A Review of Community Efforts to Mitigate and Prevent Adverse Childhood Experiences and Trauma

Christopher Blodgett, Ph.D.
Washington State University
Area Health Education Center

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Summary

This paper summarizes a number of community and treatment system initiatives in Washington State that address elements of Adverse Childhood Experiences (ACEs) prevention and mitigation across a range of social, behavioral, and emotional consequences. In doing so, the 20 year history of Community Public Health and Safety Networks is reviewed. The community networks represent a foundational body of work because of its continuing integration in the ACEs Public Private Initiative (APPI) development effort and the systematic efforts of the community networks to use ACEs intentionally as a core set of concepts in community mobilization.

To place these various programs in context, I review public health practice as a framework for addressing ACEs-focused community mobilization efforts through a common language. I then propose a trauma-informed model of public health practice that is intended to help APPI consider the unique challenges in using ACEs and trauma concepts. Finally, I review the recommendations from community prevention science which provides a detailed framework for what is required if community-centered public health efforts are to succeed.

APPI has a well-defined technology drawn from the science of trauma intervention but APPI likely face two primary challenges: how to disseminate this technology and knowledge across diverse communities and how to encourage the broad adoption of some version of a trauma-informed public health adapted to local community needs. Within what may emerge as a trauma-informed public health model, APPI has a range of effective general prevention and trauma-informed interventions to support such integrated efforts.

It is clear that across Washington there is a significant if fragile network of community initiatives that address individual and family-based interventions. There are examples of persisting efforts such as the systems adoption of evidence-based practices in juvenile justice. However, more commonly specific initiatives become 'pearls on a string' of efforts in communities that are defined, emerge, and then recede as time-limited funding comes and goes. As a consequence a focus on single community initiatives is instructive but limited. The serial progression of initiatives, however, does document that in many communities there is set of relationships that permit communities to move from one funding opportunity to the next. What may be missed and needs to be considered is what the clear additive capacity is over time.

Using principles from prevention science's Implementation Systems Framework, APPI will position itself strongly if it can address the conditions in communities that define continuity of efforts as it also addresses the development of specific services. I end the paper discussing the

potential benefit of APPI aligning its developing capacity as an intermediary organization as outlined in the implementation science literature.

I. Framework for this Report

This review addresses the findings from a number of community-based efforts addressing the principal risk conditions and consequences of adverse childhood experiences (ACEs) in the lives of children, adolescents, and families. This review emphasizes experiences with multi-partner community initiatives that are or have been significant efforts in Washington State in recent years.

Policy responses to children, youth, and families who experience trauma remain deficient. Often reactive, they lack intentionality, long-range strategic planning, and system wide application. Further, they rarely reflect the on-the-ground realities of trauma in communities in the United States. (Cooper et al., 2007)

The specific charge from the ACEs Public-Private Partnership Initiative (APPI) was to address the following issues:

- Focus on local community and state efforts through their evaluations and program reports to provide perspective that complements recommendations from the peer reviewed scientific literature.
- Summarize implementation efforts, policy and process decisions, and program outcomes for these programs – and identify any common themes and lessons learned across multiple evaluation efforts.
- Based on this review of community efforts, offer recommendations to help strengthening the understanding of the most effective evidence-based models that may prevent or mitigate ACEs.

Let me start with the last charge first in framing this paper. *There are no ACEs-specific evidence-based prevention practices.* To be an ACEs-specific prevention effort, the concept of multi-factored risk intervention and specific use of trauma-informed principles would need to be systematically driving the strategies defining the prevention practice. This work has not been done. It is also important to define how an ACEs-specific prevention effort could add value. The arguments hinge on three assertions for which the science is good but our reach and execution are not.

- The cumulative impact of persistent, early, and multi-factored exposure to adversity is a distinctive predictor of long term human costs that adds value beyond a focus on any single risk factor. The science in support of this statement is now well-established.
- The percent of the general population exposed to high cumulative ACEs dose is so great that we are facing a public health crisis requiring population level responses in addition to treatment of individuals experiencing disability because of ACEs. The public health burden of ACEs is well-defined with estimates of 25-35% of the general population being affected. What we lack is a strategy that supports identification of individuals at risk and a phased public health response based both on exposure and effects of ACEs exposure.

- We understand the biopsychosocial pathways that determine how exposure to ACEs results in developmental risk and disease that define the trauma resulting from ACE exposure. And, we use this knowledge to guide interventions. Again, the science describing the effects of adaptation to persisting adversity is well-established. Our range of tools to use this knowledge is at best limited. We have a range of evidenced-based trauma treatments that can anchor the continuum of care for the most functionally impaired. We have some promising practices that can mitigate emerging risk. We have, however, yet to integrate these efforts in a coherent public health response.

The scope of ACEs defines a public health challenge requiring community coordinated efforts. In this report, I combine community mobilization efforts and public health principles as complementary models fully recognizing that there are longstanding and distinct histories supporting both approaches. What they share is a common view on the need for communitywide population change efforts and a recognition that any effort has to simultaneously support wellbeing, reduce risk, and help treat the disorder and dysfunction in the lives of those most impacted. Both traditions depend on broad community efforts involving people from a range of backgrounds.

Because the focus of this report is on multi-partner community efforts, this review is as much about the process of effective community mobilization as it is about the specific strategies that could be used to mitigate or prevent ACEs. The centrality of multi-partner community coordination efforts reflects the complexity of adversity, and the evidence that effective interventions have to be tailored to local circumstances. No single system or community group can be responsible for ACE prevention or services. The finding threaded throughout this report is that while practical and potentially impactful, these collaborative efforts are frequently fragile, transitory, and difficult to document for benefit in short time periods. While not avoiding the need for clear outcomes, we may need to recognize that intermediate measures of success may have to be used given the long timelines required for change in populations and the multiple influences operating to enhance or impede community efforts.

