

**Translating Evidence to Improve Adverse Childhood Experience Screening in Rural
Pediatric Primary Care - A Quality Improvement Project**

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June 5, 2020

Introduction

Problem Description

Adverse childhood experiences (ACEs) are known to have lifelong impacts on an individual's well-being. Humboldt County, California has the highest rate of ACEs in the state, and currently, there is no knowledge of pediatric providers understanding of the need to screen for ACEs. Understanding that adverse experiences during childhood can have lasting impacts on an individual's health and well-being has led to the acknowledgement of childhood adversity as a widespread public health crisis. The past several decades of scientific research have identified the biological mechanisms by which early adversity leads to an increased risk of negative health and social outcomes throughout a lifetime. ACEs contribute to high levels of toxic stress that derail healthy physical, social, emotional, and cognitive development. Because ACEs have been associated with various negative health conditions in adults, such as substance abuse and mental/emotional dysfunction, and because there are pre-existing conditions for these eventual sequelae, the early identification of ACEs can mitigate the impacts of adversity on health across the lifespan.

There is limited data on the childhood prevalence of ACEs in Humboldt County in California; however, data from the 2011-2012 National Survey on Children's Health indicated 28.9% of children living in small rural areas experience two or more ACEs compared with 21.3% of urban children (Bethell et al., 2017). Knowing children in rural areas experience a higher rate of ACEs than their counterparts, supports that it is likely the children of Humboldt County also experience a greater incidence of ACEs than children in the rest of California. Pediatric primary care settings are ideal for early identification of those at risk for ACEs and mitigating risks associated with ACEs. While implementation of screening is widely supported

by professional organizations and the literature, translation of the evidence and implementation of screening in pediatric primary care settings has lagged. This quality improvement project was designed to support rural Northern California pediatric providers increase implementation of ACEs screening into daily practice.

Rationale

The term adverse childhood experiences (ACEs) comes from a landmark study conducted by the Centers for Disease Control and Prevention (CDC) and Kaiser Permanente (Felitti & et al., 1998). ACEs specifically refer to 10 categories of adversities which are categorized into three types: abuse, neglect, and household dysfunction. ACEs also include aspects of the child's environment that can undermine their sense of safety, stability and bonding such as growing up in a household with substance misuse, mental health problems, instability due to parental separation, or incarceration of a family member (Center for Disease and Control, 2019). This study also established understanding of the dose-dependent relationship between numbers of ACEs reported and negative health outcomes later in life. Risk for negative outcomes increases with the number of adverse event experiences; when children experience multiple adverse events, they are substantially more likely to be negatively affected by those events than children who experience only one (Bethell, Newacheck, Hawes, & Halfon, 2014). It is also now understood that the negative effects of ACEs can be transmitted from one generation to the next (CDC, 2019). ACEs have been associated with lower educational attainment, unemployment, and poverty (Metzler, Merrick, Klevens, Ports, & Ford, 2017). Children who have experienced ACEs are more likely to have negative health outcomes, struggle in school and have emotional and behavioral challenges (Bethell, Davis, Gombojav, Stumbo, & Powers, 2017). To address the negative health and social outcomes associated with ACEs, early identification of trauma and

appropriate intervention are critical for reducing long-term health impacts for children and adults.

The prevalence of ACEs amongst adults in the U.S. was reported in the CDC-Behavioral Risk Factor Surveillance System 2015-2017 survey with 60.9% of adults reporting having experienced at least one type of ACE, and 15.6 % adults reported experiencing four or more types of ACEs (Merrick et al., 2019). Evaluation of the study population found adults with four or more ACEs experienced poorer health outcomes, greater health risk behaviors and more socioeconomic challenges (Merrick et al., 2019). California prevalence data were similar to national levels, 61% of adults have one ACE, and 16 % have experienced four or more ACEs (Center for Youth Wellness (CYW), 2014).

Prevalence data from the 2016 National Survey of Children's Health show nearly half (46.3%) of children in every state had at least one ACE, and 21.7% had experienced two or more. The survey results also identified children who experience one ACE as having a higher likelihood of experiencing another ACE event and children with two or more ACEs were more likely to have a chronic health condition involving a special healthcare need (Bethell et al., 2017). ACEs are prevalent among children with both public and private health insurance coverage, and common across all income groups, although according to Bethell and colleagues (2017), 58% of children in the U.S. with ACEs are living in homes with incomes less than 200% of the federal poverty level.

Humboldt County, California has the highest prevalence of ACEs in the state with 75% of adults having one or more ACEs, and 30% of adults having four or more ACEs (CYW, 2014). Prevalence data for ACEs among children in Humboldt County is unknown. Data show children in the county experience a higher percentage of reports child abuse and neglect, reports of sexual

abuse, children in foster care, homeless public-school students, families living at or below the federal poverty line, and domestic violence compared to California as a whole. Given this data, it is likely children in the county are experiencing high numbers of adverse events similar to adults in the county (Humboldt County, 2018).

Multiple authorities in health care have called for early identification of toxic stress events in childhood as a priority in public health due to the greater understanding of the prevalence of ACEs among U.S. adults and children and the implications to population health. A 2019 consensus report by The National Academies of Sciences, Engineering, and Medicine (NASEM) recommends adoption of screening for trauma and early-life adversities to increase the likelihood of early detection, including creation of rapid response and referral systems that can quickly provide protective resources when ACEs are detected through interdisciplinary collaboration (Perrin, Lu, Geller, & Devoe, 2019). The CDC has established addressing ACEs as a priority for public health, as prevention of ACEs may lead to reduction in a large number of health conditions and more importantly contribute to prevention of ACEs (CDC, 2019; Merrick et al., 2019). The American Academy of Pediatrics (AAP) calls for screening and mitigating impacts of “precipitants of toxic stress” in primary care, and for pediatric medical homes to develop innovative approaches to support children and families exposed to potential toxic stressors (Garner et al., 2016). The American Academy of Nursing calls for reduction of toxic stress associated with adverse experiences during pregnancy and early childhood as a priority for improving the health of the population (Gross et al., 2016).

