REPORT

EXECUTIVE SUMMARY

Preventing and Mitigating the Effects of ACEs by Building Community Capacity and Resilience: APPI Cross-Site Evaluation Findings

July 14, 2016

Natalya Verbitsky-Savitz, Ph.D., Mathematica Policy Research

Margaret B. Hargreaves, Ph.D., M.P.P., Community Science

Samantha Penoyer, Mathematica Policy Research

Norberto Morales, Mathematica Policy Research

Brandon Coffee-Borden, Community Science

Emilyn Whitesell, Ph.D., Mathematica Policy Research

This page has been left blank for double-sided copying.

ACKNOWLEDGMENTS

APPI Member	Organization
Kathy Adams	Representative of the Community Public Health and Safety Networks
Theresa Barila	Walla Walla County Community Network and Children's Resilience Initiative
Lyndie Case	Skagit County Child and Family Consortium
Paul Cavanaugh	Thomas V. Giddens, Jr. Foundation
Antony Chiang	Empire Health Foundation
Rashelle Davis	Washington State Office of Governor Jay Inslee
Andi Ervin	Okanogan County Community Coalition
Melanie Gillespie	Foundation for Healthy Generations
Marilyn Gisser	Essentials for Childhood
Erinn Havig	Formerly, Washington State Department of Early Learning
Tory Henderson	Washington State Department of Health
Ron Hertel	Office of Superintendent of Public Instruction
Renee Hunter	Coalition for Children and Families of North Central Washington
Vicki Lunghofer	Washington Strengthening Families Collective and First 5 FUNdamentals of Pierce County
Sarah Lyman	Empire Health Foundation
Venita Lynn	Early Learning Regional Coalitions and Washington Strengthening Families Collective
Sarah Mariani	Department of Social and Human Services, Division of Behavioral Health and Recovery
Geof Morgan	Formerly, Whatcom Family & Community Network
Ron Murphy	Casey Family Programs
Peter J. Pecora	Casey Family Programs and School of Social Work, University of Washington
Debbie Peterson	Washington Strengthening Families Collective and Because It Takes A Village: Child Learning Collaborative
Laura Porter	Foundation for Healthy Generations
Barb Putnam	Department of Social and Health Services, Children's Administration
Marie Sauter	Bill & Melinda Gates Foundation
Kristi Slette	Whatcom Family & Community Network
Dan Torres	Thrive

APPI Member	Organization
Richard Watkins	Thomas V. Giddens, Jr. Foundation
Catherine Roller White	Formerly, Casey Family Programs
Greg Williamson	Washington State Department of Early Learning
Liv Woodstrom	Thrive
Sam Whiting	Formerly, Thrive

Note: This table lists voting and non-voting members of the APPI leadership team who contributed time and effort to the APPI evaluation. Peter J. Pecora and Greg Williamson were co-chairs of the APPI leadership team while this study was conducted.

This page has been left blank for double-sided copying.

EXECUTIVE SUMMARY

This report summarizes the final findings of an evaluation of five community-based initiatives in Washington State that were intended to prevent child maltreatment and exposure to toxic stress, mitigate their effects, and improve a wide array of child and youth development outcomes. The evaluation was conducted in two phases. During the first phase (2013–2014), the evaluation team assessed the contexts in which the sites were operating, the strategies the sites used to increase their collective community capacity to address adverse childhood experiences (ACEs), and the impact of their collective efforts at the county level. The findings from the first phase of the evaluation were presented in an interim report (Hargreaves et al. 2015). During the second phase of the evaluation (2015–2016), the evaluation team assessed the extent to which the sites developed sufficient capacity to achieve their goals and examined the relationship of select sites' efforts to ACEs-related outcomes at the subcounty level.

A. Significance of adverse childhood experiences

ACEs—commonly defined as 10 types of child abuse and neglect and family exposure to toxic stress[1]—are a complex population health problem with significant detrimental outcomes. The seminal ACE study, conducted among adult members of a health maintenance organization in Southern California in the late 1990s, had two major findings. First, it found that exposure to ACEs is related to a range of poor adult outcomes, including increased risk of alcohol and drug use, mental health problems, poor physical health, and risky behaviors (Felitti et al. 1998). Subsequent research demonstrated that toxic stress, associated with exposure to ACEs, disrupts neurodevelopment and leads to impaired decision making, impulse control, and resistance to disease; increase in adoption of risky behaviors; and early onset of disease, disability, and death (Figure ES.1, Center of the Developing Child at Harvard University 2016c). Second, the ACE study found, and a 2009 five-state study confirmed, that ACEs are very common in the general population, with about one in four adults reporting three or more ACEs (Centers for Disease Control and Prevention [CDC] 2010).[2] Later research found that ACEs are even more prevalent among children living in nonparental care and children who had contact with child welfare system (Bramlett and Radel 2014; Stambaugh et al. 2013).

