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REPORT

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

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- **Health and risk behavior data** were obtained from the Washington's Department of Health (individual-level Healthy Youth Survey data) and its Center for Health Statistics (Behavior Risk Factor Surveillance System data);
- **Child welfare data** were supplied by the University of Washington School of Social Work's Partners for Our Children Data Portal (Washington State's Children's Administration county-level data) and Children's Administration (outcomes data for the Community Navigator program participants and comparison groups);
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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).

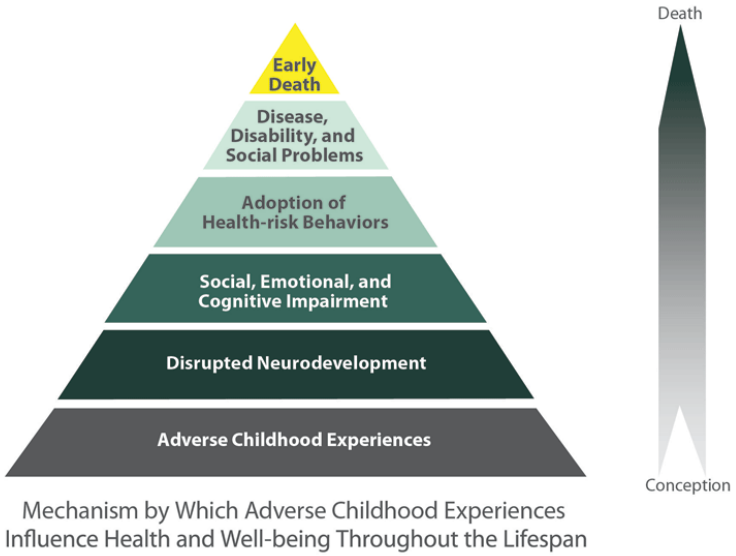
Because ACEs pose a significant public health problem, national leaders in health care, public health, and child development have identified ACEs as "the single greatest unaddressed public health threat facing our nation today" (Harris 2014). In response, growing numbers of national and state government 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



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

Source: Mathematica Policy Research

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.

I. INTRODUCTION

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 the evaluation's 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 on ACEs-related outcomes at the subcounty level.

The rest of this chapter describes the motivation and goals of this study and summarizes the findings from the earlier stage of the evaluation. In Chapter II we describe the methodology and findings from the evaluation of the community capacity of the participating sites sub-study. In Chapter III, we describe the methodology and findings from the evaluation of the selected activities sub-study. The last chapter summarizes the findings and provides some policy recommendations for how federal and state governments and agencies and private foundations can support community-based efforts to prevent ACEs and build resilience in their community.

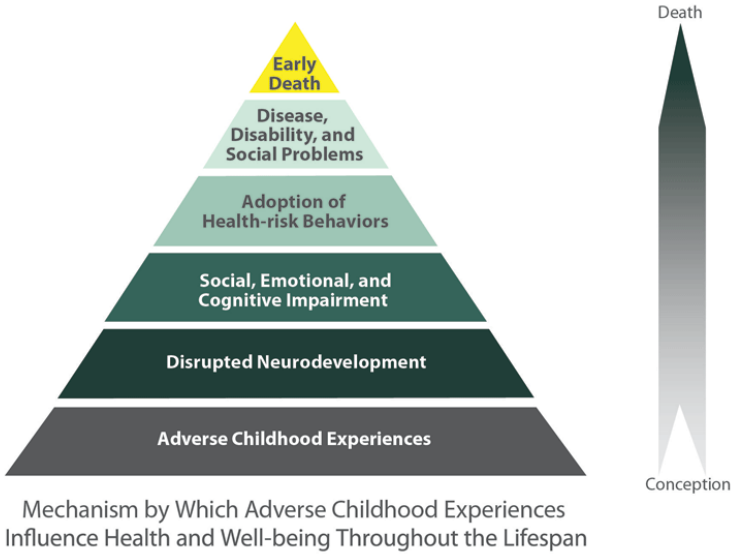
A. Significance of adverse childhood experiences

Adverse childhood experiences (ACEs) are a complex population health problem with significant detrimental outcomes. ACEs are commonly defined as 10 types of child abuse, neglect, and family exposure to toxic stress.[7] The seminal ACE study, conducted among adult members of a health maintenance organization in Southern California in the late 1990s, found that exposure to ACEs is related to poorer adult physical and mental health outcomes. In particular, people who had experienced 4 or more ACEs (compared to people who experienced zero ACEs) had 4 to 12 times increased risk of alcoholism, drug abuse, depression, and suicide attempt; 2 to 4 times increased risk of smoking, heart disease, chronic lung disease, poor self-rated health, having 50 or more sexual intercourse partners, and sexually transmitted disease; and a 1.4 to 1.6 times increased risk in physical inactivity and severe obesity later in life (Felitti et al. 1998). Subsequent research has confirmed and extended the original ACE Study (Center of the Developing Child at Harvard University 2016c). It 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 I.1).

[7] 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

ACEs are common in the United States. A 2009 five-state study found that three in five respondents (59 percent) had at least one ACE and one in four (24 percent) had three or more ACEs (Centers for Disease Control and Prevention [CDC] 2010).[8] Children living in nonparental care (compared to children living with two biological parents) were 2.7 times more likely to have one or more ACEs and 15.5 times more likely to have three or more ACEs (Bramlett and Radel 2014). ACEs are even more common among children who had contact with the child welfare system. The National Survey of Child and Adolescent Well-being, conducted in late 2000s, revealed that a majority (51 percent) of children with child welfare contact reported 4 or more ACEs (Stambaugh et al. 2013).

Figure I.1. Adverse childhood experiences pyramid



Source: Centers for Disease Control and Prevention. Available at https://www.cdc.gov/violenceprevention/acestudy/about.html. Accessed on June 14, 2016.

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 is working to increase awareness and understanding of the impact of ACEs, and to develop effective strategies to prevent ACEs, increase resilience; alleviate trauma; 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). The initiatives include broad dissemination of ACEs-related

[8] 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.

research, science-based prevention and treatment interventions, and public health initiatives focusing on community-based solutions (CDC 2014, Foundation for Healthy Generations 2014).

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 (Skagit) and the Whatcom Family & Community Network (Whatcom), both in northwest Washington; the Okanogan County Community Coalition (Okanogan) and the Coalition for Children and Families of North Central Washington (NCW), both in north Central Washington; and the Walla Walla County Community Network (Walla Walla) in the southeast corner of the state (Figure I.2).

In 2013, APPI contracted with Mathematica Policy Research to conduct a rigorous, mixed-methods evaluation of these five community-based initiatives. 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 was designed to use 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, led by Mathematica, was conducted in two phases. During the first phase (2013–2014), the evaluation team, which included Mathematica and expert consultants, Dr. Anthony Biglan, Patricia Bowie, Dr. Pennie Foster-Fishman, and Aimee White, assessed the contexts in which the sites were operating, the strategies the sites 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 State. The findings from the first phase of the evaluation were presented in the evaluation's interim report (Hargreaves et al. 2015).

Figure I.2. Map of APPI sites

Source: Mathematica Policy Research

During the second phase of the evaluation (2015–2016), the evaluation team, which included Mathematica and Community Science, 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. Community Science led the first sub-study, which included designing and conducting a web-based survey assessing the sites' collective community capacity. Mathematica led the second sub-study, which included a review of site documents; interviews with key stakeholders; and quantitative analyses of individual-, program-, and organization-level changes associated with 11 select activities.

C. Summary of interim findings from APPI cross-site evaluation

Before describing the second phase of the evaluation, we will briefly summarize the findings from the first stage of the evaluation along three dimensions: site contexts, county trends on ACEs-related risk and protective factors, and collective capacity development (for more detailed information on these findings, see Hargreaves et al. 2015).

Family Policy Council history. In 1992, the state of Washington enacted legislation creating an interagency Family Policy Council (FPC) to carry out "principle-centered systemic reforms to improve outcomes for children, youth, and families." Additional legislation in 1994 authorized the FPC to create local networks to address a set of complex issues targeted by the

state: child abuse and neglect, domestic violence, youth violence, youth substance abuse, dropping out of school, teen pregnancy, youth suicide, and out-of-home placements of children in the child welfare system. The FPC networks were developed as quasi-governmental public-private collaboratives that worked to address these issues at a community level.

When it became aware of the ACE study in late 1990s, FPC began to educate local leaders about the consequences of exposure to toxic stress during child's development, the underlying causes of problem behaviors, and health problems that contribute to intergenerational patterns of problems occurring in communities. In 2002, FPC initiated a series of statewide network training sessions on the impact of early trauma and toxic stress on brain development in children. The trainings emphasized the roles that nurturing environments, protective factors, and resilience can play in preventing or mitigating the effects of childhood trauma (Biglan et al. 2012; Cohen et al. 2010; O'Connell et al. 2009, Brownlee at al. 2013). The FPC encouraged local community networks to attend the trainings, disseminate ACEs and resilience information in their communities, and develop communitywide responses to the problem using a public health approach that included assessing community strengths and challenges, researching effective strategies, and building on local assets to develop and implement solutions to local concerns. After the FPC was defunded in 2011 and the networks lost their FPC funding in 2012, less than half (18 out of 42) of the networks were able to continue their work supported by grants from state and local agencies and private foundations. Four APPI sites (NCW, Skagit, Walla Walla, and Whatcom) share history as FPC community networks.

Site context. The APPI sites are located outside Seattle in rural counties with small core cities bounded by significant geographic features (such as mountains and Pacific Ocean). This rural isolated nature of the sites influenced their design and operation; it also contributed to a sense of agency and self-reliance, creating a favorable climate for collaboration within the sites. The large geographic area and low population density of the counties led two sites to concentrate their activities in the core towns of their regions; the other three sites targeted their efforts in select areas, such as at-risk neighborhoods or one or two schools, in their counties. Local economic realities affected the sites' access to local funding and local policy advocacy efforts. For example, the state's economic downturn in 2009 affected all sites; it created a sense of urgency to help affected families, but also resulted in funding cuts for some services.

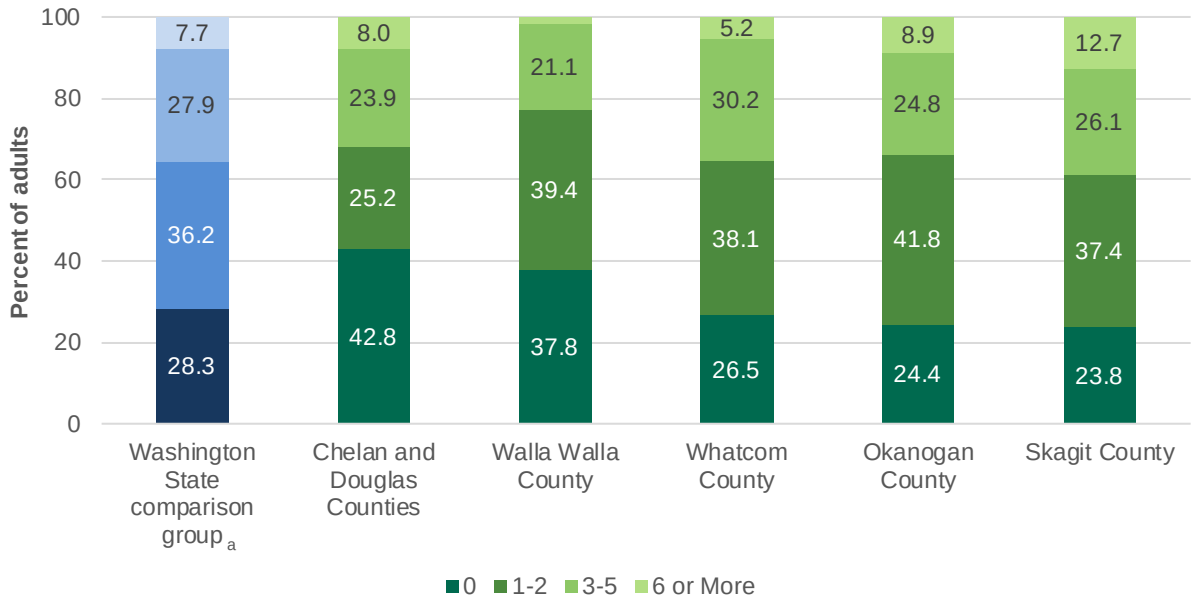
County trends on ACEs-related risk and protective factors. The APPI initiatives have been trying to shift conditions in communities, which also have been changing in ways unrelated to the efforts of the initiatives. To understand the changes in these communities, the evaluation analyzed state and county trends in 30 indicators of ACEs-related risk and protective factors over a 10-year period (2002 to 2012). For many indicators, county trends were not statistically different from statewide trends, but there were some exceptions:

- Chelan and Douglas counties (NCW) and Walla Walla County had lower prevalence of ACEs among adults (ages 18–54) than the rest of Washington State[9] (Figure I.3).

[9] The rest of the Washington State excluded the five APPI sites (Chelan/Douglas, Okanogan, Skagit, Walla Walla, and Whatcom Counties) as well as King County, which is the most populous county in the state and contains the state's largest city, Seattle. King County was excluded because of its differences with the five APPI sites, in terms of urbanicity, demographic characteristics, and availability of resources, among others.

- Walla Walla County showed a greater decrease in the population rate of alleged victims of child abuse and neglect in accepted referrals than did the rest of the state. This brought Walla Walla's rate in line with the rest of the state by the late 2000s.[10]
- NCW, Okanogan, Skagit, and Whatcom counties experienced a slower increase in the rate of hospitalizations due to injury among women—a potential indicator of domestic violence—than the rest of the state.
- Okanogan County's trends in rates of (a) school suspensions and expulsions and (b) youth arrests for violent crimes also showed greater reductions than did the state trends.

Figure I.3. Prevalence of adverse childhood experiences in the five APPI sites and Washington State comparison group among adults (Ages 18–54), 2009–2010



Source: Mathematica analysis of Washington State Department of Health, Center for Health Statistics, Behavioral Risk Factor Surveillance System (BRFSS), supported in part by Centers for Disease Control and Prevention, Cooperative Agreement U58 DP001996-1 through 2 (2009–2010).

Note: This figure reports the percentage of adults who reported experiencing adverse childhood experiences (ACEs). The standard errors range from 1.0 to 7.5 for the APPI sites' estimates and from 0.4 to 0.8 for Washington State comparison group. To improve the precision of the estimates, all statistics are based on a combined sample from the 2009 and 2010 BRFSS surveys.

[a] Washington State comparison group excludes the five APPI sites (Chelan/Douglas, Okanogan, Skagit, Walla Walla, and Whatcom counties) as well as King County, which is the most populous county in the state and contains the state's largest city, Seattle.

[10] The rate of alleged victims of child abuse and neglect in accepted referrals includes children (age birth–17) identified as alleged victims in reports to Child Protective Services that were accepted for further action. Children are counted more than once if they are reported as alleged victims more than once during the year. A "referral" is a report of suspected child abuse.

Collective capacity development. Although the APPI sites vary in the details of their operations, their strategies for building community capacity have been similar in several ways:

- All sites are using strong, research-based community mobilization and public health prevention frameworks to structure their collaborative efforts as networks, coalitions, and a consortium.
- They are engaging a broad spectrum of individual and organizational partners to solve complex community problems at multiple (individual, organization, system, community, and policy) levels.
- They have integrated ACEs prevention and resilience-building principles into their goals and strategies.
- They are actively engaging community members through ACEs and resilience trainings, public forums, community task forces, focus groups, and other facilitated conversations.
- They are using population data from many sources and are collecting new ACEs and resilience-related data to identify community problems, develop multifaceted responses, and track their progress.

The sites have also been filling critical roles in their communities as neutral conveners of diverse stakeholders and as facilitators of complex community problem-solving processes. Yet in some ways, their independent status has created a potential liability for the networks. After the loss of FPC funding, the APPI sites have continued operating by leveraging the organizational assets, time, support, and resources of their community partners. However, their staffs are small, many of the site budgets are small, and their grant-based funding is time-limited, challenging their ability to sustain their work at sufficient scale to achieve community-wide impact (Table I.1). For more information about each site, see site profiles in Appendix A.

Table I.1. APPI site characteristics

APPI site	Year started	2014 budget	2014 FTEs	2014 Leadership
Coalition for Children and Families of North Central Washington	2006	$29,000	0.25	Renee Hunter
Okanogan County Community Coalition	1999	$335,698	2.5	Andi Ervin
Skagit County Child and Family Consortium	2001	$61,200	0.7	Lyndie Case
Walla Walla County Community Network	1994	$93,000	1.5	Theresa Barila
Whatcom Family & Community Network	1990	$302,000	2.8	Geof Morgan

Source: Hargreaves et al. 2015. Table IV.1, p. 26.

Note: FTE=full time equivalents.

D. Research questions

This report synthesizes findings from the earlier stage of the evaluation together with the findings from the second stage evaluations of community capacity and select activities of the APPI sites. In particular, we address 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?

II. 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).

This substudy integrates qualitative findings from the evaluation's 2015 interim report (Hargreaves et al. 2015) with quantitative findings from the sites' 2016 ACEs and Resilience Collective Community Capacity (ARC^3) Survey. The evaluation team designed this survey to accomplish three goals: (1) describe the characteristics of the individuals and organizations working with APPI sites to reduce ACEs, increase resilience, and promote healthy child development; (2) document the sites' efforts to reduce ACEs, increase resilience, and promote healthy child development; and (3) gather data on the collective community capacity of the sites to reduce ACEs, increase resilience, and promote healthy child development.

The rest of this chapter describes the methodology and findings for this substudy. Section A describes the survey design and administration. The rest of the chapter summarizes findings by the four capacity areas: sustainable network infrastructure, cross-sector partnerships, community problem solving, and strategies for community-wide impact. Each section describes the capacity in each area and reports on the findings from the ARC^3 survey and qualitative data collected over the course of the study. The ARC^3 survey instrument is shown in Appendix B, more details about survey design and sites-specific results are described in Appendix C. Details about the survey's conceptual framework, research base, and psychometric properties (such as validity, reliability, and generalizability) are presented in Hargreaves et al. (2016).

A. Analytic methods: ACEs and Resilience Collective Community Capacity survey

The ARC^3 survey is designed to gather data at four nested levels of capacity:

1. **Coalition capacity**. 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;
2. **Network capacity**. At the network level, the survey collects information about the site's ability to develop a network of community partners who can work collectively across sectors on community change;
3. **Community-based solutions**. At this level, the survey measures the community's capacity to address ACEs through community problem solving processes that focus on equity and are informed by data; and
4. **Community-wide impact**. At the level of community-wide impact, the survey collects information about site-specific strategies to empower the community to work at multiple levels 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; (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* of the respondents or their organizations. Table II.1 shows the alignment between the four levels of capacity and the measurement domains of the ARC^3 survey.

Table II.1. 2016 ARC^3 survey capacity levels and measurement domains

Capacity Levels	Domains
Coalition capacity	Leadership and infrastructure Communications
Network capacity	Goal-directed networks Community cross-sector partnerships Shared goals
Community-based solutions	Community problem-solving processes Focus on equity Data use for improvement and accountability
Community-wide impacts	Multi-level strategies Diverse engagement and empowerment Scale of work

Source: Hargreaves et al. 2016, Table 1.

Note: Ten of the domains are measured using the Collective Community Capacity Index, part 2 of the ACEs and Resilience Collective Community Capacity (ARC^3) survey. Goal-directed networks—the remaining domain—is measured using the Extent of Collaboration questions located in the part 3 of the 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. 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 the web-based survey to the members and partners of the APPI sites over a five-week period in winter 2016. The collective community capacity index was shown to be reliable (with Cronbach alpha ranging between .76 and .85 across the 10 areas). The overall response rate was 84.4 percent, ranging from 74.4 percent in NCW to 90.8 percent in Walla Walla.

We analyzed the items using simple descriptive statistics, reporting percentages or mean subscale scores. We used responses in Part III to conduct social network analyses, which described the structure of each network.

B. Sustainable network infrastructure

Building a sustainable network infrastructure for community change requires the ongoing development of a strong network of collaborators. This requires several kinds of operational

capacity, including (1) network leadership, (2) work group structures to organize network activities, (3) staffing and other ongoing supports to support network efforts, and (4) opportunities to train network members to carry out the work. Sustainable infrastructure is considered fundamental to transformative community change; "the expectation that collaboration can occur without a supporting infrastructure is one of the most common reasons why it fails" (Kania and Kramer 2011, p. 40).

Shared history as Family Policy Council networks. Four APPI sites—NCW, Skagit, Walla Walla, and Whatcom—share history as FPC networks. Most of them, however, did not create entirely new network structures when they were selected as local FPC networks. NCW and Skagit modified an existing community group or coalition to become formally recognized as an FPC network. Whatcom used an existing community organization to create a local FPC network and then eventually merged the two organizations. Only Walla Walla created an entirely new community-based network (the Walla Walla County Community Network) with FPC funding. Okanogan was formed (and remained throughout its history) as a community mobilization coalition.

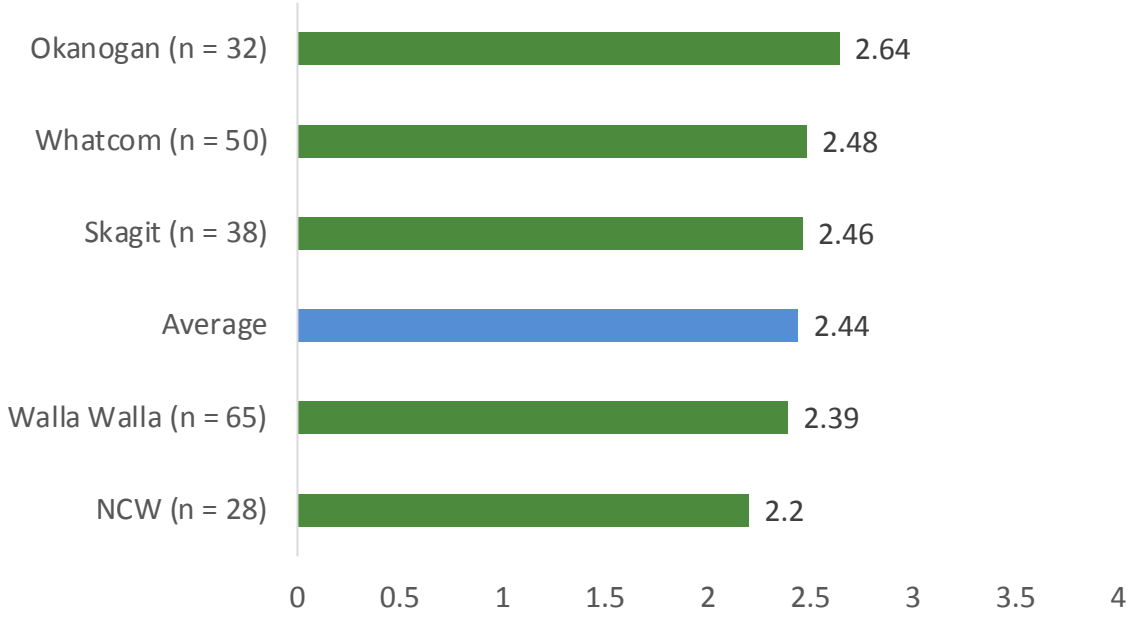
The organizational structures and goals of the APPI sites reflected their origins. The Skagit and NCW sites started as social service collaboratives that focused on improving the coordination of their continuum of local services. Supported by Community Mobilization and Drug-Free Communities grants, the Okanogan Coalition focused on healthy youth development and preventing alcohol and drug use. The Whatcom network originated in 1994 with a general community-building approach, convening local efforts to address a broad range of public health issues, such as youth suicide, youth substance abuse, youth violence, school dropout prevention, teenage pregnancy, and child abuse. After it received its first state prevention grant in 2006, the site focused more on substance abuse prevention. Less influenced by non-FPC agendas than other sites, the Walla Walla network has focused primarily on addressing ACEs and building resilience, especially since the creation of its Children's Resilience Initiative (CRI) in 2010.

With some local variations, the APPI sites share a common organizational structure. Each APPI site typically has a board of 20–30 members, divided among fiduciary members (public sector organizations, nonprofit agencies, and local foundations) and non-fiduciary members (community residents). The sites have used these structures to serve as neutral conveners of diverse stakeholders and as facilitators of complex community problem-solving processes. However, their independent status has been a liability, especially for those that lost FPC funding in 2012. The APPI sites have managed to continue operating by leveraging the organizational assets, time, support, and resources of their community partners. However, their staffs are small, several sites' budgets are small, and most of their funding is time-limited (Table I.1). These factors put their sustainability at risk.

Leadership and infrastructure capacity. The ARC^3 survey used four indicators to measure infrastructure capacity: (1) "we have organized a strong network of formal institutions and informal connections to carry out this work," (2) "we have enough resources (such as funding and volunteers) to carry out this work," (3) "coalition leaders have the authority and community standing to bring people and organizations together to carry out this work," and (4) "enough training and assistance is available locally for the community to gain the knowledge and skills needed to carry out this work."

Across the sites, the average score for the leadership and infrastructure domain was 2.44 on a scale from 0 to 4.[11] The sites did not differ on their leadership and infrastructure capacity (p = .11; Figure II.1). The "coalition leaders" item was rated, on average, highest (2.89); the "enough resources" item received the lowest average rating (1.76).

Figure II.1. Leadership and infrastructure capacity



Source: Community Science analysis of 2016 ARC^3 survey data.

Note: This figure shows the average site scores for the leadership and infrastructure capacity domain, which consists of 4 items: (1) "we have organized a strong network of formal institutions and informal connections to carry out this work," (2) "we have enough resources (such as funding and volunteers) to carry out this work," (3) "coalition leaders have the authority and community standing to bring people and organizations together to carry out this work," and (4) "enough training and assistance is available locally for the community to gain the knowledge and skills needed to carry out this work." All items are measured on a 0 to 4 scale: 0 = "not at all", 1 = "a little", 2 ="somewhat", 3 = "a great deal", and 4 = "completely".

Based on a one-way analysis of variance, the sites were not statistically significantly different in their capacity in this domain (F = 1.91, p =.11).

Communications capacity. "Because collaboration is a communicative enterprise, coalitions must have a well-developed communication system that promotes information sharing and problem discussion and resolution" (Foster-Fishman et al. 2001, p. 255). Effective communication also include public communications and messaging through community outreach, social marketing, and media.

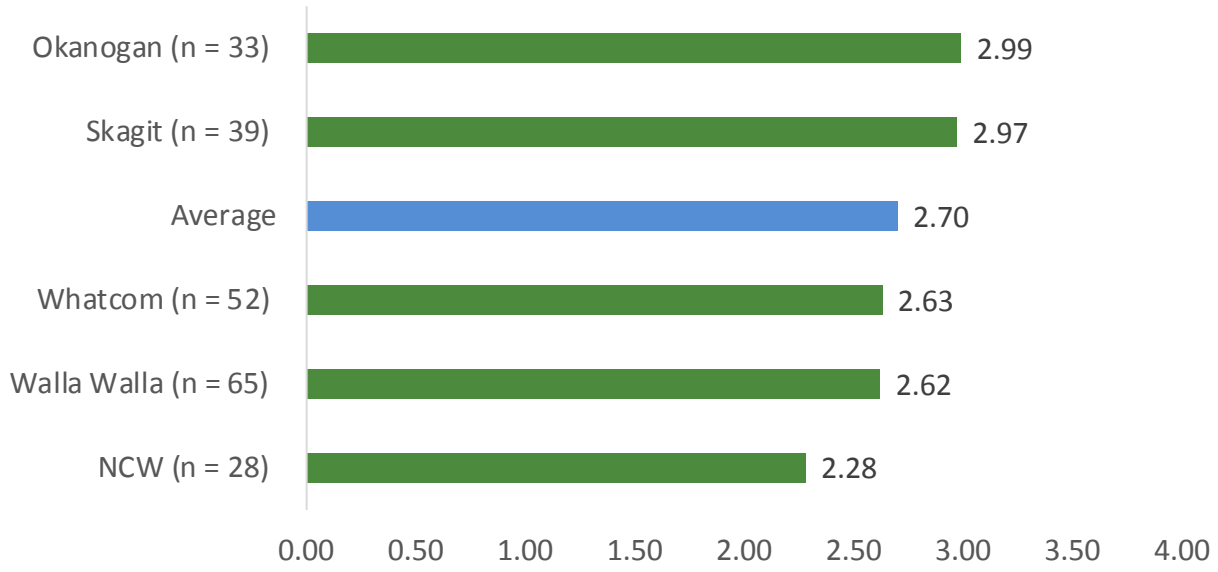
To assess network and community-wide communications, the ARC^3 index identified four capacity measures: (1) "coalition members and community partners communicate openly with each other about this area of work," (2) "I am informed as often as I need to be about what is

[11] All items were measured on a scale from 0 to 4: 0 = "not at all", 1 = "a little, 2 ="somewhat", 3 = "a great deal", and 4 = "completely".

going on with the coalition," (3) "community leaders use effective measures to raise local awareness and build political will in this area of work," and (4) "community agencies, local residents, and political leaders are recognized in public events and local media for their contributions to this area of work."

Across the sites, the average score for the communications domain was 2.70 on a 0 to 4 scale (Figure II.2). However, the sites were significantly different in their communications capacity ($p < .001$), with Okanogan and Skagit having highest average scores (2.99 and 2.97, respectively) and NCW having the lowest average score (2.28). Average ratings were higher for the "communicate openly" (3.13) and "informed as often as I need to be" (3.00) items than for the "raise local awareness" (2.46) and "public recognition" (2.26) items. Among the sites, Skagit received the highest rating (3.42), for the item "I am informed as often as I need to be."

Figure II.2. Communication capacity



Source: Community Science analysis of 2016 ARC[3] survey data.

Note: This figure shows the average site scores for the communication capacity domain, which consists of 4 items: (1) "coalition members and community partners communicate openly with each other about this area of work," (2) "I am informed as often as I need to be about what is going on with the coalition," (3) "community leaders use effective measures to raise local awareness and build political will in this area of work," and (4) "community agencies, local residents, and political leaders are recognized in public events and local media for their contributions to this area of work." All items are measured on a 0 to 4 scale: 0 = "not at all", 1 = "a little", 2 = "somewhat", 3 = "a great deal", and 4 = "completely".

Based on a one-way analysis of variance, the sites were statistically significantly different in their capacity in this domain ($F = 4.86$, $p < .001$).

C. Cross-sector partnerships targeting ACEs

The credibility and power of the APPI sites to leverage communitywide change depends, in part, on their cross-sector collaborative capacity (Norris 2013, p 6). Collaborative capacity involves the ability to: (1) make decisions and take action with other organizations within and across sectors; (2) strengthen or develop new partnerships to advocate for and influence the

authorization, funding, and implementation of new policies, practices, and programs; and (3) create more effective service delivery systems through the integration and coordination of local service networks (GEO 2014). "Such community initiatives build trust and reciprocity between leaders and organizations working across lines. They present a powerful force capable of delivering the political will to set good priorities; mobilize assets, change policies and practices; and make investments that are critical for population health" (Norris 2013, p 7).