In March 2019, Proposition 56 was passed in California to support early identification of childhood adversity. Forty-five million dollars of the state budget are to be spent on implementation of trauma screenings for all children and adults with medical coverage in the

state's public health insurance, known as Medi-Cal. This bill enables pediatric healthcare providers to seek reimbursement for annual screening of children from birth to age 21. California proposes that by screening for ACEs, providers can better determine the health risk a patient may have related to ACEs and toxic stress, which should inform patient treatment. The California Surgeon General's Office and Department of Health Care Services (DHCS) announced in December 2019 a statewide initiative ("ACEs Aware") for Medi-Cal providers to receive training to screen patients for ACEs and respond with trauma-informed care. Beginning January 2020, Medi-Cal providers can be paid for ACEs screenings. The law stipulates providers will be required to have completed "ACEs Aware" training by January 2021 to continue billing for screening.

With the rollout of a statewide initiative to implement ACEs screening, translating evidence and policy into practice requires an understanding of current practice among pediatric medical home providers. This includes assessing their understanding of the need for screening and assessing medical home provider barriers to supporting implementation of early identification of children in need of intervention. No current data are available on screening practices of pediatric primary health care providers in Humboldt County. A needs assessment on youth mental health in Humboldt County reported primary care providers rarely administered developmental or psychosocial assessments, and providers indicated they lacked access to mental health care specialists to whom they could refer children. 93.3% of providers reported difficulty accessing mental, emotional, or behavioral health services for youth (Goodspeed & Howe, 2018).

Translating evidence about ACEs into practice will require an understanding of what pediatric providers' current understanding is for ACEs screening and assessing knowledge gaps

in medical homes to support early identification of children in need of intervention. The Knowledge-to-Action (KTA) framework was applied to the organization of this project. The KTA framework was developed by Graham and colleagues as an integration of knowledge creation and knowledge application and has been adopted by the CDC's National Center for Chronic Disease Prevention and Health Promotion to support translation of scientific knowledge into practice (CDC, 2014; Graham, 2006). The KTA model conceptualizes the translation process similar to a funnel, where new knowledge moves through the stages until it is adopted and used, consisting of two distinct, but related components (I) Knowledge Creation and (II) Action Cycle. In the process of moving evidence to action, knowledge creation informs action, as a feedback cycle, where action can inform knowledge creation. The cycle of KTA includes the following seven stages: identification of problem requiring new knowledge application; adapting knowledge use to local context; assessing barriers to knowledge use; selecting, tailoring, and implementing interventions to promote use of knowledge; monitoring knowledge use; evaluating outcomes of knowledge use; and sustaining knowledge use (Graham, 2006). The KTA model provides a structure where the provider's current knowledge will inform what the needs are for actions to improve screening practices across the entire community.

Available Knowledge

A search of the literature was conducted using the databases PubMed, Cumulative Index for Nursing and Allied Health Literature (CINAHL), and PsycINFO. Search terms included: adverse childhood experiences, pediatric, primary care, screening, outcomes, childhood. Articles were included according to these criteria: English language, studies on outcomes associated with ACEs in children, implementation of ACEs screening in pediatric primary care, and provider practices of performing ACEs screening. Preference was given to peer-reviewed articles with

publication dates from 2014- current. Studies included in evaluation pertained to implementation of screening in pediatric care only, and other study populations were excluded.

The initial search identified 309 articles related to adverse childhood experiences and pediatric care settings. 172 articles were reviewed by title and abstract which decreased the number of studies for further evaluation to 69. The research was evaluated using the Johns Hopkins Nursing Evidence-based Practice Rating Scale (Newhouse, Dearholt, Poe-Pugh & White 2005). Of these, twenty-four articles offered relevant information to the problem described. Themes identified in the literature were: impact of early adversity on children, provider understanding or perspective of the need for adversity screening, barriers to screening, evaluations of screening implementation, and clinical practice guidelines calling for ACEs screening. Six studies reported on negative outcomes to children associated with ACEs: these included three level I studies, one level II study, one level III study and one level IV study. Two level III studies provided insight into what pediatric provider's current understanding and practices are regarding ACEs screening. Multiple studies addressed provider and practice barriers to screening implementation; however, only three articles specifically addressed these barriers: two studies were of level III and one level IV expert opinion was included. Eight articles were available that provided insight on implementation of screening in the pediatric medical home; one level I, two level II, one level IV, and three level V. Three clinical practice guidelines and two systematic reviews provide insight on current practice recommendations for ACEs screening.

Evidence by sub-topic

ACEs are understood to have long-term impacts on a child's health leading to negative effects on their physical, social, emotional and cognitive development (Bethell, Newacheck,

Hawes & Halfon, 2014; Garner et al, 2016; Kalmakis & Chandler, 2015; Kuehn, 2014; Merrick et al.; 2019; Oh et al, 2018; Petruccelli, Davis, & Berman, 2019). The uptake of providers screening for ACEs is limited due in part to limited provider knowledge of the original ACEs study, limited understanding of the need for screening, limited knowledge of available screening tools, and how to best incorporate screening into clinical practice (Bright et al, 2015; Kerker et al., 2016). The literature identified several provider concerns as factors impacting the application of ACEs screening, including lack of training and current knowledge, lack of clinical resources including time and community resources, lack of understanding of management of positive screens, and perceived patient-family perspectives (Albaek, Kinn, & Milde, 2017; Barnes et al., 2019; Bright, Thompson, Esernio-Jenssen, Alford & Shenkman, 2015; Gillespie, 2019; Kerker et al,2016; Marie-Mitchell & Kostolansky et al., 2018; Popp, Geisthardt, & Bumpus, 2020). Research on implementation of screening shows when providers are educated on the need for screening with available screening tools and community resources, the practice of screening is supported by providers and patients-families alike (Bryant & VanGraafeiland, 2019; Flynn & et al.,2015; Kia-Keating et al, 2019; Koaita & et al., 2018). Screening for ACEs in the pediatric care setting has the opportunity to mitigate the impact of ACEs with early identification of patients-families at risk. Providing anticipatory guidance to families about associated health risks of ACEs, and ensuring referral and/or treatment as a need is supportive to families (Garner et al, 2016; Kia-Keating et al, 2019; Marie-Mitchell & Kostolansky, 2019).