Because ACEs pose a significant public health problem, national leaders in health care, public health, and child development have identified ACEs as "the single greatest unaddressed public health threat facing our nation today" (Harris 2014). In response, growing numbers of national and state government leaders, foundations, researchers, social service agencies, and concerned communities are working to increase awareness and understanding of the impact of ACEs, and to develop effective strategies to prevent ACEs, increase resilience, alleviate trauma,

---

[1] ACEs are: (1) emotional abuse, (2) physical abuse, (3) sexual abuse, (4) emotional neglect, (5) physical neglect, (6) mother treated violently, (7) household substance abuse, (8) household mental illness, (9) parental separation or divorce, and (10) incarcerated household member. See https://www.aap.org/en-us/Documents/ttb_aces_consequences.pdf

[2] These findings are based on a large representative sample of adults in Arkansas, Louisiana, New Mexico, Tennessee, and Washington states using the 2009 Behavioral Risk Factor Surveillance System (BRFSS), ACE module data.

break the complex cycle of intergenerational transfer of ACEs from parents to their children, and support communities as they promote healthy child and adult development (Robert Wood Johnson Foundation 2015). These initiatives include broad dissemination of ACEs-related research, science-based prevention and treatment interventions, and public health initiatives focusing on community-based solutions (Center on the Developing Child at Harvard University 2016b, CDC 2014, Foundation for Healthy Generations 2014).

Figure ES.1. Adverse childhood experiences pyramid

Mechanism by Which Adverse Childhood Experiences
Influence Health and Well-being Throughout the Lifespan
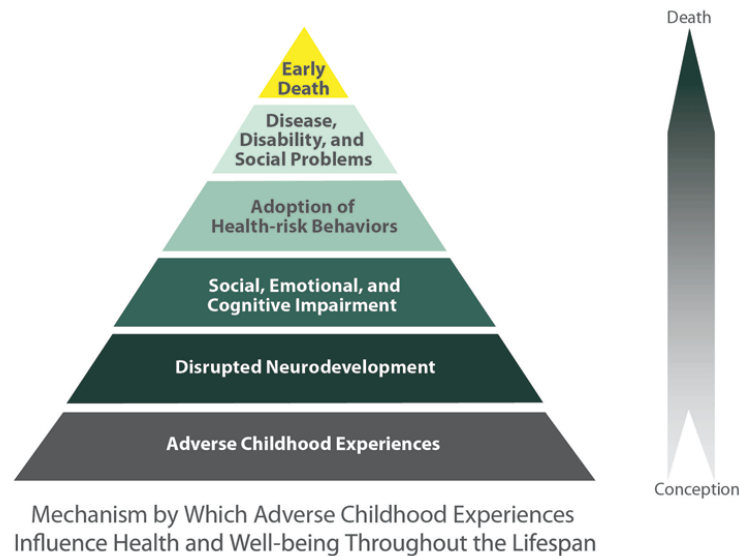
Source: Centers for Disease Control and Prevention. Available at
          https://www.cdc.gov/violenceprevention/acestudy/about.html. Accessed on June 14, 2016.

B. ACEs Public-Private Initiative cross-site evaluation

In 2013, the ACEs Public-Private Initiative (APPI)—a Washington State consortium of public agencies, private foundations, and local cross-sector community networks—was formed to study effective interventions to prevent and mitigate ACEs and facilitate statewide learning and dialogue on these topics. APPI sponsored a rigorous, mixed-methods evaluation of multifaceted community-based initiatives across the state (APPI 2013a, 2013b). Using a competitive process, APPI selected five community-based organizations based on their alignment with the goals of the APPI evaluation. All five sites agreed to participate in the evaluation and were compensated for some of the costs of participation in the study. The five sites are: the Skagit County Child and Family Consortium and the Whatcom Family & Community Network (in northwest Washington); the Okanogan County Community Coalition and the Coalition for Children and Families of North Central Washington ([NCW], in north Central Washington); and the Walla Walla County Community Network (in the southeast corner of the state, Figure ES.2).

Figure ES.2. Map of APPI sites

In 2013, APPI contracted with Mathematica Policy Research to conduct this evaluation. The evaluation addressed a central question: "Can a multifaceted community-based empowerment strategy focused on preventing and mitigating ACEs succeed in producing a wide array of positive outcomes in a community, including reduction of child maltreatment and improvement of child and youth development outcomes?" Specifically, the evaluation sought to (1) understand the APPI sites' evolving goals, strategies, and theory of change; (2) examine the extent to which the initiatives developed effective coalitions and created collaborative cross-sector partnerships that introduced new programs, policies, and practices at multiple levels to support their goals; and (3) assess the impact of these efforts on ACEs-related outcomes. The evaluation used retrospective and developmental evaluation approaches, mixed qualitative and quantitative research methods, a focus on capacity building, and a research-based multilevel conceptual framework (Biglan et al. 2012; Child Welfare Information Gateway 2014; Flaspohler et al. 2008; Hargreaves 2010, 2014; Luthar and Cicchetti 2000; O'Connell et al. 2009).