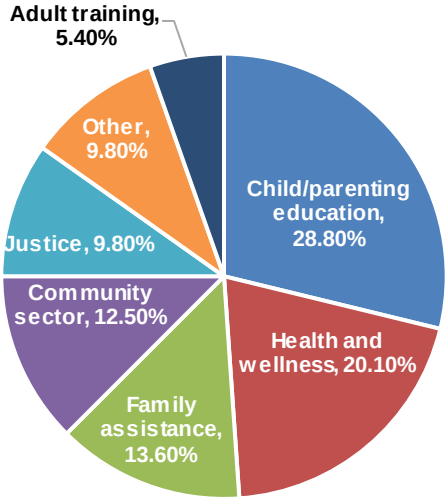
In this section, we assess the capacity of the APPI sites to develop collaborative, cross-sector partnerships by reviewing (1) the sector affiliations of their network members, (2) the level of collaboration among members, and (3) the network structure of the networks' collaborative relationships. Finally, we assess the ACEs goals shared by the sites' network members, as well as members' understanding and integration of ACEs and resilience concepts into their work.

Sector representation. During their tenure as FPC sites, the five APPI sites developed extensive cross-sector networks. The networks include representatives from seven sectors: (1) education (early childhood and parenting education, primary education, and secondary education subsectors), (2) adult training (post-secondary education and workforce development subsectors), (3) justice (law enforcement, courts and legal services, and juvenile justice subsectors), (4) health and wellness (health care, public health, mental and behavioral health, and healthy youth development subsectors), (5) family assistance (assistance with food, housing and emergencies, and social services, including child protection subsectors), (6) the community sector (community development, private philanthropy, and public policy, including tribal and local government subsectors), and (7) other sectors, which included primarily local businesses, business associations, and faith-based organizations.

Although the sites experienced some turnover among individual network members, their networks consistently included partners from almost all sectors; the most common exception was adult training.[12] Overall, the APPI sites worked most frequently with organizations in the education (28.8 percent), health and wellness (20.1 percent), family assistance (13.6 percent), and community (12.2 percent) sectors (Figure II.3).

[12] The Skagit and NCW sites reported the greatest change in individual membership between 2014 (the interim report) and 2016 (the ARC^3 survey).

Figure II.3. Overall distribution of partner organizations across sectors in the APPI sites



Source: Community Science analysis of 2016 ARC[3] survey data.

Note: This figure shows the percentage of networks' partner organizations by their primary sector of work, across the five APPI sites (N = 184 organizations).

However, depending on their interests, the networks differed in their distribution of subsector partners.

- Reflecting a long-term interest in child abuse prevention, the NCW site had higher than average representation from local early childhood/parenting education (12.1 percent) and social service/child protection (12.1 percent) subsectors.
- Reflecting its focus on alcohol and drug abuse prevention, the Okanogan site had higher than average representation from the local courts (11.1 percent), local government/public policy (11.1 percent), and law enforcement (7.4 percent) subsectors.
- Reflecting local child protective service reforms and receipt of a federal Safe Schools/Healthy Students grant, the Skagit site had higher than average representation among its social service/child protection (13.9 percent), elementary/secondary education (22.9 percent), healthy youth development (8.6 percent), and mental health (5.7 percent) subsectors.
- The Walla Walla site had higher than average representation in multiple sectors and subsectors, including "other" (16.3 percent), early childhood/parenting education (11.6 percent), post-secondary education (9.3 percent), healthy youth development (9.3 percent), philanthropy (4.7 percent), and local government (4.7 percent). This reflects the site's extensive involvement in partnerships with local businesses, trainings in local parenting classes, work with local university students and faculty, creation of local youth mentoring services and a youth community center, grants from local foundations, and local government advocacy.

- The Whatcom site had higher than average representation among its elementary/secondary education (26.1 percent), community development (10.9 percent), health care (10.9 percent), youth development (8.7 percent), and public health (6.5 percent) subsectors. These partnerships reflect the site's close collaboration with local schools, its community development origins, grant-funded youth development projects, and analysis of population health data with local health leaders.

Network structure. To examine the level of interaction and collaboration among the sites' network partners, the ARC[3] survey asked respondents to rate their level of interaction with each of the other network partners, on a five-point scale.[13] Based on those responses, the evaluation conducted social network analyses (SNA) to assess the structures of the relationships among the partners that reported having "quite a bit" or "a great deal" of interaction with each other. These SNA analyses assessed the average level, centralization, density, reciprocity, and transitivity[14] of partners' interactions[15] (Table II.2).

The SNA findings showed that the network structures of the sites' collaborative partners varied geographically. The SNA statistics for the centralization, density, and transitivity of the NCW and Okanogan networks reflected the small, close-knit nature of their rural communities. The NCW and Okanogan networks were relatively small (with 17 nodes), with higher than average levels of interaction (2.72 and 2.67, respectively, compared to the average all-site interaction rating of 2.44 on a five-point scale). The relationships in NCW and Okanogan networks were less centralized than in other APPI sites (with 0.46 and 0.42 scores, compared to the overall average score of 0.50). Their networks were also more densely connected, with more reciprocal relationships, and more small-group (transitive) connections than the other sites.

Skagit and Whatcom—the two coastal APPI sites—were somewhat similar in their network structures. These networks had about the same number of relationships (24 and 23 nodes, respectively), and the same average centralization scores (both were 0.49). However, Skagit had more dense connections, but less reciprocal relationships than reported for Whatcom.

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[13] Respondents were asked about "the extent to which you have worked with the organization in the past 12 months on projects related to ACEs, resilience, or healthy development." The response options were: 1 = "not at all", 2 = "a little", 3 = "somewhat", 4 = "quite a bit", and 5 = "a great deal".

[14] "Transitivity" refers to the prevalence of three-way interactions between partners. In other words, if partner A and B both work with partner C, how likely they are to work with each other.

[15] *Centralization* scores approaching 0 percent indicate more equality in the network partners. Centralization scores approaching 100 percent indicate more hierarchy and less variation in the number of relationships between individuals; relationships tend to be focused on a few team members, rather than distributed across all members. Higher *density* scores reflect more collaboration. Teams with scores closer to one had most members with collaborative relationships. Teams with reciprocity scores closer to 0 had few reciprocal ties (and so either had dissimilar views of their interaction or the interaction was one sided). Teams with *reciprocity* scores closer to 1 had more reciprocal ties (suggesting more similar views of their collaboration or balanced relationships). Higher levels of *transitivity* indicate greater levels of trust and shared norms and values in a network, and so reflect more balanced relationships and potential subgroups within the network.

Table II.2. Network structure of the APPI sites

Site name	Interaction scale	Nodes	Edges	Centralization	Density	Reciprocity	Transitivity
Overall	2.44	NA	NA	.50	.37	.42	.58
NCW	2.72	17	122	.46	.45	.51	.61
Okanogan	2.67	17	123	.42	.45	.43	.64
Skagit	2.44	24	213	.49	.39	.39	.62
Walla Walla	2.29	34	283	.66	.25	.33	.52
Whatcom	2.06	23	152	.49	.30	.43	.50

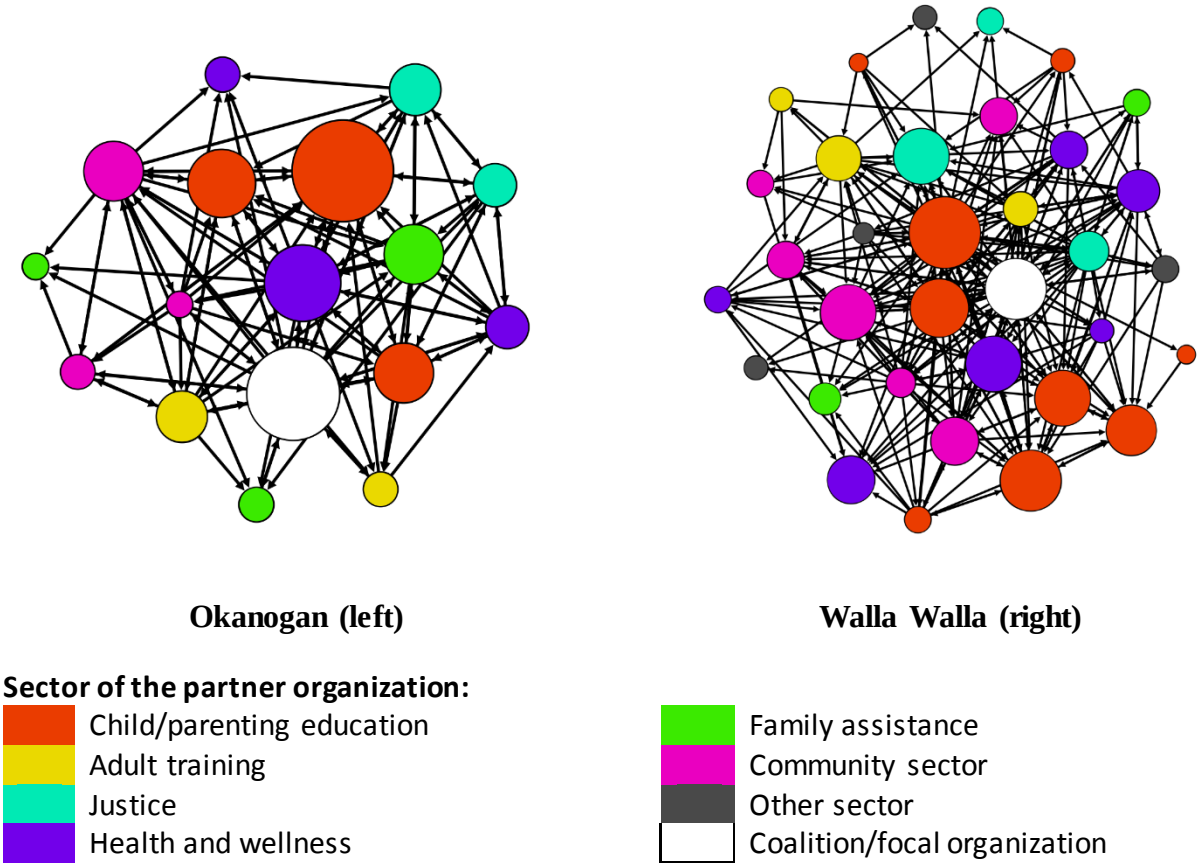
Source: Community Science analysis of 2016 ARC[3] survey data.

Note: The statistics presented in this table are based on the social network analysis of item 50: "To what extent have you worked with the following organizations during the past 12 months on one or more projects related to ACEs, resilience, and healthy child development?" Organization A was determined to have a relationship with organization B within the network if at least one respondent from organization A marked "a great deal" or "quite a bit" when answering about organization B.

NA=not applicable

In contrast, Walla Walla's network structure was different. Walla Walla's network structure was the largest (34 nodes), more diverse, most centralized (0.66), and least dense (0.25) of the APPI sites. It also had the lowest reciprocity score (0.33), and one of the lowest levels of collaboration (2.29) reported among the sites. Compared to other sites, such as Okanogan, the Walla Walla network structure was larger, more centralized, but with connections that were less dense or reciprocal (Figure II.4). This network structure reflected the site's more entrepreneurial approach to coalition building, in which the director reached out to a larger, more diverse network of local leaders to collaborate on a wide of projects, including a broad community awareness campaign, community organizing in targeted neighborhoods, and embedding trauma-informed practices in an alternative high school.

Figure II.4. Okanogan and Walla Walla network structures



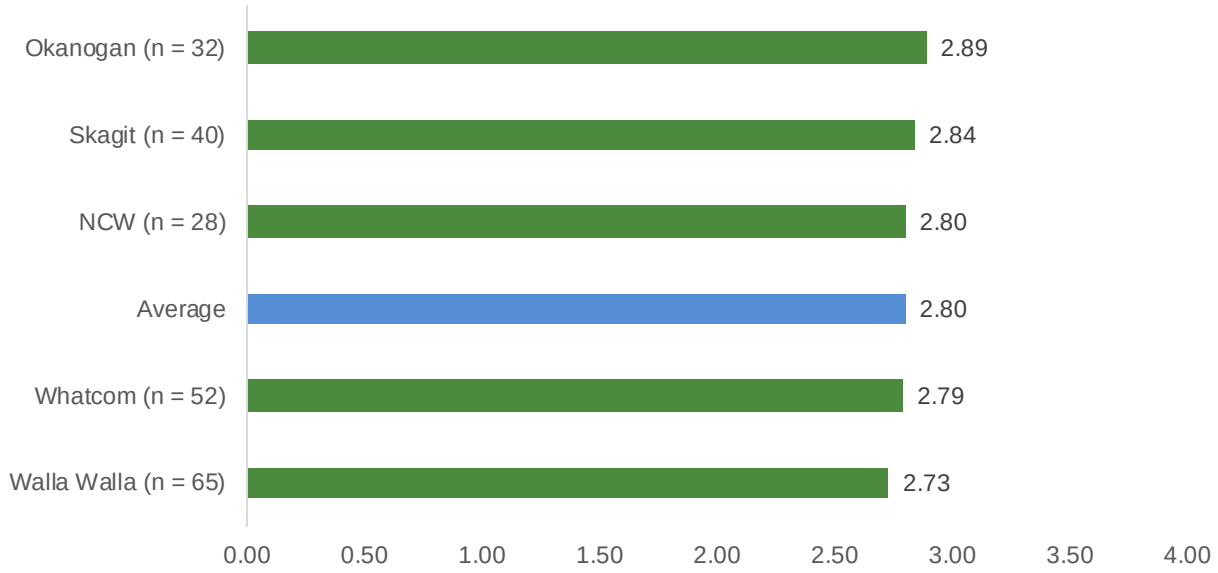
Source: Community Science analysis of 2016 ARC^3 survey data.

Note: This figure shows the visualization of the Okanogan (left) and Walla Walla (right) member and partner organization networks created using social network analysis. The figures include only organizations that responded to the network-related items in the survey. The size of each node is based on the number of organizations that reported working with the focal organization quite a bit or a great deal within the past 12 months. The nodes are colored by sector as described in the legend above.

Community partnership capacity. The ARC^3 survey assessed several additional elements of cross-sector collaborative capacity. The survey used four indicators to measure the quality of the sites' community partnerships: (1) "we have many strategic partnerships that work across sectors (such as education, health, juvenile justice, and social services);" (2) "people have a deep trust in each other to work together when it counts;" (3) "people believe that, together, they can make a difference;" and (4) "as partners, we hold each other accountable for results."

Across the sites, the overall average score for the community partnerships domain was 2.80 on a scale from 0 to 4 (Figure II.5). The average scores for this domain were not statistically different across sites ($p = .85$). The "people can make a difference together" item was rated highest, on average, (3.13), while the "people hold each other accountable for results" item received the lowest average rating (2.45) across the sites.

Figure II.5. Community partnership capacity



Source: Community Science analysis of 2016 ARC^3 survey data.

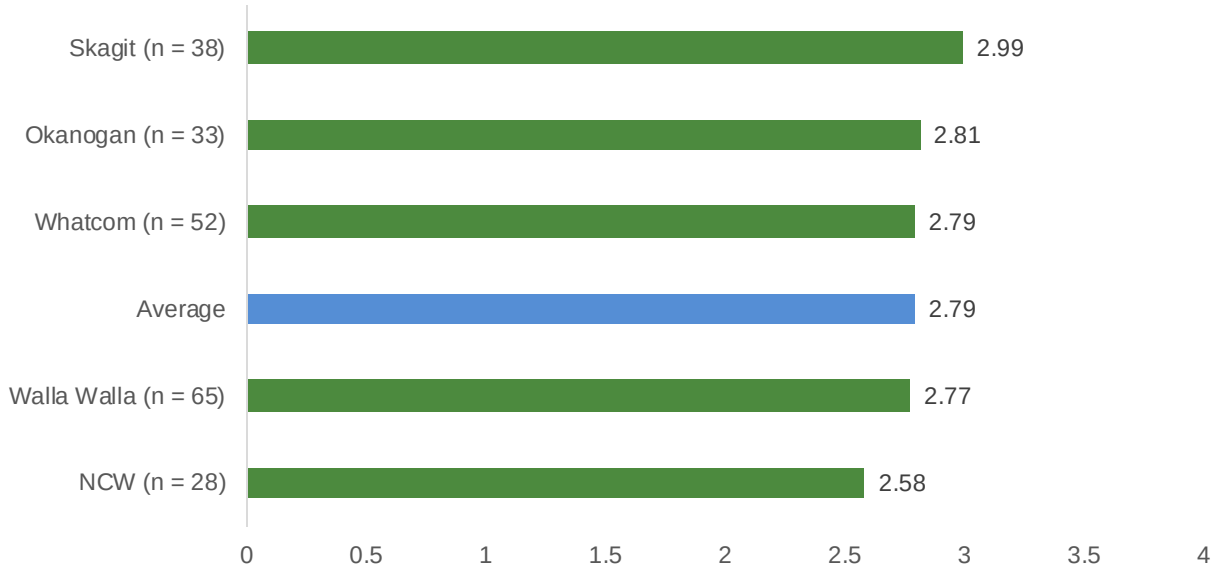
Note: This figure shows the average site scores for the community partnership capacity domain, which consists of 4 items: (1) "we have many strategic partnerships that work across sectors (such as education, health, juvenile justice, and social services)," (2) "people have a deep trust in each other to work together when it counts," (3) "people believe that, together, they can make a difference," and (4) "as partners, we hold each other accountable for results." All items are measured on a 0 to 4 scale: 0 = "not at all", 1 = "a little", 2 ="somewhat", 3 = "a great deal", and 4 = "completely".

Based on a one-way analysis of variance, the sites were not statistically significantly different in their capacity in this domain (F = .34, p = .85)

Shared goals capacity. Many community collaboration frameworks "require all participants to have a shared vision for change" (Kania and Kramer 2011, p. 39). To underscore the importance of sharing a common agenda, the ARC^3 survey identified three capacity measures for the shared goals domain: (1) "coalition members and community partners share an ongoing commitment to this area of work," (2) "community residents support local efforts in this area of work", and (3) "local political leaders share an ongoing commitment to this area of work".

Across the five APPI sites, the average score for the shared goal domain was 2.79 on a scale from 0 to 4. The scores were not statistically different on this domain across sites (p = .20; Figure II.6). The item "coalition members and community partners share an ongoing commitment to this area of work" was rated highest in the shared goal domain with an average rating of 3.38. The item with the lowest average rating in the shared goal domain was "local political leaders share an ongoing commitment to this area of work" (2.30).

Figure II.6. Shared goal capacity



Source: Community Science analysis of 2016 ARC[3] survey data.

Note: This figure shows the average site scores for the shared goal capacity domain, which consists of 3 items: (1) "coalition members and community partners share an ongoing commitment to this area of work," (2) "community residents support local efforts in this area of work", and (3) "local political leaders share an ongoing commitment to this area of work". All items are measured on a 0 to 4 scale: 0 = "not at all", 1 = "a little", 2 ="somewhat", 3 = "a great deal", and 4 = "completely".

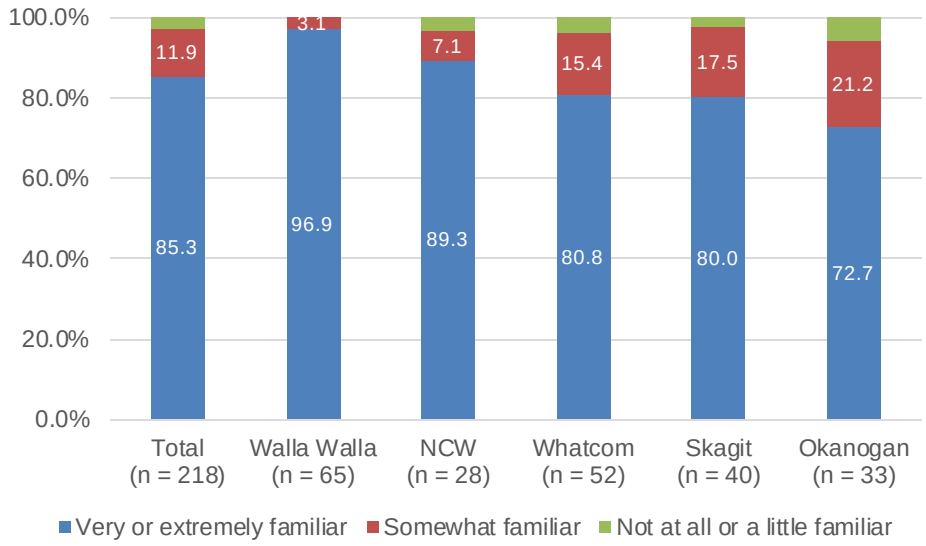
Based on a one-way analysis of variance, the sites were not statistically significantly different in their capacity in this domain (F = 1.51, p = .20).

To measure network members' familiarity with ACEs and resiliency concepts, the ARC[3] survey asked respondents about their familiarity with these concepts. Most survey respondents (85 percent) reported being "very or extremely familiar" with ACEs concepts; almost as many (81 percent) were "very or extremely familiar" with resilience concepts (Figure II.7).

Across the sites, Walla Walla's network members were most familiar with these concepts; all most all (96.9 percent) were "very or extremely familiar" with ACEs concepts and 9 out of 10 (90.8 percent) reported being "very or extremely familiar" with the concept of resilience (Figure II.7). In contrast, less than three out of four Okanogan network members (72.7 percent) reported being "very or extremely familiar" with the concept of ACEs; and three-fourths (75.8 percent) of the site's network members reported or being "very or extremely familiar" with the concept of resiliency.

Although many FPC network members reported being familiar with ACEs concepts, a smaller percentage reported that they were actually integrating the concepts into their own work and the work of their organizations. Among the Walla Walla network's members, one in 10 (10.8 percent) reported that they had integrated ACEs concepts "not at" or had only "integrated them a little" into their work. In Okanogan, 3 in 10 APPI network members (30.3 percent) reported not having started integrating ACEs concepts into their work (Figure II.8).

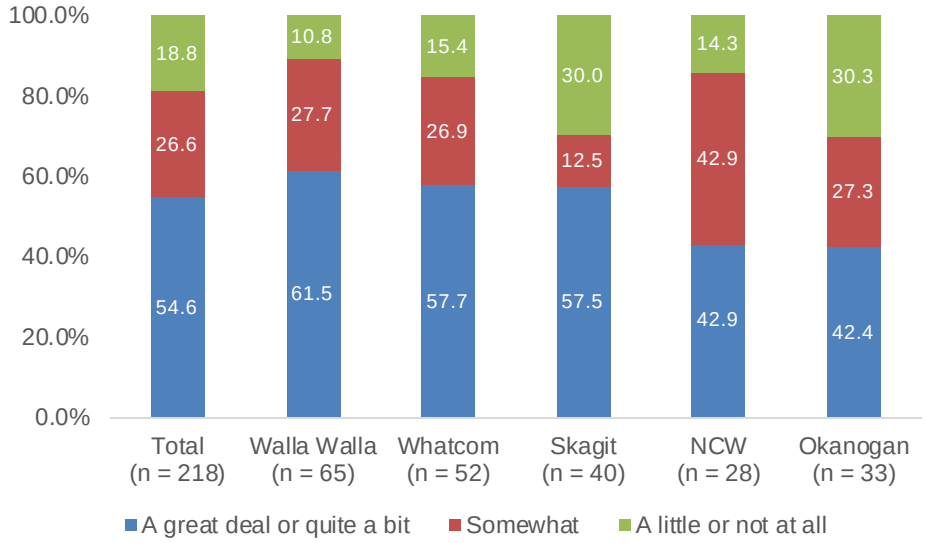
Figure II.7. Familiarity with ACEs concepts across APPI sites



Source: Community Science analysis of 2016 ARC[3] survey data.

Note: This figure shows the percentage of respondents in each site and overall who replied that they were "very or extremely familiar," "somewhat familiar," or "not at all or a little familiar" with adverse childhood experiences (ACEs) concepts.

Figure II.8. Integration of ACEs concepts



Source: Community Science analysis of 2016 ARC[3] survey data.

Note: This figure shows the percentage of respondents in each site and overall who replied that their organization (or they, if not affiliated with an organization) integrated adverse childhood experiences (ACEs) concepts into their work "a great deal or quite a bit," "somewhat," or "a little or not at all."

D. Evidence-based community problem solving

Successful community change efforts that target ACEs are able to use the best evidence available to (1) conduct community problem solving processes that document the local prevalence of ACEs and identify their root causes (their social, economic, structural, and cultural determinants), (2) develop and implement a community-wide plan to address childhood adversity, and (3) and monitor and improve their efforts. "Coalitions can play a critical role in identifying community needs, designing innovative solutions, and mobilizing community support for those efforts" (Foster-Fishman et al. 2001, p. 256).

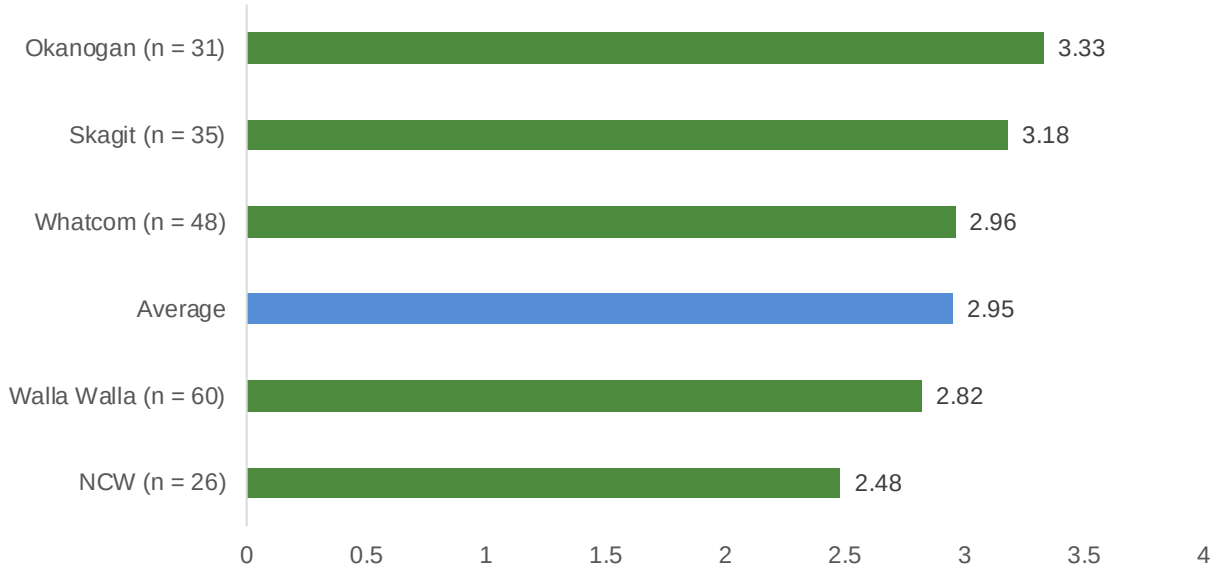
Community problem-solving capacity. All five APPI sites adopted evidence-based community mobilization and public health prevention frameworks to organize their efforts. These models included the Communities that Care (CTC) and the Strategic Prevention Framework (SPF).

- The NCW, Okanogan, and Skagit sites adopted the CTC model, a community change process designed to help communities plan, implement, and evaluate proven prevention strategies to promote healthy youth development and reduce problem behaviors (Quinby et al. 2008, Shapiro et al. 2013, CTC 2015). CTC outlines a five-step process: (1) activate a small group that organizes a formal board, (2) conduct a formal community profile, (3) to identify local risks and strengths, (4) create a community action plan, and (5) implement and evaluate the plan.
- All five sites incorporated some elements from the SPF, developed by the Substance Abuse and Mental Health Services Administration (SAMHSA). This framework also has five steps: (1) assess needs, (2) build capacity, (3) plan, (4) implement, and (5) evaluate. These steps are guided by two principles of sustainability and cultural competence (SAMHSA 2014a).
- The Walla Walla site used a more eclectic approach, taking elements from the CTC models as well as principles from other research on systems change, asset-based community capacity development, and community organizing (Flaspohler et al. 2008).

The ARC^3 survey utilized three items to measure community problem solving capacity. The items are: (1) "the coalition uses community problem-solving approaches (such as community mobilization and the strategic prevention) in this area of work", (2) "the coalition and community partners review the best research available to inform community plans", and (3) "the coalition has developed a clearly defined action plan that addresses community needs in this area of work."

Across the sites, the average overall score for the community problem-solving process domain was 2.95 on 0 to 4 scale (see Figure II.9). There were statistically significant differences between the site-specific scores in this domain ($p < .001$), with Okanogan and Skagit having the highest scores (3.33 and 3.18, respectively) and NCW receiving the lowest score (2.48). The average scores for the domain's individual items were similar (around 3.0).

Figure II.9. Community problem-solving capacity



Source: Community Science analysis of 2016 ARC[3] survey data.

Note: This figure shows the average site scores for the community problem-solving capacity domain, which consists of 3 items: (1) "the coalition uses community problem-solving approaches (such as community mobilization and the strategic prevention) in this area of work", (2) "the coalition and community partners review the best research available to inform community plans", and (3) "the coalition has developed a clearly defined action plan that addresses community needs in this area of work." All items are measured on a 0 to 4 scale: 0 = "not at all", 1 = "a little", 2 ="somewhat", 3 = "a great deal", and 4 = "completely".

Based on a one-way analysis of variance, the sites were statistically significantly different in their capacity in this domain ($F = 7.70$, $p < .001$).

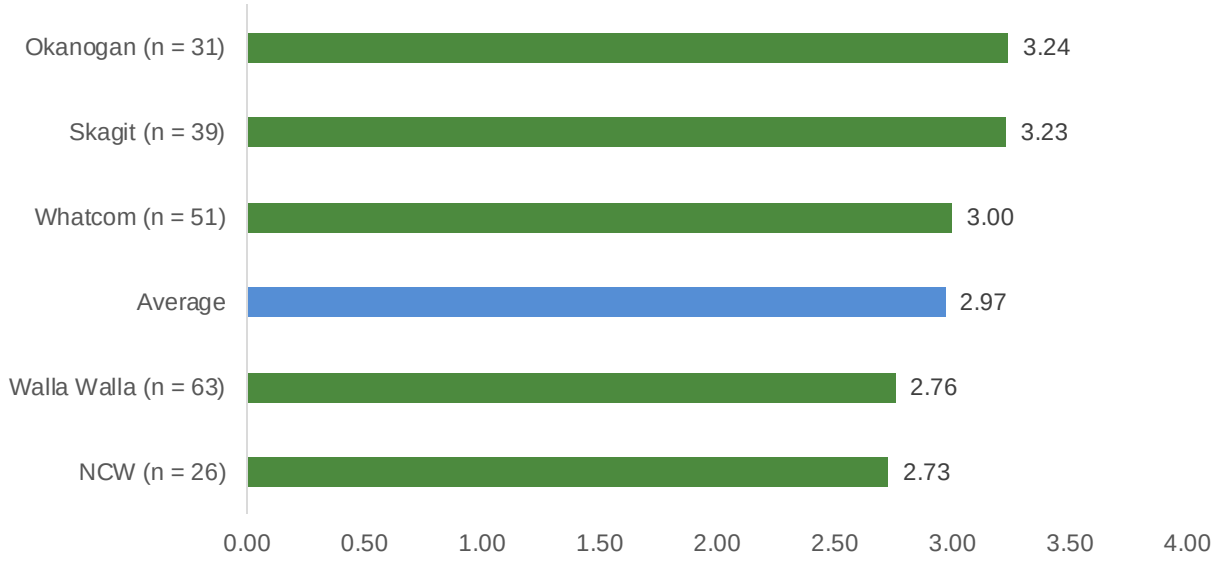
Focus on equity. Researchers report that, "increasingly, coalitions are applying 'root cause' analyses to understand their community issues" (Wolff 2016, p. 4). Some community change efforts that target ACEs are specifically promoting the use of a "health equity lens" to create community conditions that support optimal physical, mental, and emotional health. A notable example is the Culture of Health initiative, developed by the Robert Wood Johnson Foundation (RWJF 2014).