Community-based efforts operate with a persistent tension between research-based and service-based colleagues. The emergence of evidence-based practice (EBP) values- empirically supported, well-defined interventions delivered with close attention to fidelity to the model- brings this potential tension into even greater focus. Schorr (2012) describes this persisting tension as a continuum with the poles defined by experimentalists and practitioners. Taken in its simplest form, ‘experimentalists’ argue for the rigorous use of EBPs with fidelity to model as a central goal. While not anti-scientific in presentation, the practitioner perspective is that knowledge important for policy and practice can emerge outside of rigorous research studies. These practitioners who Schorr refers to as ‘inclusionists’ argue that the unique conditions in communities and the lessons from relationships with people in care results in valid and powerful change in far more ways than EBPs can address and rigorous research can measure. EBPs offer actions that fit some of the problems faced in communities but do not shed light on key lessons from on the ground experience. EBPs also often are techniques not strategies and public health efforts call for strategic efforts knitting multiple techniques into a coherent whole.

This paper in part is intended to help community experience be represented in the development work APPI is undertaking. The experimentalist-inclusionist dichotomy is likely an outdated argument that creates artificial distinctions between potential allies. Specifically, the expanding nature of prevention science and the central role of implementation science in national policy create a framework for recognizing the role of context, culture, and groups' experiences to guide practice and build science. It is particularly important to recognize the need for science-practitioner alliances in addressing the prevention and mitigation of ACEs in communities. First, we engage these problems when a prevention science specific to population level ACEs does not exist. While trauma-informed EBPs from psychotherapy can offer some tremendous tools, the adaption to a public health approach is only now beginning to be tested. The scope of ACEs simply outstrips the settings in which EBPs will be practical tools in isolation, will involve an expanding reliance on informal and relationship-based asset creation, and any effort including EBP adoption in addressing ACEs will have to be adapted to the capacity and culture of local communities. What is essential, however, is that an open, disciplined, and rigorous critique of what we do, how we do it, and what it achieves is a core ethical value shared by researchers and practitioners across the continuum.

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While the programs showcased in this report focus on Washington State experiences, it is critical that these programs be placed in context with the emerging literature regarding community initiatives, prevention and implementation science recommendations, and the definitional challenge of how to translate ACEs evidence into effective population responses. Before turning to the discussion of the specific programs, I briefly review why a public health framework is essential for ACEs prevention and early intervention. I then discuss the evidence for community prevention programs for at-risk children and families, and the critical need for programs that emphasis resilience and competence as well as needs-based responses. I present a conceptual framework for understanding the nature of trauma resulting from ACEs. Drawn from the treatment literature, trauma treatment may provide a framework for prevention and early intervention community practices. Finally, I summarize the evolution of community initiatives and the emerging prevention science to support this complex and demanding work.

Finally, a note about the programs included in this review. APPI contributors produced a compendium of over 100 state reports and local program efforts that form the basis of the material reviewed. These reports included policy briefs, evaluation reports, and relevant data summaries addressing ACEs specific to Washington State. I supplemented these resources with a number of additional programs in Washington and an emphasis on asset-based strategies that are more national in scope. Inevitably, this review misses important and valuable work that has emerged from Washington's communities. It is also true that as soon as we make a list of such efforts, the list begins to age. For the first, I offer my heartfelt apologies to colleagues across the

state. The omission is mine. For these omissions and for good work only now emerging, I hope this paper serves as a starting point to be refined.

II. Building on Washington's Public Health Emphasis in Addressing ACEs.

APPI builds on the foundational work of the Family Policy Council (FPC) which was formally ended as a state effort in 2012. After nearly 20 years of operation, FPC provides a significant example of principles of community collaboration and core elements of functions and strategies APPI will continue in its development planning. Even with the full engagement of the continuing local community networks in APPI, summarizing the FPC experience is relevant to the overall assessment of collaborative state practices. Examining the FPC experience and results, also creates an opportunity to summarize public health concepts as part of the framework for this report.

Established in 1989, FPC was formed to address a broad spectrum set of problems that capture many of the contributing conditions and consequence defining ACEs as an arena of work. These included child abuse and neglect, youth substance abuse, youth violence, domestic violence, youth suicide, teen pregnancy and male parentage, dropping out of school, and child out of home placements. FPC was structured to operate as both a state coordinating body and as a funder and support to locally defined efforts through the Community Public Health and Safety Networks (community networks).

The proposal for a public health approach to ACEs has been advanced for many years (e.g., Foege. 1998). The published ACEs literature while defining ACEs as a 'public health disaster' (Anda & Brown, 2010) has not moved to specific propositions for a public health response to ACEs. Aligning ACEs with public health risks also aligns ACEs responses with public health practice and an extensively tested strategy for moving populations to increased health. The principles of public health practice helps sharpen the focus in the balance of this report and creates a framework for looking at the work of FPC.

Public health is defined as what we do collectively to assure the conditions in which people can be healthy (IOM, 1988, 2002). While clearly the focused mission of the public health system, public health practice is shared collectively by professionals and citizens. The distinct perspective of public health is that health interventions are phased based *both* on positive health promotion and conceptually related efforts to reduce risk and manage emerging disorders using a unifying body of knowledge to coordinated responses keyed to individual and group risk.