The evaluation was conducted in two phases. During the first phase (2013–2014), the evaluation team[3] assessed the contexts in which the sites were operating, the strategies the sites

---

[3] The first phase of the APPI Cross-site Evaluation was led by Mathematica and included expert consultants Dr. Anthony Biglan, Patricia Bowie, Dr. Pennie Foster-Fishman, and Aimee White.

used to increase their collective community capacity to address ACEs, and the impact of their collective efforts at the county level. The methods used included two rounds of site visits and interviews, a review of site documents, and analysis of county-level trends in 30 ACEs-related county-level indicators that compared the sites to the rest of Washington. The findings from the first phase of the evaluation were presented in the evaluation's interim report (Hargreaves et al. 2015).

This report describes the findings from the second phase of the evaluation (2015–2016). During this phase, the evaluation team[4] assessed the extent to which the sites—defined in this report as the coalition, consortium, or network participating in the APPI evaluation and their direct partners—developed sufficient capacity to achieve their goals. We also examined the relationship of select sites' efforts on ACEs-related outcomes at the subcounty level. We designed and conducted a survey assessing the sites' collective community capacity; reviewed site documents; interviewed key stakeholders; and conducted quantitative analyses of individual-, program-, and organization-level changes associated with 11 select activities.

We addressed the following three research questions:

1. What are the strengths and weaknesses in collective community capacity in the five APPI sites?

2. How do select ACEs and resilience-related activities of APPI sites relate to the outcomes of individuals in their communities?

3. What did we learn from the APPI evaluations?

C. Evaluation of the collective community capacity of the APPI sites

Community capacity is commonly defined as "the interaction of human, organizational, and social capacity existing within a given community that can be leveraged to solve collective problems and improve or maintain the well-being of a given community" (Chaskin 1999, p. 4). It involves "myriad elements, including the ability of community organizations and individuals to collaborate, advocate, communicate, collect, and use data to implement programs and practices that are effective for their community" (GEO 2014, p 9). The APPI sites sought to develop community capacity in four major areas: (1) creating sustainable network infrastructures, (2) facilitating cross-sector partnerships targeting ACEs, (3) using evidence-based community problem-solving processes, and (4) implementing strategies for community-wide impact.

This sub-study synthesized qualitative findings from the evaluation's 2015 interim report with quantitative findings from the sites' 2016 ACEs and Resilience Collective Community Capacity (ARC[3]) survey. The evaluation team designed the survey, which included modified items from several existing surveys and new items, in consultation with the APPI sites and leadership team (For more information on the development and testing of the ARC[3] survey, see Hargreaves et al. 2016). To improve the item clarity, we pre-tested the survey in three non-APPI sites in Washington State and then revised the items based on their feedback. We administered

---

[4] The second phase of the evaluation was led by Mathematica and included Community Science, which led the survey efforts.

the web-based survey to the members and partners of the APPI sites[5] over a five-week period in winter 2016.

The ARC[3] survey is designed to gather capacity data at four nested levels: (1) coalition capacity to develop and sustain a strong infrastructure, (2) network capacity to work collectively across sectors on community change, (3) capacity to plan and implement community-based solutions to address ACEs and resilience, and (4) community-wide capacity to empower the entire community to work at a scale to achieve community-wide results. At the coalition (or core team) level, the survey collects information about the strength and sustainability of the site's leadership, infrastructure, and communications functions. At the network level, the survey collects information about the sites' ability to develop a network of community partners who work collectively across sectors on community change. The survey also measures the community's capacity to address ACEs through community problem solving processes that focus on equity and are informed by data. At the community-wide level, the survey collects information about site-specific strategies to empower community to work at multiple levels and at sufficient scale (breadth) and scope (depth) to achieve community-wide results.

The ARC[3] survey consists of four parts: (1) *coalition experiences*; (2) a *collective community capacity index*, which examines the community's capacity in 10 areas such as community partnerships, shared goals, leadership and infrastructure, data use for improvement and accountability, communication, community problem-solving processes, diverse engagement and empowerment, focus on equity, multi-level strategies, and scale of work; The collective community capacity index was shown to be reliable (with Cronbach alpha ranging between .76 and .85 across the 10 areas). (3) *the extent of collaboration* with a number of organizations in the past 12 months on projects related to ACEs, resilience, and healthy child development; and (4) *background characteristics*. The overall response rate was 84.4 percent, ranging from 74.4 percent in NCW to 90.8 percent in Walla Walla.

The evaluation of APPI sites' collective community capacity had three major findings:

First, the development of APPI sites across community capacity domains varies. Sites received highest scores in five domains: (1) developing cross-sector community partnerships addressing ACEs, (2) implementing evidence-based community problem-solving processes, (3) developing shared goals targeting ACEs and resilience, (4) communicating effectively with their partners, and (5) focusing on equity. The sites have moderate capacity in (1) developing sustainable network infrastructures, (2) engaging and mobilizing large numbers of community residents, (3) implementing trauma-informed programs, policies, and practices at multiple levels, and (4) increasing their capacity to use data to document and evaluate their results. The lowest score was obtained for sites' capacity to work at sufficient scale to achieve communitywide change.

---

[5] The evaluation team received a list of members and partners for each site from the APPI site lead. To check for completeness, we compared the list of partners and members that we received in 2015 to the one we received two years earlier (during the earlier stage of the evaluation). Three of the sites had few changes; the lists for two sites differed substantially from the earlier ones. We verified with the sites whether these differences were due to changes in network structure or an error and adjusted the lists accordingly.