Negative impact of early adversity to children

While the majority of research supports the association of childhood adversity and adult health outcomes, the impact of early adversity to brain development and multiple body-systems is also identified in children (Bethell et al., 2014; Garner et al., 2016; Oh et al., 2018)

Understanding how adverse experiences in childhood influence healthy development, physical, mental, health and learning is continuing to expand (Bethell et al., 2016; Garner et al, 2016; Kalmakis & Chandler, 2015). Children experiencing adverse events are more likely to have a physical, mental, and/or developmental condition with a comorbid health condition than children who have not experienced an ACE (Bethell et al., 2014; Bright et al., 2016; Kalmakis & Chandler, 2015; Kuehn, 2014; Merrick et al., 2019; Petrucceli, Davis & Bernman, 2019). Additionally, children with chronic health conditions and associated health risks were more likely to have experienced ACEs (Bethell et al, 2014). In children, ACEs have been correlated to a range of physical, mental, and developmental conditions such as fair or poor physical and dental health, obesity, asthma, growth impairment, attention deficit disorder, developmental delay, learning difficulties with lower rates of school engagement, sleep disruption, and somatic disorders (Bright et al., 2016; Oh et al., 2018).

Provider perspective and practices

Pediatric provider knowledge of the impact of ACEs on childhood health is limited, and screening for ACEs in childhood is not yet widely established in pediatric medical homes. One-third of providers responding to the AAP 2013 Periodic Survey did not ask about ACEs during patient visits and only 4% of providers report using the ACEs tool, with 46% of providers reporting never using ACEs screening tools (Kerker et al., 2016). Only 11% of providers surveyed by the AAP were very or somewhat familiar with the ACEs study, and 49% had never heard of available screening tools (Kerker et al., 2016). Pediatric providers who reported feeling pediatricians needed to screen for ACEs did not match the percentage of providers who reported actually screening for ACES (Bright et al., 2015; Kerker et al., 2016). The literature suggests

pediatric providers may be underestimating the prevalence of ACEs in their practice and thereby limiting willingness to screen (Bright et al., 2015).

Barriers to ACEs screening

A lack of uptake in ACEs screening by pediatric providers has been related to several barriers according to current literature. Evidence for barriers to screening for ACEs in the pediatric medical home were identified as: lack of training and knowledge on ACEs and available screening tools; poor understanding of the need for ACEs identification in the medical home; lack of resources to conduct regular screenings; lack of time to complete screening; lack of experience managing positive ACE screens; lack of services and resources to refer patients and families; and patient and family resistance to screening (Albaek, Kinn, & Milde, 2017; Barnes et al., 2019; Bright et al., 2015 Gillespie, 2019; Kerker et al., 2016; Marie-Mitchell & Kostolansky et al., 2018; Popp et al., 2020). Another potential barrier identified was the emotional discomfort providers may experience with screening for ACEs, which may be perceived as too sensitive a topic to approach with patients and families (Albaek et al., 2017; Popp et al., 2020). In a Level III survey of provider perspective, very few practitioners identified discomfort with asking sensitive questions as a barrier to performing ACEs screening (Popp et al., 2020).

A meta-synthesis of available qualitative studies (N=9) on pediatric provider perspectives on screening for ACEs identified providers perceive organizational culture and system attributes as a challenge in performing screening (Albaek et al., 2017). A lack of clinical resources to address ACEs and a lack of community referral resources for patients and families in the community setting has been cited by others (Albaek et al., 2017; Barnes & et al, 2019; Garner et

al., 2015) During well-child visits there are competing interest with the number of screenings required to be completed (Garner et al., 2015; Popp et al., 2020; Weitzman & Wegner, 2016).

Implementation of screening

Evaluation of studies reviewing implementation of ACEs screening in pediatric primary care provided insight to the practicality of healthcare providers being able to perform ACEs screening. Limited research is available on implementation of ACEs screening specific to pediatric primary care settings. In multiple levels of studies that assessed screening implementation in the pediatric primary care setting, screening for ACEs was found to have acceptability and feasibility for healthcare providers. In four of five studies measuring provider perspectives regarding implementation of ACEs, screening providers reported increased confidence in administering screening and increased comfort levels for discussing sensitive topics related to adverse events in childhood (Bryant & VanGraafeiland, 2019; Kia-Keating et al., 2019; Koita et al., 2018; Marie-Mitchell et al., 2019). When implementation of ACEs screening in clinical settings included an education intervention on the need for screening and information on available community resources, provider confidence and screening practices increased (Bryant & VanGraafeiland, 2019; Flynn & et al., 2015; Kia-Keating et al., 2019; Koita & et al., 2018). Two high-quality systematic reviews indicated when pediatric providers received education about the impact of ACEs on patient outcomes, screening practices increased and provider confidence in screening and screening rates improved (Flynn et al., 2015; Marie-Mitchell & Kostolansky, 2019). In one study (N=24) the implementation of ACEs screening during well-child visits did not have a significant change in provider familiarity of the ACEs study or in provider confidence in screening (Marsicek et al., 2019). Three studies reported with implementation of screening in pediatric primary care, an improvement of health outcomes

and/or reduction in ACE risk was observed (Flynn et al., 2015; Kia-Keating & et al., 2019; Marie-Mitchell & Kostolansky, 2019). Two studies reported implementation of screening increased the rate of referrals to prevention and intervention services that were accepted by families (Kia- Keating & et al., 2019; Marie-Mitchell & Kostolansky, 2019). While the literature is mixed on the best approach to increase pediatric provider screening practices, the literature does support that providers' knowledge and confidence with the practice is improving, and that screening can have an influential impact on ACEs risk for children.

Evidence-based Clinical Practice Guidelines for ACEs screening

Clinical practice guidelines (CPGs) and systematic reviews support the recommendation for universal screening of children and families at risk, as an opportunity to prevent chronic health issues and other detrimental developmental factors with early detection and intervention (Barnes et al., 2019; Garner et al., 2016, Purewal et al., 2016; Schulman & Maul, 2019). The AAP recommends pediatric medical homes have capacity to routinely screen for exposure to ACEs, reduce sources of toxic stress, and mitigate the impact of adverse events on the lives of children (Garner et al., 2016). The pediatric provider is the ideal partner in addressing ACEs because of the valued, trusting, and often long-term relationships cultivated with patients and families. Providers are able to apply a prevention approach, provide parents information and guidance, and if needed refer for appropriate therapeutic treatment to reduce risk of development of adverse health outcomes (Barnes et al., 2019; Garner et al., 2016, Purewal et al., 2016; Schulman & Maul, 2019). Clinical Practice Guidelines and systematic reviews recommend the following to support early identification of ACEs in pediatric populations: increase training on impact of ACEs to health outcomes and the need for screening among pediatric providers and medical home staff; utilize an integrated interprofessional approach in addressing ACEs;

participate in development of community-based partnerships to address ACEs; and provide anticipatory guidance about the impact of adversity to the developing child, identify protective factors, and support resilience interventions that consider the child's odds of illness or disease. It is also recommended pediatric clinicians advocate for and inform policy regarding management of ACEs, payment and reimbursement systems to support screening and interventions for ACEs, and monitoring program development and integration of ACEs screening in clinical practice, including incorporation of screening into electronic health records (Barnes et al., 2019; Garner et al., 2016; Purewal et al., 2016; Schulman & Maul, 2019; Weitzman & Wegner, 2016).