To track ACEs as a health equity issue, the evaluation team included four items in the ARC[3] survey. The items are (1) "the coalition is dominated by one organization or sector (such as education, health, or social services," (2) "coalition members work closely with community partners, local residents, and political leaders to address the social, cultural, and economic causes of adverse childhood experiences," (3) "among coalition members and partners, power is shared in the community's best interests," and (4) "the coalition effectively resolves conflicts and balances power among its members and community partners."[16]

[16] The first item—coalition is dominated by one organization or sector (such as education, health, or social services—was reverse coded to ensure that higher scores for all items in this domain represent more positive

Across the APPI sites, the average score for the focus on equity domain was 2.97 on a 0 to 4 scale. The sites did not have statistically significantly different scores in this domain (p = .11, Figure II.10). The item "the coalition effectively resolves conflicts and balances power among its members and community partners" received a wide range of site-specific scores.

Figure II.10. Focus on equity capacity



Source: Community Science analysis of 2016 ARC[3] survey data.

Note: This figure shows the average site scores for the focus on equity capacity domain, which consists of 4 items: (1) "coalition is dominated by one organization or sector (such as education, health, or social services", (2) "coalition members work closely with community partners, local residents, and political leaders to address the social, cultural, and economic causes of adverse childhood experiences," (3) "among coalition members and partners, power is shared in the community's best interests," and (4) "the coalition effectively resolves conflicts and balances power among its members and community partners." All items are measured on a 0 to 4 scale: 0 = "not at all", 1 = "a little", 2 ="somewhat", 3 = "a great deal", and 4 = "completely". The first item was reverse coded to ensure that for all items higher scores for all items on this domain represent more positive outcomes.

Based on a one-way analysis of variance, the sites were statistically significantly different in their capacity in this domain (F = 1.90, p = = .11).

Use of data for improvement and accountability. Research has shown that coalitions benefit from using data to monitor and improve their efforts. "Coalitions that have a continuous learning orientation, consistently seeking and responding to feedback and evaluation data, adapting to shifting contextual conditions, discussing problems and potential solutions, and seeking external information and expertise are more successful in their endeavors" (Foster-Fishman et al. 2001, p. 255). "Transforming current practices requires a willingness to create new theories of change based on both scientific knowledge and practical knowledge in the field, taking risks driven by rigorous measurement of what works (and doesn't) for whom, in order to understand why. It also requires a continuous cycle of learning and improving" (Center on the

outcomes, a coalition that is *more* diverse and shares power among all stakeholders in the *best* interests of the community.

Developing Child at Harvard University 2016a, p. 16). Due to the rapid development in this field, it is especially important to implement the continuous cycle of monitoring, testing, and evaluation of new and improved strategies targeting ACEs.

The APPI evaluation assessed the APPI sites' capacity to use data in three areas: monitoring community health trends, collecting and using ACEs-related data, and evaluating and improving the effectiveness of their community change efforts.

- **Community trends.** The APPI sites made extensive use of community trend data for coalition planning. The Walla Walla and NCW sites published ACEs-related community trends reports. The Okanogan site developed a collective database of local court, law enforcement, and liquor board trends in drug and alcohol-related activity. The Whatcom and Skagit sites routinely reviewed trend data from their local health departments.
- **ACEs data.** In 2009, Washington was one of the first five states to add an ACEs module of questions to the state's Behavior Risk Factor Surveillance System (BRFSS) surveys. Since then, several APPI sites have supported the collection of additional ACEs-related survey data to fill local information gaps and needs.
- **Evaluation of network efforts.** The FPC did not require its networks to collect implementation and outcome data in a standardized format that would facilitate cross-site analysis (Blodgett 2013). As a result, no APPI site developed the internal capacity to monitor and improve its efforts. Consequently, the sites lack some of the data needed to document the impact of their activities.

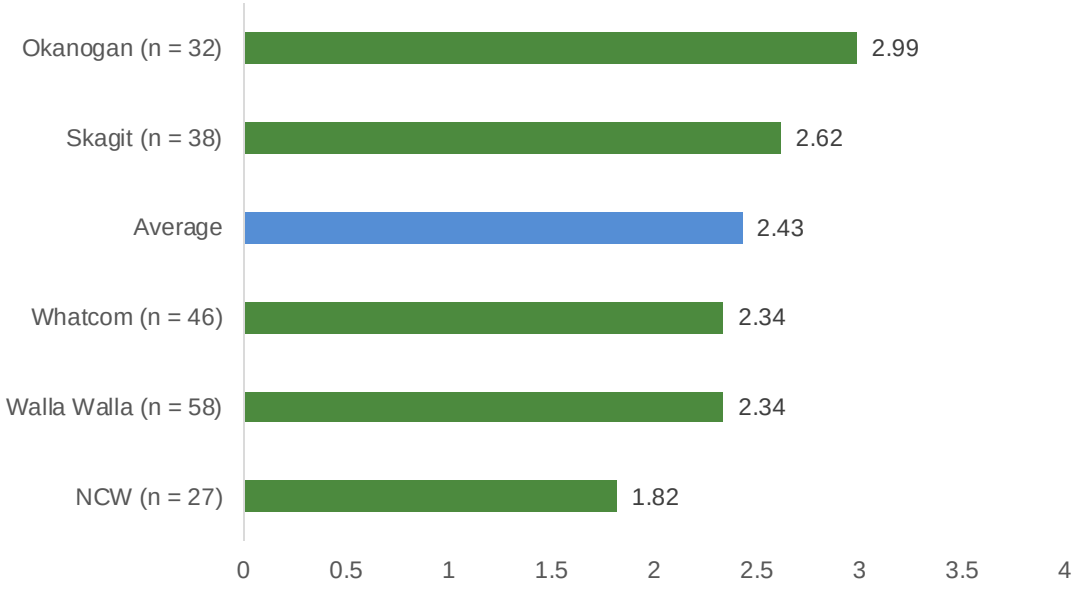
To monitor capacity in this area, the ARC^3 survey identified four capacity measures for the data use domain. The measures are (1) "we have access to the data sources and systems needed to track our progress and identify successes and failures," (2) "the coalition has enough staff capacity and expertise to analyze and use data for decision-making," (3) "the coalition uses data to identify local disparities for community planning in this area of work," and (4) "the coalition uses a range of evaluation methods to conduct rapid tests of promising programs and practices in this area of work."

Across the APPI sites, the overall average score for the data use domain was 2.43 on a 0 to 4 scale (Figure II.11). This average score masks the wide variation in site-specific scores. The Okanogan site received the highest domain score of 2.99; the NCW site received the lowest domain score of 1.82. On average, the sites were rated highest (2.74) on their capacity to "use data to identify local disparities for community planning in this area of work." They were rated lowest (2.27), on average, for their "staff capacity and expertise to analyze and use data."

E. Strategies for community-wide impact

In 2002, the FPC charged its local networks with the task of tackling the complex problem of childhood adversity. Aware of the complexity of the problem, the FPC encouraged local networks to educate their communities about ACEs and develop their own community-based solutions. This section reviews (1) the strategies the sites used to find community-based solutions, (2) the processes the sites used to engage their communities in finding solutions, and (3) the scale at which the sites worked to achieve community-wide change.

Figure II.11. Data use capacity



Source: Community Science analysis of 2016 ARC^3 survey data.

Note: This figure shows the average site scores for the data use capacity domain, which consists of 4 items: (1) "we have access to the data sources and systems needed to track our progress and identify successes and failures", (2) "the coalition has enough staff capacity and expertise to analyze and use data for decision-making", (3) "the coalition uses data to identify local disparities for community planning in this area of work", and (4) "the coalition uses a range of evaluation methods to conduct rapid tests of promising programs and practices in this area of work". All items are measured on a 0 to 4 scale: 0 = "not at all", 1 = "a little, 2 ="somewhat", 3 = "a great deal", and 4 = "completely".

Based on a one-way analysis of variance, the sites were statistically significantly different in their capacity in this domain ($F = 8.39$, $p < .001$).

Multilevel strategies. In 2009, the FPC developed a Community Capacity Development (CCD) framework, which guided local networks to target change at two (individual and community) levels. Since then, community change initiatives have started using social-ecological frameworks that target change at five (individual, program, organization, system, and policy) levels (Center on the Developing Child at Harvard University 2016a, p. 4). "In recent years, led by the CDC, these [public health] coalitions have moved in the direction of policy and systems change as their most powerful and desired outcome. Addressing policy change and systems change has become the gold standard of outcomes" (Wolff 2016, p. 4). ACEs researchers and neuroscientists support the use of systems-change strategies to address ACEs. "A rapidly growing knowledge base from the biological and behavioral sciences, combined with practical, on-the-ground knowledge from working with adults and families, points to more effective solutions both in the systems that provide pathways out of poverty and in helping individuals develop more effective skills for coping with adversity" (Center on the Developing Child at Harvard University 2016a, p. 16).

The ARC^3 survey asked respondents the extent to which their coalition had influenced their ACEs activities at five different levels: improving individual staff knowledge of ACEs, integrating ACEs into organizational practices, collaborating with organizations in other sectors,

facilitating community awareness of ACEs, and improving ACEs policy advocacy efforts. The items that received the highest average ratings focused on ACEs awareness: the "staff knowledge" item (3.12) and the "community awareness" item (3.12). The items addressing ACEs activities at the organizational, systems, and policy levels received lower influence ratings (2.43, 3.03, and 2.72, respectively).

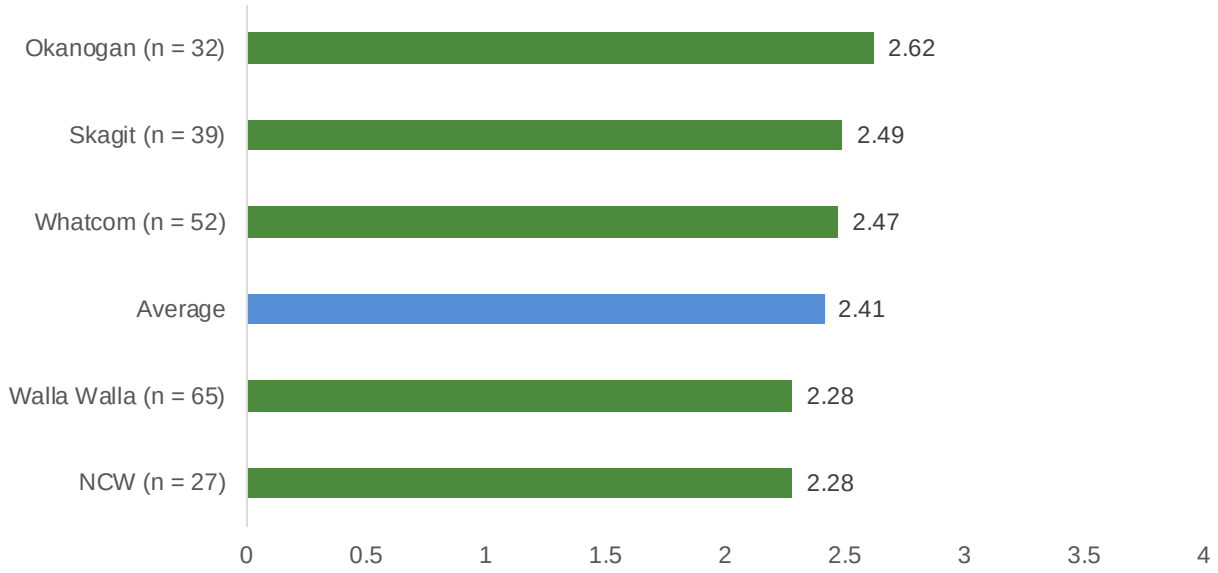
To track the sites' multi-level strategies, the ARC[3] survey index identified capacity measures at five (individual, organization, system, and policy) ecological levels. The capacity measures are (1) "children and families get the help they need to develop safe, stable, and caring relationships and improve self-regulation and other aspects of healthy development", (2) "organizations change their programs and practices to help families more effectively in this area of work", (3) "service providers combine their efforts to provide more seamless support for children and families in this area of work", (4) "coalition members and community partners use positive reinforcement and other strategies to change community norms in this area of work", and (5)" coalition members mobilize allies to advocate for policy change (through legislation, administrative rules, and funding) in this area of work.

Across the APPI sites, the overall average score for the multiple strategies domain was 2.41 on a scale from 0 to 4 (see Figure II.12). While the five sites were not significantly different from each other on the average scale scores (p = .09), Okanogan, Skagit, and Whatcom received relatively high ratings for the item, "coalition members and community partners use positive reinforcement and other strategies to change community norms in this area of work …" Their scores were 2.97. 2.97, and 2.91, respectively. The domain item with the lowest average rating (2.22) was the item, "children and families get the help they need to develop safe, stable, and caring relationships and improve self-regulation and other aspects of healthy development."

Diverse engagement and empowerment. The APPI sites viewed community engagement as an essential strategy in the prevention and mitigation of ACEs. Researchers agree that broad-based community engagement creates many benefits. First, "people are not treated as mere consumers of services but are rather engaged as producers of health, serving as leaders for a healthier culture and healthier environment" (Norris 2013, p. 8). Second, "engaging those most affected by an issue results in creating solutions that are appropriate and compatible with the population being served" (Wolff 2016, p. 2). However, they caution, "community coalitions need to engage both the most powerful and least powerful people in a community, finding ways for them to work together and address the community's priorities for action and the impediments to change in institutions and organizations serving the community" (Wolff 2016, p. 3).

To assess community mobilization, the index identified three capacity measures for the diverse engagement and empowerment domain. The measures are: (1) "community residents are actively engaged as leaders in this area of work", (2) "we make youth leadership opportunities available in this area of work", and (3) "coalition members work closely with powerful allies (such as school districts and local legislators) in this area of work."

Figure II.12. Multi-level strategies capacity



Source: Community Science analysis of 2016 ARC^3 survey data.

Note: This figure shows the average site scores for the multi-level strategies capacity domain, which consists of 5 items: (1) "children and families get the help they need to develop safe, stable, and caring relationships and improve self-regulation and other aspects of healthy development", (2) "organizations change their programs and practices to help families more effectively in this area of work", (3) "service providers combine their efforts to provide more seamless support for children and families in this area of work", (4) "coalition members and community partners use positive reinforcement and other strategies to change community norms in this area of work", and (5)" coalition members mobilize allies to advocate for policy change (through legislation, administrative rules, and funding) in this area of work. All items are measured on a 0 to 4 scale: 0 = "not at all", 1 = "a little, 2 ="somewhat", 3 = "a great deal", and 4 = "completely".

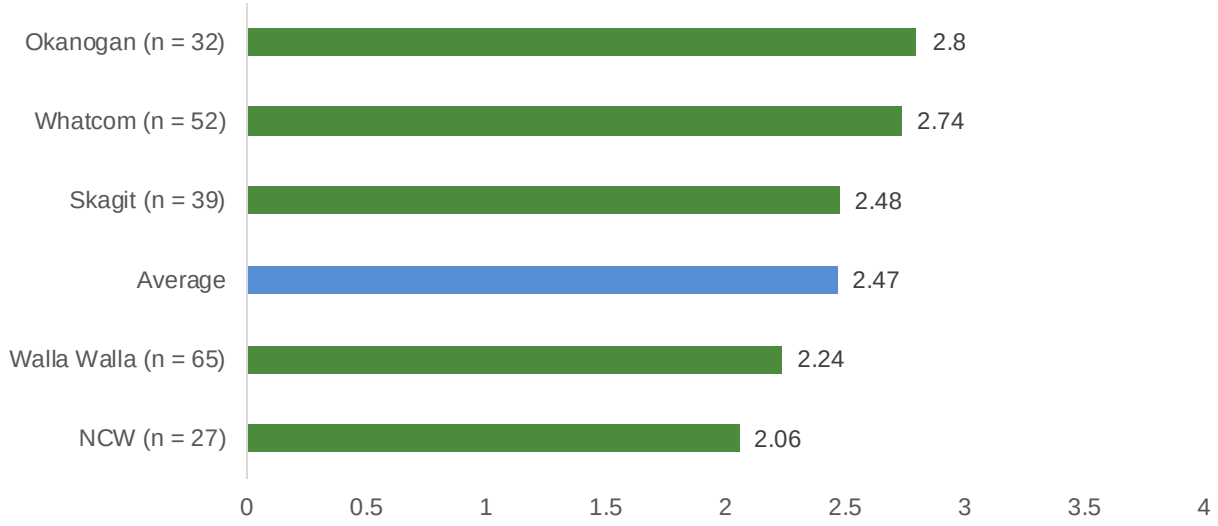
Based on a one-way analysis of variance, the sites were not statistically significantly different in their capacity in this domain ($F = 2.07$, $p = .09$).

Across the APPI sites, the average overall score for the diverse engagement and empowerment domain was 2.47 on a 0 to 4 scale (Figure II.13). The sites were significantly different in this capacity ($p < .001$), with Okanogan and Whatcom obtaining the highest average scores (2.8 and 2.74, respectively) in this domain. The item with the highest average rating (2.97) in this domain was "coalition members work closely with powerful allies (such as school districts and local legislators) in this area of work. The item with the lowest average rating in this domain (2.17) was "community residents are actively engaged as leaders in this area of work." This low rating is reflected in the findings from the ARC^3 survey's sector analysis. Only 8.7 percent of the survey's respondents identified themselves as community members, not affiliated with any organization.

Scale of work. The final capacity reviewed in this chapter is perhaps the most important for accomplishing community-wide change. Even effective strategies cannot have a community-wide impact unless they are implemented at sufficient scale to reach their target population. Moreover, efforts that cannot be sustained over time are unlikely to have a lasting impact. Researchers concur: "delivering positive impact at scale over time requires the community will

and accountability to act with a "dose-sufficient" approach of reach (population), intensity (strength), and duration (time)" (Norris 2013, p. 8).

Figure II.13. Diverse engagement and empowerment capacity



Source: Community Science analysis of 2016 ARC^3 survey data.

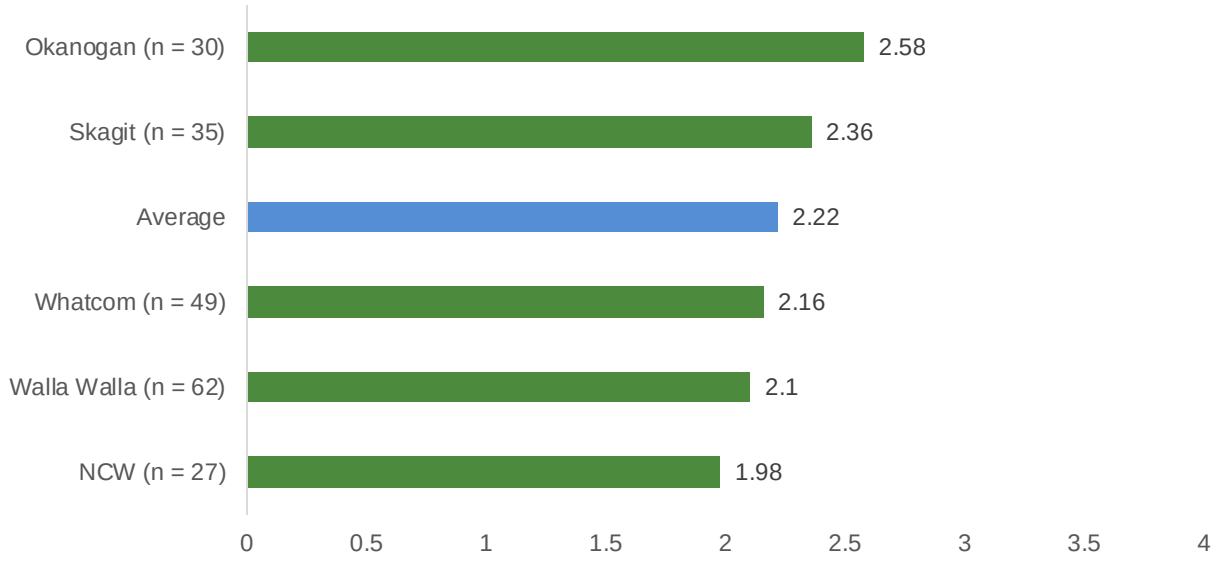
Note: This figure shows the average site scores for the diverse engagement and empowerment capacity domain, which consists of 3 items: (1) "community residents are actively engaged as leaders in this area of work", (2) "we make youth leadership opportunities available in this area of work", and (3) "coalition members work closely with powerful allies (such as school districts and local legislators) in this area of work." All items are measured on a 0 to 4 scale: 0 = "not at all", 1 = "a little, 2 ="somewhat", 3 = "a great deal", and 4 = "completely".

Based on a one-way analysis of variance, the sites were statistically significantly different in their capacity in this domain ($F = 7.42$, $p < .001$).

To assess the capacity for community-wide impact, the ARC^3 survey identified two capacity measures for the scale of work domain. These measures focus on working at sufficient scale to achieve community outcomes, in part through the institutionalization and expansion of successful local programs and practices. The measures are (1) "local efforts are able to sustain and expand successful programs and practices in this area of work", and (2) "local efforts are working at sufficient scale to improve community-wide trends in child development and family well-being."

The overall average rating for the scale of work domain (2.22) was the lowest of all ten community capacity domains (Figure II.14). The sites were statistically significantly different on this domain ($p = .03$) with Okanogan receiving the highest average score (2.58). Of the two questions in the domain, the item, "local efforts are working at sufficient scale to improve community-wide trends in child development and family well-being" received the lowest average score of 2.19 on a 0 to 4 scale. This finding reflects the challenges that sites have experienced obtaining sufficient resources to carry out and sustain their ACEs-related work. One solution for the sites to build community capacity in this area is to improve their ability to advocate for the resources needed to scale up trauma-informed programs, policies, and practices.

Figure II.14. Scale of work capacity



Source: Community Science analysis of 2016 ARC[3] survey data.

Note: This figure shows the average site scores for the scale of work domain, which consists of 2 items: (1) "local efforts are able to sustain and expand successful programs and practices in this area of work", and (2) "local efforts are working at sufficient scale to improve community-wide trends in child development and family well-being." All items are measured on a 0 to 4 scale: 0 = "not at all", 1 = "a little, 2 ="somewhat", 3 = "a great deal", and 4 = "completely".

Based on a one-way analysis of variance, the sites were statistically significantly different in their capacity in this domain (F = 2.79, p = .03).

F. Conclusions: linking capacity to community change

In this chapter, we analyzed interview and survey data to assess the collective community capacity that the APPI sites have developed in ten domains. This chapter identified four 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.

Second, the sites have similar capacity on five domains. The site are no statistically significant differences in five domains: (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 faced 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 had 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. In all five domains, NCW had the lowest score. The sites also differed in network size, structure, and membership diversity, as well as other social network characteristics, including level of collaboration, density, and reciprocity. These differences in capacity and network characteristics are consistent with the differences described in the APPI evaluation's interim report (Hargreaves et al. 2015) and in the final report's site profiles (Appendix A of this report).

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III. EVALUATION OF SELECT ACTIVITIES

One of the goals of the APPI evaluation was to examine whether sites' efforts to decrease ACEs, increase resilience, and improve well-being of children and adults in their communities have led to corresponding improvements in measurable outcomes. In the earlier part of the evaluation, we assessed the feasibility of detecting impacts of the sites' ACEs-related efforts at the county level. We found that the sites strategically targeted their activities to specific geographic locations (for example, a school or a few smaller neighborhoods within a county) or populations (for example, at-risk youth). Therefore, it was not surprising to find that the available county-level data were not sufficiently sensitive to detect shifts in outcomes due to sites' efforts (Hargreaves et al. 2015).

In this stage we narrowed our focus to evaluating eleven activities. The evaluation synthesizes findings from qualitative data collected through stakeholder interviews and document reviews, as well as analysis of quantitative outcomes data for the selected activities. In Section A, we describe the evaluation methods, including the criteria for selecting the 11 activities and the analytic designs used to examine the outcomes of the selected activities. The rest of the chapter summarizes the findings for each of the eleven activities and is organized into four sections by the focus of the activity work—community development, risk reduction and healthy youth development, child abuse prevention and family support, and school climate and student success.

A. Evaluation methods

In consultation with the sites, we selected the 11 activities based on four criteria:

1. **Degree of involvement.** To be able to take credit for the success (or failure) of the activity, the sites had to play a significant role in implementing (or helping to implement) an activity. For example, the sites had to have led, helped coordinate, or offered a substantial amount of support to its partners in implementing the activity.
2. **Believed to be successful by the sites**. As innovators, the APPI sites tried many different activities to address the needs of their communities. However, few of these activities were rigorously evaluated in the past. We focused on the ones that were believed to be successful to see whether we can validate sites' perceptions of effectiveness by examining changes in related outcomes with rigorous evaluation methods.
3. **Availability of data**. We had to have high quality data for the right outcomes, time period, and target population and similar data for a potential comparison group (if feasible). Thus, we selected activities where the sites had (or were expected to easily obtain) appropriate data.
4. **Represent diversity of sites' efforts**. Although the selected activities clearly could not be thought of as representative of all of the sites' efforts—for example, only potentially successful activities with good data were selected—we selected activities that show the diversity of sites' efforts. We selected two to three activities per site and two to three activities from each domain in which sites worked (namely, community development, risk

reduction and healthy youth development, child abuse prevention and family support, and school climate and student success).

We evaluated 11 activities across the five APPI sites. The evaluation was based on data which were publicly available (from state agencies or school districts) or were obtained by the APPI sites. We used a variety of data including implementation data, data from summative reports, administrative data, and data from existing surveys. All measures reflected aggregate outcomes (average outcomes for all program participants or percentage of students reporting using alcohol). Table III.1 provides a summary of data indicators and sources by activity.

The evaluation was based on a retrospective design and used the most rigorous methods possible with the available data. When all available data were collected after the activity was implemented, we used cross-sectional descriptive methods. Descriptive outcomes include providing average survey responses for a subset of program participants and presenting the number of community members reached by various efforts. Due to data limitations, most activities were examined using descriptive analysis.

When possible, we used more rigorous methods, such as a pre-post design, difference-in-differences design, or an interrupted time series (ITS) design (Shadish et al. 2002). These designs compare changes in outcomes over time.

Pre-post design. Pre-post design is used when data are available for the same outcome both before and after implementation of an activity. In the most basic form, the pre-post design requires only two data points: one "pre" measure (measured before the intervention began) and one "post" measure (measured at some point after the activity was implemented). The design then examines whether the difference in outcome before and after an implementation is statistically significant. When two or three points are available, this design allows us to examine whether the difference in the average pre-implementation and average post-implementation outcome is significant. The latter design produces more accurate statistical tests by incorporating the information on how much the outcome of interest varies over time before and after the intervention (for example, from cohort to cohort).

The pre-post design presents advantages but also significant limitations. The main benefits of this approach are its minimal data requirements and its straightforward, simple interpretation. The cost of this accessibility is that the design is not very rigorous. In particular, the pre-post design cannot distinguish the effect of the activity from anything else that occurred during the same time period (that is, the history effect). A pre-post design, for example, might detect that fewer youths are drinking alcohol after the intervention as compared to prior to the intervention. However, it will not tell us whether the improvement was due to the intervention itself or because the alcohol use declined for other reasons.

Difference-in-differences design. One way to increase the rigor of a pre-post design is to add a comparison group. This approach, called a difference-in-differences design or a pre-post design with a comparison group, allows us to compare the change experienced in the treatment group to the changes experienced elsewhere during the same time period. We use this approach to evaluate three activities: MOOV Positive Social Norms Campaign (Okanogan),

Prevention/Intervention Specialist program (Skagit), and Shuksan Middle School efforts (Whatcom).

This approach assumes that the change experienced in the comparison group is an accurate representation of what would have happened in the treatment group if it had not received any type of intervention. We cannot directly test this assumption, but some types of comparison groups are more likely to meet this assumption than others. For example, for a school-level intervention, another school in the same district that has similar student demographics may be a strong comparison group. Unfortunately, identifying a strong comparison group was not feasible for any of the activities examined in the APPI evaluation due to data limitations. Instead we used a "benchmark" comparison group. For example, in some analyses we compared changes in outcomes of an intervention school to changes in district or statewide averages. This allowed us to compare the changes in the intervention school to the changes experienced by other schools during the same time period. It is always possible, however, that the comparison and treatment schools differed on important dimensions, and that is what led to the differences in their outcomes.

Interrupted time-series design. An ITS approach augments a pre-post design by incorporating additional years of data. When there are sufficient data points available, an ITS model allows one to (a) examine and control for the trend in the outcome before the intervention was implemented and (b) examine whether implementation of the intervention coincided with a change in the *level* and/or the *slope* (i.e., trajectory) of the outcome. That is, we can determine not just if the average outcome improved, but whether outcomes continued to improve with time.

The ITS design work best when (1) the outcome is observed frequently over a long time period before and after the intervention, (2) before the intervention the outcome is either constant or follows an obvious trajectory (for example, a linear trajectory), and (3) the intervention produces an impact soon after its implementation or the lag between implementation and the potential effect could be easily predicted based on prior knowledge or substantive theory. Due to data limitations, only two activities—Whatcom's Shuksan Middle School and Okanogan's Positive Social Norms Campaign—met the minimum requirements to use an ITS design in this evaluation.

Although ITS design is one of the most rigorous single-group quasi-experimental designs, it still cannot completely rule out alternative explanations for the observed change in level and slope of the outcome. The major threat to the interrupted-time series design 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.

Benchmark comparison group. To examine the likelihood of alternative explanations, we included comparison groups for both pre-post and ITS analyses, whenever possible.[17] To the extent possible, we tried to match this comparison group to the intervention group. For example,

[17] As mentioned earlier, a pre-post design with a comparison group is often referred to as difference-in-differences design as it compares the difference between pre- and post-intervention outcomes in the intervention group to the pre-post difference in a comparison group during the same time period.

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, the interventions were usually implemented in only one unit (for example, neighborhood, school, or school district) and all of our analyses were based on aggregated data. As a result, we were unable to closely match intervention and comparison groups at the level of individuals. To the extent that these two groups differ, alternative explanations could be the true causes of the observed differences in outcomes.

Multiple comparisons. The activities that we evaluated were often complex—there were multiple goals, many different components, and the activities targeted a variety of outcomes across a range of age groups. To reflect this multidimensional approach, we examined the changes across several related outcomes, often for multiple groups and using different data sources (when feasible). For example, when evaluating interventions that target substance use among youth, we examined use of alcohol, marijuana, and other drugs among students in several grades as well as students' perceptions of norms, school climate, and safety. Considering the number of statistical tests that we conducted for each activity, we were likely to detect some significant differences purely by chance. To avoid reporting spurious findings, we tried to corroborate our findings by examining whether the findings were consistent across relevant age groups, data sources, and related outcomes as well as what we learned about these activities through interviews and document reviews.

Table III.1 provides a summary of the evaluation designs by activity. For technical details about these methodologies, see Appendix D.