Second, the sites have similar capacity on five domains. For five domains, there are no statistically significant differences in average domain scores across sites. These areas are: (1) community partnerships, (2) shared goals, (3) focus on equity, (4) leadership and infrastructure, and (5) multi-level strategies. Arguably, the sites have been uniformly successful in developing cross-sector networks with common goals and sharing power equitably among partners (the first three domains). And, sites have had similar challenges developing the resources and infrastructure needed to implement trauma-informed programs, policies, and practices at multiple levels (the last two domains).

Third, the sites have different capacity on five domains and network structure and characteristics. The sites are significantly different in terms of their capacity to (1) engage with and empower a diverse set of community partners, (2) communicate effectively with network members and community partners, (3) manage community problem-solving processes, (4) collect and use data to monitor and evaluate their work, and (5) expand the reach and scale of their activities. In two domains—data use and scale of work—Okanogan received higher capacity scores than the other sites. In another two domains—effective communications and community problem-solving—Okanogan and Skagit had higher capacity. In the diverse engagement and empowerment domain, Okanogan and Whatcom received the two highest scores while Walla Walla and NCW had the two lowest scores among the five sites. For the focusing on equity, all sites except NCW had similar scores. In all six domains, NCW had the lowest score. The sites also differed in network structure and characteristics, including level of collaboration, density, and reciprocity. These differences in capacity and network characteristics are consistent with the differences described in the interim report (Hargreaves et al. 2015) and in the final report's site profiles (Appendix A).

D. Evaluation of the select activities of the APPI sites

The APPI evaluation also examined whether sites' efforts to decrease ACEs, increase resilience, and improve well-being of children and adults in their communities led to corresponding improvements in measurable outcomes. In this sub-study, we evaluated 11 select activities of the APPI sites. The activities were selected based on four criteria: (1) sites had to have played a significant role in implementing (or helping to implement) an activity; (2) sites perceived the activity to be successful; (3) we expected to have high quality outcomes data; and (4) in sum, the activities represented the diversity of all of the sites' efforts. The evaluation synthesized findings from qualitative data collected through stakeholder interviews and document reviews, and analyzed quantitative outcomes data from a variety of sources for the selected activities.

The outcomes evaluation used a retrospective design and used the most rigorous methods possible given the available data. The latter included descriptive analysis as well as more rigorous quasi-experimental methods. Due to data limitations, most activities were examined using descriptive analysis. When possible, we used a pre-post design, a difference-in-differences design, or an interrupted time series (ITS) design (Shadish et al. 2002). The major threat to these quasi-experimental designs is a history effect—a possibility that *something else* occurred at the same time as the intervention that led to the observed changes in the outcome for the intervention group. When feasible, we used a benchmark comparison group to examine the likelihood of alternative explanations. To the extent possible, we tried to match this comparison group to the

intervention group. For example, for school-based interventions, the comparison groups consisted of students in the same grade levels and school district (or state) as the intervention group. However, to the extent that these two groups differ, alternative explanations could be the true causes of the observed differences in outcomes.

We found that 6 (of the 11) evaluated activities were associated with positive and statistically significant changes in targeted outcomes. The remaining five activities either had inconsistent findings or had limited or no outcomes data available. Table ES.1 summarizes the findings for each of the 11 activities.

E. Discussion of APPI cross-site evaluation findings and their policy implications

This final report completes a retrospective evaluation of the efforts of five APPI sites. The sites took on the challenges of (1) reducing ACEs, (2) increasing resilience, and (3) promoting healthy child development in their communities. The evaluation team's interim report documented the sites' strategies to address these three goals, and determined that the sites' efforts had minimal impact at a county-wide level. In this final report, we assessed the capacity the sites developed to address their goals, and we looked for evidence of the impact of their activities. In the second stage of the evaluation, we found that three of the five sites had implemented activities with demonstrated results. Here, we compare the sites' capacities to their results to see which factors were associated with their success.

Full spectrum prevention. The APPI sites had broad agendas. In addition to their work disseminating ACEs information, all sites worked in these four areas: (1) child abuse prevention and family support, (2) school climate and student success, (3) risk behavior reduction and healthy youth development, and (4) community development. In each area, their efforts spanned the full spectrum of prevention: (1) general (*universal* or primary)[6] prevention activities to support healthy child, youth, and community development; (2) *selective* targeted (secondary) prevention initiatives to increase resilience among at-risk children, families, and youth; and (3) *indicated* trauma-informed (tertiary) prevention programs and practices to provide remediation or recovery services to individuals with multiple ACEs.

---

[6] The older public health literature commonly defines *primary prevention* as activities intended to prevent a disease or condition from occurring in the first place; *secondary prevention* as activities intended to help with identification of a condition, allowing for treatment to begin, in its early stages; *tertiary prevention* as treatment of a condition once it has developed (CDC 2013).