Specific Aims

The purpose of this quality improvement project was to establish a community-based educational intervention to inform pediatric providers on the need for ACEs screening and resources available to support implementation in the clinical setting. Providers' willingness to implement this type of practice change was to be evaluated, to further guide development of support necessary for addressing ACEs with early identification and appropriate interventions in the primary care setting.

Methods

Context

The target population for this community-based quality improvement project was 19 Children's Health and Disability Prevention (CHDP) provider sites in Humboldt County. CHDP is the state medical program that oversees provision of healthcare services to children. In the state of California, a provider's office must meet the requirements of being a CHDP provider to deliver care to children with Medi-Cal insurance. CHDP providers are considered pediatric medical homes. 90% of children in Humboldt County have health insurance coverage, and

therefore have access to preventive well-child visits where ACEs screening is recommended to be completed (Humboldt County, 2018). The CHDP provider sites in Humboldt County consist of eleven federally qualified health centers (FQHC's), four state-recognized rural health care clinics, and four Native American health clinics. While all these sites see children, only three have pediatricians. There are no existing data on the prevalence of ACEs screening in pediatric primary care offices in Humboldt County, or what providers' current perspectives are related to the need for implementation of ACEs screening. Community stakeholders that have provided input on this project include Humboldt Independent Practice Association, First 5 of Humboldt County, and Humboldt County Department of Public Health.

Intervention

The intervention was a quality improvement initiative to improve knowledge translation of ACEs screening among pediatric providers in a rural community. In a one hour long educational session providers were introduced to the state required "ACEs Aware" initiative, a web-based training about ACEs screening for pediatric providers seeking reimbursement for screening. Pediatric providers were provided a toolkit including information about the original ACEs study, the importance of screening for ACEs, recommendations on addressing barriers, and information on pathways for local referrals to social services, and accessing mental health services and other types of community-specific resources. Additionally, providers were introduced to a web-based community resource/database developed by stakeholders. The educational sessions were offered at each CHDP site or in combined site trainings, by invitation for participation delivered to providers and office managers by email and telephone calls.

The Plan-Do-Study-Act (PDSA) framework was applied to the project (White, M., Dudley-Brown, & Terhaar, 2016). PDSA cycles are used to evaluate effectiveness of quality

improvement ideas with development, testing, and implementation of new ideas. The phases can be summarized as the following: in the first phase, the project is developed and objectives are set; the second phase includes project implementation and data collection; data are analyzed and summarized; and finally after analysis, modifications are made before the next cycle begins. Using a PDSA cycle will identify weak areas of implementing screening in pediatric medical homes.

Study of Intervention

This intervention was considered the first PDSA cycle, and future cycles will be based upon the lessons learned. A pre and post-survey was distributed to providers attending educational sessions to identify if the intervention had an impact on providers' adaptability to change, providers' confidence in screening, perceived role, and belief of availability of community resources to support the implementation of screening. Identification of barriers to the implementation of ACEs screening during the intervention period will inform areas for future improvement and insight as to what types of provider support are needed for evidence translation. The study of this intervention is considered a provider level construct that will examine participant's adaptability, attitudes, and perceived behaviors (White, Dudley-Brown & Terhaar. 2016).

Measures

The literature did not identify tools specific to pediatric primary care providers ACEs screening practices or willingness to implement screening. Two surveys were identified that have applicability to this project. Initial validation of the Brief Individual Readiness for Change Scale (BIRCS) was established by Goldman (2009), to measure provider readiness for the implementation of research or evidence-based practices and to identify points of provider

resistance in implementing practice changes. BIRCS identifies four areas impacting application of new practice activities such as screening: practitioners' beliefs about having the abilities necessary to implement the technique; believing there is flexibility to implement it; believing necessary training resources are available; and understanding the new technique will positively impact patient outcomes (Goldman, 2009). The second survey (Kalmakis, Chandler, Roberts, & Leung, 2015) was used to examine nurse practitioners' screening practices for childhood adversity amongst adult primary care patients. The survey includes 57 items including knowledge about ACEs, conditions for which a history of ACEs would be suspected, frequency of screening, perceived role in screening, and barriers to screening. For the purpose of this improvement project three items from the nurse practitioner survey were added to BIRCS to assess the perceived role in screening, confidence, and utility of resources. One additional question was added to the survey asking the participant's thoughts about the best way for community resource information to be provided (Appendix A). Survey results provided baseline information about participant perceptions on the implementation of ACEs screening into practice.

The BIRCS questions are scored on a 5-point Likert scale including the values from 0 (strongly disagree) to 4 (strongly agree) and were found to have adequate reliability (α coefficients from .781-.811) (Goldman, 2009). The questions selected from the nurse practitioner survey were shown to demonstrate reliability (α coefficients from .719 to .768) (Kalmakis & Chandler, 2015). These questions used a 4-point scale with the following variables (1) screening, "rarely or never/sometimes" versus "usually/always"; (2) confidence, "not at all/some extent" versus "moderate/great extent"; (4) utility of resources, "not at all/somewhat" versus "moderate/very."

Analysis

Descriptive statistics were used for the comparison of pre- and post-survey results including percentages, means, t-scores using Excel and SPSS Statistics software. The pre – survey was administered immediately before the intervention, and a post- survey was administered immediately after the intervention. It is the intent of the project that future cycles will include a repeat post-survey eight weeks after the first project cycle. To ensure sustainability of changes made, ongoing PDSA cycles will be completed to improve screening practices in the community. Information obtained from this quality improvement project will be disseminated to Oregon Health & Science University in the form of a presentation in June 2020. No raw data will be available; however, aggregate data in the form of charts will be shared within the presentations. Results of the study will be made available to stakeholders during future project meetings. The analysis obtained will be used to inform future PDSA cycles to ensure the sustainability of changes.