Table III.1. Evaluation data sources and designs for 11 selected activities

Activity name (site)	Outcomes	Data sources	Evaluation design
Domain 1: community development			
ACEs Awareness Campaign (NCW)	• Number of presentations and attendees • Number of distributed brochures	• Implementation data from the Coalition for Children and Families of North Central Washington	Descriptive analysis
CRI's Resilience and ACEs Awareness Campaign (Walla Walla)	• Number of presentations and attendees • Familiarity with ACEs • Use of resiliencetrumpsaces.org website.	• Implementation data from the Walla Walla Community Network • 2014 ACEs Awareness Survey • 2016 ARC[3] survey • Google analytics website traffic data	Descriptive analysis
Commitment to Community ([C2C], Walla Walla)	• Perceptions of neighborhood safety and needs • Perceptions of usefulness of C2C work	• 2004 C2C forum survey • 2009 Jefferson Park neighborhood survey • 2015 neighborhood survey	Descriptive analysis
Domain 2: risk behavior reduction and healthy youth development			
Omak Community Truancy Board (Okanogan)	• Number and percentage of students referred to the courts under the Becca Law	• 2014–2015 administrative data from the Omak Community Truancy Board	Descriptive analysis
MOOV Positive Social Norms Campaign (Okanogan)	• Alcohol use among youth	• Omak high school monthly student survey data	Interrupted time series
Prevention/Intervention Specialist Program (Skagit)	• Alcohol, drug, and cigarette use among youth • Knowledge of intervention prevention specialists • Students' perceptions of norms and schools' climate and safety	• Healthy Youth Survey data • OSPI's prevention/intervention specialist program data	Difference-in-differences

Table III.1 *(continued)*

Activity name (site)	Outcomes	Data sources	Evaluation design
Domain 3: child abuse prevention and family support			
Nurse-Family Partnership (Skagit)	• Maternal smoking and alcohol use during pregnancy • Percentage of infants with low and very low birth weight	• Data collected by the Skagit's Nurse-Family Partnership program	Descriptive analysis
Community Navigators (Whatcom)	• Percentage of families reunified • Percentage of families with children re-entering child welfare system after reunification	• Administrative data from the Children's Administration	Descriptive analysis
Domain 4: school climate and student success			
Shuksan Middle School (Whatcom)	• Student behavior and discipline data • Students' substance use • Students' perceptions of school safety and climate • Students' engagement in school • Hispanic student achievement in reading and math	• Bellingham School District's disciplinary data • Bellingham School District's school-level Healthy Youth Survey data • OSPI's proficiency and enrollment data	Interrupted time series (disciplinary outcomes only) Difference-in-differences (all, except disciplinary, outcomes)
Lincoln High School and the Health Center (Walla Walla)	• Student behavior and discipline data • Graduation data	• Administrative data from Lincoln High School	Pre-post design
Westside High School (NCW)[a]	• NA	• NA	NA

Note: ACE = adverse childhood experience (10 categories of childhood abuse, neglect, and family dysfunction); ARC[3] = ACEs and Resilience Collective Community Capacity survey; C2C = Commitment to Community; CRI = Children's Resilience Initiative; MOOV = Most of Okanogan Valley, NCW = Coalition for Children and Families of North Central Washington; OSPI = Washington State's Office of Superintendent of Public Instructions; NA = not applicable.

[a] No outcomes data were available for Westside High School because this activity was in early stages of implementation at the time of the writing of this report.

B. Community development activities

Two of the five APPI sites (Whatcom and Walla Walla) have focused their time and resources on building formal and informal social supports for vulnerable families in targeted neighborhoods. The underlying logic is that by bringing neighbors together to work on community improvement projects, attend public events, and participate in other neighborhood-oriented activities, residents can develop a greater sense of community, become less socially isolated, and be more willing to ask others for help and reciprocate when needed. Whatcom also helped to bring new services and supports to an isolated community on the eastern side of the county. Such efforts are designed to help meet basic needs, reduce toxic stress, and increase social capital among at-risk families.

The APPI sites view community engagement as an essential strategy in the prevention and mitigation of ACEs. The sites are working to raise awareness of ACEs and resilience principles among many segments of their communities. Through increased awareness, the sites hope to (1) motivate service providers to change their professional practices, (2) gain political support from local policymakers and private funders to allocate more local resources for trauma-informed services and supports, and (3) help local families understand their own traumatic experiences so they can use that insight to make changes in their own lives and in the lives of their children.

In this section, we will describe three activities: two public awareness campaigns implemented by the NCW and Walla Walla sites and Commitment to Community implemented by Walla Walla. The former were designed to educate communities about ACEs and resilience and the latter to help address residents' concerns about their neighborhoods and build community engagement. We will describe these activities, their sources of funding and support, and implementation challenges. Finally, when data are available, we will evaluate whether these activities relate to changes in targeted outcomes.

1. ACEs awareness campaign (Coalition for Children and Families of North Central Washington)

Description. The ACEs Awareness Campaign is an initiative led by the Coalition for Children and Families of North Central Washington (hereafter, the Coalition) to disseminate knowledge about ACEs in the Wenatchee community.[18] The ACEs Awareness Campaign aims to:

- Educate the community about ACEs and their impact on the health and well-being of children, youth, and adults in the community;
- Publicize the resources available to parents and other members of the community to help promote good parenting skills, decrease the incidence of child abuse and neglect, and report child abuse and neglect when they occur;

[18] The ACEs Awareness Campaign targets community members in Wenatchee, Washington and neighboring areas of Douglas and Chelan counties.

- Build the support of the community to address these important issues.

The ACEs Awareness Campaign efforts have grown to include disseminating written information, hosting community outreach events, and organizing conferences and presentations. The Coalition board is supported in this activity by a group of volunteers who attend the community events and distribute information. Key activities include the following:

▲ **ACEs Training by Laura Porter**

- **Designing, printing, and disseminating an ACEs brochure in early 2014.** ACEs brochure is a major tool for heightening awareness about ACEs. Volunteers and Coalition members distribute brochures at presentations, community outreach events (such as local fairs and summer festivals), and partner Coalition members' outreach events. Only about 300 brochures remain of the 10,000 printed; the Coalition plans to have additional brochures printed in 2016.

- **Disseminating ACEs information to local organizations and residents (ongoing).** A four-person team at the Coalition presents information on ACEs approximately every two months to organizations that express interest, such as parent teacher associations, churches, and other community groups. Coalition volunteers, partners, and members disseminate ACEs brochure and information at local community events.[19] The Coalition collaborates with other organizations to reach community members in a variety of settings. For example, instructors for parenting classes offered by the Strengthening Families Program distribute ACEs brochures in both English and Spanish. The nursing director for Chelan Douglas Health District also shares information about ACEs and distributes ACEs brochures at WIC program[20] events to reach its target audience of parents with young children and other community residents. The Coalition contributes to other ACEs-related social causes and organizations as well; for example, it provides substance abuse information through presentations and community engagement events.

[19] The coalition performs outreach activities at approximately six large seasonal community events and many smaller events. The larger festivals, such as Fiestas Mexicanas and Washington State Apple Blossom Festival, take place in the summer (between May and September) and bring in thousands of people from Wenatchee and the surrounding communities. The coalition hosts a booth, distributes ACEs brochures, and speaks to those interested in hearing more about ACEs at roughly one event per week from May to September. For a list of Wenatchee's festivals, see: [http://wenatchee.org/annual-events-festivals-fairs/]

[20] WIC is the federal government's Special Supplemental Nutrition Program for Women, Infants, and Children.

- **Coordinating and/or hosting conferences and presentations to engage community leaders and area experts** (Table III.2). These events were intended to target focal groups of stakeholders with specific information on ACEs and resilience and to provide forums to discuss and exchange ideas.
- **Developing a survey to collect data on ACEs awareness and resilience in Wenatchee and surrounding areas**. The Coalition plans to distribute the survey to residents in 2016. Such efforts are expected to support future efforts to assess the impact of the ACEs Awareness Campaign on people's understanding of ACEs.

Support and funding. The Coalition directs and supports the various initiatives of the ACEs Awareness Campaign through promotion, coordination, and presentations. The Coalition uses the APPI grant, which it received in 2013, as the main source of funding for all initiatives. Funds are used to support promotional activities, events, and speakers.

While the Coalition's staff is directly involved at ACEs-related events, the campaign relies heavily on Coalition members and volunteers to implement its initiatives. The Coalition also employs a part-time assistant who works approximately 20 hours per month to support the chair of the board of the Coalition with various tasks, such as maintaining meeting minutes and helping communicate with Coalition members and local stakeholders.

Outcomes. The Coalition has employed traditional dissemination tools and venues, such as printed brochures, conference presentations, and community events, in its efforts to promote awareness of ACEs concepts in the community. The Coalition has increased its efforts to promote ACEs awareness using the one-time APPI grant it received in 2013 (Table III.2). The level of activity is low, however, and is primarily concentrated in summer months at community outreach events (such as summer festivals and fairs).

The ACEs brochure—designed and printed by the Coalition—has been a key vehicle for ACEs outreach. At this time, the Coalition has distributed almost 10,000 brochures at different venues in the community. Based on the quantity of distributed brochures, a substantial number of people have been reached at different venues. However, survey or other data are needed to assess the impact of these outreach efforts on people's understanding of ACEs and resilience concepts and whether understanding leads to changes in behavior.

Challenges. The ACEs Awareness Campaign's capacity to remain operational and sustainable in the long term depends on the Coalition's ability to attract and maintain staff and volunteers, overcome logistical challenges, and raise additional funds. Volunteer turnover, staff availability, and funding constraints limit outreach and information dissemination efforts. For example, coordinating conferences and hosting speakers can be difficult due to logistical challenges and limited funds. Geographical and weather-related issues in particular impact the Coalition's ability to mobilize and coordinate events, with most of the Coalition's events restricted to the summer months. Lastly, the funding structure of the ACEs Awareness Campaign makes it difficult for the Coalition to engage in the long-term financial planning needed to ensure continuity of services and initiatives.

Table III.2. NCW conferences, presentations, and community outreach events aimed at raising ACEs awareness, 2010–2015

Date	Activity description	Target audience	Number of attendees
May 2010	Hurt to Hope! conference by Dr. Robert Anda (Center for Disease Control and Prevention) and Ms. Natalie Turner (Washington State University)	General population	162
April 2013	ACE/Impact on Well Being workshop	Educators	35
July 2014	Emotion Coaching by Dr. John Gottman (The Gottman Institute)	Parents	40
September 2014	ACEs presentation to Wenatchee School	School board members	12
November 2014	Presentation by Laura Porter (Washington State Family Policy Council)	General population	350
September 2015	Health care conference one-hour presentation by the nursing director for Chelan/Douglas Health District	School nurses from Washington State	200
November 2015	Legislative forum	Social service agencies, non-profits	55
Multi-Year	Community outreach at local festivals (such as Fiestas Mexicanas and Washington State Apple Blossom Festival)	General population	Unknown[1]

Source: Coalition for Children and Families of North Central Washington reported conferences, presentations, outreach events, 2010–2016.

Notes: [1]No data are available on the number of people who stopped by the Coalition's booth or talked to the volunteers at these events.

2. Children's Resilience Initiative's Resilience and ACEs Awareness Campaign (Walla Walla County Community Network)

Description. The Children's Resilience Initiative (CRI), led by the Walla Walla County Community Network (hereafter the Network), seeks to develop community capacity and transform Walla Walla County into a trauma-informed community. The key goals of the campaign are to raise awareness of ACEs, reduce and prevent ACEs, and build resilience among those who are affected by ACEs. As part of this activity, the Network conducts a multi-faceted campaign, which involves creating and maintaining the Resilience Trumps ACEs website, developing and marketing teaching tools, running a social media campaign via Facebook, and conducting multiple trainings and presentations about ACEs and resilience.

Planning for CRI began in 2009, and CRI launched in 2010. Its efforts to increase resilience and transform Walla Walla into a trauma-informed community are ongoing. In 2014, the Network also participated in developing and administering an ACEs awareness and resilience survey to community residents.

Key activities include:

- **Resilience Trumps ACEs website.** CRI hosts the website (http://www.resiliencetrumpsaces.org), which provides a variety of information on ACEs, materials for download or purchase, and other resources available through CRI as described below.
- **Materials.** CRI offers tools to teach resilience, including: the Resilience Deck of Cards; Resilience Games; Resilience Treasure Hunt Kit; bookmarks; magnets; a perpetual desktop calendar; and Resilience Trumps ACEs coloring book, posters, guide for parents and new parents, tip sheet, and community action manual.
- **Social media.** The CRI Facebook page is managed by a young mother. CRI's Facebook posts include those that a parent might find beneficial, such as posing the question, "What does resilience mean to you?" As of December 2015, the page had received 1,198 likes. CRI posts a few times per week but increases Facebook activity around key events. For example, during Children's Resilience month (October), CRI posts almost daily.
- **Presentations and trainings.** CRI conducts presentations and trainings for a variety of audiences, including business organizations, foundations, community members, school district and school staff, and healthcare workers. From its beginning through 2012 (when it stopped tracking these data), CRI hosted more than 700 presentations and trainings. CRI offers presentations ranging from two hours to a full day on topics such as the original ACE study, brain development, resilience models, strategies and tools for parents, examples of community responses to information on ACEs and resilience, and the Community Action Toolbox (a series of strategies to build a trauma-informed community). For example, a recent training developed and presented by CRI included six modules over a 12-week period; in addition to information on ACEs and trauma, the training emphasized the necessity of a paradigm shift from traditional practices.
- **Head Start Trauma Smart.** CRI brought in Head Start Trauma Smart to train all three Head Start programs in the Walla Walla Valley. This required special funding and outreach. As of December 2015, 525 children had attended centers using the Head Start Trauma Smart model. To allow children from Head Start to continue with this model as they transition into the public school system and to have Walla Walla become a trauma-informed school district, CRI aims to have all elementary schools trained on the trauma-informed model.

Funding and support. The Network and CRI pursue funding from a variety of sources to maintain current activities and help expand their efforts. Local foundations, colleges, healthcare providers, school districts, and community members have contributed funding to CRI and its activities. For example, initial funding to develop CRI was provided by Sherwood Trust. The campaign was also supported by grants from United Way of Walla Walla, Bill & Melinda Gates Foundation, and Blue Mountain Community Foundation. Additionally, in 2015 the Robert Wood Johnson Foundation awarded the Network a Mobilizing Action for Resilient Communities

grant.[21] Because of contributions from multiple sources, CRI has been able to expand its ACEs awareness activities since 2009.

Outcomes. Key data used to report findings include results from an ACEs awareness survey conducted by the Walla Walla Health Department and website analytics for the Resilience Trumps ACEs website. The 2014 ACEs awareness survey found that 42 percent of residents reported being familiar or somewhat familiar with ACEs (Figure III.1).[22] Moreover, the ARC[3] survey findings indicate that Walla Walla has the highest awareness of ACEs and resilience concepts among its network members as compared to other APPI sites. In particular, almost all (96.9 percent) of network members reported being "very or extremely familiar" with ACEs concepts and 9 out of 10 (90.8 percent) reported being "very or extremely familiar" with the concept of resilience (for more detail, see Chapter II).

Moreover, the use of Walla Walla's website has doubled after the first year (2011–2012) and remained stable since then (Table III.3). In 2013–2014 year (the last year for which data are available), the site had more than 7,000 users who initiated over 10,000 sessions. They viewed, on average, 3.2 pages and spent more than three minutes on the site per session, indicating that many of them are reading the materials on the site (and are not just accidentally clicking on the link in their search browser).

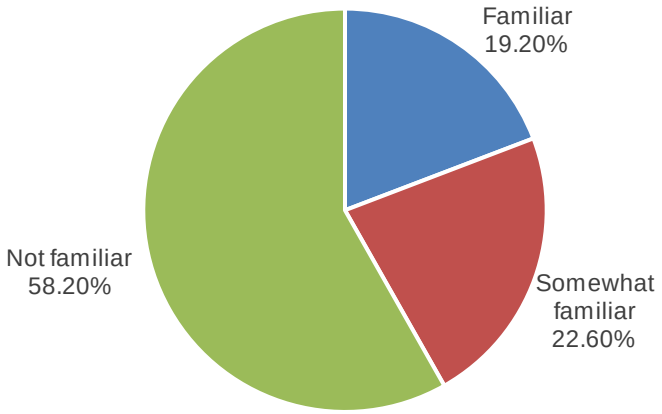
In summary, this high intensity, multi-modal awareness campaign appears to have raised the awareness of ACEs and resilience concepts among Walla Walla residents and the network members. However, more data are needed to evaluate whether the increase in awareness leads to changes in behaviors such as decreasing child abuse and neglect and strengthened families.

Challenges. CRI's main challenge is informing community members of opportunities and resources. CRI utilizes a variety of social media platforms and its own webpage to publicize its activities but still finds it challenging to reach all community members who may benefit from its offerings.

[21] The goal of the Mobilizing Action for Resilient Communities grant program is to synthesize information on how communities can move forward with trauma-informed practices and resilience initiatives.

[22] We are unaware of any data source that measures knowledge of ACEs concepts in communities that are not already implementing strategies to build this awareness among their residents. However, we suspect that the rate of awareness about ACEs concepts in the general population in the United States is low.

Figure III.1. Familiarity with adverse childhood experiences among Walla Walla residents, 2014



Source: 2014 Walla Walla ACEs Awareness Survey conducted by the Walla Wala Health Department.

Notes: This figure summarizes percentage of respondents who answered that they are "familiar," "somewhat familiar," or "not familiar" to the following survey item: "How familiar are you with ACEs or Adverse Childhood Experiences?" The total number of respondents who answered this item was 699.

Table III.3. Resilience Trumps ACEs website traffic

	2011–2012	2012–2013	2013–2014
Sessions	4,777	10,198	10,119
Users	3,301	7,005	7,072
Page views	18,430	36,686	32,132
Pages per session	3.86	3.60	3.18
Average session duration (minutes)	3:43	3:28	3:09
Bounce rate	45.87	44.34	47.98
Percentage new sessions	69.10	67.15	67.43

Source: Website traffic data from Google Analytics on the resilienceturmpsaces.org website from 2011 through 2014.

Notes: This table reports on indicators of website usage for three years since the creation of the Resilience Trumps ACEs website. Each year of data begins in September and ends in August. For example, 2011–2012 includes data from September 2011 through August 2012.

Sessions = the number of times a site is visited; users = the number of individuals visiting a website; page views = the number of times a full page of the website is viewed or refreshed; page views per session = the average number of page views per sessions/visits; average session duration = average length of time in minutes a user is on the website; bounce rate = the percentage of visitors to a particular website who navigate away from the site after viewing only one page; percentage new sessions = the percentage of sessions undertaken by a new user.

3. Commitment to Community (Walla Walla Community Network)

Description. Commitment to Community (C2C) is a community development initiative focused on working alongside neighborhood residents to build a sense of ownership within neighborhoods and encourage community members to address their neighborhood issues. The initial concept of C2C began with a partnership between the Walla Walla Community Network, the Sherwood Trust, and the Blue Mountain Action Council. In March 2004, the three organizations organized and hosted a community forum on neighborhood safety, where they administered a survey asking about neighborhood concerns and needs. In 2005, they began building a steering committee of community members with the goal of engaging the communities to help address concerns and needs identified in the survey and, ultimately, to build a stronger community.

Since 2005, C2C facilitated resolution of a variety of neighborhood concerns. C2C facilitated collaboration with crime prevention officers and the Walla Walla Police Department to track trends in police service calls (such as 911 calls) and code enforcement calls (such as municipal code violations). C2C outreach workers created neighborhood "hubs of trust" with residents, crime prevention officers, Walla Walla police department, and other agencies to build trusting relationships. C2C outreach also includes guidance and support of physical infrastructure projects, such as laying sidewalks and creating crosswalks, and intangible activities, such as building relationships through community events.

C2C focused its efforts by gradually engaging four underserved and disadvantaged neighborhoods in the city of Walla Walla (in chronological order of program involvement):

- **Jefferson Park.** In 2005, Jefferson Park became the first neighborhood targeted by C2C. It was identified because of its high number of calls for police service and because a neighborhood resident advocated for improving her neighborhood. Projects in Jefferson Park have included community events, such as potlucks, neighborhood gatherings, National Night Out,[23] and a Christmas dinner and tree lighting ceremony. Other physical projects in Jefferson Park have included neighborhood cleanup days; adding a crosswalk and bus stop rest area for children going to school; adding a stop sign to a key intersection; and constructing a playground, exercise system, and trail to revitalize a park.
- **Edith Carrie.** In 2005, C2C came to Edith Carrie, a small neighborhood of about 80 households adjacent to the Washington State Penitentiary complex and located within a commercial and industrial section. Projects in Edith Carrie first focused on neighborhood safety and connecting neighbors to one another. For example, C2C brought in community policing as part of these initiatives. Projects in Edith Carrie have included community building activities, such as potlucks and barbecues; developing a neighborhood master plan; and creating a neighborhood center. Physical infrastructure projects have centered on converting vacant space into usable community areas. For example, trash dump sites were converted into a new neighborhood park with playground structures, a basketball court, and neighborhood gardens. C2C funding from Sherwood Trust was used to purchase 10

[23] National Night Out is a national initiative and community building campaign that is intended to promote police-community partnerships.

properties in a very poor neighborhood from a landlord and remove trailers that were used for drug activity. Other neighborhood safety projects have included addressing pit bull and rabbit populations, adding street and alley lighting, repairing streets, and constructing sidewalks. The Pomegranate Center partnered with C2C by working with neighborhood residents to understand how they used their neighborhood and what core values were important to them.

- **Washington Park.** C2C work in Washington Park began in 2006. Here, C2C focused many community events on afterschool programs, including a homework support club and a recreation partnership with the city of Walla Walla. Other community events have included potlucks, an annual Christmas event, and an annual Children's Day event at a neighborhood park. Physical neighborhood projects have included adding a children's art mural, resurfacing the basketball courts, conducting neighborhood cleanup days, repairing sidewalks and trees, adding playground equipment, and creating walking trails with benches and other amenities.
- **Blue Ridge.** C2C projects in the Blue Ridge Neighborhood began in 2011. These projects have included connecting neighbors through community parties, potlucks, and neighborhood cleanup days. Additionally, the community built a relationship with a neighborhood fire station, which hosted Halloween and Christmas parties.

Funding and support. The primary funding source for C2C has been Sherwood Trust (a local foundation). Sherwood Trust funded C2C for the first few years of the program, and it also has supported C2C and encouraged community involvement in other ways. In particular, Sherwood Trust matches 50 percent of the funds raised by community members for specific projects within each neighborhood through its Neighborhood Match Fund.[24] Other key supporters include the Blue Mountain Community Foundation, the United Way, small private donors, the City of Walla Walla, and the local electric company. For example, Walla Walla provided an arborist at no cost to identify trees to be removed due to root damage to streets and sidewalks. Additionally, Pacific Power, the electric company that serves the area, has helped improve neighborhood lighting by offering safety light rebates and providing to homeowners free services of electricians to install the lights.

Challenges. Continuity in leadership and sustainability are continued challenges for C2C. For example, C2C changed directors every two to three years after its first long-term director left the position. Although turnover provides an influx of new and promising ideas, it can also make it difficult to maintain the organization's vision and long-term goals. Furthermore, sustainability is also a challenge for C2C. Although Sherwood Trust has funded the program for many years and plans to continue providing support, there is no formalized long-term commitment.

Outcomes. At the initial community forum in March 2004, the Sherwood Trust and Blue Mountain Action Council administered a neighborhood improvement survey to 255 community

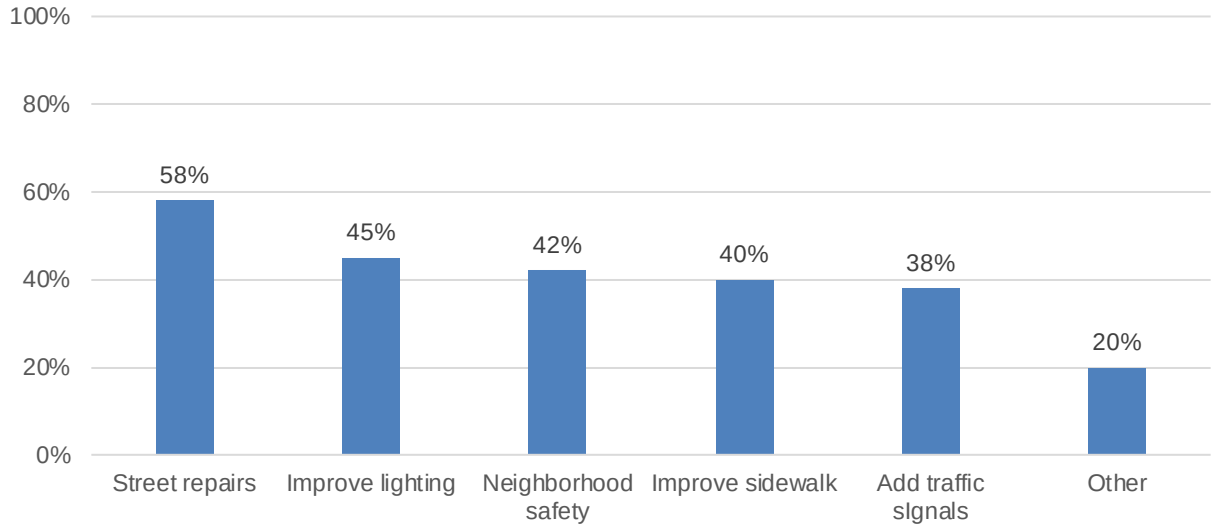
[24] Sherwood Trust matches both monetary donations (such as funds raised during community events), in-kind donations (such as free use of equipment and donations of materials for neighborhood projects), and volunteer hours (federal rates are used to determine the monetary value of volunteer hours).

forum attendees, representing 7.4 percent of the 3,461 Walla Walla housing units.[25] An overwhelming number of community forum attendees indicated that they wanted to improve Walla Walla neighborhoods. For example, residents of Jefferson Park sought improvements to sidewalks, lighting, streets, and traffic signals (Figure III.2).

Many of these concerns were addressed when C2C began facilitating these services in Jefferson Park. In June 2009, C2C and Whitman College administered the Jefferson Park Neighborhood Survey to 116 residents. A substantial proportion of survey respondents reported finding use and value in the projects facilitated by C2C. For example, the majority of Jefferson Park survey respondents reported having used the Jefferson Park playground (60 percent), 48 percent reported having used exercise equipment near the center of the park, and 26 percent indicated they have met people at neighborhood events (Figure III.3). Moreover, the vast majority of Jefferson Park survey respondents (90 percent) found projects and events facilitated by C2C to be somewhat or very valuable to the Jefferson Park neighborhood (Figure III.4).

In 2015, C2C administered neighborhood surveys in Jefferson Park, Edith Carrie, and Blue Ridge neighborhoods in conjunction with Walla Walla Community Network and the Blue Mountain Action Council. Across these neighborhoods, nearly half or more survey respondents reported having pride in their neighborhood or finding value in the C2C program. Between 48 and 64 percent of survey respondents within each neighborhood agreed or strongly agreed with being proud of their neighborhood, and between 50 and 100 percent found C2C to be a valuable program (Figure III.5).

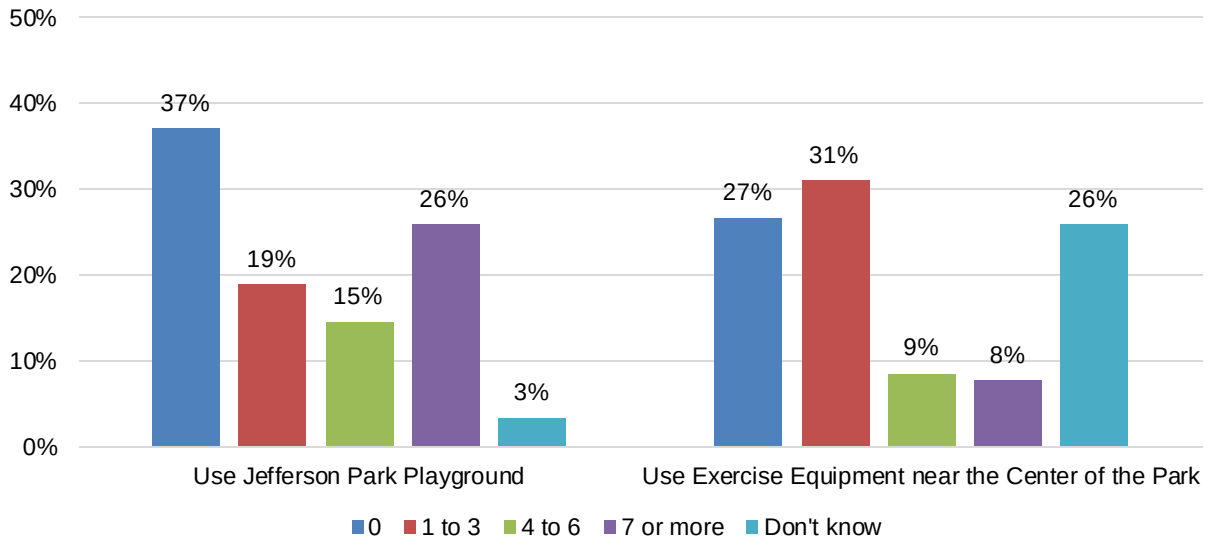
Figure III.2. Walla Walla residents' requested neighborhood improvements, 2004



Source: March 2004 Commitment to Community Forum. Survey results include responses from 255 of 3,461 housing units (7.4 percent).

[25] Due to low response rates and selection bias, C2C Forum Survey and 2015 Neighborhood Survey findings may not represent the views of all Walla Walla residents.

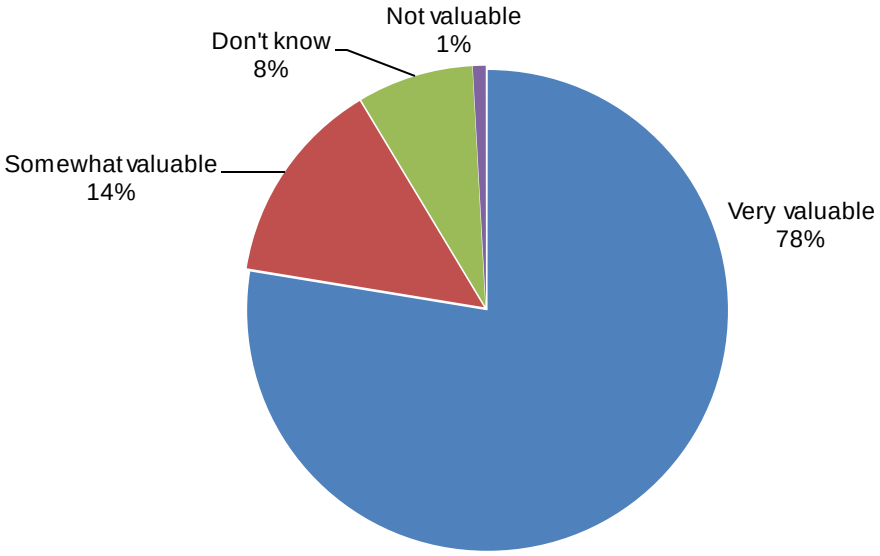
Figure III.3. Jefferson Park residents' use of neighborhood features, number of times used per month, 2009



Source: 2009 Jefferson Park Neighborhood Survey results from 116 respondents. The survey was designed and administered by Walla Walla Community Network in partnership with Whitman College.

Note: Use Jefferson Park playground indicates responses to "How many times per month will you and/or your family use the new playground equipment in Jefferson Park?" Use exercise equipment near the center of the park indicates response to "How many times per month will you and/or your family use the new exercise equipment near Garrison Middle School and the center of the park?"

