communities.

References

- ACE Aware. (2021a, June). ACEs Aware Trauma-Informed Network of Care Roadmap. <u>https://www.acesaware.org/wp-content/uploads/2021/06/Aces-Aware-Network-of-Care-Roadmap.pdf</u>
- ACE Aware. (2021b, July 21) *Ace Fundamentals*. Retrieved from <u>www.acesaware.org/ace-</u> <u>fundamentals</u>
- Anda, R. F., Felitti, V. J., Bremner, J. D., Walker, J. D., Whitfield, C., Perry, B. D., Dube, S. R., & Giles, W. H. (2006). *The enduring effects of abuse and related adverse experiences in childhood. A convergence of evidence from neurobiology and epidemiology*. European archives of psychiatry and clinical neuroscience, 256(3), 174–186. Retrieved from https://doi.org/10.1007/s00406-005-0624-4
- Baglivio, M. T., Epps, N., Swartz, K., Huq, M. S., Sheer, A., & Hardt, N. (2021, February 8).
 The prevalence of adverse childhood experiences (ACE) in the lives of juvenile offenders.
 National Institute of Corrections. Retrieved from https://nicic.gov/prevalence-adverse-childhood-experiences.
- Bhushan, D., Kotz, K., McCall, J., Wirtz, S., Gilgoff, R., Dube, S. R., Powers, C., Olson-Morgan, J., Galeste, M., Patterson, K. and Harris, L. (2020). *Roadmap For Resilience: The California Surgeon General's Report on Adverse Childhood Experiences, Toxic Stress, And Health.* DOI: 10.48019/PEAM8812
- Brenner, G. H., (2019, September 14). How adverse childhood experiences COST \$1.33 trillion a year. Psychology Today. Retrieved from

https://www.psychologytoday.com/us/blog/experimentations/201909/how-adversechildhood-experiences-cost-133-trillion-year

Brown, D. W., Anda, R. F., Tiemeier, H., Felitti, V. J., Edwards, V. J., Croft, J. B., & Giles, W.
H. (2009). Adverse childhood experiences and the risk of premature mortality. American journal of preventive medicine, 37(5), 389–396. Retrieved from https://doi.org/10.1016/j.amepre.2009.06.021

Bucci, M., Marques, S. S., Oh, D., & Harris, N. B. (2016). Toxic Stress in Children and Adolescents. Advances in pediatrics, 63(1), 403–428. Retrieved from <u>https://doi.org/10.1016/j.yapd.2016.04.002</u>

California Department of Public Health & California Department of Social Services. (2020). *Adverse Childhood Experiences Data Report: Behavioral Risk Factor Surveillance System (BRFSS), 2011 - 2017: An Overview of Adverse Childhood Experiences in California*. Retrieved from <a href="https://www.pacesconnection.com/g/california-aces-action/fileSendAction/fcType/0/fcOid/509387504523927863/filePointer/509387504521175235/ACEs-BRFSS-Data-Report.pdf

Centers for Disease Control and Prevention. *Leading causes of death by age group*. (2017). Retrieved from <u>https://www.cdc.gov/injury/images/lc-charts/leading</u> causes of death by age group 2017 1100w850h.jpg

Centers for Disease Control and Prevention. (2020). *Adverse Childhood Experiences (Aces)*. Centers for Disease Control and Prevention, Centers for Disease Control and Prevention. Retrieved from <u>www.cdc.gov/violenceprevention/aces/index.html</u> Center for Youth Wellness. (2014). Data Report: A Hidden Crisis. Findings on Adverse Childhood Experiences in California. Retrieved from <u>https://centerforyouthwellness.org/wp-content/themes/cyw/build/img/building-a-</u> <u>movement/hidden-crisis.pdf</u>

- Danese, A., & McEwen, B. S. (2012). Adverse childhood experiences, allostasis, allostatic load, and age-related disease. Physiology & Behavior, 106(1), 29–39. Retrieved from https://doi.org/10.1016/j.physbeh.2011.08.019
- Dube, S. R., Felitti, V. J., Dong, M., Giles, W. H., & Anda, R. F. (2003). The impact of adverse childhood experiences on health problems: evidence from four birth cohorts dating back to 1900. Preventive Medicine, 37(3), 268–277. Retrieved from <u>https://doi.org/10.1016/s0091-7435(03)00123-3</u>
- Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., Koss, M. P., & Marks, J. S. (1998). *Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults*. American Journal of Preventive Medicine, 14(4), 245–258. Retrieved from https://doi.org/10.1016/s0749-3797(98)00017-8/2
- Garner, A. S., Shonkoff, J. P., Siegel, B. S., Dobbins, M. I., Earls, M. F., McGuinn, L., &
 Committee on Early Childhood, Adoption, and Dependent Care. (2012). *Early childhood adversity, toxic stress, and the role of the pediatrician: translating developmental science into lifelong health.* Pediatrics, 129(1), e224-e231. Retrieved from https://pediatrics.aappublications.org/content/129/1/e224.short