Ethical Considerations

This project was reviewed by the OHSU institutional review board (IRB) and was deemed quality improvement and therefore exempt from full review. Participant risk in this project was minimal. Surveys were provided in a web-based and paper format during the intervention sessions. Participants were prompted to create a unique identification code when the surveys were distributed before the educational intervention to de-identify responses and to ensure confidentiality of information collected. The de-identified survey responses were entered in a spreadsheet for analysis, and original surveys were destroyed. Participation in the project is voluntary, no incentives or compensation was provided to participants.

Results

A total of sixteen providers from six clinical sites participated in the educational intervention and completed the pre and post intervention surveys. Initially, the intervention was to be completed during in-person sessions at each clinic site. Due to global pandemic restricting access to clinical sites, the interventions occurred via web-based communication systems and participants completed the intervention surveys via web-based survey collection tool, with the expectation of one clinic that the author was able to enter. The original tool-kit that was developed was delivered to participants via email as a pdf, rather than as a hard copy that could be used in patient rooms. No demographic data was collected for participants, other than what clinical site they practiced at. In total, clinic representation included one school-based health clinic, three Federally Qualified Health Centers, one Rural Health Care Clinic, and one private practice. The only two clinics that include pediatric providers both participated in the intervention.

Comparison of the pre to post intervention survey results support that a community based education intervention can elicit a significant change in providers willingness to adopt and perform current screening practice recommendations, providers perceived role in performing ACEs screening, provider referral practices and knowledge of available community resources.

Statistical significance was shown using the Wilcoxon signed-rank test that the education intervention did elicit a statistically significant change in providers adaptability to change practice in implementing ACEs screening in primary care ($Z=-3.41, p=.001$). The BIRCS portion of the provider survey is useful in identifying whether providers are prepared to implement evidence-based practices in the clinical setting. Pre-BIRCS mean was 2.6, and the Post-BIRCS mean was 3.4. The greater an increase in the BIRCS mean score from the baseline,

the more strongly the individual attributes and beliefs are associated with a provider readiness for change (Goldman, 2009).

In regards to provider confidence, the Wilcoxon signed-rank test showed that the intervention did elicit a statistically significant change in provider confidence for administering an ACEs screening tool in primary care ($Z = -2.60, p = .009$). 50% of participants had a positive difference in their confidence level after the intervention (8 positive differences, 8 ties). Initially, 81% providers reported “somewhat” confident, post intervention this rank decreased to 44%, and 55% reported “moderate/very” confident in their ability to screen for an ACEs history.

In evaluation, if providers believe that it is the role of the primary care provider to screen for ACEs the Wilcoxon signed rank test also showed that the intervention had a statistically significant change in providers perceived role ($Z = 2.449, p = .014$). The median Pre-Intervention role score was 3, and the Post-Intervention role score was 4. In comparison of pre and post results six participants had a positive difference in scoring, and 10 participants were tied. Pre-intervention, 31% of providers reported that it was the role of a pediatric provider to screen for a history of adverse events to a “great” extent. Post-intervention this rank improved to 63% of providers believing it is the role of the pediatric provider to screen.

In assessment of the intervention to providers referral practices, the Wilcoxon signed-rank test showed that the intervention did have a statistically significant change in providers consideration for referrals when a patient/parent reveals an adverse experience ($Z = -2.50, p = .011$). Pre-intervention 63% of providers reported that they “usually” would refer to a community resource when a patient/family disclosed adverse experiences. After the intervention

this increased to 75% of providers reporting that they “usually” would. In total there were seven positive differences observed and nine ties after the intervention.

Equal distribution was not achieved in the measurement of providers knowledge of available community resources, therefore a non-parametric test was used to evaluate the measure. The Kruskal-Wallis H test showed that there was a statistically significant difference in provider knowledge of available community resources to refer families to after the education intervention with a community toolkit ($p=.021$), with a median pre-score of 2, and median post-score of 3. One negative rank, nine positive ranks, and six tied ranks were reported post intervention. Pre-intervention 56% of providers reported that they “sometimes” believe they had the information on how to refer families to resources locally, after the intervention only 13% reported “sometimes” and 79% reported “moderate/great extent” on having the necessary knowledge on how to refer families to local community resources.

A qualitative unstructured question of the survey that asked participants about additional needs for community resources was included in the survey. Ten participants of the intervention provided responses to this question. Themes identified in the responses included the following: mental-health resources, mentorship programs for youth, resources for implementing social supports in the clinical setting, resources on obtaining organizational buy-in for completing ACEs screening, resources that specifically support families impacted by ACEs, need for a central point of contact/center that includes case management support for families.

An anecdotal observation that was made during the intervention, is that provider length of experience did impact provider perception on the need for ACEs screening in the medical home, specifically providers who are relatively new to primary care were more receptive to the

intervention. An ancillary observation made was that the clinical sites that were interested in being able to bill for completing ACEs screening, included more participants in the intervention compared to sites that did not have current plans on how to implement the screening into their practices. The sessions did provide a benefit, in identifying participants who were interested in the project and seeking more information on how they could participate at the community level for addressing ACEs.

Discussion

Summary

The introduction of a community-based toolkit that familiarized pediatric healthcare providers on the importance for ACEs screening in primary care, with information on local pathways for community referrals, that aligned with a larger state initiative to address ACEs contributed to a greater understanding of what the local pediatric perspective is for implementing screening into practice. Pre-intervention surveys indicated that the local pediatric providers have some confidence in completing screenings for adverse events amongst families, and improvement was observed in this practice after the intervention. Post-intervention surveys indicated that community-focused training can have an impact on providers' adaptability to implement screening into practice. Overall, the greatest improvements observed were to providers' willingness to adapt the practice change, providers' confidence in screening, and knowledge of available community resources. While the perspective of provider role and referral practices did not show improvement to the same degree as other elements evaluated, positive impact was gained by some providers. Overall, the intervention contributes to the understanding of what providers' knowledge is at the local level to address the issue of adversity

and toxic stress. Exposure and education on the need for screening, and discussion of community systems builds provider confidence for incorporating screening into care. With providers offering additional areas of need for additional community resources, this information can contribute to cycles of the project to address childhood adversity in primary care.