There are two keys to a public health approach. First, public health actions occur through phased responses using common concepts of health, risk, and illness to define necessary actions. Second, public health strategies place equal emphasis on promotion of wellbeing as well as reduction of risk and dysfunction. Public health actions occur along a continuum including universal, targeted, and indicated prevention efforts, with treatment and illness management as the fourth arena of response. Universal actions address health promotion and risk mitigation in the entire population irrespective of individual or subgroup risk. Health education, policies and investments that promote healthy behaviors and manage risks, and the enforcement of health regulations are examples of universal action. Selective interventions address individual, family,

and smaller group interventions to promote wellbeing and address known risk factors in the participants that increase risk of disease. Indicated interventions promote wellbeing and address early evidence of disorders in individuals with high risks and the early symptoms of the disorder we are seeking to prevent in the population. Significantly, public education policy has adopted effectively the same structure for practice under the framework of 'response to intervention' as codified in the 2004 reauthorization of the Individuals with Disabilities Education Act.

This integrated vision of population health efforts is organized around common functions and common service strategies. The three common functions are (1) understanding health status and resources in communities, (2) development of strategies to address health promotion and risk response, and (3) efforts that translates policy proposals into concrete actions that lead to measurable improvements in health and illness risk reduction. Public health is organized around 10 essential services (e.g. University of Kansas Community Tool Box as resource, http://ctb.ku.edu/en/tablecontents/sub_section_main_1804.aspx). The 10 essential services identified by the American Public Health Association are:

1. Monitor health status to identify community health problems.
2. Diagnose and investigate health problems and health hazards in the community.
3. Inform, educate and empower people about health issues.
4. Mobilize community partnerships to identify and solve health problems.
5. Develop policies and plans that support individual and community health efforts.
6. Enforce laws and regulations that protect health and ensure safety.
7. Link people to needed personal health services and assure the provision of health care when otherwise unavailable.
8. Assure a competent public health and personal health care workforce.
9. Evaluate effectiveness, accessibility and quality of personal and population-based health services.
10. Research for new insights and innovative solutions to health problems.

http://www.apha.org/programs/standards/performancestandardsprogram/resexxentialservices.htm.

These 10 strategies are ideally applied at all three levels of practice in an integrated plan to promote health, reduce risk, and promote recovery through community efforts intended to (1) educate, create awareness, and shift norms and attitudes; (2) systems efforts intended to change organizational practices regarding resource allocations, practice objectives, policy, and workforce capacity; and (3) individual, family, and group efforts intended to change knowledge, beliefs, attitudes, values, and behaviors.

Charged with finding community-based solutions to a wide range of the problems of childhood, FPC was an early adopter of a public health approach to ACEs in the United States (Anda & Brown, 2010). This work can be traced at least to the year 2000 when FPC and early-adopter community networks (notably Pierce County) began to conduct specific ACE-informed work through a public health lens. The Spokane, Vancouver, Bellingham, and Walla Walla community networks also evolved significant distinct organized local efforts that began in the early 2000's and continue today. Other community networks engaged in significant public education efforts as participants in an ACEs training network where individual staff were trained in and delivered ACEs education developed through the FPC.

A public health 'call-to-action' became infused in FPC materials for the past decade. The principal strategy was a public education/advocacy role rather than a specific set of proposed changes in policies and practices. This is not criticism of FPC. Rather, it is an example of sound public health practice where education builds public will to address a problem as an essential pre-condition for change. While the ACE-informed public health efforts of FPC were targeted in this foundational work for ACEs, using a public health framework to examine FPC's overall activities can help describe the capacity now in place and areas of further work needed as APPI evolves.

In reviewing the work of FPC on ACEs, we need to distinguish the development work of the FPC as a small governmental organization from the work of the affiliated network of community networks funded by the FPC[1]. These were intended as complementary processes, but the scope of FPC's collective effort as a small facilitative organization is more clearly documented. With a focus on state level efforts, FPC and the community networks made substantive progress in several of the 10 essential services of public health. This summary is supported by documentation available at the FPC website http://www.fpc.wa.gov/index.html.

While FPC and the community network system did not address all 10 of the essential services, a strong case can be made that they addressed six services with substantive success. Two of the essential services (diagnosis/investigation, enforcement) were outside the mission of the FPC and the networks. Unfortunately, the documentation of the contributions of the system of community networks as whole is primarily anecdotal given the lack of a common evaluation framework to track services and outcomes over time and communities. The enabling language for the FPC and network (RCW 70.190.100) specifically barred FPC from conducting impact research for the networks[2]. With that constraint in mind, the narrative evidence supporting the community networks is important although a difficult story to capture using common evaluation standards.

Essential Service 1. Monitor health status to identify community health problems. FPC developed close working relationships with several key national figures in ACEs research. Most notably, the working association with Dr. Robert Anda, resulted in Washington being among the initial five states to adopt the ACEs module for the Behavioral Risk Factor Surveillance System (BRFSS, MMWR, 2010). The resulting Washington specific ACEs report (Anda & Brown, 2010) is the first look at the level of exposure and health burden in adults to describe Washington residents. The adoption of the ACEs module in BRFSS also has resulted in use of this information in local communities to address health status reports (e.g., Snohomish County Public Health's county-specific analysis of the BRFSS findings).

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[1] My unit of WSU was the contracted coordinator of the Spokane County Community Network from 2007 through early 2012. During this time period, we engaged in a series of ACEs educational and trauma response efforts in partnership with the Spokane network as well as managed the broader work of the network.

[2] RCW 70.190.100 stated, "(b) The legislature intends that this monitoring be used by the Washington state institute for public policy, together with public health data on at-risk behaviors and risk and protective factors, to produce an external evaluation of the effectiveness of the networks and their programs. For this reason, and to conserve public funds, the council shall not conduct or contract for the conduct of control group studies, quasi-experimental design studies, or other analysis efforts to attempt to determine the impact of network programs on at-risk behaviors or risk and protective factors…"

Essential Service 3. Inform, educate and empower people about health issues. FPC supported extensive training across the state both through its own staff efforts and through its formally identified ACE trainers affiliated with many of the local community networks. A specific analysis describing the cumulative scope of trainings is not available. FPC also produced an online introductory ACE training course (http://www.fpc.wa.gov/acecourse.html) as a durable resource for professionals and community members.