The more current literature defines three types of interventions: (1) *universal* prevention interventions that target general public or an entire population. These interventions generally are low cost and low risk, and effective and acceptable for the general population; (2) *selective* preventive interventions, which target individuals or subgroups of people who are at a significantly higher risk of developing the disorder than an average individual. These interventions are most appropriate when their cost is moderate and their risk of negative effects is minimal or nonexistent; (3) *indicated* prevention interventions, which are targeted to high-risk individuals who have minimal but detectable signs or symptoms of a disorder or biological markers indicating predisposition to a disorder but who do not meet diagnostic levels at the current time (National Research Council and Institute of Medicine 2009).

Table ES.1. Evaluation of select activities: summary of findings

Activity name (site name)	Activity type	Summary of findings
Some evidence of impact (positive, statistically significant changes)		
Nurse-Family Partnership (NFP) (Skagit)	Targeted prevention strategy	• This evidence-based program has been documented to (1) reduce child abuse and neglect, (2) reduce the likelihood of mothers giving birth to additional children while in their late teens and early twenties, (3) reduce prenatal smoking among mothers who smoke, and (4) improve cognitive and/or academic outcomes for children born to mothers with low psychological resources. • Improvements in prenatal smoking and alcohol use among mothers and birth of low birth or very low birth weight infants in Skagit were similar or better than in the Washington state and national NFP programs.
Positive Social Norms Campaign (Okanogan)	General prevention strategy	• Decreased alcohol use among youth by 10 percentage points, with 77 percent of Omak high school students reporting using alcohol before the campaign began and 87 percent of students reporting alcohol use after the campaign was implemented.
Omak Community Truancy Board (Okanogan)	Trauma-informed practice	• This is a promising intervention that is currently in its second year of implementation. In the first year, the truancy board helped improve attendance of 15 (out of 20) referred students. • More years of data are needed, however, to determine whether this magnitude of change is sustainable.
ACEs and Resilience Awareness Campaign (Walla Walla)	Community awareness	• 40 percent of residents report awareness of ACEs concepts. • The Walla Walla network has the highest level of awareness and use of ACEs and resilience concepts among the five APPI sites. Almost all network members and partners report being largely or extremely familiar with ACEs and resilience concepts (97 and 90 percent, respectively). • Pre-intervention data (or data from other communities that are not raising awareness of ACEs) are needed to estimate the magnitude of the impact of this activity. • Also, data were not available to determine whether improved awareness of ACEs and resilience concept leads to corresponding changes in behavior among residents.
Commitment to Community (Walla Walla)	Trauma-informed practice	• Residents reported positive attitudes toward their neighborhood and the Commitment to Community efforts after program. • However, these findings are based on relatively small samples. No pre-intervention data are available on the same outcomes.

Table ES.1 *(continued)*

Activity name (site name)	Activity type	Summary of findings
Lincoln High School (Walla Walla)	Trauma-informed practice	Consistent improvement in discipline and graduation indicators over three- to five-year period, including: • The number of students referred to the office for discipline problems decreased by 23 percentage points from 2007 to 2010. • The number of office referrals per student decreased by 2.8 referrals between 2007 and 2010 and by another 0.3 referrals between 2010 and 2012. • Number of out-of-school suspension days per student decreased by 2.3 days between 2007 and 2010 and by another .25 day between 2010 and 2012. • Emergency expulsions also decreased in both phases but by smaller amounts. • Graduation rates increased by 13 percentage points between 2008 and 2010 and by another 20 percentage points between 2010 and 2013. However, due to data limitations, we cannot say how much of this improvement is attributable to the changes in school's policies, practices, and climate and how much is due to other factors, such as possible changing in student population over time. Pre-intervention longitudinal data and a matched comparison group would improve the rigor of the analysis and allow us to be more confident in the magnitude of the impacts.
No evidence of impact (mixed results or limited or no outcome data available)		
ACEs Awareness Campaign (NCW)	Community awareness	• This a low-intensity activity using traditional means of dissemination such as distribution of a brochure and community presentations. • NCW is planning to administer an ACEs awareness survey later in 2016; however, no outcomes data were available for this evaluation.
Westside High School (NCW)	Trauma-informed practice	• This activity is in the initial stage of implementation and no outcomes data were available for this evaluation.
Community Navigator Program (Whatcom)	Trauma-informed practice	• A small group of surveyed program participants expressed satisfaction with the program. Positive differences in outcomes related to timely family reunification were found between a small group of the program participants and a comparison group. These differences were not statistically significant. • Due to the differences in characteristics between participants and the comparison group and other data limitations, we were unable to rigorously evaluate this program. Appropriate data on a large representative group of Community Navigator families and a matched comparison group are needed.
Shuksan Middle School (Whatcom)	Trauma-informed practice	• Found mixed (positive and no-change) results across a variety of related indicators, including disciplinary, perceptions of school climate, substance use, and Hispanic student proficiency outcomes. Results were inconsistent across grades.
Prevention/Intervention Specialists (Skagit)	Targeted prevention strategy	• Need outcomes data for students who received services. County-level data that we examined lack sensitivity to detect any potential impacts of the program (if they exist).