- Gordon, J. B., Nemeroff, C. B., & Felitti, V. (2020). Screening for Adverse Childhood Experiences. JAMA, 324(17), 1789. Retrieved from <u>https://doi.org/10.1001/jama.2020.16449</u>
- Hughes, K., Bellis, M. A., Hardcastle, K. A., Sethi, D., Butchart, A., Mikton, C., Jones, L., & Dunne, M. P. (2017). *The effect of multiple adverse childhood experiences on health: a systematic review and meta-analysis.* The Lancet. Public Health, 2(8), e356–e366.
 Retrieved from https://doi.org/10.1016/S2468-2667(17)30118-4

Kotter, J. P. (2012). Leading change. Harvard business Press.

- Liu, S. R., Kia-Keating, M., Nylund-Gibson, K., & Barnett, M. L. (2020). Co-Occurring Youth Profiles of Adverse Childhood Experiences and Protective Factors: Associations with Health, Resilience, and Racial Disparities. American Journal of Community Psychology, 65(1-2), 173–186. Retrieved from <u>https://doi.org/10.1002/ajcp.12387</u>
- Liu, S. R., Kia-Keating, M., & Nylund-Gibson, K. (2018). Patterns of adversity and pathways to health among White, Black, and Latinx youth. Child Abuse & Neglect, 86, 89–99. Retrieved from <u>https://doi.org/10.1016/j.chiabu.2018.09.007</u>
- Maguire-Jack, K., Lanier, P., & Lombardi, B. (2020). *Investigating racial differences in clusters* of adverse childhood experiences. The American Journal of Orthopsychiatry, 90(1), 106– 114. Retrieved from <u>https://doi.org/10.1037/ort0000405</u>
- Merrick, M. T., Ford, D. C., Ports, K. A., Guinn, A. S., Chen, J., Klevens, J., Metzler, M., Jones, C. M., Simon, T. R., Daniel, V. M., Ottley, P., & Mercy, J. A. (2019, November 7). *Vital signs: Estimated proportion of adult health problems attributable to adverse childhood*

experiences and implications for prevention - 25 states, 2015–2017. Centers for Disease Control and Prevention. Retrieved from

https://www.cdc.gov/mmwr/volumes/68/wr/mm6844e1.htm

- Merrick, M. T., Ford, D. C., Ports, K. A., & Guinn, A. S. (2018). Prevalence of Adverse Childhood Experiences From the 2011-2014 Behavioral Risk Factor Surveillance System in 23 States. JAMA Pediatrics, 172(11), 1038–1044. Retrieved from https://doi.org/10.1001/jamapediatrics.2018.2537
- Miller, T. R., Waehrer, G. M., Oh, D. L., Purewal Boparai, S., Ohlsson Walker, S., Silvério Marques, S., & Burke Harris, N. (2020). *Adult health burden and costs in California during 2013 associated with prior adverse childhood experiences*. PLoS One, 15(1), e0228019. Retrieved from

https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0228019

- National Academies of Sciences, Engineering, and Medicine. (2019). Vibrant and healthy kids: Aligning science, practice, and policy to advance health equity. Retrieved from https://www.nap.edu/download/25466
- Petruccelli, K., Davis, J., & Berman, T. (2019). Adverse childhood experiences and associated health outcomes: A systematic review and meta-analysis. Child Abuse & Neglect, 97, 104127. Retrieved from <u>https://doi.org/10.1016/j.chiabu.2019.104127</u>
- Population Reference Bureau. (n.d.). Prevalence of Adverse Childhood Experiences (Adult Retrospective). [KidsData.org]. Retrieved from

https://www.kidsdata.org/topic/1969/aces-

brfss/table#fmt=2486&loc=357,2&tf=133&ch=89,90,1273,1256,1274,1259&sortColumn Id=0&sortType=asc

Shonkoff, J. P., Garner, A. S., (2012). Committee on Psychosocial Aspects of Child and Family Health, Committee on Early Childhood, Adoption, and Dependent Care, & Section on Developmental and Behavioral Pediatrics. *The lifelong effects of early childhood adversity and toxic stress*. Pediatrics, 129(1), e232–e246. Retrieved from https://doi.org/10.1542/peds.2011-2663

- Substance Abuse and Mental Health Services. (2014). SAMHSA's concept of trauma and guidance for a trauma-informed approach. Retrieved from https://ncsacw.samhsa.gov/userfiles/files/SAMHSA_Trauma.pdf
- Waehrer, G. M., Miller, T. R., Silverio Marques, S. C., Oh, D. L., & Burke Harris, N. (2020).
 Disease burden of adverse childhood experiences across 14 states. PloS One, 15(1),
 e0226134. Retrieved from https://doi.org/10.1371/journal.pone.0226134