FPC supported annual community network conferences as skills building and educational events to build common cause among community network representatives. In addition, over the last 10 years, FPC has hosted multiple larger conferences and meetings with an ACEs-based focus. Two recent examples exemplify this larger body of work. In November 2010, FPC convened state and national experts for a facilitated Researchers' Think Tank linked to a statewide summit addressing early learning. In June 2012, FPC cosponsored the Leverage Points conference with the Washington Children's Trust and Edmonds Community College.

Essential Service 4. Mobilize community partnerships to identify and solve health problems. There are few examples of distributed networks of community coalitions that remained active for 20 years. FPC's relationship with Washington State's community networks is one. Guided by locally defined plans, the community networks reflect a common emphasis on the goals of community convening, education, and local service funding which characterized most of the participating networks activities.

FPC used extensive reporting practices to monitor performance, goal achievement, and to showcase local progress but this reporting mechanism was not designed for an integrative quantitative or qualitative analysis. Neither did FPC support a common data collection mechanism to describe clientele or services. As a result, there is not a synthesis evaluation of community networks work that directly reflects the scope and impact of these local efforts. A review of the detailed network summaries available does demonstrate the meaningful role local network played over time in convening local planning processes, funding local services, and conducting public education.

There is significant anecdotal documentation of how local community networks supported services that otherwise were difficult to fund, supported innovation efforts in local communities, and served as convening bodies for emerging work and attracted additional investments in local activities. Among other valued local examples of this development work, ACEs-related development work in the Pierce, Jefferson, Walla Walla, and Spokane networks has been conducted with FPC funds and resulted in regional and national attention. As another example, the Whatcom County community network has been a primary lead in a state-funded demonstration of how community based staff can help coordinate services for highly vulnerable families engaged in the child welfare system. These are a sampling of substantive capacity building and local partnership actions that document impact of the FPC strategy in the local communities.

Essential Service 5. Develop policies and plans that support individual and community health efforts. FPC developed extensive guides and structures to help community networks form, operate, and train network community members. These formal, written resources were the basis

for the core structure and performance expectations defining the network of community efforts. Based in well-established community development practices, these documents offer a framework that can be adapted as practical guides for these continuing efforts.

Essential Service 7. Link people to needed personal health services and assure the provision of health care when otherwise unavailable. A principal function of the local community networks has been the funding of direct services that otherwise would not have been able to occur or to meet their service goals without the funds. The details of the services and service populations are embedded in individual community network reports but should at least be acknowledged as substantive and persistent investments that were a distinctive component of the local community networks. These resources were particularly significant in the last 10 years as access to flexible not categorical funding in local communities became increasingly rare. In many communities, these funds became one of the few sources of flexible funds to address gaps, build capacity, and experiment with new service strategies. For example, the local ACE development work noted above would have been unlikely to occur without the flexibility offered by the FPC local contracts. At the time of this report, no equivalent recurring non-categorical funding for local capacity building and experimentation is accessible in communities across Washington.

Essential Service 8. Assure a competent public health and personal health care workforce. This arena of work has been summarized already in addressing education efforts and the structure of community participant trainings embedded in the FPC practice model.

Overall, the strongest documentation for the legacy of FPC is at the universal level of practice particularly as it relates to awareness building, education, workforce development, and monitoring functions. Through the local networks, it is clear that significant additional work including creation, funding, and delivery of selective and indicated services occurred but the scope of this work relies primarily on narrative summaries and anecdote. This doesn't reduce the importance of the work but it does make mapping both the assets and their impact challenging.

Finally, FPC attempted to address the remaining two essential services (evaluation, research in innovation) with limited success. These limited bodies of work are significant because of what they represent as lessons learned for continuing community-based efforts envisioned in APPI.

Embedded in the FPC work structure was the use of self-reflective reporting as monitoring and quality improvement practice. This practice was detailed and aligns well with best practice recommendations for the use of information to guide community coalition development. The constraint on the evaluation activities of FPC is the lack of documentation of the scope and impact of work in the community networks. The reports released are summary narratives and do not address the cumulative impact in areas such as service types, demographics of families served, dose of service, and local indicators of program outcome. Elements of such information are alluded to in FPC promotional materials but no formal evaluation was conducted. Elements of this type of information occurs in local reports but is not organized across communities or time. The caution for APPI moving forward is that development of these standardized reporting structures can be demanding initially but provide critical descriptive information to support the overall case for the collective work.

FPC released a series of research briefs and associated technical appendices (Longhi & Porter, 2009a, 2009b; Longhi, 2010; Hall et al., 2012) addressing the proposition that high capacity communities in Washington State showed gains on multiple risk indicators, including ACE exposure in younger adults, compared to low capacity communities. These studies variously used state secondary data sets, Healthy Youth Survey results, and BRFSS ACE module results to compare 29 'high capacity' communities to 10 'low capacity' communities. High capacity communities were defined as communities with funded community networks that survived funding cuts because of early indications of success. Low capacity communities were defined as communities who had their community networks defunded in 2001 because budget challenges and insufficient progress in establishing functional community collaboratives. Modest but statistically significant change was demonstrated between the two groups of communities on a cumulative severity index based on secondary data measures of population risk, with respect ACE exposure in younger adults in BRFSS data, and reduced substance use based on Healthy Youth Survey results.