NOTE: This table reports statistically significant changes in outcomes, unless noted otherwise.

- In the area of child abuse prevention and family support, three sites (NCW, Okanogan, and Skagit) expanded the availability of evidence-based parenting prevention programs, including the NFP and the Tripe P Positive Parenting Program. Some sites also strategically worked with local social service agencies—key providers of child abuse and neglect services—to provide training about ACEs and resilience to the agencies' staff, offer parenting classes to their clients, and develop new trauma-informed services (such as Whatcom's Community Navigators).

- In the area of school climate and student success, the sites doubled the capacity of the schools' prevention/intervention specialists to offer support and services to students at risk of academic failure (Skagit) and helped a local alternative high school (Walla Walla's Lincoln High School) to implement an innovative array of trauma-informed services for its students, most of whom had exposure to high levels of ACEs (Walla Walla).

- In the area of risk behavior reduction and healthy youth development, the sites also worked on a spectrum of prevention activities. Several sites used federal and state prevention grants to address gang violence, suicide, and youth alcohol and drug use in their communities.

- With varying degrees of focus and scope, all APPI sites focused on community development that went beyond raising general community awareness of ACEs, resilience, and toxic stress to address the local inequities that are known risk factors for some ACEs.

Multiple models of success. The APPI sites that were more successful in addressing ACEs and toxic stress and building resilience aligned three factors: (1) collective community capacity, (2) community network characteristics, and (3) effective community change strategies. Together, these factors form a locally-based theory of change for achieving community impact. Okanogan and Skagit—the two sites with the highest average scores in at least three areas (out of five areas with statistically significant differences) on the collective capacity index—were among the three sites with demonstrated evidence of effectiveness in the evaluation's outcome study. However, their collective capacities, community change strategies, and network structures were quite different than the third site (Walla Walla). The first two sites focused more on evidence-based prevention programs (such as a community positive norms campaign and a home visiting program) and were supported by dense partner networks.

In contrast, Walla Walla was successful using an entirely different approach. Walla Walla operated more like an entrepreneurial business than a traditional coalition, and it created a larger, less dense "smart" network structure to work with community partners on a broader range of community change activities, including spearheading a broad community awareness campaign and collaborating with local leaders on innovative pilot projects that targeted populations with high ACEs (such as transforming an alternative high school, organizing and improving high-risk neighborhoods, and creating a children's resilience initiative). Through this approach, more network members in Walla Walla than in any other APPI site reported knowing about ACEs and resiliency concepts and integrating them into their work. These findings underscore the recognition there may not exist one "best" community capacity building model; effective models need to be tailored to local circumstances and needs.

Sustainability challenges. Regardless of their origins, all five APPI sites have had to independently find the resources and support coalition infrastructure needed to sustain their

ACEs-informed work, evaluate their effectiveness, and mount resource-intensive systems and campaigns to change policy. These resources have often been scarce and at times limited the depth of the sites' ACEs-related activities. Three sites—Okanogan, Skagit, and Whatcom— secured federal and state prevention grants that increased their operating budgets and sustained their coalitions or network. This has required being creative by, for example, including ACEs-informed work into prevention action plans and explaining the relationship between multiple community problems and ACEs to various stakeholders. However, this strategy also obligated the sites to focus on prevention activities that were not always trauma-informed. Currently, the sustainability of all APPI sites is uncertain and depends on their ability to secure resources and implement a successful coalition leadership succession plan.

Contributions of this study. The APPI evaluation contributed in multiple ways to growing both a substantive and methodological knowledge base. On the substantive side, the evaluation contributed to growing evidence about forces and efforts that help or hinder the development of collective community capacity in the APPI sites, rigorously evaluated which activities of the APPI sites were related to improved individual outcomes, and identified areas for improvement.

On the methodological side, the evaluation also achieved several noteworthy successes. Obtaining data for secondary analysis is a critical but often challenging task for any evaluation. We were able to obtain a large set of relevant outcomes data from multiple stakeholders in a short period of time. We found relevant state and county data were readily available in Washington State; however, critical subcounty data were often hard to access or unavailable. The evaluation used a variety of quasi-experimental methods—ranging from descriptive analysis to comparative interrupted time-series analysis—to examine the outcomes of the selected activities. Finally, we designed the ARC[3] survey to monitor sites' development. While its results were consistent with qualitative evaluation findings, the survey needs further testing in other communities in Washington State and nationwide to gauge its usefulness as a general collective community capacity measure.

Policy and research recommendations. We close this report with several policy and research implications of the evaluation's findings. To help sustain, expand, and improve the communities' efforts to reduce ACEs, build resilience, and improve the well-being of their local communities, local agencies, the federal and state governments, and private foundations may do the following:

1. **Help coalitions like the APPI sites to shift their priorities to balance general prevention and ACEs-informed practices**. This includes changing coalition network structures to allow for more local adaptation and testing of promising ACEs-informed programs and practices.

2. **Incorporate into state and federal grants and contracts the requirement to use ACEs-informed policies and practices**. State and federal agencies may endorse and finance the adoption and scale-up of effective ACEs-informed policies and practices.