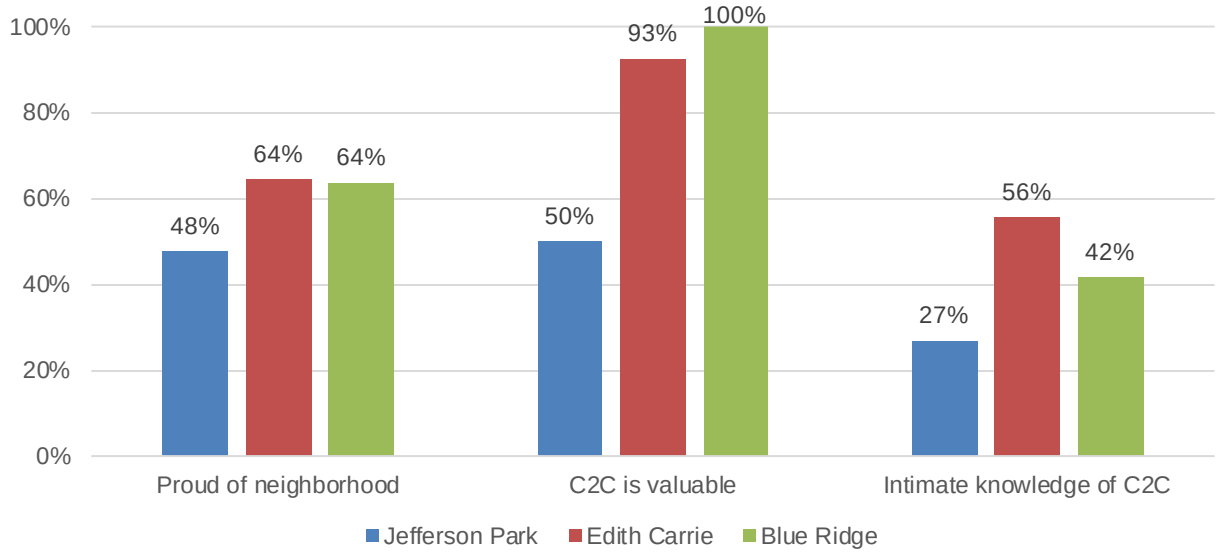
Figure III.4. Jefferson Park residents' perceptions of C2C value, 2009



Source: 2009 Jefferson Park Neighborhood Survey results from 116 respondents. Survey designed and administered by Walla Walla Community Network in partnership with Whitman College.

Note: Includes responses to "In your opinion, how valuable do you think Commitment to Community assisted projects and events are for your neighborhood and community?"

Figure III.5. Walla Walla residents' perceptions of their neighborhoods and of C2C, 2015



Source: 2015 Neighborhood Surveys designed and administered by Walla Walla Community Network in partnership with Blue Mountain Action Council. Number of survey respondents for Jefferson Park is 65, Edith Carrie is 28, Blue Ridge is 12.

Note: "Proud of neighborhood" represents the percentage of respondents reporting they agree or strongly agree that they are proud of the condition and appearance of their neighborhood.

"C2C is valuable" represents the percentage of respondents reporting they agree and strongly agree that C2C assisted projects and events are valuable for my neighborhood and community.

"Intimate knowledge of C2C" represents the percentage of respondents reporting that they have an intimate knowledge of what the organization C2C is for and what it does.

C. Risk behavior reduction and healthy youth development activities

The APPI sites have been particularly active in the area of risk behavior reduction and healthy youth development. For example, one site (Skagit) secured grants to hire more prevention and intervention staff in schools and community programs. Two other sites (Whatcom and Okanogan) facilitated successful coalitions involving schools, media, parents, law enforcement, and juvenile justice agencies to limit opportunities for such problem behaviors as underage drinking, gang violence, and suicide. All of the sites have helped start and operate after-school activities, youth-led prevention clubs, and such community-based activities as mentoring programs and a teen center, providing opportunities for healthy youth development. The sites have also been involved in providing more intensive youth services, such as mental health treatment services, community truancy boards, and the use of trauma-informed practices in juvenile justice settings.

Our evaluation focused on three activities focused on youth: efforts to improve school attendance—Omak Community Truancy Board—and limit use of alcohol and drugs—MOOV Positive Norms Campaign and the expansion of Prevention/Intervention Specialist program. The rest of this section describes these activities and presents their outcomes and challenges.

1. Omak Community Truancy board (Okanogan County Community Coalition)

Description. In response to the tragic death of a teenage girl, the Washington State Legislature passed the Compulsory School Attendance and Admissions law (R.C.W. 28a.225, referred to as the "Becca Bill") in 1996.[26] The Becca Bill outlines a process for identifying and addressing truancy. With a few exceptions, the bill (1) requires children between ages 8 and 18 to attend a school, (2) obligates schools to inform the parents if a child was absent from school for a certain number of days without a legitimate excuse, and (3) mandates schools to refer the cases of "severe offenders"[27] and their families to the juvenile court system. It also provides a mechanism for communities to help address children's truancy issues and avoid escalation to the juvenile court system by allowing for a community truancy board.

The Omak Community Truancy Board was implemented over a two-year period. Starting in April 2013 and through the summer of 2014, Andi Ervin from the Okanogan County Community Coalition, representatives from the Omak School District, and potential board members learned about other truancy boards and observed truancy board meetings in Spokane, Washington. In August 2014, Omak Community Truancy Board members participated in a formal member training session. The Omak Community Truancy board became active and began seeing its first students in October 2015. As of the writing of this report, the Truancy Board is in its second year of operation.

The Okanogan County Community Coalition plays a key role in the Omak Community Truancy Board. Using its knowledge of the community, the Coalition serves on a collaborative advisory board that assesses which individuals and organizations can provide helpful resources to students and their families. In this capacity, the Coalition nominated individuals to serve on the Truancy Board; final determinations were made by the superintendent of the Omak School District.

Before the Omak Community Truancy Board was in place, when a student became a severe offender the school district filed a truancy petition[28] with the juvenile court and the student was considered for (and typically placed on) court supervision to address attendance issues until he or she turned 18. The Omak Community Truancy Board aims to be an alternative to the juvenile court system, helping students avoid appearing in court and acquiring a juvenile record. The Truancy Board seeks to help truant students and their families by identifying the issues preventing students from attending school and by connecting families to resources that may help them solve attendance issues. Under the new system, if a severe offender appears before the Omak Community Truancy Board and agrees to the terms discussed with the Truancy Board, a "stay" is placed on his or her Becca petition. If the student and family follow the guidelines in

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[26] For more information on the Becca Bill, see http://app.leg.wa.gov/rcw/default.aspx?cite=28a.225 or http://www.k12.wa.us/GATE/Truancy/pubdocs/ENGLISHTruancyBrochure2008.pdf

[27] "Severe offender" refers to a student who reached 7 unexcused absences in a month or 10 unexcused absences in a school year.

[28] Truancy petitions are requests for the superior court to compel children to attend school.

the agreement and the student begins to attend school regularly, the student's case is not referred to juvenile court and the Becca petition is dismissed at the end of the school year.

During initial meetings with truant students and their families, the Truancy Board aims to have at least one board member present from each partner organization, including representatives from the school district (student assistance specialists, Truancy Board Coordinator, and referring building administrator), the Community Action Council, Family Empowerment (a student and family program), Okanogan Behavioral HealthCare, the Colville Confederated Tribes Attendance and Truancy Program, the Tribal Truancy Office, staff from Okanogan County Community Coalition, and an Okanogan County juvenile court officer. Subsequent interactions are dictated by the terms of the agreement reached during the initial meeting. Additionally, a juvenile probation officer checks in with students throughout the school year.[29] The Truancy Board connects students and their families to a variety of resources, including medical appointments and treatment, behavioral health services, and parent education. Additionally, the Community Action Council and the Housing Authority of Okanogan County work with families to address poverty and housing issues.

Funding and support. Support for The Truancy Board comes from the Omak School District, the Okanogan County Juvenile Court, and its partner organizations. The Omak Community Truancy Board leverages resources from its partner organizations to provide staff to serve on the Truancy Board. Additionally, a half-time juvenile probation officer from the Okanogan County Juvenile Court system is dedicated to the Truancy Board.

Outcomes. In the 2014–2015 school year, the first year that the Truancy Board operated, 20 students were referred to the Omak Community Truancy Board: one elementary, 3 middle, and 16 high school students (Table III.4). Fifteen of the 20 students seen by the truancy board improved their attendance and were not referred to Becca, which is considered a successful disposition. The remaining five students were referred to the juvenile court under the Becca Bill.

In summary, the Omak Community Truancy Board helped resolve barriers to regular school attendance for three out of four students in its first year of operation. We had access to only one year of data after implementation. More follow-up is needed to determine whether the Truancy Board can sustain a similar rate of success in the future. Continuing to track data on the students referred to the Truancy Board and adding a matched comparison group will allow for a more rigorous longitudinal analysis in future evaluations.

[29] This check-in occurs during the time the juvenile probation officer has dedicated to Truancy Board activities (approximately one-half of the officer's time).

Table III.4. Omak Community Truancy Board student outcomes, 2014–2015 school year

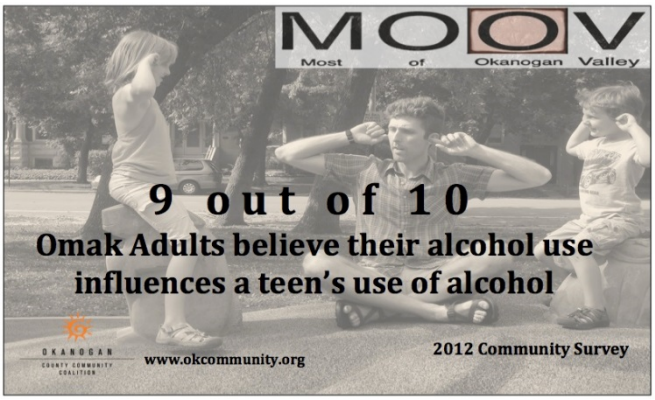
	Number of Students	Percent
Not referred under the Becca Bill	15	75
Referred to courts under the Becca Bill	5	25
Total	20	100

Source: Data reported by Okanogan County Community Coalition

Challenges. A key challenge for the Truancy Board is identifying the root causes of truancy and providing substantive services for families that address these issues. For example, providing students with a ride to school may prevent some unexcused absences, but might not be sustainable and might not address the root cause of truancy. The Truancy Board mitigates this challenge by including representatives from a variety of community organizations to serve on the Truancy Board; these individuals bring unique perspectives to each student's case and help provide broad knowledge of a variety of resources available to help each student and family.

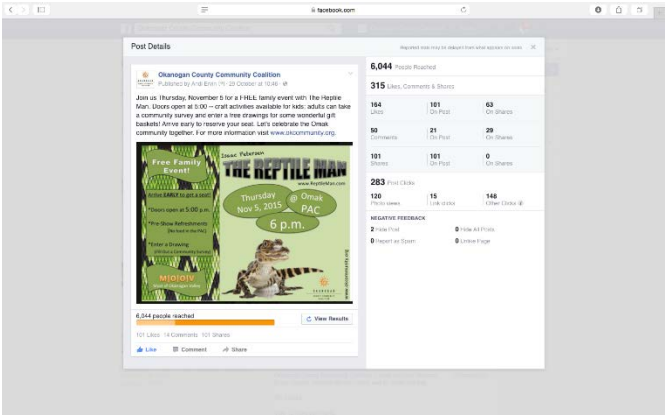
2. Most of Okanogan Valley Positive Social Norms Campaign (Okanogan County Community Coalition)

Description. Okanogan County Community Coalition's work on reducing alcohol consumption is characterized by its systematic, deliberate, evidence- and data-driven approach. The work began by conducting a community needs assessment, completing a logic model and theory of change, and providing training on environmental strategies to reduce underage drinking for the Coalition members and partners in 2011. In 2012, the Coalition developed and implemented a law enforcement survey and a community survey to measure community attitudes and beliefs about underage drinking. Results from these surveys led to the Most of Okanogan Valley (MOOV) Positive Social Norms Campaign, a media campaign focused on promoting positive social norms and decreasing alcohol use among youth in the Okanogan Valley. In response to early student surveys showing an increase in underage drinking during the last few months of the school year, the targeted goal of reducing underage alcohol use in the spring emerged.



MOOV Bowling Alley poster

The Coalition is using diverse approaches to conduct its campaign, ranging from traditional print advertisements to social media websites and Twitter activity. On the more traditional front, the campaign rotates messages, such as "9 out of 10 Omak adults do not approve of underage drinking" (with the MOOV logo) throughout various media outlets. Examples include advertisements in the local newspaper, radio stations, video advertisements in movie theaters and in bowling alleys, and messages posted on coffee cup sleeves and billboards around the area. In the Omak School District, school-based MOOV efforts include advertisements in yearbooks, banners with the MOOV logo in middle and high schools, and advertisements at high school sporting events. A key component of the Coalition's MOOV strategy is to use social media, including Facebook and Twitter, to engage community members. The Coalition aims to have campaign-related activity on its Facebook page daily and frequently posts related research, reports, quotes, pictures from events and activities, and information about family-friendly events. Other Coalition activities under the MOOV campaign include hosting or partnering with other organizations to offer community events (such as family movie nights, town hall meetings, harvest festivals, and Christmas on Main) and conducting a community survey for adults.



Okanogan County Community Coalition Facebook post announcing a Town Hall meeting with the Reptile Man. The Coalition boosted the reach of this post (for a $20 fee).

The work on the Positive Norms campaign is informed by data that the Coalition gathers regularly. For example, the Coalition's survey of Omak High School students found an increase in underage drinking in the spring. In order to prevent this spike, the Coalition began to increase messaging in the spring.

Finally, the Coalition recruited key stakeholders to help implement the campaign. Local police department is an important partner in the MOOV campaign's efforts. The police have expanded the geographic reach of their underage drinking law enforcement efforts to include natural wildlife areas and areas in northern Okanogan Valley, which were previously not emphasized.

Okanogan Senior Skip Day Poster and Billboard

Funding and support. In September 2010, the Okanogan County Community Coalition was awarded a Drug-Free Communities grant,[30] which was used to conduct a community needs assessment. The MOOV campaign itself has been funded through a variety of grants over time, many of which are aligned to its theory of change. In early years, key funding came from a federal community grant as well as a state community and wellness initiative grant.

In 2012, the Coalition received a small grant from the Washington State Division of Behavioral Health and Recovery for Dr. Harold Holder to provide training to the Coalition and its partners. This training focused on identifying environmental strategies to reduce underage drinking. Later that year, the Division of Behavioral Health and Recovery awarded a 2.5-year Enforcement of Underage Drinking Laws grant, which was funded by Office of Juvenile Justice and Delinquency Prevention.

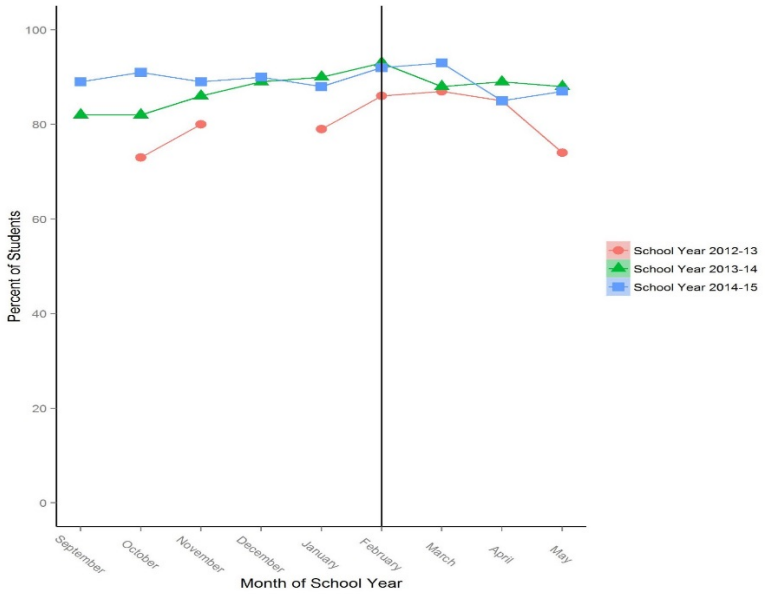
The Okanogan County Community Coalition was recently awarded a continuation of its original five-year federal Drug-Free Communities grant, which led to the MOOV campaign. This grant will allow the Coalition to stay fully staffed through 2020 and will be used to pay the salaries of 1.5 (of 2.5) of the coalition's full-time employees.

Outcomes. The Coalition has been successful in reducing teenage drinking. Compared to the 2012–2013 school year, there was an overall increase in the percentage of students reporting they had *not* consumed alcohol in the previous 30 days. For example, 77 percent of students, on average, reported abstaining from alcohol in the previous 30 days in 2012–2013 compared to 87 percent in 2013–2014 and 2014–2015. This 10 percentage point improvement was statistically significant. (Figure III.6, Table III.5).

Challenges. A challenge of the MOOV Positive Norms Campaign has been developing effective messaging about marijuana and other drug use. In an interview, the Coalition's director indicated that evidence shows that positive messaging for underage alcohol use is effective, but early research has shown that positive messaging for marijuana may result in an increase in marijuana use. The most appropriate strategy for encouraging teens to abstain from drug has not yet been identified by this community.

[30] Drug-Free Communities grant program is funded and directed by the U.S. Office of National Drug Control Policy with support from SAMHSA.

Figure III.6. Percentage of Omak High School students reporting no alcohol use in the past 30 days, 2012–2013 through 2014–2015 school years



Source: Mathematica analysis of Omak High School student survey data, 2012—2013 to 2014—2015 school years.

Notes: This figure shows percentage of Omak High School students who reported not using alcohol in the past 30 days. Data collection began in October 2012. No data are available for December 2012 due to snow days and over the summer (June, July, and August), when school is not in session. The Coalition began its positive messaging campaign to target underage alcohol use in 2013–2014 school year. The vertical bar in February indicates the month in which the Coalition increased positive messaging to target spring underage alcohol use in 2013–2014 and 2014–2015.

Table III.5. Outcomes of MOOV Positive Norms Campaign efforts to reduce youth drinking, 2012–2015

Indicator	Intercept	Post	Time	Post*Time
Percentage of students not drinking alcohol is the past 30 days	77.09***	10.07**	0.74	-0.43

Source: Mathematica analysis of Omak High School monthly student survey data, 2012–2013 to 2014–2015 school years.

Note: This table presents the results on an interrupted time-series analysis comparing alcohol consumption in the pre-intervention period (2012–2013 school year) to the post-intervention period (2013–2014 and 2014–2015 school years). To control for seasonal trends, the TIME refers to each month of the school year (September = 0, October = 1, and so on). The key parameters of interest are the (1) POST term, which represents the change in the *level* of outcome after the intervention and (2) interaction term, POST*TIME, which represents the change in the *linear trajectory* (or *slope*) of the outcome after the intervention.

Data collection began in October 2012. No data were available for December 2012 (due to snow days) or over the summer (June, July, and August) when school is not in session.

The level of statistical significance is indicated by *p < .10; **p < .05; ***p<.01.

3. Prevention/Intervention Specialist Program (Skagit County Child and Family Consortium)

Description. In the late 1980s, Washington State authorized funding for school districts to hire prevention/intervention (P/I) specialists to provide a broad range of services for students with alcohol or drug dependencies. Once hired, P/I specialists received referrals through several pathways: self-referral, friend referral, and substance-related discipline (a consequence of a substance-related infraction). P/I specialists made presentations in classrooms and partnered with health teachers to co-teach a curriculum on life skills. They were encouraged to be available and accessible to students. For example, some P/I specialists were available in the lunch room and had offices near the school library. The goal of the P/I specialist program was to reduce substance abuse and violence among middle and high school students.

The reach of the program has varied over time in response to shifts in funding. Originally, the program included three P/I specialists who served students in Skagit County school districts. In 2005 the Skagit County Children/Family Consortium obtained a Safe Schools/Healthy Students (SS/HS) grant from the Substance Abuse and Mental Health Services Administration, which allowed it to significantly expand the P/I specialist program. The new funding allowed for hiring 7 more P/I specialists (increasing the total number of specialists from 6 to 13). The expanded program offered services in all seven Skagit County school districts, ultimately providing more prevention and intervention services to middle and high school students (Table III.6).[31]

When SS/HS funding ended in 2009, the program was scaled down, and some districts eliminated the P/I specialist program. As of 2014–2015 school year, Skagit County has two P/I specialists serving two schools (down from 23 schools at the peak of the program).

Funding and Support. Funding of the P/I Specialist program in Skagit County has varied considerably over time. Lakewood School District was the fiscal agent of the initial funding from Washington State OSPI for the P/I Specialist program. Under this funding stream, Lakewood School District allocated funding to each school district in the Northwest Region, including school districts in Skagit County, to hire their own P/I specialists. From 2006 to 2009, the P/I specialist program received significant funding from the SS/HS grant. Since 2009, local school districts and ESD either eliminated or funded a much smaller P/I specialist program.

[31] This intervention targets middle and high school students in the seven school districts of the Skagit County (Anacortes, Burlington-Edison, Concrete, Conway, La Conner, Mount Vernon, and Sedro-Woolley school districts).

Table III.6. Reach of the prevention/intervention specialist program in Skagit County, 2002–2003 through 2014–2015 school years

School year	Number of prevention/intervention specialists	Number of schools	Number of students
Before the expansion			
2002–2003	5	8	NA
2003–2004	6	8	NA
2004–2005	6	8	228
During the expansion funded by the Safe Schools/Healthy Students grant			
2005–2006	13	15	362
2006–2007	15	17	740
2007–2008	16	23	1105
2008–2009	18	23	1166
After the Safe Schools/Healthy Students grant funding ended			
2009–2010	6	8	407
2010–2011	3	4	210
2011–2012	1	1	4
2012–2013	1	1	28
2013–2014	2	3	101
2014–2015	2	2	58

Source: Washington State's Office of Superintendent of Public Instruction Prevention/Intervention Specialist program data.

Note: This table presents the number of prevention/intervention (P/I) specialists in Skagit County, the number of schools that they served, and the number of students that they provided services to. The program was expanded in Skagit County when the Skagit County Children/Family Consortium obtained a Safe Schools/Healthy Students grant from the U.S. Substance Abuse and Mental Health Services Administration. After the additional funding was exhausted, the program shrank.

NA=not available

Outcomes. Although the P/I specialists reached a substantial number of students, we are unable to detect impacts in student outcomes. Using data from the Healthy Youth Surveys administered in the fall of every other school year from 2002–2003 and 2012–2013 (representing years before the SS/HS grant, during the expansion, and after the termination of the SS/HS grant), we found no consistent changes[32] in alcohol or drug use indicators associated with the expansion (or shrinkage) of the P/I specialist program in Skagit County (Tables III.6 and III.7, Figures E.1–E.5). Furthermore, there were no consistent changes in beliefs or perceptions of

[32] Due to the number of examined outcomes and statistical tests that we conduct, it is likely that at least some tests will produce statistically significant results. To avoid reporting spurious changes as major findings, we focus our discussion on outcomes for which we find consistent findings across the eighth and tenth grades.

school, which may be correlated with substance abuse issues or related to the effectiveness of a P/I specialist (Figures E.6–E.10).

We find mixed results for the relationship between the expansion of the P/I specialist program and awareness that a school staff member was available to discuss problems with alcohol, tobacco, or other drug use. In both Skagit County and the rest of the Washington State comparison group, there was an overall decrease in students' awareness of this resource between 2002 and 2012. During the P/I specialist program expansion, however, compared to the rest of Washington State, eighth- and tenth-grade students in Skagit County experienced a smaller decrease in awareness (4.4 and 7.8 percentage points, respectively). There is no indication that awareness of this staff resource (relative to awareness in Washington State) changed after the SS/HS grant ended in 2009 (See Figure III.7, Tables III.6 and III.7).

However, our ability to detect impacts of the P/I specialist program is limited by the available data. In our analysis, we compare the perceptions of *all* eighth- and tenth–grade students in Skagit County to the perceptions of students in the rest of Washington State. Most students in Skagit County did not receive services from the P/I specialists. Therefore, the impact of P/I specialists on aggregate student outcomes is likely to be small and hard to detect. Future evaluations would benefit from having student-level data, which would allow exploration of outcomes for at-risk students or students who received intensive services from P/I specialists.

Another data limitation is the frequency of data collection. Healthy Youth Survey data are collected every two years, which reduces the number of available time points. More frequent data collection (annually or even monthly) would facilitate more rigorous evaluation methods.

Finally, the P/I specialist program existed in Skagit County throughout the observed period. Although the program expanded substantially under the SS/HS grant, the data do not include the period before the P/I specialist program was implemented.

Challenges. Since the inception of Skagit County's P/I specialist program in the late 1980s, maintaining funding has been an ongoing issue. Along with the inherent challenges of identifying students with substance abuse issues, fluctuations in funding may have contributed to a lack of a capacity to reach all at-risk students. For example, many P/I specialists split time between schools, which likely made it more difficult to reach all students who could benefit from services in each school.

Table III.7. Regression results for student survey outcomes in Skagit County and comparison schools, grade 8, 2002–2014

Indicator	Intercept	Before	After	Treatment	Before* Treatment	After* Treatment
Students' use of alcohol and other substances						
No alcohol use in past 30 days	**0.8377*** **	**-0.0125*** **	**0.0343*** **	-0.0148	**-0.0189***	-0.0168
No binge drinking in past 30 days	**0.9078*** **	**-0.0055*** **	**0.0176*** **	**-0.0203** **	0.0026	0.0060
No cigarette use in past 30 days	**0.9334*** **	**-0.0120*** **	**0.0084*** **	-0.0046	-0.0076	0.0020
No marijuana use in past 30 days	**0.9220*** **	**-0.0132*** **	**-0.0128*** **	-0.0156	0.0079	-0.0089
No illegal drug use in past 30 days	**0.9152*** **	**-0.0075*** **	**-0.0112*** **	-0.0142	0.0109	-0.0134
Students' perceptions and knowledge of resources						
School provides intervention specialist	**0.7075*** **	**0.0756*** **	**-0.0683*** **	**0.0801*** **	**-0.0435***	-0.0287
Wrong to use illegal drugs	**0.9544*** **	-0.0016	0.0018	0.0021	**-0.0109***	0.0015
School rules about tobacco are enforced	**0.7462*** **	**0.0088** **	**-0.0153*** **	-0.0117	**0.0472** **	**0.0336*** **
Feel safe at school	**0.8145*** **	-0.0012	**0.0175*** **	-0.0056	-0.0022	0.0113
Enjoy being at school	**0.4578*** **	**-0.0091*** **	**0.0319*** **	0.0133	0.0052	0.0129
School is important for later in life	**0.8718*** **	-0.0036	**0.0047***	0.0029	**-0.0227*** **	0.0074

Source: Mathematica Policy Research's analysis of State of Washington Department of Health's Healthy Youth Survey student-level data.

Note: Each row represents results from a separate difference-in-differences regression model. Years are school years, with 2002 representing the 2002–2003 school year. The comparison group is Washington State (excluding Skagit County). TREATMENT equals to 1 for Skagit County and 0 otherwise; BEFORE is a binary indicator variable, which equals to 1 in the years before the expansion of the program due to Safe Schools/Healthy Students (SS/HS) funding and 0 otherwise; AFTER is a binary indicator variable, which equals to 1 in the years after the program shrank due to the end of the SS/HS funding and 0 otherwise. The key parameters of interest are the two interaction terms (1) BEFORE*TREATMENT, which estimates whether the change in outcome due to the expansion of the program in the intervention group is different from the change in the comparison group during the same time period and (2) AFTER*TREATMENT, which estimates whether the change in outcome due to the shrinking of the program in the intervention group is different from the change in the comparison group during the same time period.

All outcomes have data for 2002–2012 (even years) except for "school rules about tobacco are enforced" and "illegal drug use in past 30 days," which do not have data for 2002. All indicators are in a "positive" form, where higher rates indicate a better outcome.

The level of statistical significance is indicated by *p < .10; **p < .05; ***p<.01.

Table III.8. Regression results for student survey outcomes in Skagit County and comparison schools, grade 10, 2002–2014

Indicator	Intercept	Before	After	Treatment	Before* Treatment	After* Treatment
Students' use of alcohol and other substances						
No alcohol use in past 30 days	**0.6907*** **	**-0.0218*** **	**0.0489*** **	-0.0106	-0.0151	-0.0013
No binge drinking in past 30 days	**0.8218*** **	**-0.0149*** **	**0.0253*** **	-0.0076	-0.0259	-0.0076
No cigarette use in past 30 days	**0.8595*** **	**-0.0049** **	**0.0269*** **	0.0128	-0.0176	-0.0091
No marijuana use in past 30 days	**0.8181*** **	**-0.0063** **	**-0.0173*** **	0.0178	**-0.0310* **	-0.0250
No illegal drug use in past 30 days	**0.8062*** **	**0.0055** **	**-0.0139*** **	0.0213	**-0.0378** **	-0.0279
Students' perceptions and knowledge of resources						
School provides intervention specialist	**0.6498*** **	**0.0813*** **	**-0.0502*** **	**0.0937** **	**-0.0780** **	-0.0515
Wrong to use illegal drugs	**0.9237*** **	0.0008	**0.0041** **	-0.0024	-0.0100	0.0079
School rules about tobacco are enforced	**0.6489*** **	0.0088	**0.0109** **	0.0025	0.0219	-0.0106
Feel safe at school	**0.8158*** **	-0.0018	**0.0329*** **	-0.0051	-0.0026	0.0042
Enjoy being at school	**0.4101*** **	**-0.0143*** **	**0.0171*** **	**0.0571** **	-0.0300	**-0.0797*** **
School is important for later in life	**0.7956*** **	-0.0022	**0.0066** **	0.0028	**-0.0452** **	-0.0155

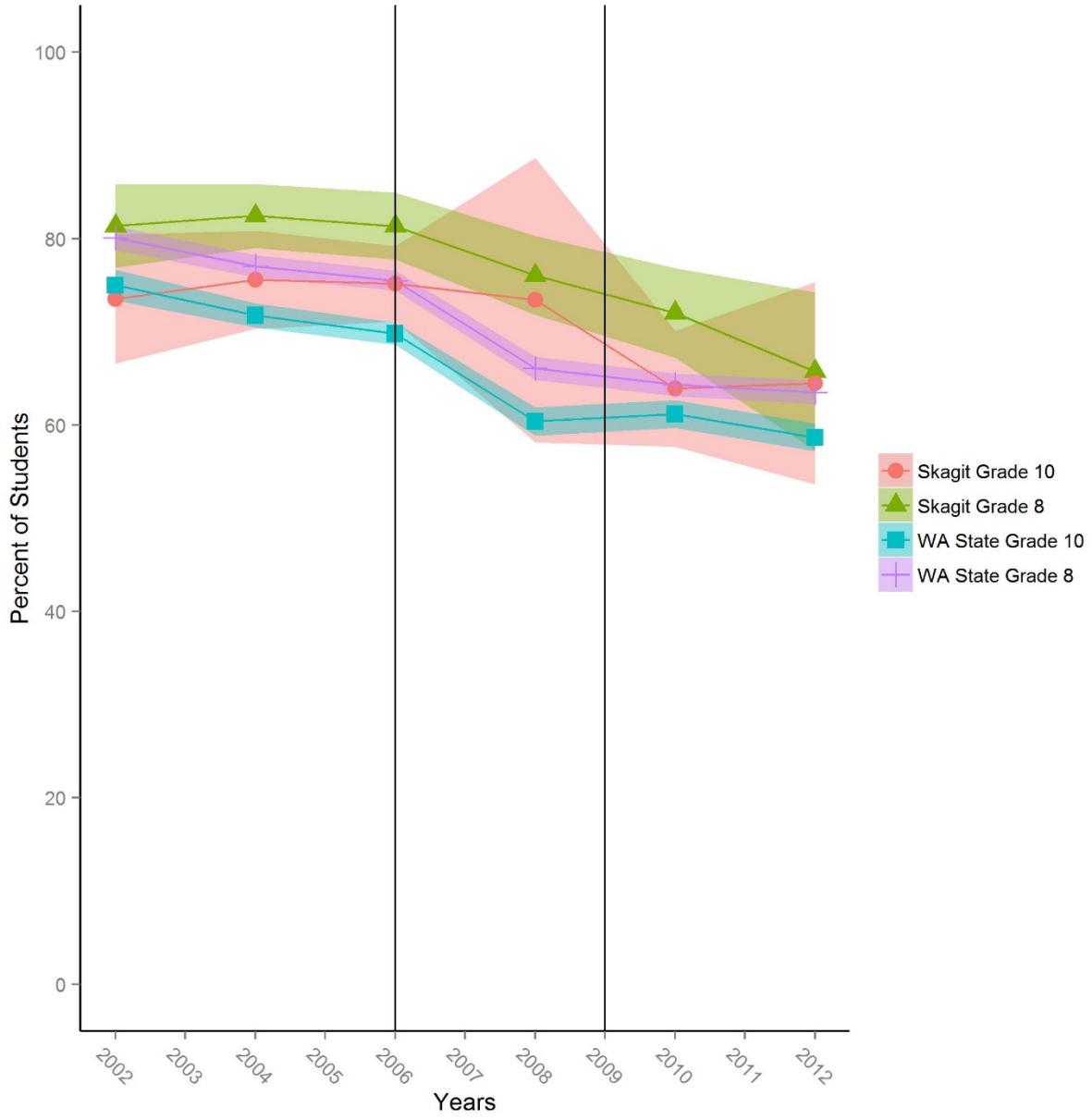
Source: Mathematica Policy Research's analysis of State of Washington Department of Health's Healthy Youth Survey student-level data.