Unfortunately, two related conceptual errors complicate interpretation of the research in these reports. First, the design is an 'intact groups' quasi-experimental comparison study of the 29 high capacity and 10 low capacity communities. By selecting 10 defunded communities where community networks had not been effectively established, the authors defined a comparison group with a known performance problem that could reflect capacity deficits and challenges in the overall community. Equally, the efforts of any community network exists inside much larger community efforts that reach far beyond the potential influence of any specific community network no matter how effective in its own right. The result is a comparison of communities characterized by a range of systematic differences. The attempts (see Longhi & Porter, 2009a) to address baseline equivalence only considered the measures used for defining risk (the dependent measures) and not for initial differences in capacity (the independent variable). The statistical reporting of the analyses is not well-documented which also makes a full critique of the findings challenging. As a result, systematic initial differences between the two groups of communities and attempts to address these differences were not effectively addressed.

The second error is one of over-generalization in attributing change specifically to the actions of community networks. The implication in the reports is that the quality of the FPC community network can stand as an effective indicator of overall community capacity. This ignores multiple concurrent state and community efforts not affiliated with FPC networks. To use Spokane County as one example among several, during the eight year period considered, millions of dollars in community collaborative funding for high risk children and families came to the community often little or no explicit coordination with FPC local efforts. It is possible that FPC success is a proxy measure for overall community capacity but this is not the same as attributing the community's capacity to FPC networks alone.

Despite these constraints, I do not advise that this family of reports be dismissed. First, using three separate data sources describing population risk, the studies find statistically significant change over time between the two sets of communities. This convergence of findings suggests that some systematic difference is worth further investigation. For example, a re-analysis of the data that included more extensive documentation of community capacity could produce a much more robust test of questions including: (1) does community capacity predict change in risk over

time?; and (2) is the functioning of the FPC networks a clear contributor to any change observed? This re-analysis is a feasible and useful effort for APPI to consider capitalizing on the work already committed to this effort.

The gem in the studies' approach may be the analysis of the degree of capacity change within the communities with the 29 funded networks and change in the communities' level of documented problem behavior and ACEs. In this analysis, small but statistically significant change was associated with the degree of change over time in the capacity of the networks. While network change likely is better considered as a proxy for community capacity rather than as the primary reason for capacity, this is an intriguing finding from this work. This work has value as an initial attempt to use secondary data sets as a resource for looking at multi-community change.

In summary, as APPI progresses with representatives of local community networks as active participants, APPI is gaining more than just the infrastructure in the communities. As important as that local human capital is, the resources in the local network reflect a public health informed strategy, member training structure, and a model of coalition building that has produced documented benefits across the state. This is a significant foundation to retain and refine.

III. Creating a Public Health Model for ACEs Prevention and Mitigation

We do not have a consensus model for how to respond to ACEs in a public health framework, and we have yet to test propositions that use these concepts as central tools. What is needed is a well-articulated public health argument for a 'trauma-informed' public health model. The advantage of such a model would be a coherent set of principles to guide ACE prevention and mitigation, alignment principles for choosing among existing interventions, and a mechanism for determining gaps in strategies to guide new service development.

> A trauma-informed public health model is needed to guide how to apply trauma concepts but also to define the boundary in which these concepts are best used.

A major benefit of evolving a clear trauma-informed model is to better determine where ACEs and trauma are useful tools and where they are not. O'Connell et al. (2009) underscore this point in their Institutes of Medicine discussion of prevention of mental, emotional, and behavioral disorders in children and adolescents. They describe that as powerful as cumulative risk is in understanding disease onset, specific adverse experiences ("signature sets" of risks) can be pivotal in understanding risk for specific disorders. For example, parental depression may be a 'signature' risk for conduct disorders while parental depression does not contribute significantly to anxiety disorders. Within the ACES framework, sexual abuse is a contributing risk to the overall ACEs dose effects. However, research suggests that child sexual abuse may be a 'signature' risk which carries disproportionate effects on long term wellbeing. This does not undo the value of the cumulative dose framework but it does suggest that we are not at the end of learning how to understand the phenomenon of adversity or its long term impact. As a result, while we can move with confidence on the value of the cumulative dose model of ACEs as a planning framework, there is still much to learn as we work to translate these ideas into concrete practical policy and practice strategies.

In this section, I outline a trauma-informed public health model. My goal is to provide an analytic structure in which to discuss community development practice and specific past and ongoing community initiatives. I do not to provide a comprehensive literature review although the statements I will make are well-documented in the literature. This model is more extensively developed in a monograph in preparation (Blodgett, 2012a) and is grounded significantly in the extensive resilience (e.g., Masten, 2001; Rutter, 1979) and developmental psychopathology (e.g., Cicchetti & Cohen, 1995a, 1995b) literatures. Rather, I will focus on implications for public health practice and community initiatives as a framework for APPI actions. This presentation is informed by the conceptual model guiding interventions my team is evolving and testing through multiple federal grants and funding from the Bill and Melinda Gates Foundation.

There is clear urgency to develop a coherent vision for a trauma-informed public health model if we are to build partnerships with the public health system. In the face of persistent loss of funding and a re-emphasis on population health practices, some local health jurisdictions are actively questioning the relevance and utility of adopting a response organized around ACEs and trauma. This was confirmed in interviews conducted as part of the preparation for this review. The ambiguity of the tasks and the lack of clarity about measurable outcomes in any ACE prevention/mitigation efforts currently reinforce concerns and create major barriers to engaging the broader public health system as partners. If skeptical potential partners are to be engaged, there has to be a concrete conceptual model with specific actions that can lead to measurable results. We do not presently have this response to offer.