3. **Provide community coalitions with resources sufficient to sustain key "backbone" operational functions.** This is perhaps the most important policy implication of the APPI evaluation. The APPI sites struggled to find the funding to sustain their efforts, and they often lacked the resources to evaluate their work or to mount substantial systems and policy

change campaigns. Providing resources to sustain key operational functions is vital to sustaining the efforts of these community coalitions.

4. **Build public sector capacity to support community efforts to address the social and economic factors that are related to ACEs**. Research has shown that neighborhood factors, such as high poverty rates, residential instability, and household composition, are related to rates of child abuse and neglect (Ernst 2000, Freisthler et al. 2007, Klein and Merritt 2014, Morton et al. 2014). These neighborhood characteristics can be modified, as shown in the *Promise Neighborhoods* initiative, modeled after the *Harlem Children Zone* programs (Corwin et al. 2016). Public health agencies can play an important part in community efforts to create healthier, more equitable communities.

5. **Support the development, testing, and dissemination of the latest research on effective ACEs-informed programs and practices**. Access to the latest research in Washington State and nationwide will provide local communities with a ready menu of current "best practices" which they can use to select and implement effective ACEs-informed strategies appropriate for their communities.

6. **Support the development, testing, and dissemination of effective systems and policy-change practices addressing ACEs and their root causes**. Comprehensive community initiatives must go beyond the development or modification of individual programs and service-delivery systems, to initiate system- and policy-level change that addresses the structural forces that contribute to and perpetuate ACEs and toxic stress.

7. **Identify and fill methodological gaps in the evaluation of community-based initiatives targeting ACEs, toxic stress, and resilience**. More rigorous evaluations of community-based initiative need to be conducted to fill this methodological gap.

REFERENCES

ACEs Public-Private Initiative (APPI). "APPI website." 2013a. Available at [http://www.appi-wa.org/]. Accessed May 1, 2016.

APPI. "ACEs Public-Private Initiative (APPI) Request for Proposals Regarding a Study of Community-based Family Support Networks in Washington State." Seattle, WA: APPI, June 2013b.

Biglan, A., B. R. Flay, D. D. Embry, and I. Sandler. "Nurturing Environments and the Next Generation of Prevention Research and Practice." *American Psychologist*, vol. 67, 2012, pp. 257–271.

Bramlett, M. D. and L. F. Radel, "Adverse Family Experiences Among Children in Nonparental Care, 2011–2012." *National Health Statistics R*eport, no 74. May 7, 2014. Available at [http://www.cdc.gov/nchs/data/nhsr/nhsr074.pdf]. Accessed May 3, 2016.

Centers for Disease Control and Prevention (CDC). "Adverse Childhood Experiences Reported by Adults—Five States, 2009." *Morbidity and Mortality Weekly Report*, vol. 59, no. 49, December 17, 2010, pp. 1609-1613. Available at [http://www.cdc.gov/mmwr/pdf/wk/mm5949.pdf]. Accessed May 3, 2016.

CDC. "Arthritis—The Arthritis Challenge: The Concept of Prevention." 2013. Available at [http://www.cdc.gov/arthritis/temp/pilots-201208/pilot1/online/arthritis-challenge/03-Prevention/concept.htm]. Accessed May 15, 2016.

CDC. "Essentials for Childhood: Steps to Create Safe, Stable, Nurturing Relationships and Environments." 2014. Available at [http://www.cdc.gov/violenceprevention/pdf/essentials_for_childhood_framework.pdf]. Accessed May 15, 2016.

Center on the Developing Child at Harvard University. "Frontiers of Innovation." 2016b. Available at [http://developingchild.harvard.edu/innovation-application/frontiers-of-innovation/]. Accessed May 14, 2016

Center on the Developing Child at Harvard University. "Building Core Capabilities for Life: The Science Behind Skills Adults Need to Succeed in Parenting and in the Workplace." 2016c. Available at [http://developingchild.harvard.edu/resources/building-core-capabilities-for-life/]. Accessed May 15, 2016.

Chaskin, R. "Defining Community Capacity: A Framework and Implications from a Comprehensive Community Initiative." Chicago: Chapin Hall Center for Children, University of Chicago, 1999.

Child Welfare Information Gateway. *Protective factors Approaches in Child Welfare.* Washington, DC: U.S. Department of Health and Human Services, 2014. Available at [https://www.childwelfare.gov/pubPDFs/protective_factors.pdf]. Accessed January 18, 2015.

Corwin, T., P. J. Pecora & P. Ostrum. *Community-Based Family Support Strategies: Exemplars with Implementation and Evaluation Strategies.* Seattle: Casey Family Programs. 2016. Available at [http://www.casey.org/community-based-family-support/]. Accessed July 9, 2016.

Ernst, J. S. "Mapping Child Maltreatment: Looking at Neighborhoods in a Suburban County." *Child Welfare*, vol. 79, no. 5, 2000, pp. 555-572.

Foundation for Healthy Generations. "Foundation for Healthy Generations." 2014. Available at [http://www.healthygen.org/]. Accessed May 3, 2016.