Interpretation

Through providing an educational intervention to local pediatric providers, a capacity for provider change, perceived role, referral practices, and knowledge of community resources was observed. At the time of the intervention, none of the clinic sites participating had yet implemented ACEs screening. Screening and intervention for adverse childhood events has been identified as a population health priority by the AAP, ANA, CDC and NASEM (CDC, 2019; Garner et al., 2016; Gross et al., 2016; Merrick et al., 2019; Perrin et al., 2019). The project completed aligns with research that when implementation of ACEs screening does include an education intervention on the need for screening and information on available community resources, provider confidence in screening and addressing ACEs in primary care increases (Bryant & VanGrafeiland, 2019; Kerker, 2016). While this intervention did not specifically measure the rates of referrals made by providers it does align with Kia-Keating et al., (2019) and Marie-Mitchell & Kostolansky (2019) results that screening improves rate of referrals, and that provider knowledge of resources can improve referral practices.

Provider practices can enhance referral impact by coordinating any services families receive. Participant report of referral practices pre-intervention was a higher percentage than what was anticipated, based upon the past needs assessment that surveyed pediatric health care providers in 2018 resulting that local pediatric providers lacked knowledge on how to access mental health services for youth (Goodspeed & Howe, 2018). This difference could correlate to a

shift of providers who are currently practicing in the community. Since 2018, there has been an influx of 12 new providers who are seeing pediatric patients in the community. Knowledge of what resources are available in the community improved for participants. While acknowledging the effects of trauma can be an effective intervention itself, the AAP acknowledges that it is the role of the pediatric provider to ensure that the patient obtained referrals for services whether the services had a patient impact or not (Weitzman & Waegner, 2015). As the pediatric providers' knowledge of available community resources to support patient treatment and intervention develops this enables the development of a multidisciplinary approach to patient care and provider-led community partnerships.

No current research has evaluated pediatric providers' perceptions on the need for ACEs screening implementation in a rural area. Rural health care environments are often characterized by a lack of resources-funding, workforce shortages, limited referral resources, and barriers to the implementation of evidenced based practices (National Advisory Committee on Rural Health and Human Services, 2018). For this reason pediatric primary care providers practicing in rural settings may find it challenging to implement the screening, preventive interventions, referrals, and care coordination that are recommended to address ACEs. For providers practicing in rural-areas taking a population-based approach with collaboration for preventing ACEs and decreasing their impact requires partnerships with other family serving providers and agencies such as mental health services, local health departments, and schools.

Limitations

Limitations were present in the quality improvement intervention. Inherent participant bias, naturally can alter the results of the project. Individual provider variation in pre-existing knowledge about ACEs, interest and willingness to participate in education intervention, and

belief on the role of the pediatric provider to screen for ACEs may have influenced the providers' receptivity to the intervention. A global pandemic limited the author's access to clinical sites and provider participation in the quality improvement project. Participant demographic and clinical background data was not collected for the purpose of reducing the time burden of participation for providers. This information would be beneficial for future cycles to identify characteristics of providers, in order to be able to describe the attributes of providers for further analysis of the results. The small sample size of participants in the intervention can have an impact on the representation of providers in the results. With a small sample size it can be argued that randomness of the observations of the population is impacted. It is important to note, this project did occur in a rural community, where power can be difficult to obtain. To account for this limitation alternative statistical methods were used, specifically nonparametric tests that don't rely upon the assumption of equal distribution of the population. The intervention consisted of evidenced-based research and policies, however components of the presentation and tool-kit were specific to the community, limiting the generalizability of the work to other communities. This does not take away from the lessons that a community specific intervention can have on provider perceptions. Results of the post-intervention survey may be inflated due to the short-term follow-up. In future cycles follow up will be completed at eight-weeks post intervention to minimize this limitation.

Conclusion

As the understanding of the negative consequences that toxic stress and childhood adversity can have to an individual's health and quality of life develops, a call for action with early identification of trauma and appropriate intervention to reduce the long term health impacts has been made by healthcare authorities, provider organizations, and government agencies

(CDC, 2019; California Department of Healthcare Services, 2019; Garner et al., 2016; Gross et al., 2016; Merrick et al., 2019; Perrin et al., 2019) Despite the recommendations for the identification of adverse childhood experiences as a priority, pediatric provider knowledge and implementation of screening remains limited (Bright et al., 2015; Kerker et al., 2016). Pediatric providers in rural communities are faced with the challenge of serving a population known to experience a higher rate of ACEs despite a limited amount of resources (Bethell et al., 2017). Barriers to the implementation of screening for ACEs were identified as a lack of organizational support, lack of training, limited understanding on the need for ACEs screening, lack of resources to complete screening, and a lack of experience with performing screening (Albaek et al., 2017; Barnes et al., 2019; Bright et al., 2015; Gillespie, 2019; Kerker et al., 2016; Marie-Mitchell et al., 2018; Popp et al., 2020). The usefulness of this project to Humboldt County, was the initiation of a community-level project to improve pediatric provider knowledge on the need for ACEs screening, with training on the importance of screening, guidance on how screening can be completed and reimbursed, and local community services in addressing ACEs for children and families served. The project demonstrated that local pediatric providers are ready to implement this type of practice change, and that education intervention can impact providers' perceived role in screening, confidence in screening, and knowledge of availability of community resources to support the implementation of screening. The implication of this project to practice, supports that pediatric providers hold a role in the early identification of trauma and recommendation of appropriate interventions to improve health outcomes for children and families. Dissemination of the addressing ACEs community toolkit to pediatric healthcare providers in the community will continue. Consideration for future activities and sustainability of the project include identification of provider champions to address practice barriers in screening

implementation, community provider roundtables, and a cohesive policy statement on how screening practices are being improved in the community by pediatric healthcare providers.

Further study on the implementation of ACEs screening could focus on community-collaborative approaches to addressing ACEs. There is a great need for examining how rural communities have challenges in implementing evidence-based practices recommendations, and the unique solutions that are developed to overcome those challenges. Examining providers uptake of screening and patient participation in rural communities could reveal further value of screening in primary care. Recognizing that adapting healthcare delivery systems that address the complexity of childhood adversity for the child, family, and community is critical. This degree of change requires support from the clinical site to policy formation, with the understanding that not all communities are the same.