1. Distinguishing the role of ACEs and trauma in a public health framework.

What makes an ACEs and trauma perspective a distinct departure from what we already do? *The fundamental shift is from a focus on events and resulting dysfunction to a focus on how individuals adapt and how adaptation is affected by the relational environment surrounding the individual.*

This focus on adaptation aligns well both with developmental neuroscience and with the bio-ecological model developed by Bronfenbrenner. Bronfenbrenner and Crouter (1983) described a "person-process-context model" in which developmental trajectories evolve dynamically as a result of our relational and our individual capacity. Trauma and adversity changes both the individual and the context. Trauma influences perception and response in the individual, responses from people defining the key relationships, and the resources and predictability of events that define the opportunities for new learning and growth. Now well-supported in the human epigenetics research, Bronfenbrenner and his collaborators also argued that the genetic potential of the individual is expressed as a result of the environment and in turn influences the environment in an iterative exchange (Bronfenbrenner & Ceci, 1993, 1994; Bronfenbrenner & Morris, 1998). The extensive stress and coping literature of the past 80 years also supports how the biology of stress and the dynamics of adaptation define health and illness. Focusing on adaptation to adversity can help align a trauma-informed public health approach with the emerging developmental neuroscience and well-established developmental lifespan theory. The core of effective trauma responses is how we change relational contexts and assets in the individual in order to support health and reduce risk of developmental disruptions.

Let me briefly define the key terms I am using.

- Trauma refers to the physiological and psychological responses of adaption to adversity.
- Complex trauma refers to both exposure to multiple persisting adverse experiences and the persisting effects of physiological, psychological, and relationship adaptations as individuals cope with adversity. A hallmark of complex trauma is exposure to adversity often very early in life with resulting risks to optimal development.
- Trauma-sensitive actions involve a basic knowledge of trauma and early adoption of this knowledge in re-considering need in working with children and families.
- Trauma-informed practice involves the specific use of knowledge about trauma and its expression to modify supports and relationships with children to improve developmental success.
- Trauma-focused practice involves supports and interventions specifically intended to address trauma symptoms that result in functional impairment of individuals. Trauma-specific practice is an equivalent term.

In the absence of intolerable adversity, high quality relationships, a sense of security, access to developmental experiences that support growth, a sense of mastery realistic individual achievement define health and wellbeing, and resilience define health.

One of the most appealing aspects of adopting a trauma-informed public health approach is that it creates a true continuum of health to illness. The behavioral health fields have struggled with this continuum and primarily describe the dividing line between health and illness and the subsequent course of illness without addressing the nature of a positive description of health in a unified model.

By understanding trauma, we can define the critical positive health goals in a trauma-informed public health model. Using bio-ecological theory and developmental neuroscience, health is the sense of personal wellbeing that is supported and contributes to quality of (1) nurturance in relationships, (2) the experience of safety, (3) access to enriching experiences at critical times, and (4) opportunities to experience mastery based on individual effort. In a public health response, we have to be clear about what we are working to positively accomplish. For sake of this discussion, I suggest a statement attributed to Sigmund Freud that the purpose of life is 'to love well and to work well.' It at least offers an interesting starting point for what is ultimately a very practical challenge to define what we are working to actively promote in a public health trauma-informed response.

By focusing on adaptation, we also create a coherent way to describe overcoming adversity as a positive dimension of health and a positive public health goal to support. As compelling as the predictive power of ACEs is in describing risk, many people recover and continue to grow despite exposure to adversity. Although often changed by adversity, many of us recover even when confronted by horrific experiences. This is particularly so when adversity is awful but an isolated experience. In the presence of adversity, resilience defines the abilities in an individual to use the assets created through relationship, safety, and mastery to recover from and effectively adapt to loss. Resilience is a core characteristic of healthy people because exposure to adversity is inevitable. Health is not the absence of adversity but rather access to the resources and opportunities that support the individual to adapt and grow despite adversity. Resilience is also

the capacity in people exposed to cumulative and overwhelming events that buffers and creates opportunities for successful adaptation even in extraordinary circumstances. These positive goals universally benefit each of us but also can act as protective factors for children exposed to significant adversity. Promoting resilience then is an essential positive public health goal in communities.

We need to place how we define opportunity, risk and health in a developmental context to guide the focus of supports and the strategies that help guide a public health approach to ACEs. The need for developmentally appropriate prevention model is well-established in general prevention theory addressing behavioral health risks. O'Connell et al. (2009) state, "…four key features of a developmental framework are important as a basis for prevention and promotion: (1) age-related patterns of competence and disorder, (2) multiple contexts, (3) developmental tasks, and (4) interactions among biological, psychological, and social factors." (p. 72). The issue of how to address developmentally appropriate responses deserves a full presentation in its own right and is beyond the scope of this review. However, the planning work in APPI will benefit greatly by fully integrating a developmental framework into its planning process.

The broad tasks of a trauma-informed public health model are:

- A clear articulation of the trauma-informed positive health goals to address in coordination with risk reduction and treatment for trauma disorders.
- A well-articulated definition of positive health goals including strong attachment relationships, safety, critical stimulation at critical times, mastery, and the promotion of resilience as lifespan objectives.
- Broad community and professional literacy in ACEs, trauma effects, and the positive health goals to reduce stigma and create new norms regarding acceptance of preventable adversity.
- Surveillance and developmentally appropriate supports in the natural systems that serve children to address the pervasive problems of ACE exposure and concurrent emergence of developmental risk.
- Development of selective and indicated trauma-informed preventive interventions as well as trauma-focused treatment aligned with the natural systems supporting children.
- A developmentally informed selection of interventions that accounts for fit of supports to the developmental capacity and goals of the individual who is the focus of care.
- Clarity in the metrics of improved health and reduced risk in the population that is the focus for public health efforts.