Freisthler, B., Bruce, E., and Needell, B. "Understanding the Geospatial Relationship of Neighborhood Characteristics and Rates of Maltreatment for Black, Hispanic, and White Children." *Social Work*, *52*(1), 2007, 7-16.

Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., Koss, M. P., and Marks, J. S. "Relationship of Child Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults: The Adverse Childhood Experiences (ACE) Study." *American Journal of Preventive Medicine, 14*(4), 1998, 245-258.

Flaspohler, P., J. Duffy, A. Wandersman, L. Stillman, and M. Maras. "Unpacking Prevention Capacity: An Intersection of Research-to-Practice Models and Community-Centered Models." *American Journal of Community Psychology*, vol. 41, 2008, pp. 182–196.

Grantmakers for Effective Organizations (GEO). "Evaluating Community Change: A Framework for Grantmakers." Washington, DC: GE, June 24, 2014. Available at [http://www.geofunders.org/resource-library/all/record/a066000000FgMTiAAN]. Accessed January 18, 2015.

Hargreaves, M. "Evaluating System Change: A Planning Guide." Cambridge, MA: Mathematica Policy Research, April 2010.

Hargreaves, M. "Rapid Evaluation Approaches for Complex Initiatives." Report prepared for the Office of the Assistant Secretary for Planning and Evaluation, U.S. Department of Health and Human Services. Cambridge, MA: Mathematica Policy Research, March 2014.

Hargreaves, M. B., N. Verbitsky-Savitz, B. Coffee-Borden, L. Perreras, P. J. Pecora, C. Roller White, G. B. Morgan, T. Barila, A. Ervin, L. Case, R. Hunter, and K. Adams. *Advancing the Measurement of Collective Community Capacity to Address Adverse Childhood Experiences and Resilience.* Gaithersburg, MD: Community Science, 2016.

Hargreaves, M., N. Verbitsky-Savitz, S. Penoyer, M. Vine, L. Ruttner, A. Davidoff-Gore. *APPI Cross-Site Evaluation: Interim Report.* Cambridge, MA: Mathematica Policy Research, 2015. Available at [https://www.mathematica-mpr.com/our-publications-and-findings/publications/appi-crosssite-evaluation-interim-report]. Accessed May 3, 2016.

Harris, N. B. "How Childhood Trauma Affects Health Across a Lifetime." Presented at TEDMED 2014. Available at [http://www.ted.com/talks/nadine_burke_harris_how_childhood_trauma_affects_health_across_a_lifetime?share=19391661a0]. Accessed November 21, 2015

Klein, S., and D. H. Merritt. "Neighborhood Racial and Ethnic Diversity as a Predictor of Child Welfare System Involvement." *Children and Youth Services Review*, *41*, 2014, pp. 95-105.

Luthar, S. S. and D. Cicchetti. "The Construct of Resilience: Implications for Interventions and Social Policies." *Development and Psychopathology*. Vo. 12, 2000, pp. 857-885.

Morton, C. M., C. Simmel, and N. A. Peterson. "Neighborhood Alcohol Outlet Density and Rates of Child Abuse and Neglect: Moderating Effects of Access to Substance Abuse Services." *Child Abuse & Neglect*, *38*(5), 2014, 952-961.

National Research Council and Institute of Medicine. "Preventing Mental, Emotional, and Behavioral Disorders Among Young People: Progress and Possibilities." M. E. O'Connell, T. Boat, and K. E. Warner, Editors; Committee on Prevention of Mental Disorders and Substance Abuse Among Children, Youth, and Young Adults: Research Advances and Promising Interventions; Board on Children, Youth, and Families; Division of Behavioral and Social Sciences and Education. Washington, DC: The National Academies Press. 2009. Available at http://www.nap.edu/catalog.php?record_id=12480.

O'Connell, M. E., T. Boat, and K. E. Warner (editors). *Preventing Mental, Emotional, and Behavioral Disorders Among Young People: Progress and Possibilities*. Washington, DC: National Academies Press. 2009. Available at [http://www.nap.edu/catalog/12480/preventing-mental-emotional-and-behavioral-disorders-among-young-people-progress].

Robert Wood Johnson Foundation. "ACEs: Early Life Events that Can Damage Our Adult Health." 2015. Available at [http://www.rwjf.org/en/library/collections/aces.html]. Accessed November 22, 2015.

Shadish, W. R., T. D. Cook, and D. T. Campbell. *Experimental and Quasi-experimental Designs for Generalized Causal Inference*. Belmont, CA: Wadsworth, Cengage Learning, 2002.

Stambaugh, L. F., H. Ringeisen, C. C. Casanueva, S. Tueller, K. E. Smith, and M. Dolan *Adverse Childhood Experiences in NSCAW*. OPRE Report #2013-26, 2013. Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services. Available at [https://www.acf.hhs.gov/sites/default/files/opre/aces_brief_final_7_23_13_2.pdf]. Accessed May 3, 2016

This page has been left blank for double-sided copying.

This page has been left blank for double-sided copying.

Improving public well-being by conducting high quality, objective research and data collection

MATHEMATICA
Policy Research