Note: Each row represents results from a separate difference-in-differences regression model. Years are school years, with 2002 representing the 2002–2003 school year. The comparison group is Washington State (excluding Skagit County). TREATMENT equals to 1 for Skagit County and 0 otherwise; BEFORE is a binary indicator variable, which equals to 1 in the years before the expansion of the program due to Safe Schools/Healthy Students (SS/HS) funding and 0 otherwise; and AFTER is a binary indicator variable, which equals to 1 in the years after the program shrank due to the end of the SS/HS funding and 0 otherwise. The key parameters of interest are the two interaction terms
(1) BEFORE*TREATMENT, which estimates whether the change in outcome due to the expansion of the program in the intervention group is different from the change in the comparison group during the same time period and
(2) AFTER*TREATMENT, which estimates whether the change in outcome due to the shrinking of the program in the intervention group is different from the change in the comparison group during the same time period.

All outcomes have data for 2002–2012 (even years) except for "school rules about tobacco are enforced" and "illegal drug use in past 30 days," which do not have data for 2002. All indicators are in a "positive" form where higher rates indicate a better outcome.

The level of statistical significance is indicated by *p < .10; **p < .05; ***p<.01.

Figure III.7. Percentage of students who reported that their school provides a counselor, intervention specialist, or other school staff member for students to discuss problem with alcohol, tobacco, or other drugs in Skagit County and comparison schools



Source: Mathematica Policy Research's analyses of State of Washington Department of Health's Healthy Youth Survey (HYS) data, 2002–2012.

Notes: Symbols (and solid trend lines) illustrate point estimates, while surrounding shaded regions illustrate 95 percent confidence intervals. Years are school years; for example, 2002 represents the 2002–2003 school year. The Washington State comparison group excludes Skagit County. The vertical bar at the 2006–2007 school year marks the beginning of SS/HS funding and the vertical bar at the 2013–2014 school year marks the end of SS/HS funding.

D. Child abuse prevention and family support activities

The APPI sites have initiated and sustained efforts at multiple levels (individual, organization, cross-sector, community, and policy) to address the child maltreatment prevention and treatment needs of their communities. Their accomplishments include expanding the availability of evidence-based parenting programs and developing new programs, creating alliances with local child welfare systems to implement population-level child protection projects, increasing the use of trauma-informed practices by social service agencies through training and technical assistance, and helping families directly through parenting classes and training programs. For example, the Skagit, NCW, and Okanogan sites brought several evidence-based child abuse prevention programs to their communities, including Triple P, Strengthening Families Program, Kaleidoscope Play and Learn program, and Nurse-Family Partnership (NFP) home visiting program. In their communities, the Whatcom and Walla Walla networks have worked with local Child Protective Services to create informal family to family supports and networks and to provide families involved with CPS with peer support through a new Community Navigators program. Time-limited grants and staff turnover of these programs have challenged the sustainability of these programs.

For this evaluation we selected two activities—Skagit's Nurse-Family Partnership program and Whatcom's Community Navigator program. The sections below describe these activities, their outcomes and their limitations.

1. Nurse-Family Partnership program (Skagit County Child and Family Consortium)

Description. The Nurse-Family Partnership (NFP) is an evidence-based home visiting program developed and tested by David Olds and colleagues. As part of the program, registered nurses work with low-income first-time mothers and their families in their homes during pregnancy and throughout the first two years of the child's life. The program aims to improve pregnancy outcomes, child health and development, and the economic self-sufficiency of the family. Based on existing research, expected long-term outcomes include (1) reducing child abuse and neglect, (2) reducing the likelihood of giving birth to additional children while the mother is in her late teens and early twenties, (3) reducing prenatal smoking among mothers who smoke, and (4) improving cognitive and/or academic outcomes for children born to mothers with low psychological resources (Coalition for Evidence-based Policy 2014).

In 2006, the Skagit County Children/Family Consortium[33] obtained a SS/HS grant from the Substance Abuse and Mental Health Services Administration to establish the Skagit County NFP. The SS/HS grant paid for services for up to 75 families at a time in Skagit County. Due to the grant requirements, the Northwest Educational Service District became the fiscal agent, managed the NFP program, and hired staff. The Consortium served as the advisory board for the NFP. Since the SS/HS grant did not cover additional staff or funding for the Consortium, grant coordination responsibilities, such as networking, outreach, and partner onboarding, were added

[33] The Consortium consists of representatives from the public school system (grades kindergarten through twelve), juvenile justice, health care providers, and other early learning partners.

to the jobs of existing Consortium staff. The SS/HS grant ended in October 2009, leaving NFP program with minimal capacity.

In April 2013, the Skagit County Health Department began funding the NFP program. Currently, the Consortium supports the coordinator at the Health Department by providing outreach, identifying funding opportunities, and providing updates to the executive board of the Consortium. As of December 2015, the Skagit County NFP had capacity to serve 62 families, but only 47 families were enrolled and approximately six were pending admission. The Skagit County NFP program plans to expand capacity to serve up to 70 families at a time in the spring of 2016.

Funding and support. The Skagit County NFP was funded by a SS/HS grant from March 2006 through October 2009. It then operated at minimal capacity until April 2013, when the Skagit County Health Department began funding the program using state and county funds. The Health Department is committed to continuing the NFP with support from Thrive Washington funds.

Outcomes. Previous research on the NFP model has shown evidence of effectiveness. Nationally, evaluations have found evidence that NFP can (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 (Coalition for Evidence-based Policy 2014). Furthermore, the Commission to Eliminate Child Abuse and Neglect Fatalities found that the NFP model is the only evidence-based solution for reducing fatalities due to child abuse and neglect (Commission to Eliminate Child Abuse and Neglect Fatalities 2016).

Since its inception, the NFP program in Skagit County has continued to reach families despite changing funding sources. The Skagit County NFP served 149 families during the SS/HS grant (March 2006–October 2009) and has served 182 families since the SS/HS grant ended. Most of the families served since the end of the SS/HS grant were enrolled after April 2013, when the Skagit County Health Department began supporting the NFP. The Skagit County NFP is currently serving 47 families, and six additional families are pending admission into the program.

The Skagit County NFP has seen a reduction in negative maternal behaviors. According to the Nurse-Family Partnership Quarterly Report for Skagit County, which reports on data through December 2014, maternal smoking behavior decreased by 14 percent among Skagit County NFP families (Table III.9). This reduction was smaller than the NFP target (-20 percent) but is not statistically different than statewide or national NFP results (-17 percent and -16 percent, respectively). Skagit County's NFP effectively eliminated maternal alcohol use, with a 100 percent decrease among NFP families. This exceeded NFP objectives for reducing maternal alcohol use (-20 percent) and is significantly higher than the reductions experienced by participants in NFPs programs throughout Washington State (-14 percent) and nationally (- 28 percent).

The Skagit County NFP met the NFP targets for preventing low birth weight and very low birth weight infants (Table III.9). The percentage of Skagit County NFP clients who had low birth weight infants (7 percent) was slightly lower, but not significantly different, than NFP rates at the state and national levels (8 percent and 10 percent, respectively). The percentage of Skagit NFP clients who had very low birth weight infants (1 percent) was similar to and not significantly different from NFP rates at the state and national level (1 percent and 2 percent, respectively).

Table III.9. Nurse-Family Partnership maternal and infant outcomes through December 2014

	Skagit County NFP	WA State NFP	National NFP	NFP objectives
Maternal smoking during pregnancy				
Number of clients with data	119	3,894	110,321	NA
Relative change	-14%	-17%	-16%	-20%
Maternal alcohol use during pregnancy				
Number of clients with data	119	3,957	112,060	NA
Relative change	-100%	**-14%*****	**-28%*****	-20%
Low-birth weight infants (LBW)[1]				
Number of birth	162	5,311	137,249	NA
Percentage LBW	7%	8%	10%	NA
Very low birth weight (VLBW)[2]				
Number of birth	162	5,311	137,249	NA
Percentage VLBW	1%	1%	2%	NA

Source: Mathematica Policy Research's analysis of Nurse-Family Partnership Quarterly Report for Skagit County NFP Data. Results are cumulative from program initiation through December 31, 2014.

Note: Maternal outcomes were derived from a survey of pregnant women at intake and 36 weeks, which asks whether they have (1) smoked in the previous 48 hours and (2) consumed alcohol in the previous 14 days. The change in maternal smoking during pregnancy and the change in maternal alcohol use during pregnancy reflect the change in women's reported smoking/alcohol behavior from intake to 36 weeks (measured in percent, not percentage points).

[1] Low birth weight infants are defined as those weighing less than 2,500 grams (5.5 pounds) at birth.

[2] Very low birth weight infants are defined as those weighing less than 1,500 grams at birth.

NFP = Nurse-Family Partnership; NA= not applicable

For Washington State and National NFP comparison groups, statistically significant differences (relative to the Skagit County NFP) are indicated by *p < .10; **p < .05; ***p<.01

In sum, the NFP program is a home-visiting program that has been shown to be an effective way to reduce child abuse and neglect. Skagit County's NFP program has shown similar or better improvements on indicators of risky behaviors of pregnant women and on the birth weight of newborns than state or national NFP program.

Challenges. The key challenge for Skagit County NFP has been maintaining funding and the capacity to serve families. The Consortium began to plan for self-sustainability within the

Skagit County NFP when the SS/HS funding lapsed. At this time, the program reduced its capacity and intake of new families until the Skagit County Health Department provided a new funding stream. The fluctuation of families served over the life of the Skagit County NFP program is due to changes in capacity resulting from staffing and funding sources.

2. Community Navigators (Whatcom Family and Community Network)

Description. In 2006, the Whatcom Family and Community Network (the Network) began to facilitate services for and build community capacity with families on public assistance. Conversations about community needs and challenges among Network staff, Division of Children and Family Services (DCFS) staff, and families highlighted parents' need to understand and successfully navigate Child Protective Services (CPS) court processes. As a result of this insight, the Network created the Community Navigators program. In the fall 2008, CPS referred the first family to the Network. In January 2009, the Network began operating the Community Navigators program under a contract with the Department of Social and Health Services Children's Administration (DSHS Children's Administration).

The pilot Community Navigators program was co-developed by the Network and DCFS Children's Administration. It was designed to offer an innovative way of helping families traverse the complex CPS system, with the ultimate goals of reuniting families, reducing the number of families re-entering the CPS system, and building community capacity. A key innovation was leveraging the experience of parents who have been through the CPS system (referred to as community navigators). Because of their previous experience the CPS system (for example, having had children in CPS themselves or being foster parents), community navigators could empathize with families seeking to achieve reunification with their children,[34] and "had successfully closed their cases with [CPS] and so could honestly say, 'I got through it; you can too.'"

The program targeted families who were particularly socially isolated or who might benefit from additional resources to help navigate diverse systems. It often operated as the "last resort" for families who had exhausted other alternatives but had not successfully reunited with their children. In particular, CPS would refer their "hard cases" to the Community Navigator program. Community navigators would interact with the families weekly (either in person or by phone) to (1) serve as a mentor, (2) help families understand the CPS court process and the competencies and requirements evaluated by CPS social workers, (3) connect them to resources in the community, and (4) encourage families to create support networks that could decrease the likelihood of re-entry into the system. Finally, community navigators would monitor families' progress through the system.

The network staff was responsible for recruiting, training, and supervising the community navigators. At its peak, the program employed 5 community navigators. The Network also

[34] To become a community navigator, a parent must have had all cases with DSHS Children's Administration or Child Protective Services successfully closed for at least six months. For additional information, see Whatcom Family & Community Network. "Community Navigator Preliminary Contract Report July 1, 2009-June 30, 2010" 2010.

hosted a monthly family dinner that included training sessions and social activities for the participating families.

In 2014, the Community Navigators program was terminated due to changes in state funding and priorities. Having served 120 families, the program's legacy extends to the relationships it helped develop and the sense of accomplishment and resolution it gave community navigators through their work with families in need. Two former navigators continue to contribute to efforts and organizations in Whatcom and Skagit counties in support of similar missions to that of the Community Navigators program.

Funding and support. The Community Navigators program was funded by the Washington State child welfare agency (Children's Administration) and supported by the local CPS office. The DSHS Children's Administration paid the Network $30 per navigator hour spent working for the program. This funding supported administrative efforts and expenses, such as travel and supplies, as well as navigator salaries. Navigators were hired on part-time basis and worked approximately 20 hours per week. They were paid $15 per hour for their services and were reimbursed for travel to families whenever that was necessary.

Whatcom County's Community Navigators program ended as a result of budget cuts at DSHS and DCFS. A rigorous evidence demonstrating the effectiveness of Community Navigators may have been helpful in demonstrating the benefits of ongoing state funding for the program; however, no such evidence of the program's effectiveness was available when budget reduction decisions had to be made.

Outcomes. To understand participants' experiences and gauge outcomes, the Network administered follow-up surveys to families in 2011, 2012, and 2014. The surveys were returned by a small number of families (6 families in 2011, 7 families in 2012, and 21 families in 2014). Due to differences in the structure of the survey, we report the average score (on a scale from 1 to 7) for years 2011 and 2012 and the percentage of respondents who agree/disagree with various statements in 2014.

In follow-up surveys, parents in families served by Community Navigators reported positive experiences and outcomes. For example, in 2011, parents reported that they were able to find ways to be better parents, were able to connect with other resources, and felt their assigned navigators were helpful to them (average scores of 6.2–6.5 on a 1–7 scale, Table III.10). In 2012, parents reported they were able to find ways to be better parents and were able to make healthy friendships (average score of 6 on a 1–7 scale, Table III.10). In 2014, parents had favorable responses to most questions, including agreeing they were able to find ways to be better parents and were able to connect with other resources (80–100 percent agreement across all questions, Table III.11).

Furthermore, anecdotal evidence indicates that some families reported a better understanding of the CPS administrative process, how to file documents, and what social workers required. Anecdotal evidence also suggests some families were more open to collaborating with social workers after working with community navigators.

Table III.10. Community Navigator parent evaluation questionnaire results, 2011–2012

Question	2011 (n=6)	2012 (n=7)
I feel my Community Navigator has been helpful to me.	6.2	5.4
I have connected to other resources with the help of the Navigator.	6.2	5.0
I feel/felt supported by the agencies and staff working with me.	5.5	5.0
I feel my goals are being met through working with DCFS/CPS and other agencies.	4.5	4.3
I believe that the community I live in can help me support my children.	6.0	4.1
I have the friends and family support I need to support my family.	6.2	4.7
I know what resources there are to support my family and am able to find them.	5.8	5.0
I know how to build friendships that are healthy for me and my family.	6.3	6.0
We often do things together with other families in the community.	4.2	4.1
Our family often gets support and help from our friends and neighbors.	4.5	4.4
Our family regularly helps out our friends and neighbors.	4.3	3.9
I feel I understand more and have found ways to be a better parent.	6.5	6.0

Source: Washington State DSHS Children's Administration (2011, 2012). "Report to the Legislature 'Community's Commitment to Children' Whatcom County Family and Community Networks Pilot Project."

Notes: Data represent average scores for each of 12 questions for the 6 and 7 parents who responded. The scores are based on responses on a scale from 1–7; with 1 as "Strongly disagree" and 7 as "Strongly agree." We cannot determine whether reported scores derive from parents in individual households or whether there are multiple respondents from a given household.

These results should be viewed with caution due to the small and non-representative samples of respondents.

Table III.11. Community Navigator parent evaluation questionnaires results, 2013–2014

Question	Agree (%)	Neutral (%)	Disagree (%)
I feel my Community Navigator has been helpful to me.	81	19	0
I have connected to other resources with the help of the Navigator.	85	10	5
I feel/felt supported by the agencies and staff working with me.	95	5	0
I feel my goals are being met through working with DCFS/CPS and other agencies.	90	5	5
I believe that the community I live in can help me support my children.	81	14	5
I have the friends and family support I need to support my family.	81	19	0
I know what resources there are to support my family and am able to find them.	100	0	0
I know how to build friendships that are healthy for me and my family.	95	5	0
We often do things together with other families in the community.	86	9	5
Our family often gets support and help from our friends and neighbors.	90	5	5
Our family regularly helps out our friends and neighbors.	86	14	0
I feel I understand more and have found ways to be a better parent.	100	0	0

Source: Whatcom Family & Community Network. "Draft Report July 2013–May 2014"

Notes: Data represent percentages for each of 12 questions for the 21 parents who responded. The scores are based on responses on a scale from 1–7; with 1 as "Strongly disagree" and 7 as "Strongly agree." The results are reported as the proportion of parents in responding to each category for "Agree", "Neutral", and "Disagree." Mathematica reports the scores as the percentage of parents in responding to each category for "Agree", "Neutral", and "Disagree." We cannot determine whether reported scores derive from parents in individual households or whether there are multiple respondents from a given household.

These results should be viewed with caution due to the small and non-representative samples of respondents.

Finally, we also used administrative data from the Washington State DSHS Children's Administration to compare the outcomes of 34 children from 16 (out of 120) families served by community navigators to a comparison group of children who were receiving services from the same CPS offices during 2009–2014 program years. These data suggest that Community Navigator families experienced some positive outcomes. For example, relative to the comparison group, children from the Community Navigators families were 13.3 percentage points more likely to have their child return home for any length of stay, 3.5 percentage points more likely to achieve reunification, and 7.3 percentage points more likely to have children returned home within twelve months (Table III.12). None of these differences, however, were statistically significant.

These results should be considered informational but not conclusive in light of the survey and administrative data limitations. In particular, all findings are based on small samples that may not be representative of all families or children served by the program. Additionally, the community navigator and comparison families for whom outcome data were available received services during overlapping but different periods of time. Due to missing service start and end dates, these analysis used the entire program period as a proxy for the service dates of the families participating in the Community Navigator program. Finally, navigator and comparison families were significantly different at baseline on a number of observed characteristics, including Community Navigator children were less likely to have a permanency goal of adoption or guardianship (24 percent vs 38 percent), be legally free (0 percent vs 33 percent), be under the age of 4 years old (12 percent vs 46 percent, see Table III.12). In sum, it is not possible to evaluate the impacts of the Community Navigators program in a meaningful way without more robust data on families receiving services from Community Navigators and (if possible) a matched comparison group.

Challenges. The Network began receiving referrals from CPS to work with families in the fall of 2008. As referrals increased, the Community Navigators program was somewhat limited in its ability to recruit navigators who were both familiar with the challenges faced by families in the program and able to travel to meet with families. Sustainability also proved challenging for this program. The program was terminated after in 2014 due to state budget cuts and changing priorities of the agencies involved.

Table III.12. Characteristics and outcomes of Community Navigator and comparison group children, 2009–2014

Variables	Navigator Children (%)	Comparison Children (%)	Difference (%)
Characteristics			
Female	44.12	50.45	-6.33
Minority	29.41	24.22	5.20
Removal reasons			
Neglect	76.47	71.64	4.83
Physical abuse	11.76	11.21	0.55
Sexual abuse	2.94	3.36	-0.42
Permanency plan goal			
Reunification	52.94	45.07	7.87
Adoption or guardianship	23.53	37.67	**-14.14***
Legally-Free	0.00	33.41	**-33.41*****
Removal age of the child			
<4 years	11.76	45.52	**-33.75*****
4–7 years	32.35	19.51	**12.85***
8–12 years	32.35	17.60	**14.75****
>12	23.53	17.38	6.15
Initial removal (first removal for the child)	85.29	93.39	**-8.09***
Initially placed with relatives	61.76	43.39	**18.38****
Outcomes			
Dependent child placed with parents (Trial return home prior to discharge, includes youth still in care)	44.12	30.83	13.29
Family reunified	52.94	49.44	3.50
Family reunified within 12 months	44.12	36.77	7.35
Re-entry into CPS within 12 months of reunification (out of families who were reunified)	0.00	6.80	-6.80
Sample Size			
Number of children	34	892	
Number of families	16	NA	

Source: Washington State DSHS Children's Administration, 2009–2014.

Notes: This table represents baseline characteristics and outcomes for a sample of children who were served by the Community Navigators program and a comparison group, as well as the differences between the two groups, reported as percentage points. The Community Navigator group consists of 16 (out of 120) families with available data. The comparison group is composed of children from the same DSHS office who were not referred to the Community Navigator program. NA=not available

These results should be viewed with caution in light of the survey and administrative data limitations. In particular, all findings are based on small samples that may not be representative of all families or children served by the program. Additionally, the community navigator and comparison families for whom outcome data were available received services during overlapping but different periods of time. Finally, navigator and comparison families were significantly different at baseline on a number of observed characteristics (see table).

The level of statistical significance for two-tailed tests is indicated by *p < .10; **p < .05; ***p<.01

E. School climate and student success activities

The APPI sites targeted school discipline policy and practice as a means to create more nurturing and compassionate school environments. In particular, the Whatcom Network, Walla Walla Network, and Okanogan Coalition have been working with teachers, principals, and staff in targeted elementary, middle, and high schools to shift school policies from punitive approaches to more trauma-informed practices. Their efforts included using evidence-based positive behavior management techniques; training school administrators, teachers, and other staff on ACEs, resilience, and trauma-informed counseling topics; collecting ACEs information through student surveys; changing school suspension and expulsion policies; and adding ACEs and resilience topics to courses. These changes have yielded important results: reducing school suspensions and expulsions, improving student behavior, increasing student retention, and at one high school, increasing graduation rates. The APPI sites' strategy of using successful pilot projects to leverage districtwide policy change has been more of a challenge. Yet, support from school superintendents and school boards has begun to spread school-specific "wins" to more locations in some sites.

This evaluation focused on three activities—Whatcom's Shuksan Middle School, Walla Walla's Lincoln High School, and NCW's Westside High School—designed to transform the school environment and improve student outcomes in some of the neediest schools in the targeted areas. The rest of this section describes these activities, evaluates their outcomes, and discusses some of the implementation challenges.

1. Shuksan Middle School (Whatcom Family and Community Network)

Description. Shuksan Middle School's efforts to combat the impact of adverse childhood experiences (ACEs) are part of a grass-roots initiative designed to shift school policies and practices from a focus on punitive discipline methods (such as suspensions and expulsions) to the development of resilient students. Shuksan Middle School has traditionally served an at-risk population and contends with gang activity, disciplinary problems, low attendance, and low achievement. Among middle schools in the Bellingham School District, Shuksan has the highest percentage of students in poverty and minority students.[35] In the 2011–2012 school year, Shuksan had the lowest achievement scores in reading, math, writing, and science and also the lowest attendance rate.[36]

The activity evolved from a grass-roots efforts in response to some of the challenges that the school and surrounding community faced. In 2006, a Shuksan teacher began organizing occasional community nights for parents and other interested community members to help

[35] Based on the U.S. Department of Education, National Center for Education Statistics' 2013-2014 Common Core of Data, about two thirds (63 percent) of Shuksan Middle School students were eligible for free or reduced-price lunch; the other three middle schools in the Bellingham School District had between 23 and 42 percent of student eligible for free or reduced-price lunch. Furthermore, almost half (47 percent) of Shuksan's students were minority (non-White, mostly Hispanic); other schools in the district had 21-34 percent minority students.

[36] Based on the Washington State Office of Superintendent of Public Instruction (OSPI)'s data on achievement scores and unexcused absences, in 2011 Shuksan Middle School students had lower scores than the other three middle schools in the Bellingham School District and had the highest rate of unexcused absences (1.3 percent).

address prominent gang activity and other youth-related issues in the community. A key goal of these meetings was to create and strengthen the relationship between residents and local law enforcement and, ultimately, to curb gang activity and other disorderly conduct among youth. By 2008, these meetings had grown in size and frequency.

In 2011, a new principal joined Shuksan Middle School and began to work with the Whatcom Family and Community Network. He led the transformation of community nights into Shuksan family nights. Shuksan continued to feature local law enforcement in these meetings but also began to incorporate games, workshops, and information about community resources. The principal also recognized the importance of involving the parents of minority students, including those with limited English language proficiency. Accordingly, Shuksan brought in translators for five different languages, hired Spanish-speaking administrators, and identified gaps in academic proficiency between Hispanic and non-Hispanic students. With the help of the Whatcom Family and Community Network, Shuksan also designed and administered a Risk and Resilience survey, which included questions about students' exposure to ACEs. The survey, first administered in 2011–2012 school year, found that 70 percent of students had experienced one or more ACEs and 25 percent experienced three or more ACEs.

Working with the Whatcom Family and Community Network, Shuksan Middle School began to shift its focus from punitive discipline policies to practices designed to create more nurturing and compassionate school environments. The school changed its discipline policies, including replacing out-of-school with in-school suspensions, except in extreme cases. To support this resilience-focused work and help school staff build capacity to address student need and respond to student misbehavior in a constructive manner, the Whatcom Family and Community Network helped provide Shuksan with access to training, curriculum development, and funding sources. Shuksan Middle School now implements multiple reinforcing strategies, which include the following:

- **Educating staff on ACEs and resilience.** Shuksan Middle School began offering training and encouraging professional development activities to help staff engage in positive interactions with students that promote resilience and healthy child development. Twenty members (40 percent) of the school staff attended the first training conducted in 2012. Now, all staff receive training on ACEs and their impact on students. In 2015, Shuksan Middle School hosted a screening of James Redford's *Paper Tigers* documentary, which described the efforts of Walla Walla's Lincoln High School—an activity described in the next section—to build student resilience and reduce the harmful effects of ACEs on students.
- **Emphasizing restorative practices.** In 2013, Shuksan Middle School staff began emphasis on restorative practice. This approach replaces punitive discipline methods (such as suspensions and expulsions) with practices that hold students accountable for their actions when they misbehave. The students are encouraged to "make it right with their 'victim' and the school community (which can be another student, a teacher or anyone who was harmed intentionally or unintentionally)" (Shuksan Middle School 2015). This helps students understand their feelings, develop positive ways of expressing themselves, deal successfully with stressful situations, and restore the relationship between the "victim" and the student.
- **Implementing Positive Behavioral Interventions and Supports (PBIS).** PBIS is a behavioral education program, implemented in schools or districts around the United States,

that supports the use of evidence-based practices to "teach behaviors you expect" (Positive Behavioral Interventions and Supports 2016). The program focuses on a few behavioral expectations that are positively stated and easy to remember. The school then determines how to teach these expectations and model the right behaviors to students and fine tunes its discipline referral policies appropriately. The goal is to provide a consistent message to the students both inside and outside of the classroom. With help from Whatcom Family and Community Network, Shuksan Middle School adopted PBIS in 2013.

- **Improving the achievement of English learners.** After identifying the achievement gap between Hispanic and non-Hispanic students in various academic subjects as one of the problems, Shuksan Middle School implemented a Sheltered Instruction Observation Protocol (SIOP) in 2012. The SIOP supports specialized training of teachers in pedagogical techniques used to prepare lesson plans and teach English learners. This initiative focuses on advancing the reading, writing, listening, and speaking skills of English learners, especially Hispanic students.

In sum, Shuksan Middle School's strategies aim to improve social interactions, diminish bullying, decrease risky behaviors, and improve academic proficiency among its students, with a particular focus on those who have experienced one or more ACEs and are English learners.

Funding and support. The Whatcom Family and Community Network supports Shuksan Middle School through coaching, curriculum development, funding, and training. The Network also facilitates interactions and meetings among staff, community members, and research experts about ACEs.

The Bellingham School District also supports Shuksan's ACEs work. For example, with the agreement from the district, the principal redistributed some of schools' district funding to support its ACEs and resilience-related activities. Importantly, the superintendent and school board are supportive of Shuksan's efforts and the district now allocates additional funding to Shuksan for ACEs-related work.

In 2014, Washington's Office of Superintendent of Public Instruction (OSPI) awarded Shuksan a five-year, $1.3 million grant to work with the Whatcom Network, the Bellingham School District, and Western Washington University's College of Education to implement a 21st Century Community Learning Center.

Outcomes. To evaluate the Shuksan Middle School efforts, we examined three types of outcomes: (1) disciplinary outcomes reported by the Bellingham School District, (2) students' substance use, perceptions of school safety and climate, and engagement in school reported on the Healthy Youth Survey, and (3) Hispanic students' achievement reported by the OSPI. The results were mixed and inconsistent across grades and across outcomes.

Disciplinary outcomes. To examine whether Shuksan's efforts led to improvement in disciplinary outcomes, we compared outcomes in Shuksan Middle School to changes in the other

three middle schools in the Bellingham School District[37] during the same time period (Table III.13). The only statistically significant effect we found was for the average number of days suspended among students who received in-school suspensions. In particular, for each year after the intervention, the average number of days spent in in-school suspension at Shuksan was reduced by nearly one full day (0.94 days) compared to the comparison group. We found no statistically significant effects for the other nine disciplinary outcomes.

Students' substance use, perceptions of school safety and climate, and engagement in school. Using data from the Washington State Department of Health's Healthy Youth Survey, we explored how students' substance use, perceptions of school safety and climate, and engagement in school have changed over time. For these analyses, we compare changes in Shuksan Middle School to changes in other middle schools in the Bellingham School District.