ACEs identify targets of intervention for risk exposure but ACEs do not identify methods of intervention to address mitigation/prevention of the effects of trauma resulting from ACEs. Because so many ACEs have their origins in the caregiver-child[3] relationship, most of our efforts to mitigate or prevent ACEs are focused as much on the needs of the caregiver as they are on the needs of the child. Because parents and family caregivers of ACE-exposed children typically were exposed to significant ACEs in their own lives, our principal strategies for ACE reduction and prevention return to managing the process of trauma either in the adult caregiver, the child,

[3] Caregiving relationships involve many people in caregiving roles. This is not to minimize the critical role of biological parents but to acknowledge that children succeed in a variety of relationships.

or the caregiver-child relationship. Because children and adults operate in multiple relationships, understanding the central role of relationship creates common ground across settings in mitigating the effects of trauma. Our efforts ultimately have to address the quality, consistency, and effectiveness of the other relationships children operate within to support safety, learning, and mastery. As a result, once we move beyond awareness building, our focus is not on ACES but on enhancement of well-being and mitigation of trauma's effects in relationships.

The long term effects of cumulative doses of ACES are associated with the specific challenges of *complex trauma*. Complex trauma involves short term physiological, behavioral, and emotional coping strategies that lead to long term developmental deficits and become persistent patterns of response that compromise long term adaptation and development. ACEs create conditions that damage, disrupt, or destroy the core social and physiological conditions needed for optimal human development. The core conditions are highly overlapping and mutually influenced but include secure attachment relationships, the experience of the world as more often safe than not, adequate stimulation and opportunity at critical developmental points, and a progressive sense of mastery in the developmental tasks we face as we grow. The resulting disruption from ruptures in relationships, loss of safety, disrupted access to timely stimulation and learning opportunity, and failure to experience mastery (helplessness and hopelessness) creates experiences of unpredictable and persistent stress (toxic stress). The struggle to respond to these disruptions and the resulting stress are adaptive but sacrifice growth in service of survival. The resulting physiological and psychological adaptations are collectively what determine trauma's expression in neurodevelopmental disruptions, struggles in relationships, challenges to self-regulation, and behaviors that are disruptive and damaging to the child and others.

Complex trauma involves interlocking problems with a failure of sense of safety in daily routines, failure to master developmental self-regulation skills (impulsivity, aggression, emotional distress (anxiety, hostility, loss and isolation), disrupted ability to form effective relationships, interruptions in developmentally appropriate reasoning and problem-solving. In daily life, the expression of these underlying struggles are expressed in disrupted relationships, academic problems, emotional problems (anxiety, depression, hostility), and problems of behavior including withdrawal, hostility, and impulsive disorganized actions. While acute trauma and struggles adapting to isolated adversity is a significant concern, it is the social and health costs of complex trauma that define the pathways for the impact of cumulative ACEs. The positive news is that the physiological and psychology mechanisms of complex trauma are understandable and can be addressed through public health actions. Treatment models exist and the challenge is adapting the principles that guide these psychotherapies into prevention practices.

ACEs identify targets of intervention not scientifically informed methods of intervention. Understanding complex trauma provides a framework for specific interventions.

The 'value add' of a trauma-informed or trauma-focused effort is that trauma results in a qualitatively distinct patterns of behaviors, affective and cognitive responses, and relationship consequences that can uniquely inform how we develop services. The evidence for the comparative benefit of trauma-informed interventions in comparison to standard care supports

the conclusion that trauma is specific and can guide effective practices. However, as we move out of treatment settings and into a public health set of responses for trauma exposed children and adults, the evidence for trauma-informed interventions does not presently exist. To accept a trauma informed public health approach is to also accept that part of this work is a high stakes testing of emerging interventions and their outcomes.

APPI can use trauma informed principles to guide intervention selection without supporting specific trauma interventions and the associated investment in development. For example, many parent education programs are based in social learning principles (Bandura, 1986) and have resulted in evidence based practices. Common home visiting models do not include an understanding of trauma in their models although they can be considered as highly relevant interventions because of their parent-child attachment and parenting adjustment outcomes. As a result, trauma-informed actions could be supported by a range of investments that are not specifically designed to address trauma.

The outstanding question is does an explicit effort to address trauma increase benefit in prevention efforts. The evidence for trauma-specific interventions does suggest that system use of an understanding of trauma can result in superior treatment outcomes but this approach is only beginning to be tested in non-treatment settings. At this time, the more compelling argument is that unaddressed trauma may be a principal reason why many services are less effective than they could be. For example, while trauma principles are not integrated in home visiting models, the evidence is that trauma is a principal reason home visiting may fail many families (e.g., Duggan et al., 2004) and challenge successful scaling-up in communities. In a working paper (Blodgett, 2012b), I summarize interim findings in a large study of the Nurse Family Partnership (NFP) in Spokane that high ACE doses are commonplace in mothers and fathers enrolled in NFP. In these Spokane NFP families, adversity in the year prior to enrolling in NFP is the most significant predictor of parental adjustment one year after the birth of their child. In home visiting nationally, one of the most common adaptations being employed is the use of mental health consultants not for the families but for the home visitors because of the level of trauma they encounter in the families they serve. As home visiting is going through a rapid national expansion, the complexity of problems (ACEs exposure and associated trauma) in families being served increasingly is seen as a fundamental threat to the successful extension of these evidence based interventions. We may be experiencing in home visiting a case example of how the emerging recognition of trauma can challenge a tested and highly relevant intervention strategy. For APPI, it will be important to determine how much to invest in understanding trauma as part of the build-out of community responses.