References

- Albaek, A. U., Kinn, L. G., & Milde, A. M. (2017). Walking children through a minefield: How professionals experience exploring adverse childhood Experiences. *Qualitative Health Research, 28*(2), 231–244. doi: 10.1177/1049732317734828
- Arledge, D. Adverse Childhood Experiences- Humboldt County. Summary Findings. California Center for Rural Policy, Humboldt State University. September 2017
- Barnes, A. J., Anthony, B. J., Karatekin, C., Lingras, K. A., Mercado, R., & Thompson, L. A. (2019). Identifying adverse childhood experiences in pediatrics to prevent chronic health conditions. *Pediatric Research, 87*(2), 362–370. doi: 10.1038/s41390-019-0613-3
- Bethell, C. D., Newacheck, P., Hawes, E., & Halfon, N. (2014). Adverse childhood experiences: assessing the impact on health And school engagement and the mitigating role of resilience. *Health Affairs, 33*(12), 2106–2115. doi: 10.1377/hlthaff.2014.0914
- Bethell, C. D., Davis, M. B., Gombojav, N., Stumbo, S., & Powers, K. (2017, October). Issue Brief: A national and across state profile on adverse childhood experiences among children and possibilities to heal and thrive. Retrieved October 10, 2019, from <http://www.cahmi.org/projects/adverse-childhood-experiences-aces/>.
- Bright, M. A., Thompson, L., Esernio-Jensen, D., Alford, S., & Shenkman, E. (2015). Primary care pediatricians' perceived prevalence and surveillance of adverse childhood experiences in low-income children. *Journal of Health Care for the Poor and Underserved, 26*(3), 686–700. doi: 10.1353/hpu.2015.0080
- Bright, M. A., Knapp, C., Hinojosa, M. S., Alford, S., & Bonner, B. (2015). The comorbidity of Physical, Mental, and Developmental Conditions Associated with Childhood Adversity:

A Population-Based Study. *Maternal and Child Health Journal*, 20(4), 843–853. doi: 10.1007/s10995-015-1915-7

California Department of Health Care Services. (2019). Medi-Cal Trauma & Developmental Screenings. Retrieved from <https://www.dhcs.ca.gov/provgovpart/Documents/Trauma-and-Developmental-Screenings-12-11-19.pdf>

Centers for Disease Control and Prevention (2019). Preventing adverse childhood experiences: Leveraging the best available evidence. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention.

Center for Youth Wellness. (2014, November 10). A Hidden Crisis: Findings on Adverse Childhood Experiences in California. Retrieved from <https://www.socalgrantmakers.org/resources/hidden-crisis-findings-adverse-childhood-experiences-california>.

Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., ... 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. doi: 10.1016/s0749-3797(98)00017-8

Flynn, A. B., Fothergill, K. E., Wilcox, H. C., Coleclough, E., Horwitz, R., Ruble, A., ... Wissow, L. S. (2015). Primary care interventions to prevent or treat traumatic stress in childhood: A systematic review. *Academic Pediatrics*, 15(5), 480–492. doi: 10.1016/j.acap.2015.06.012

Garner, A. S., Shonkoff, J. P., Siegel, B. S., Dobbins, M. I., Earls, M. F., Garner, A. S., ... Wood, D. L. (2016). Reaffirmed policy early childhood adversity, toxic stress, and the

- role of the pediatrician: Translating developmental science into lifelong health. *Pediatrics*, 138(5). doi: 10.1542/peds.2011-2662
- Gillespie, R. J. (2019). Screening for adverse childhood experiences in pediatric primary care: pitfalls and possibilities. *Pediatric Annals*, 48(7). doi: 10.3928/19382359-20190610-02
- Goldman, G. D. (2009). Initial validation of a brief individual readiness for change scale (BIRCS) for use with addiction program staff practitioners. *Journal of Social Work Practice in the Addictions*, 9(2), 184–203. doi: 10.1080/15332560902858596
- Goodspeed, B. L., & Howe, T. R. (2018, April). Children's mental health care needs assessment in six rural northern California counties. Retrieved from <https://digitalcommons.humboldt.edu/cgi/viewcontent.cgi?article=1139&context=etd>.
- Graham ID, et al. Lost in knowledge Translation: Time for a map? *J Contin Educ Health Prof*, 2006;26(1):13–24
- Gross, D., Beeber, L., Desocio, J., & Brennaman, L. (2016). Toxic stress: Urgent action needed to reduce exposure to toxic stress in pregnant women and young children. *Nursing Outlook*, 64, 513-515. <http://dx.doi.org/10.1016/j.outlook.2016.07.011>
- Humboldt County Department of Health & Human Services, Public Health (Humboldt County). “2018 Humboldt County Community Health Assessment.” *Public Health*, Humboldt County Department of Health and Human Services, 2018, <https://humboldt.gov/DocumentCenter/View/71701/2018-Community-Health-Assessment-PDF>.
- Kalmakis, K. A., Chandler, G. E., Roberts, S. J., & Leung, K. (2016). Nurse practitioner screening for childhood adversity among adult primary care patients: A mixed-method

- study. *Journal of the American Association of Nurse Practitioners*, 29(1), 35–45. doi: 10.1002/2327-6924.12378
- Kalmakis, K. A., & Chandler, G. E. (2015). Health consequences of adverse childhood experiences: A systematic review. *Journal of the American Association of Nurse Practitioners*, 27, 457-465. <http://dx.doi.org/10.1002/2327-6924.12215>
- Kerker, B. D., Storfer-Isser, A., Szilagyi, M., Stein, R. E., Garner, A. S., O'Connor, K. G., ... Horwitz, S. M. (2016). Do pediatricians ask about adverse childhood experiences in pediatric primary care? *Academic Pediatrics*, 16(2), 154–160. doi: 10.1016/j.acap.2015.08.002
- Kia-Keating, M., Barnett, M. L., Liu, S. R., Sims, G. M., & Ruth, A. B. (2019). Trauma-responsive care in a pediatric setting: Feasibility and acceptability of screening for adverse childhood experiences. *American Journal of Community Psychology*, 64(3-4), 286–297. doi: 10.1002/ajcp.12366
- Koita, K., Long, D., Hessler, D., Benson, M., Daley, K., Bucci, M., ... Harris, N. B. (2018). Development and implementation of a pediatric adverse childhood experiences (ACEs) and other determinants of health questionnaire in the pediatric medical home: A pilot study. *Plos One*, 13(12). doi: 10.1371/journal.pone.0208088
- Kuehn BM. AAP: Toxic stress threatens kids' long-term health. *JAMA*. 2014;312(6):585–586. doi:<https://doi.org/10.1001/jama.2014.8737>
- Marie-Mitchell A, Lee J, Siplon C, Chan F, Riesen S, Vercio C. Implementation of the whole child assessment to screen for adverse childhood experiences. *Global Pediatric Health* 2019; 6: 2333794X1986209.