Again, we found mixed results. Shuksan Middle School efforts were associated with a 14 percentage point increase in the percentage of sixth-graders who perceived high levels of school rewards for pro-social involvement and a 10 percentage point decrease in the percentage of sixth-graders who reported a low commitment to school. These differences were statistically significant (Tables III.13–III.14 and Figures III.8–III.9). However, we did not see statistically significant differences for the same outcomes among the eighth-grade students. The Shuksan Middle School efforts were associated with an 11 percentage point increase of eighth-graders who report feeling safe at school (Tables III.13–III.14 and Figures III.8–III.9). However, we again did not see statistically significant differences for the same outcome among the sixth-grade students. We did not find statistically significant differences for the other sixth- or eighth-grade survey outcomes, including substance use outcomes.

[37] The other three Bellingham School District middle schools are Fairhaven Middle School, Kulshan Middle School, and Whatcom Middle School.

Table III.13. Regression results for disciplinary outcomes in Shuksan Middle School and comparison schools, 2003–2014

Outcomes	Intercept	Time	Post	Treatment	Time * Post	Time * Treatment	Post * Treatment	Treatment * Time * Post
Percentage of students with								
Out-of-school suspensions [a]								
Short-term out-of-school suspensions	**8.84*** **	-0.19	-2.52	1.94	-1.18	-0.88	1.52	-0.43
Long-term out-of-school suspensions	0.39	**-0.12***	0.28	**1.45*** **	-0.09	-0.02	-0.55	-0.09
In-school suspensions	**3.41***	0.26	0.32	**12.03*** **	-1.10	-1.10	-5.14	1.64
Average number of days suspended								
Out-of-school suspensions [a]								
Short-term out-of-school suspensions	**3.61*** **	-0.11	0.40	0.87	-0.01	-0.05	-0.19	0.85
Long-term out-of-school suspensions	**12.07*** **	**-0.80***	-0.53	2.12	2.24	0.02	3.40	-2.31
In-school suspensions	**1.82*** **	0.03	-0.85	0.84	0.14	0.04	**2.70** **	**-0.94***
Average number of suspension incidents								
Out-of-school suspensions [b]	**0.16*** **	-0.01	-0.04	0.13	-0.02	-0.02	-0.08	0.00
Short-term out-of-school suspensions	**0.16*** **	-0.01	-0.05	0.11	-0.02	-0.01	-0.07	0.00
Long-term out-of-school suspensions	0.00	**0.00** **	0.00	**0.02** **	0.00	0.00	-0.01	0.00
In-school suspensions	0.06	0.00	-0.01	**0.32*** **	-0.01	-0.02	0.17	-0.10

Source: Mathematica Policy Research's school-level analyses are based on Bellingham School District's disciplinary data and Washington State Office of Superintendent of Public Instruction (OSPI)'s student enrollment data, 2003–2014.

Notes: This table reports the results of the interrupted time-series with a comparison group analyses. The comparison group is the other three Bellingham School District middle schools (Fairhaven Middle School, Kulshan Middle School, and Whatcom Middle School). Each row represents results from a separate regression model. Estimated coefficients are in the form of percentage points, the average number of days, or the average number of incidents. The key parameters of interest are the two interaction terms shown in the last two columns: (1) POST*TREATMENT term, which examines whether the change in the *level* of outcome after the intervention in Shuksan Middle school is different from the change in the comparison group during the same time period and (2) TREATMENT*TIME*POST, which examines whether the change in the *linear trajectory* (or *slope*) of the outcome in Shuksan Middle School is different from the change in the comparison group. Statistical significance is indicated by * p < .10; ** p < .05; *** p < .01.

Definitions of outcomes: Percentage of students with suspensions outcomes were calculated by dividing the number of students with that outcome by the total number of enrolled students in that school in that school year. Average number of days suspended outcomes were calculated by dividing the total number of days suspended by the total number of students with the corresponding disciplinary action in a given school in that school year. Average number of suspension incidents was calculated by dividing the number of incidents by the total number of students enrolled in that school in that school year.

[a] Because a student could receive both a short- and long-term out-of-school suspension during an school year, we could not calculate the percentage of students with out-of-school suspensions and the average number of days that students were out of school due to suspension.

[b] We calculated the average number of out-of-school suspension incidents by adding numbers of incidents for short- and long-term out-of-school suspensions and dividing the sum by the total number of enrolled students in that school year.

Table III.14. Regression results for sixth-grade student survey outcomes in Shuksan Middle School and comparison schools, 2002–2014

Outcomes	Intercept	Post	Treatment	Post* Treatment
Self-reported substance use. Percentage of students reporting …				
No alcohol use in the previous 30 days	**97.78*** **	0.35	-0.93	1.35
No marijuana use in the previous 30 days	**99.10*** **	0.12	-0.75	0.68
School climate factors. Percentage of students reporting …				
Not being bullied	**73.11*** **	-0.76	**-7.11** **	5.11
Feeling safe at school	**93.23*** **	-0.20	**-7.23*** **	3.10
High levels of school rewards for pro-social involvement	**57.45*** **	**-5.33* **	**-8.43** **	**14.21** **
Low commitment to school	**38.21*** **	-1.21	**7.59** **	**-10.34* **

Source: Mathematica Policy Research's school-level analyses are based on Washington State Department of Health's Healthy Youth Survey (HYS) data, 2002–2014.

Notes: Difference-in-differences analyses were used to estimate the impact of the intervention starting in 2011. The comparison group includes the other three Bellingham School District middle schools (Fairhaven Middle School, Kulshan Middle School, and Whatcom Middle School). TREATMENT equals to 1 for Shuksan Middle School and 0 otherwise; POST equals to 1 after the start of the intervention in 2011 and 0 otherwise. The key parameter of interest is the interaction term, POST*TREATMENT, which indicates whether the pre-post change in the average outcome in the Shuksan Middle School is different from the change in the comparison group during the same time period. Estimated coefficients are in the form of percentages. We conducted sensitivity analyses excluding what appeared to be anomalous observations for the year 2008; no statistically significant differences were noted.

School rewards for pro-social involvement scale includes four items: (1) "My teacher(s) notices when I am doing a good job and lets me know about it."; (2) "The school lets my parents know when I have done something well."; (3) "I feel safe at my school."; and (4) "My teachers praise me when I work hard in school." *Low commitment to school* scale includes seven items: (1) "How often do you feel the schoolwork you are assigned is meaningful and important?"; (2) "How interesting are most of your courses to you?"; (3) "How important do you think the things you are learning in school are going to be for you later in life?"; (4) "Enjoy being in school?"; (5) "Hate being in school?"; (6) "Try to do your best work in school?"; (7) "During the LAST 4 WEEKS, how many whole days of school have you missed because you skipped or "cut"?"

The level of statistical significance is indicated by* p < .10; ** p < .05; *** p<.01.

Table III.15. Regression results for eighth-grade student survey outcomes in Shuksan Middle School and comparison schools, 2002–2014

Outcomes	Intercept	Post	Treatment	Post* Treatment
Self-reported substance use. Percentage of students reporting …				
No alcohol use in the previous 30 days	**84.86*** **	**6.64*** **	-3.43	1.43
No marijuana use in the previous 30 days	**91.50*** **	0.00	-0.75	0.75
No other drugs consumed in the previous 30 days	**96.64*** **	1.02	-1.14	-0.02
School climate factors. Percentage of students reporting …				
Not being bullied	**72.14*** **	-1.98	0.36	3.98
Feeling safe at school	**87.32*** **	3.18	**-14.07*** **	**11.47** **
High levels of opportunities for pro-social involvement	**65.71*** **	5.12	-3.71	-6.62
High levels of school rewards for pro-social involvement	**61.14*** **	0.52	**-7.89* **	-6.27
Low Commitment to School	**35.43*** **	-4.76	1.82	6.01

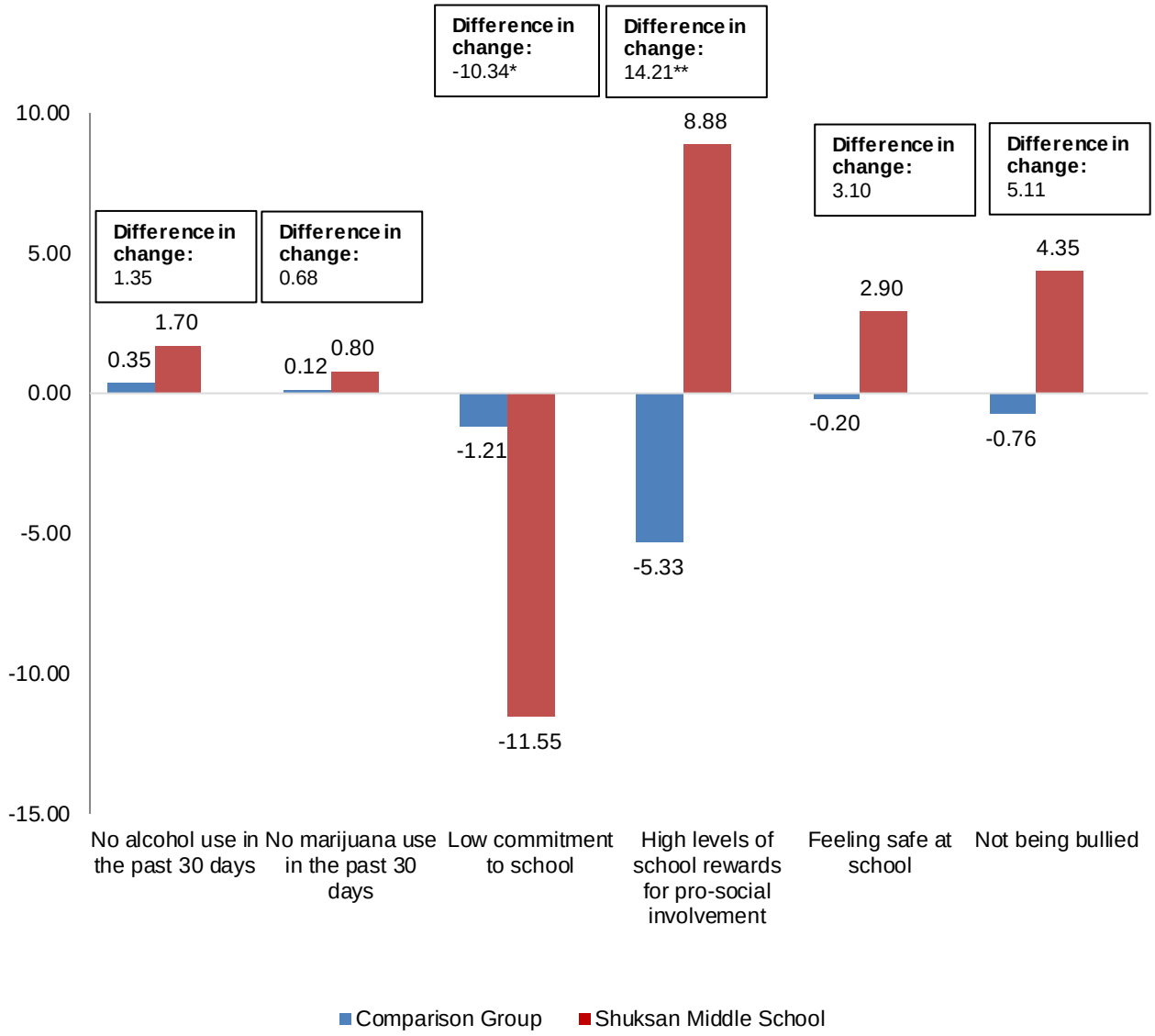
Source: Mathematica Policy Research's school-level analyses are based on Washington State Department of Health's Healthy Youth Survey (HYS) data, 2002–2014.

Notes: Difference-in-differences analyses were used to estimate the impact of the intervention starting in 2011. The comparison group includes the other three Bellingham School District middle schools (Fairhaven Middle School, Kulshan Middle School, and Whatcom Middle School). TREATMENT equals to 1 for Shuksan Middle School and 0 otherwise; POST equals to 1 after the start of the intervention in 2011 and 0 otherwise. The key parameter of interest is the interaction term, POST*TREATMENT, which indicates whether the pre-post change in the average outcome in the Shuksan Middle School is different from the change in the comparison group during the same time period. Estimated coefficients are in the form of percentages. We conducted sensitivity analyses excluding what appeared to be anomalous observations for the year 2008; no statistically significant differences were noted.

Opportunities for pro-social involvement scale includes five items: (1) "In my school, students have lots of chances to help decide things like class activities and rules."; (2) "There are lots of chances for students in my school to talk with a teacher one-on-one."; (3) "Teachers ask me to work on special classroom projects."; (4) "There are lots of chances for students in my school to get involved in sports, clubs, and other school activities outside of class."; and (5) "I have lots of chances to be part of class discussions or activities." School rewards for pro-social involvement scale includes four items: (1) "My teacher(s) notices when I am doing a good job and lets me know about it."; (2) "The school lets my parents know when I have done something well."; (3) "I feel safe at my school."; and (4) "My teachers praise me when I work hard in school." Low commitment to school scale includes seven items: (1) "How often do you feel the schoolwork you are assigned is meaningful and important?"; (2) "How interesting are most of your courses to you?"; (3) "How important do you think the things you are learning in school are going to be for you later in life?"; (4) "Enjoy being in school?"; (5) "Hate being in school?"; (6) "Try to do your best work in school?"; (7) "During the LAST 4 WEEKS, how many whole days of school have you missed because you skipped or "cut"?"

The level of statistical significance is indicated by* p < .10; ** p < .05; *** p<.01.

Figure III.8. Changes in outcomes of sixth-grade students in Shuksan Middle School and comparison schools

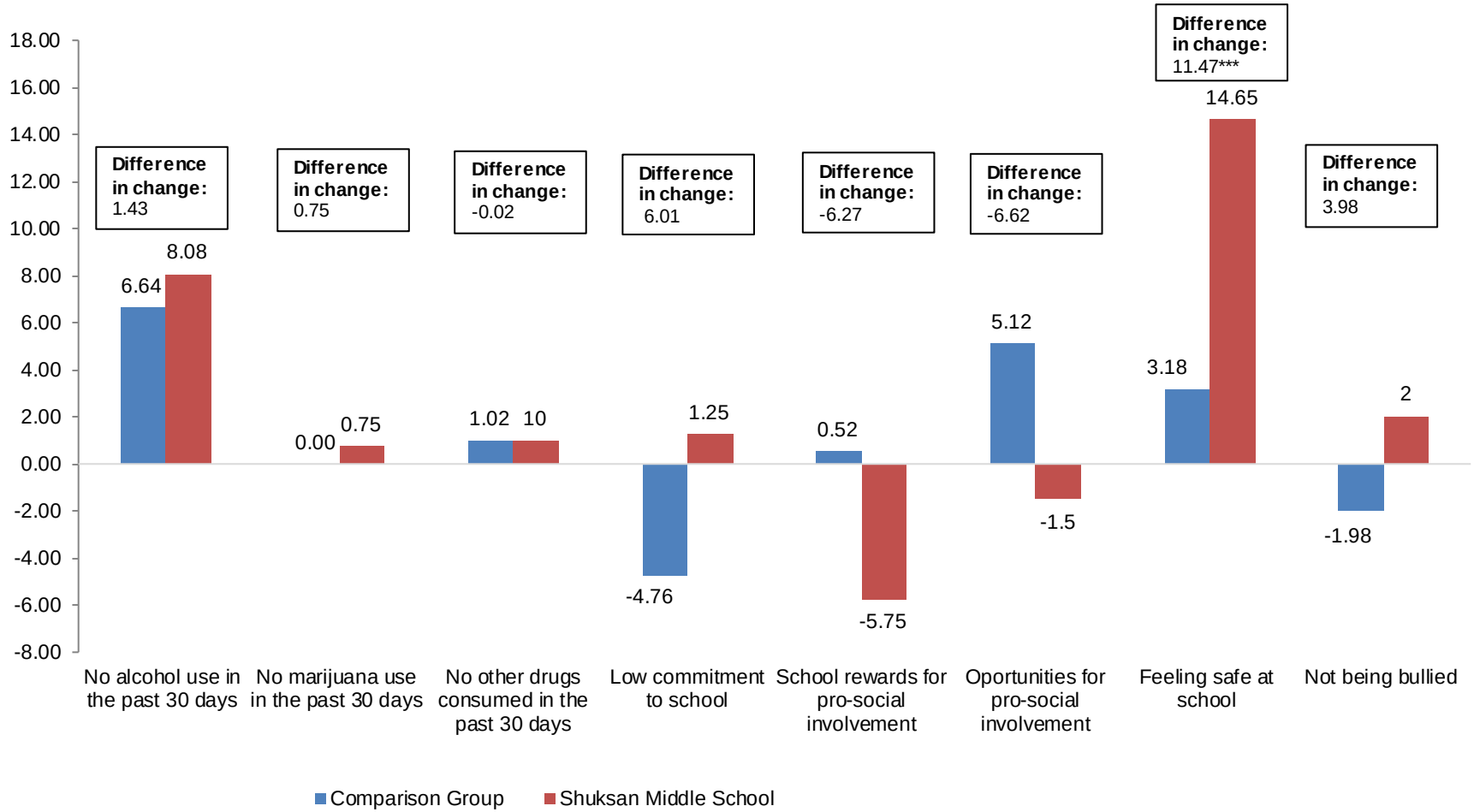


Source: Mathematica Policy Research's analyses of Washington State Department of Health's school-level Healthy Youth Survey (HYS) data, 2002–2014.

Notes: This figure reports the results of the difference-in-differences analysis. Bars show estimated change in percentage points between the pre-intervention period (2002–2010) and post-intervention (2012–2014) period for Shuksan Middle School (red bars) and the comparison (blue bars) groups. The comparison group includes the other three Bellingham School District middle schools (Fairhaven Middle School, Kulshan Middle School, and Whatcom Middle School), weighted by student enrollment. Text boxes indicate the difference in the pre-post changes between estimates for Shuksan Middle School and the comparison group and the level of statistical significance. Years are school years; for example, 2002 represents the 2002–2003 school year.

The level of statistical significance for the difference in change is indicated by * p < .10; ** p < .05; *** p<.01.

Figure III.9. Changes in outcomes of eighth-grade students in Shuksan Middle School and comparison schools



Source: Mathematica Policy Research's analyses of Washington State Department of Health's school-level Healthy Youth Survey (HYS) data, 2002–2014.

Notes: This figure reports the results of the difference-in-differences analysis. Bars show estimated change in percentage points between the pre-intervention period (2002–2010) and post-intervention (2012–2014) period for Shuksan Middle School (red) and the comparison (blue) groups. The comparison group includes the other three Bellingham School District middle schools (Fairhaven Middle School, Kulshan Middle School, and Whatcom Middle School), weighted by student enrollment. Text boxes indicate the difference in the pre-post changes between estimates for Shuksan Middle School and the comparison group and the level of statistical significance. Years are school years; for example, 2002 represents the 2002–2003 school year. The level of statistical significance for the difference in change is indicated by * p < .10; ** p < .05; *** p<.01.

Hispanic students' achievement. To gauge the effectiveness of Shuksan's interventions for Hispanic students, we compared changes in reading and math proficiency rates for Hispanic students at Shuksan Middle School to changes in proficiency rates for Hispanic students statewide (Table III.16 and Figures III.10–III.11). The results for reading achievement were again mixed. We found a statistically significant difference for seventh grade, indicating that the reading proficiency rate for Hispanic students in Shuksan Middle School increased relative to Hispanic students statewide (17.4 percentage points). Point estimates for sixth and eighth grades were smaller and statistically insignificant. For math proficiency, the point estimates varied in sign and magnitude, and none were statistically significant.

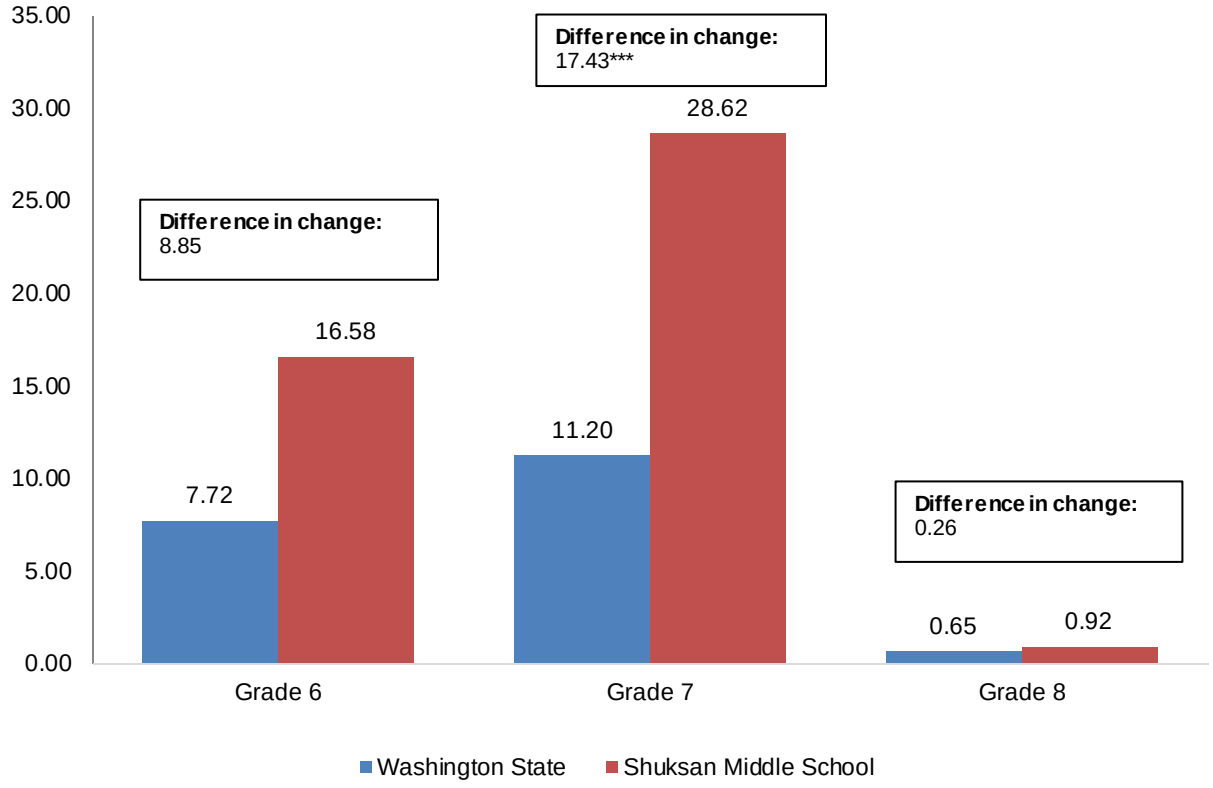
In sum, in assessing Shuksan Middle School's efforts we see inconsistent results across a wide-range of outcomes and several grade levels. As a result, we cannot conclude that these efforts (as opposed to differences in student cohorts, effectiveness of teachers in certain grades, or other factors) have led to the observed changes in student outcomes.

Several data and measurement limitations might have constrained our ability to detect an impact of Shuksan Middle School's ACEs-related work on student outcomes. Data were only available at the school level and were often available for only a few years. For example, the Healthy Youth Survey is administered every two years, and it was not administered in Shuksan Middle School in 2010, the year before the intervention. Academic proficiency data were collected annually, but data on the same assessment were available only for the 2009–2013 time period.

Challenges. A key challenge Shuksan Middle School faces is providing a consistent message about the importance of ACEs and ways to diminish their impact on both students and school staff. Shuksan continues to convey the importance of ACEs awareness and restorative practice to all staff, provides training when new staff joins the school, and promotes the adoption of resilience-oriented approaches and strategies schoolwide.

Fundraising and increasing stakeholder support continue to be important challenges. The Bellingham School District is working with Shuksan to provide funding for additional program activities, such as purchasing materials, performing background checks for volunteers, developing athletic programs, and covering the cost of official "clock hours" for professional development activities.

Figure III.10. Changes in Hispanic students' reading proficiency rates in Shuksan Middle School and comparison schools

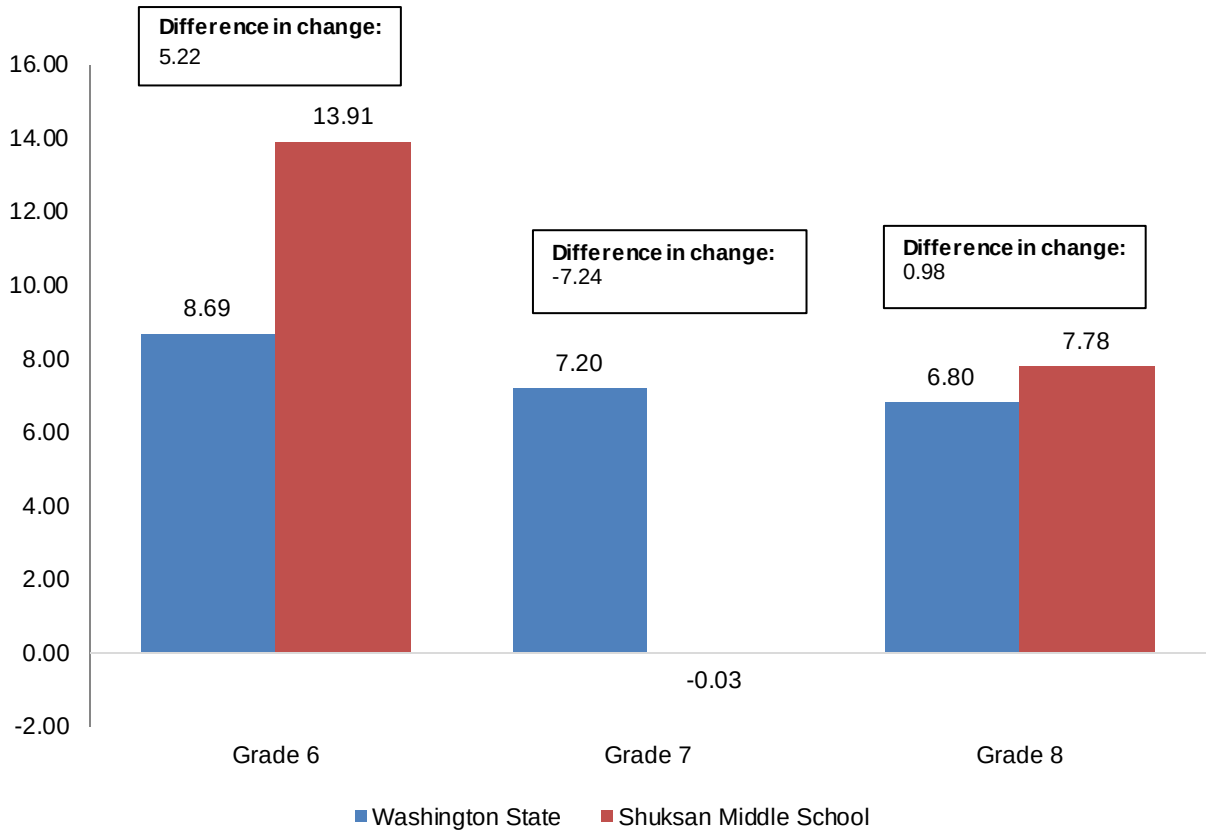


Source: Mathematica Policy Research's analyses are based on Measurements of Student Progress (MSP) academic assessment test data from Washington State Office of Superintendent of Public Instruction (OSPI), 2009–2013.

Notes: This figure reports the results of the difference-in-differences analysis. Bars illustrate estimated change in percentage points between the pre-intervention period (2009–2010) and post-intervention (2011–2013) period for Shuksan Middle School (red) and Washington State (blue). Text boxes indicate the difference in this change and the level of statistical significance. Years are school years; for example, 2009 represents the 2009–2010 school year. The comparison group includes Hispanic students in grades 6, 7, or 8 at Washington State, weighted by student enrollment.

The level of statistical significance for the difference in change is indicated by * $p < .10$; ** $p < .05$; *** $p<.01$.

Figure III.11. Changes in Hispanic students' math proficiency rates in Shuksan Middle School and comparison schools



Source: Mathematica Policy Research's analyses are based on Measurements of Student Progress (MSP) academic assessment test data from Washington State Office of Superintendent of Public Instruction (OSPI), 2009–2013.

Notes: This figure reports the results of the difference-in-differences analysis. Bars illustrate estimated change in percentage points between the pre-intervention period (2009–2010) and post-intervention (2011–2013) period for Shuksan Middle School (red) and Washington State (blue). Text boxes indicate the difference in this change and the level of statistical significance. Years are school years; for example, 2009 represents the 2009–2010 school year. The comparison group includes Hispanic students in grades 6, 7, or 8 at Washington State, weighted by student enrollment.

The level of statistical significance for the difference in change is indicated by * p < .10; ** p < .05; *** p<.01.

Table III.16. Regression results for Hispanic student proficiency rates in Shuksan Middle School and comparison schools, 2009–2013

Outcomes	Intercept	Post	Treatment	Post* Treatment
Percentage of Hispanic students proficient in reading				
Grade 6	**49.45*** **	7.72	-7.24	8.85
Grade 7	**41.90*** **	**11.20*** **	**-13.28*** **	**17.43*** **
Grade 8	**53.88*** **	0.65	-2.38	0.26
Percentage of Hispanic students proficient in math				
Grade 6	**35.41*** **	8.69	-14.75	5.22
Grade 7	**36.34*** **	7.20	-4.44	-7.24
Grade 8	**32.25*** **	**6.80** **	**-11.97*** **	0.98

Source: Mathematica Policy Research's analyses are based on Measurements of Student Progress (MSP) academic assessment test data from Washington State Office of Superintendent of Public Instruction (OSPI), 2009–2013.

Notes: Difference-in-differences analyses were used to estimate the impact of the intervention starting in 2011. The comparison group includes Hispanic students in grades 6, 7, or 8 in the entire Washington State. TREATMENT equals to 1 for Shuksan Middle School and 0 otherwise; POST equals to 1 after the start of the intervention in 2011 and 0 otherwise. The key parameter of interest is the interaction term, POST*TREATMENT, which indicates whether the pre-post change in the average outcome in the Shuksan Middle School is different from the change in the comparison group during the same time period. Estimated coefficients are in the form of percentages.

The level of statistical significance is indicated by* p < .10; ** p < .05; *** p<.01.

2. Lincoln High School and the Health Center (Walla Walla Community Network)

Description. Lincoln High School is an alternative high school serving troubled students who have struggled in other Walla Walla school district schools. These students often exhibit behavioral problems and low achievement levels and, thus, are at a high risk of dropping out.

Changes at Lincoln High School were implemented in two phases. The first phase began in the 2007–2008 school year, Principal Jim Sporleder's first full year at Lincoln High School. When Mr. Sporleder became principal (April 2007), the school was in trouble. The average daily attendance was only 25 students; the school and the surrounding neighborhood were overrun by gangs. Principal Sporleder began working with staff and students on improving the school. In 2008–2009 school year, enrollment increased to approximately 230 students, many of whom were transferred to Lincoln High School from three satellite campuses. During this time, Mr. Sporleder, teachers, and staff focused primarily on bringing safety and structure to the school and on addressing violence issues. The key goals were for staff to enforce discipline and for students to feel safe at school and to follow school rules. Other key changes included the introduction of additional academic courses and after-school activities.

The second phase of change began in the 2010–2011 school year, when Mr. Sporleder began implementing ACEs-related initiatives at Lincoln High School. Mr. Sporleder attended several

presentations on ACEs and toxic stress and learned about their negative impacts on the developing brain, cognitive skills, and mental and physical health. This research inspired him to work with teachers and staff at Lincoln High School to implement trauma-informed practices, to change the discipline policy, and to improve school culture. From 2010–2011 to 2013–2014 the school implemented a pilot initiative with the goal of becoming a trauma-informed school. In conjunction with the Health Center (a separate organization with a clinic based at Lincoln High School), Lincoln aimed to reduce student stress levels and facilitate learning by developing personal relationships and creating an understanding, safe, and supportive school community.

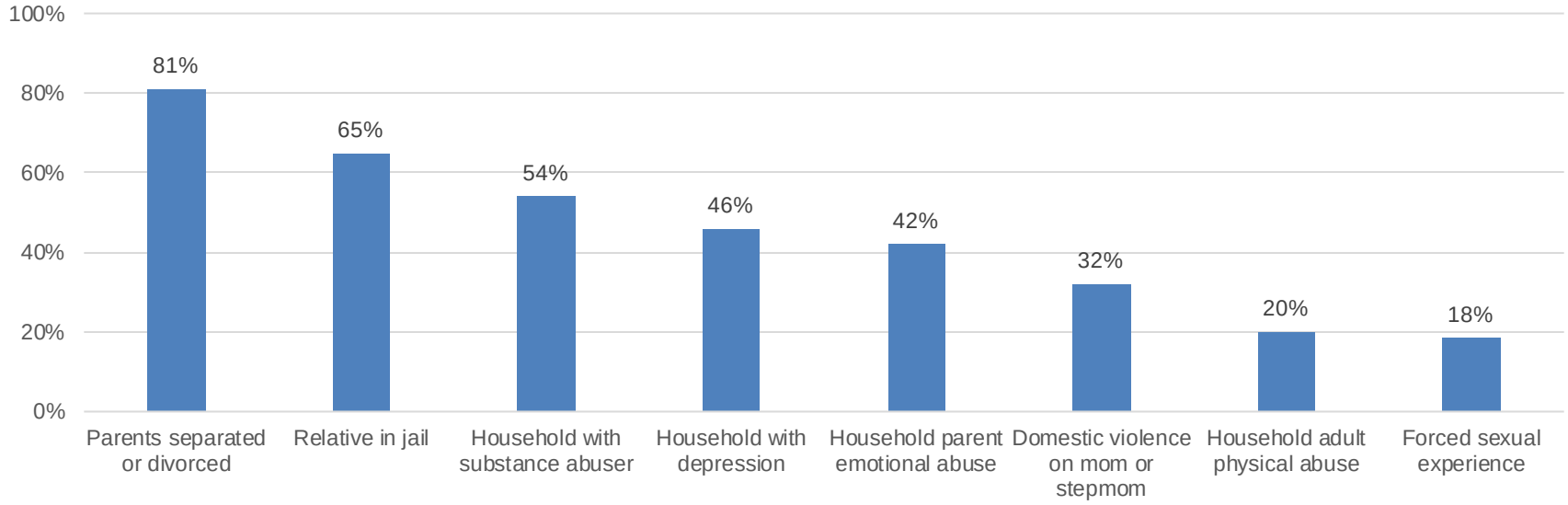
A student survey conducted by the Health Center in 2010–2011 revealed that a substantial number of students had experienced ACEs (Figure III.12). Four out of five (81 percent) of respondents reported having separated or divorced parents, three out of five (65 percent) reporting having a relative in jail, and majority (54 percent) reported living in a household with a problem drinker, alcoholic, or someone who abuses other substances. Based on the results of this survey and available research, Lincoln High School focused on the following:

- **Safety practices:** Making students feel safe in order to reduce their stress and increase their learning capacity.
- **Value practices:** Teaching and reinforcing the values of respect, teamwork, and hope.
- **Relationship practices:** Using conversations that matter to building relationships with students.
- **Learning practices:** Building capacity to learn through the previous three practices.

The trauma-informed culture at Lincoln High School included a change in discipline policy. Rather than following a traditional practice of punishing students for bad behavior, which could traumatize an already-vulnerable student, teachers and staff began exploring the root cause of the problematic behavior. The goal was to intervene when students showed early signs of stress. For example, staff began by asking the students, "What's going on?" in an effort to make the student feel safe. If necessary, adults would refer students to a school counselor or an intervention counselor at the Health Center. If the initial efforts were unsuccessful, students would meet with Mr. Sporleder, who worked with students to assess their decision-making ability in terms of stoplight colors: green, yellow, and red. If a student was "red," the principal would give him or her time to think before reflecting on student actions and discussing how to handle similar situations in the future. In summary, all teachers and school staff focused on how to help students and their families rather than on how to discipline them.

In conjunction with this new approach to discipline, the school shifted from relying on out-of-school suspensions to using primarily in-school suspensions. This policy change was motivated by the belief that when students received out-of-school suspensions they would often return to stressful home environments and would fall behind in school. With in-school suspensions, students were held accountable for completing school work and had the opportunity to connect with teachers and staff who cared about them.

Figure III.12. Lincoln High School students' exposure to adverse childhood experiences (ACEs), 2010–2011 school year



Source: Mathematica Policy Research analysis of the Health Center at Lincoln High School student survey, 2010–2011 school year

Note: These indicators represent eight of the ten adverse childhood experiences (ACEs). Parents separated or divorced shows students who responded yes to having parents who were ever separated or divorced. Household adult physical abuse shows students who responded yes to having an adult in your household that has often pushed, grabbed, slapped, or thrown something at you. Household parent emotion abuse shows students who responded yes to having a parent in your household OFTEN swear at you, insult you, or put you down. Relative in jail shows students who reported having at least one parent, guardian, brother, or sister that is or has been in jail. Forced sexual experience shows students who responded yes to having ever been forced to do something sexual that you didn't want to do. Domestic violence on mom or stepmom shows students who responded yes to having seen domestic violence against their mother or stepmother. Household with substance abuser shows students who reported living with a problem drinker, alcoholic, used street drugs, etc. House with depression shows students who reported living with someone who is depressed, mentally ill, or has attempted suicide.

A key component of Lincoln High School's approach to reducing the harmful effects of ACEs was its relationship with the Health Center. The Health Center is located next to Lincoln High School and provides free mental and physical health care to students, who are able to make their own appointments. The Health Center employs a trauma-sensitive method and may help improve student attendance, as students who feel sick or upset can come to school for care.

An important outcome of Lincoln High School's work is the creation and wide-reaching influence of the documentary *Paper Tigers*, which describes Lincoln High School's transformation, and its sequel *Resilience*. The filmmaker James Redford was connected to the Walla Walla Community network by a local journalist who reported on ACEs and the efforts at Lincoln High School and the Health Center. In 2015, James Redford released *Paper Tigers*, which was screened 70 times across the country in the week following its release. The documentary continues to be shown in a variety of settings across the country, including events hosted by school systems, parent-teacher organizations, community coalitions and networks, social services and health departments, and colleges and universities. In January 2016, *Resilience*, the sequel to *Paper Tigers*, premiered at the Seattle International Film Festival; the documentary focuses on ACEs and their effects on children's development and adult health.

Funding and support. The Health Center is funded primarily through private donations and grants. The Health Center receives no funding from the school district or the state and is currently unable to bill Medicaid or other insurance providers for the services provided. Walla Walla hosted a screening of *Paper Tigers* as a fundraiser for the Health Center. Attendance was high, with the number of people expressing interest exceeding the occupancy of Walla Walla's largest venue.

Outcomes. During phase one and two of Lincoln High School's initiatives, improvement was shown on discipline indicators and graduation rates. For most outcomes, the largest improvements occurred in phase one, which the school began with extremely bad outcomes and when it had the largest potential for improvement. Generally, a smaller improvement followed in the second phase.

The average number of days that students spent in out-of-school suspensions decreased in phase one and phase two, and both changes are statistically significant. In phase one, the average number of days suspended per student in Lincoln High School decreased from 2.98 days to 0.71 days; in phase two, it was reduced even further to 0.47 days (Figure III.13).[38]

Office referrals for discipline also decreased substantially over this time period (Figure III.13). In phase one, the percentage of students receiving discipline referrals decreased from 85 percent to 62 percent, a large and statistically significant improvement. There was another small but statistically insignificant decrease in phase two. In the 2012–2013 school year, only 58 percent of students received office referrals. Improvement in referrals was also shown in the average number of office referrals per student. In phase one, there were approximately

[38] This variable is the total number of days spent in out-of-school suspension divided by total school enrollment. Thus, it captures the number of days the average student spent in out-of-school suspension, not the average length of an out-of-school suspension.

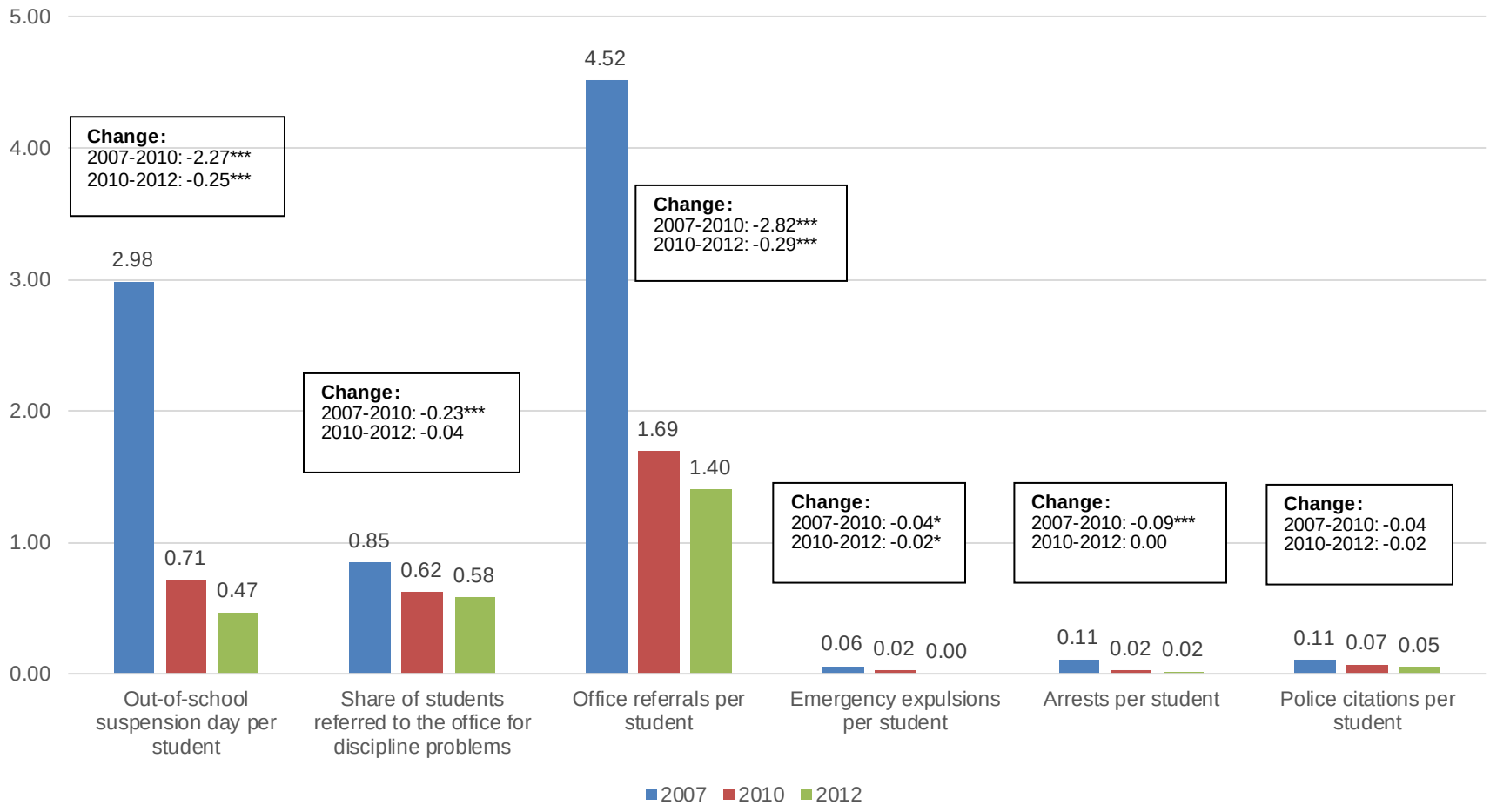
4.5 referrals per student; this decreased to 1.69 referrals per student at the end of phase one and to 1.40 referrals per student at the end of phase two. In both phases, the improvements are statistically significant. Small (and sometimes statistically significant) improvements were also seen for the number of emergency expulsions per student, the number of arrests per student, and the number of police citations per student.

Graduation rates at Lincoln High School also showed statistically significant improvements during both phases 1 and 2 (Figure III.14). The Lincoln High School graduation rates increased from 44 percent in the 2008–2009 school year to 58 percent in the 2010–2011 school year and to 78 percent in the 2013–2014 school year.

Due to data limitations, we cannot say how much of the observed changes in outcomes could be attributed to the Lincoln High School's efforts to change school's policies, practices, and climate and how much may be attributed to *other factors*, such as changes in student population. First, we do not have any data on relevant outcomes in the years before 2009, when the new principal joined Lincoln High School. Second, we do not have data for a similar group of high school students from other schools in the area (or in Washington State) and are unable to include a comparison group in our analyses.

Challenges. Lincoln High School and the Health Center experience challenges to maintaining their trauma-informed work. Recent leadership transitions at Lincoln High School may pose challenges for staff and students as they become acclimated to the new leader's style, priorities, and methods. Funding the Health Center remains a challenge because it is not permitted to charge Medicaid or other insurance for services provided to students. In an effort to mitigate this challenge, the Health Center is exploring strategies to gain approval to bill Medicaid and other insurance.

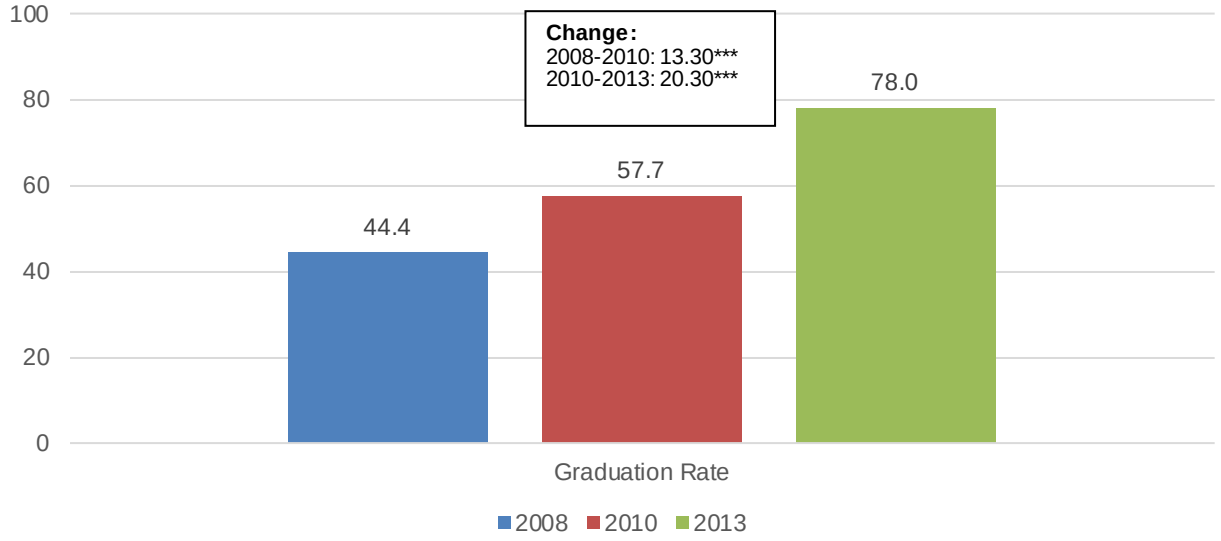
Figure III.13. Lincoln High School's disciplinary actions, 2007–2008 through 2012–2013 school years



Source: Mathematica Policy Research analysis of Lincoln High School self-reported discipline data.

Note: This figure presents the results of pre-post analysis. Years are school years; for example, 2009 represents the 2009–2010 school year. The level of statistical significance is indicated by *p < .10; **p < .05; ***p < .01.

Figure III.14. Lincoln High School's graduation rate, 2008–2009 through 2013–2014 school years



Source: Mathematica Policy Research analysis of Lincoln High School self-reported discipline data.

Note: This figure presents the results of pre-post analysis. Years are school years; for example, 2009 represents the 2009–2010 school year.

3. Westside High School (Coalition for Children and Families of North Central Washington)

Description. Westside High School is an alternative school in the Wenatchee School District. It has historically had a high dropout rate and serves large numbers of students in poverty and Latino students.[39] In its 2013 Mental Health Services proposal, Westside's school leadership identified a need to address the following concerns: (1) district-wide security and safety issues; (2) a large group of students in special education with mental health and behavioral issues; (3) general education students with significant health needs; (4) negative impacts of long-term suspensions on students; (5) high rates of high school dropout; (6) high stress levels among staff; and (7) lack of ongoing support for students inside and outside of school.

Inspired by the success of initiatives at Walla Walla's Lincoln High School (described in the previous section) and other schools in Washington State, Westside High School initiated efforts to combat adverse childhood experiences (ACEs). In 2013, the school began conducting ACEs and resilience training for staff, which includes conversational tools geared toward reaching students who have experienced ACEs, sensitivity training, compassion fatigue interventions, and information on mindfulness and self-care. The school also began conducting resilience training for students. In particular, all ninth- and tenth-grade students undergo a four-week training that is intended to build resilience strategies and help students respond to triggers productively. In addition, students can participate in classroom-based mental health units. For example, in a knitting unit, students are taught to knit and practice mindfulness and meditation, while, the Tree of Life unit helps students reflect on their interpersonal relationships and support network. The school also began conducting Wellness Fair, a one-day school event intended to raise awareness of community services and promotes students' wellness. In spring 2016, the school is planning to screen *Paper Tigers*, a documentary of Walla Walla's Lincoln High School efforts to address ACEs and build resilience among its students. Later in the year, a health center is expected to open on the grounds of nearby Lincoln Elementary School,[40] which will provide both primary care (such as vaccinations) and mental health care services for students, families, and community members.

Funding and support. Westside works closely with the Coalition's prevention arm (Prevention and Family Programs Committee), with key decisions made jointly with the Coalition's Board of Directors. The Coalition helps Westside High School coordinate activities and events, facilitates connections, and provides information that supports training and community building efforts. The Coalition meets monthly with Westside High School, brings guest speakers, shares information, and helps increase community capacity. The Coalition does

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[39] More than two-thirds (69 percent) of Westside High School students are eligible for free or reduced-price lunch, and a majority (54 percent) identified as Latino (U.S. Department of Education, National Center for Education Statistics' Common Core of Data, 2013-2014). In 2014, the high school dropout rate was 32 percent (Washington State Office of Superintendent of Public Instruction, 2013-14 data). In neighboring Lincoln Elementary School, 97 percent of fourth-grade students reported being exposed to childhood trauma on the School Climate and Trauma Survey and almost one-third (30 percent) were identified as having clinical levels of post-traumatic stress disorder by school staff.

[40] Lincoln Elementary School serves approximately 600 students in grades K-5 and is a feeder school for Westside High School. The health center will serve both Lincoln Elementary and Westside High School communities.

not directly provide funding for the Westside High School's initiatives, but at times it financially supports related activities.

The Wenatchee Public School District funds all professional development efforts, including PBIS training. Representatives (PBIS teams) for each school are trained by the school district and then return to train other staff at their home schools. These resources have resulted in all of Westside High School's buildings being PBIS-approved buildings.

The health center initiative is funded by the Wenatchee Public School District. Westside High School principal, health professionals, administrators, elected officials, and the Coalition have all collaborated to coordinate funding from the school board for the on-site health center at Lincoln Elementary.

Outcomes. Because Westside High School began implementing changes only recently (in 2014–2015 school year), this evaluation describes the initial stage of implementation but does not report any student outcomes.

Challenges. An ongoing challenge is the development of a sustainable set of initiatives that prevent (and address) the adverse consequences of ACEs and build resilient students. Westside High School faces some difficulty in coordinating with community and area leaders to fund and support the program components already in place and to develop future initiatives.

It is potentially too early to assess outcomes for this initiative, as the 2015–2016 academic year is only the second year of full implementation. This type of program could take several years to have a meaningful impact on long-term student outcomes. As the program evolves, it will be important to identify appropriate short-term student outcomes, such as behavioral or perception indicators, and to collect data needed to facilitate an evaluation of this activity.

IV. DISCUSSION OF APPI CROSS-SITE EVALUATION FINDINGS AND THEIR POLICY IMPLICATIONS

A. Evaluation findings

In 2002, Washington State's Family Policy Council (FPC) initiated a series of statewide network trainings on the impact of adverse childhood experiences (ACEs) and toxic stress on the brain development of children. The trainings emphasized the importance of nurturing environments, protective factors, and resilience in preventing or mitigating effects of early trauma. The FPC encouraged its network of local coalitions to raise community awareness of ACEs and develop communitywide responses to the problem.

This final report completes a retrospective evaluation of the efforts of five of those local network coalitions. The five APPI sites took on the challenges of (1) reducing ACEs, (2) increasing resilience, and (3) promoting healthy child development in their communities. The evaluation'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. We found that three of the five sites had implemented activities with demonstrated results. In this final chapter, 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)[41] 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 (Table IV.1).

[41] 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 IV.1. ACEs and resilience prevention spectrum: examples from the APPI sites

General (universal or primary[1]) prevention	Selective targeted (secondary[1]) prevention	Indicated trauma-informed (tertiary[1]) prevention
Domain 1: community development		
• Multi-service resource centers • ACEs trainings for local businesses	• Secondary trauma training for service providers	• Community organizing in neighborhoods with high rates of ACEs, violence, child abuse, and incarceration
Domain 2: risk behavior reduction and healthy youth development		
• Community positive norms campaign • Student volunteer activities	• Targeted gang prevention clubs and activities • Targeted youth mentoring programs	• Trauma-informed juvenile justice practices • Community truancy boards
Domain 3: child abuse prevention and family support		
• Nurse-Family Partnership program • Strengthening Families program	• ACEs 101 training for child protection staff • ACEs parenting classes for at-risk parents	• Community navigators' peer support for child protection families
Domain 4: school climate and student success		
• School-wide positive behavior management • Compassionate schools	• School prevention/intervention specialists	• Trauma-informed education services and supports • Integrated on-site physical and mental health care for alternative school students

NOTE: [1]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).

In the area of child abuse prevention and family support, the sites' efforts included expanding the availability of evidence-based parenting prevention programs for parents, including the NFP and the Triple P Positive Parenting Program, the Strengthening Families Program, and the Kaleidoscope Play and Learn Program. Some sites also deliberately involved local social service agencies—key providers of child abuse and neglect services—in their work by providing training about ACEs and resilience to the agencies' staff and offering parenting classes to their clients. The Whatcom site developed a new trauma-informed program for high-risk parents in the child protection system, offering them peer support to help them navigate the system, recover their children, and piece together their lives.

In the area of school climate and student success, the sites also worked at all three prevention levels. Several sites focused on universal prevention, supporting the implementation of school-wide positive behavior management practices. By obtaining SAMHSA's SS/HS grant, the Skagit site doubled the capacity of the schools' prevention/intervention specialists to offer support and services to students at risk of academic failure. The Walla Walla site helped a local alternative high school (Lincoln High) to implement an innovative array of trauma-informed services for its students, most of whom had high levels of exposure to ACEs. These included changes in suspension policies and classroom practices, student support, and an on-site health clinic with integrated mental health and primary care services.

In the area of risk behavior reduction and healthy youth development, the sites also worked on a spectrum of prevention activities. Several sites obtained federal and state prevention grants addressing gang violence, suicide, and youth alcohol and drug use. Their work included general prevention activities, such as positive social norms campaigns (Okanogan), student volunteer opportunities, and school youth prevention clubs. They also implemented prevention programs targeting at-risk youth, including mentoring programs, a youth community center, and gang-prevention activities. The Okanogan site also worked with its local juvenile justice system to implement trauma-informed practices for its high-ACEs youth, including organizing and participating in a community truancy board, a practice used in several communities across the state (MacArthur Foundation 2013).

However, few 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 the root causes of many ACEs. Some sites provided more targeted ACEs trainings for organizations interested in providing employee assistance to staff, including mindfulness training and self-regulation techniques for direct service staff at risk of secondary trauma. One site (Whatcom) successfully advocated for the opening of a multi-service resource center for an isolated rural community of immigrants. Two sites (Whatcom and Walla Walla) used community organizing strategies to improve disadvantaged neighborhoods with high rates of ACEs, child abuse, violence, and incarceration. This work included Walla Walla's Commitment to Community (C2C) initiative.

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.

The sites have similar capacity on half (five) of the capacity domains. For five ARC^3 index 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).

However, the sites have different capacity on five domains as well as 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. In all five domains, NCW had the lowest score. The sites also differed in network size, structure, and membership diversity, as well as other social network characteristics, including level of collaboration, density, and reciprocity. These differences in capacity and network characteristics are consistent with the differences described in the APPI evaluation's interim report (Hargreaves et al. 2015) and in the final report's site profiles (Appendix A).

Evidence of positive changes in outcomes. We found that 6 (of the 11) evaluated activities—Skagit's Nurse-Family Partnership, Okanogan's Positive Social Norms Campaign and Omak Community Truancy Board, and Walla Walla's ACEs and Resilience Awareness Campaign, Commitment to Community, and Lincoln High School—were associated with positive and statistically significant changes in targeted outcomes. The remaining five activities either had inconsistent findings (Whatcom's Shuksan Middle School) or had limited or no outcomes data available (NCW's ACEs Awareness Campaign and Westside High School, Whatcom's Community Navigator program, and Skagit's Prevention/Intervention Specialists). Table IV.2 summarizes the findings for each of the 11 activities.

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) choice of 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 universal, 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 an ACEs and Resilience Collective Community Capacity (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.

Table IV.2. 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 IV.2 (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.

B. Policy implications

Since the FPC's introduction of ACEs, resilience, and brain development research across Washington State in 2002, the APPI sites have pioneered efforts to develop and test community-based strategies to reduce ACEs, increase resilience, and support healthy child development. By studying the APPI sites' challenges and successes we have learned important lessons about the organizational, structural, financial, social, political, and economic factors that can facilitate or obstruct community change. Fortunately, many new initiatives around the United States are developing new ways to support this work and address the barriers encountered by the APPI sites.

We close this report with several policy implications of the evaluation's findings, and examples of current efforts to implement these policies. 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, federal and state governments, and private foundations can do the following:

1. **Help coalitions like the APPI sites to shift their priorities to balance general prevention and ACEs-informed practices**. Three of the APPI sites—Okanogan, Skagit, and Whatcom—funded their networks, in part, through federal prevention grants. This shifted the focus of their work on general prevention rather than ACEs or trauma-informed practices. To have a community-wide impact on reducing ACEs and building resilience, the coalitions need to make ACEs work their priority. This includes changing coalition network structures to allow for more local adaptation and testing of promising ACEs-informed programs and practices. One example of this work is the *Mobilizing Action for Resilient Communities* (MARC) initiative, coordinated by the Health Federation of Philadelphia with support from the Robert Wood Johnson Foundation. Begun in 2015, the initiative is bringing together 14 established coalitions in a learning collaborative to learn how to "advance their local ACEs-informed agendas through innovative next steps to strengthen their networks" (Health Federation of Philadelphia 2016).
2. **Incorporate into state and federal grants and contracts the requirement to use ACEs-informed policies and practices**. As mentioned earlier, three of the APPI sites funded their networks through federal prevention grants that did not target ACEs. Unless their grant requirements changed, these sites had limited ability to shift the focus of the grant-funded activities. However, state and federal agencies can support the adoption and scale-up of effective ACEs-informed policies and practices by shifting their grant requirements and funding priorities. An example of this work at the federal level is the work of the Substance Abuse and Mental Health Services Administration (SAMHSA) to develop guidelines, principles, and treatment improvement procedure manuals for trauma-informed care (SAMHSA 2014c). These principles address "safety, trustworthiness and transparency, peer support and mutual self-help, collaboration and mutuality, empowerment, voice and choice, and cultural, historical, and gender issues" (SAMHSA 2014b).
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 efforts. However, with sustained operational assistance, communities can engage in successful community mobilization efforts. One example of a successful backbone support is *Building Healthy Communities*, a "10 year, $1 billion comprehensive community initiative launched by The California Endowment in 2010 to advance statewide policy, change the narrative, and transform 14 of California's communities most devastated by health inequities" (The California Endowment 2016a). With operational support, the Building Healthy Communities' sites have successfully changed numerous local community systems and policies (The California Endowment 2016b).

4. **Build public sector capacity to support community efforts to address the root causes, including the social and economic determinants, of ACEs**. Although APPI sites identified social and economic inequities as contributors of ACEs, only two sites—Whatcom and Walla Walla—mounted community development initiatives that targeted neighborhoods with high ACEs prevalence. However, they are on the right path. 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 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. The Association of State and Territorial Health Officers (ASTHO) issued a Presidential Challenge in 2016 urging public health agencies to make health equity an integral part of their work, so that "public health agencies will be looked to by all sectors for consultation and guidance on data analysis and use, community engagement, narrative creation, and policy development that will advance health and overall equity" (ASTHO 2016).

5. **Support the development, testing, and dissemination of the latest research on effective ACEs-informed programs and practices**. Despite innovative work in this area, APPI sites lacked comprehensive information about which ACEs-informed strategies would have the greatest impact in their communities. However, a substantial research base that addresses this gap has been developed since the original ACE study was published in 1998. 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. An example of such an initiative is the *Frontiers of Innovation*, led by Center on the Developing Child at Harvard University. The Center has published a series of working papers on effective ACEs-informed practices (Center on the Developing Child at Harvard University 2016b). It also started the Frontiers of Innovation initiative in 2011 to facilitate "the idea generation, development, implementation, testing, evaluation, and rapid-cycle iteration" of science-based innovations addressing ACEs, toxic stress and brain development (Center on the Developing Child at Harvard University 2016b).

6. **Support the development, testing, and dissemination of effective systems and policy-change practices addressing ACEs and their root causes**. APPI sites focused more on building community awareness and supporting pilot projects and less on mobilizing residents and other stakeholders to advocate for large-scale systems and policy change. To achieve community-wide impacts, however, 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. One example of this work is *Change in Mind: Applying Neurosciences to Revitalize Communities*, a three-year initiative of the Alliance for Strong Families and Communities, conducted in partnership with the Robert Wood Johnson Foundation and the Palix Foundation's Alberta Family Wellness Initiative. Started in 2015, the initiative is working with ten U.S. alliance members and five non-governmental organizations in Alberta, Canada, to "infuse, align, and accelerate established neuroscience discoveries about the effects of life-altering toxic stress into their community-based work" targeting systems and policy change (Alliance for Strong Families and Communities 2015).

7. **Identify and fill methodological gaps in the evaluation of community-based initiatives targeting ACEs, toxic stress, and resilience**. Although there exists rigorous research evaluating the effectiveness of client-level programs and practices targeting ACEs, trauma, and toxic stress, rigorous evaluation of community-based initiatives targeting ACEs has not been emphasized as much. To remedy this imbalance, APPI funded this evaluation, which utilized rigorous qualitative and quantitative methods, examined outcomes at the county and subcounty levels, and developed and administered a new ARC^3 survey to learn about what worked in the APPI sites. However, more rigorous evaluations are needed to learn which community-based initiatives work for whom and in what settings.

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