- Marie-Mitchell, A., & Kostolansky, R. (2019). A systematic review of trials to improve child outcomes associated with adverse childhood experiences. *American Journal of Preventive Medicine*, 56(5), 756–764. doi: 10.1016/j.amepre.2018.11.030
- Marsicek SM, Morrison JM, Manikonda N, O’Halloran M, Spoehr-Labutta Z, Brinn M. Implementing standardized screening for adverse childhood experiences in a pediatric resident continuity clinic: *Pediatric Quality and Safety* 2019; 4: e154.
- Merrick, M. T., Ford, D. C., Ports, K. A., Guinn, A. S., Chen, J., Klevens, J., ... Mercy, J. A. (2019). Vital signs: Estimated proportion of adult health problems attributable to adverse childhood experiences and implications for prevention — 25 states, 2015–2017. *MMWR. Morbidity and Mortality Weekly Report*, 68(44), 999–1005. doi: 10.15585/mmwr.mm6844e1
- Metzler, M., Merrick, M. T., Klevens, J., Ports, K. A., & Ford, D. C. (2017). Adverse childhood experiences and life opportunities: Shifting the narrative. *Children and Youth Services Review*, 72, 141–149. doi: 10.1016/j.childyouth.2016.10.021
- National Advisory Committee on Rural Health and Human Services. (2018). Exploring the Rural Context for - Health Resources and ... Retrieved from <https://www.hrsa.gov/sites/default/files/hrsa/advisory-committees/rural/publications/Rural-Context-for-ACEs-August2018.pdf>
- Newhouse, R., Dearholt, S., Poe S, Pugh LC, White K. (2005) The Johns Hopkins Nursing Evidence-based Practice Rating Scale. Baltimore, MD, The Johns Hopkins Hospital; Johns Hopkins University School of Nursing.

- Oh, D. L., Jerman, P., Marques, S. S., Koita, K., Boparai, S. K. P., Harris, N. B., & Bucci, M. (2018). Systematic review of pediatric health outcomes associated with childhood adversity. *BMC Pediatrics*, *18*(1). doi: 10.1186/s12887-018-1037-7
- Petrucelli, K., Davis, J., & Berman, T. (2019). Adverse childhood experiences and associated health outcomes: A systematic review and meta-analysis. *Child Abuse & Neglect*, *97*, 104127. doi: 10.1016/j.chiabu.2019.104127
- Perrin, J. M., Lu, M. C., Geller, A., & Devoe, J. E. (2019). Vibrant and healthy kids: Aligning science, practice, and policy to advance health equity. *Academic Pediatrics*. doi: 10.1016/j.acap.2019.11.019
- Purewal SK., Bucci M., Wang LG, *et al.* Screening for Adverse Childhood Experiences (ACEs) in an Integrated Pediatric Care Model. *ZERO TO THREE* 2016; **36**: 10–7.
- Popp, T. K., Geisthardt, C., & Bumpus, E. A. (2020). Pediatric practitioners' screening for adverse childhood experiences: Current practices and future directions. *Social Work in Public Health*, 1–10. doi: 10.1080/19371918.2020.1711839
- Schulman, M. & Maul, A. (2019). Screening for Adverse Childhood Experiences and Trauma. *Center for Health Care Strategies*. Retrieved from <https://www.chcs.org/resource/screening-for-adverse-childhood-experiences-and-traum>
- Weitzman, C. & Wegner, L. (2015). Promoting optimal development: Screening for behavioral and emotional problems. *Pediatrics*, *135*(2), 384–395. doi: 10.1542/peds.2014-3716
- White, K. M., Dudley-Brown, S., & Terhaar, M. (2016). *Translation of evidence into nursing and health care* (2nd ed.). New York, NY: Springer.

Appendix A- Adverse Childhood Experiences Screening Implementation Survey

You are being invited to take part in a voluntary quality improvement project that seeks to examine screening implementation for Adverse Childhood Experiences (ACEs) looking at ability to change practice, knowledge, attitudes, and beliefs. A survey will be administered to you before and after you receive this education. Participation is not required. As a participant, there are no direct benefits to you. You will not be paid or compensated for your participation. The only known risk of participation is a potential loss of confidentiality. In order to provide you with an assurance of confidentiality, you are being asked to generate your own unique identification code. You do not need to remember your code; instructions will be provided each time you are asked to complete a survey:

To answer these questions:

- MOTHER means the person you identify as your mother (biological or otherwise)
- FATHER means the person you identify as your father (biological or otherwise)
- BROTHERS and SISTERS include those you identify as siblings (biological or otherwise)

Please use the steps below to create your code.

1. In space 1 below, write the **FIRST letter** of your **MOTHER'S FIRST NAME**.
2. In space 2 below, write the **FIRST letter** of your **FATHER'S FIRST NAME**.
3. In space 3 below, write the number that represents how many **OLDER BROTHERS** you have.
4. In space 4 below, write the number that represents how many **YOUNGER SISTERS** you have.
5. In space 5 below, write either:
 - the number 1 if the **FIRST LETTER** of your **FIRST NAME** is in the first half of the alphabet (A-M); OR
 - the number 2 if the **FIRST LETTER** of your **FIRST NAME** is in the last half of the alphabet (N-Z).
6. In space 6 below, write the **LAST LETTER** of your **LAST NAME**.
7. In space 7 below, find the month that you were born and **write the designated number**:
 - If your birth month is January, April, July, or October, write the number 3;
 - If your birth month is February, May, August, or November, write the number 4; OR
 - If your birth month is March, June, September, or December, write the number 5.

Your Unique ID is:

1

2

3

4

5

6

7

In general, what are your current perceptions about using screening instruments for assessing Adverse Childhood experiences during pediatric health care visits?

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I believe I have the skills to use them					
I believe I have the flexibility to use them					
I believe using them will take too much time					
I believe I will receive the training I need to use them					
I believe using them will improve outcomes for my patients and their families					

Please **circle** your response to the following questions:

How confident are you in your ability to screen for a history of ACEs	Not at all	Somewhat	Moderately	Very confident
Extent that you think it is your role as a pediatric provider to screen for a history of adverse events	Not at all	Small Extent	Moderate extent	Great extent
If patient/parent reveals an adverse experience how often do you refer to a community resource	Never	Sometimes	Usually	Always
Do believe you have information on how to refer families for additional resources	Not at all	Some extent	Moderate extent	Great extent