In addition to helping focus specific selective and indicated public health interventions, understanding trauma may inform universal public health strategies. In our work with schools, we use trauma informed education as a principal strategy to shift professional beliefs, attitudes, and practices in schools as systems. A primary example of this shift occurs around how adults in schools understand the distinction between discipline and accountability. Often, violations of rules in schools are considered as disciplinary practices and punishment is seen as critical to effective corrective action. In our trauma-informed school model, we argue that (1) trauma exposure is extensive in any group of children but often unknown, (2) traumatized children respond to change in environment and relationships as threats, and (3) rule violations often

reflect automatic if self-defeating responses beyond intentional control because the responses are mediated by areas of the brain outside of conscious decision-making.

Anecdotal evidence in Walla Walla and Spokane effort demonstrate that understanding these ideas fundamentally shifts beliefs and response in school personnel from punitive practices to control behavior to inquiry-based effort to understand why the violation of rules occurred and what can be done to help the child adapt more productively in the classroom or building. Disciplinary referrals drop significantly as a result and disciplinary practices shift to support safety and re-regulation of children rather than isolation and control. These findings are presently supported by anecdote, survey findings (Blodgett et al., 2012), and some preliminary data. While we work to present more rigorous quantitative data, this specific shift in schools may be an example of a universal prevention change. It would be possible to consider community-based prevention efforts with a similar trauma-informed focus as part of other community initiatives in neighborhoods or networks of parent educators.

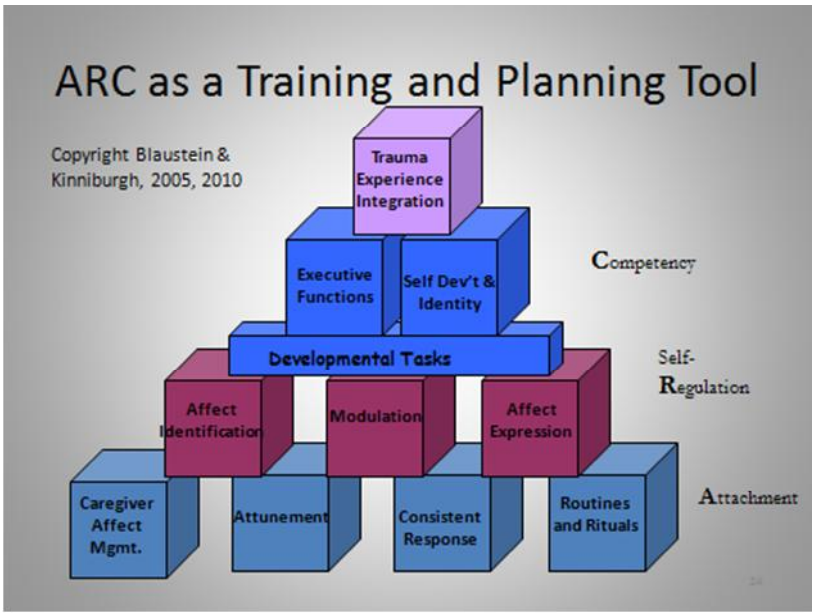
> An understanding of trauma can guide universal public health responses as well as providing trauma-informed and trauma-focused interventions for individuals, families, and targeted groups.

2. The core strategies in an ACEs-trauma public health intervention model.

The current practice models that define trauma-focused psychotherapies are supported by substantial effectiveness research. Several dozen fully established or promising trauma-focused treatments are summarized through the National Child Traumatic Stress Network's review of interventions (http://www.nctsn.org/resources/topics/treatments-that-work/promising-practices). Interventions address a range of modalities, ages, methods of service delivery, and trauma types. A number of these interventions are also tested in diverse populations and meet common criteria for culturally competent practices. Trauma-focused intervention are organized to address the core public health problems of attachment and relationship quality, parenting skills, remedial skills development to address developmental gaps, and positive experiences with increasing mastery. In addition, trauma-focused interventions deal very specifically with trauma symptom distress and behavioral deficits in areas such as arousal and emotional dysregulation (withdrawal, anxiety, and aggression), distorted self-concept, and impulsivity. As a result, in considering a public health response continuum, trauma-specific indicated and selective interventions are available and operate from a common conceptual model to guide interventions.

Trauma-focused treatments are situated in much larger literatures addressing prevention interventions with more than 1,500 clinical outcome studies (Kazdin, 2000) with several hundred meeting scientific standards to be included in meta-analyses. In a meta-analysis of child and adolescent psychotherapies (Weisz et al., 2005), children in prevention research had significantly better outcomes on multiple measures than 75% of children in the associated control groups. Weisz et al. also report that the effect sizes (a measure of the meaningfulness of change) demonstrate benefits consistent with the benefits seen in adult psychotherapy interventions. Prevention interventions with children and youth do not produce benefit as great in meta-analyses but the research demonstrates small to medium levels of benefit across several hundred studies (Durlak & Wells, 1997, 1998). As a result, there is a large set of intervention options, including many that are trauma informed. The challenge is that most interventions address only

targeted children and families facing the most apparent levels of distress. These resources address options for selective and indicated populations but (1) do not necessarily address trauma specifically and (2) need to be organized in a larger framework where their value in mitigating and preventing trauma and ACEs can be articulated clearly. Within this larger framework, a wide range of effective trauma-focused and trauma-informed intervention can be identified to fit any specific set of community conditions.



The universal positive health goals of trauma-informed public health extend the core processes of trauma-focused treatments. The goals are: support the quality and number of intimate relationships, teach essential skills of social-emotional competence (affect regulation and expression, empathy, self-regulation), increase the quality and opportunities people have to learn and contribute to others, and increase the capacity of systems (neighborhoods, schools, workplace and social groups) to support these goals. For example, in our trauma-informed school improvement efforts, we do not principally focus on trauma identification and response. Our primary focus is on the quality of teacher-student relationships and the importance of social emotional competence in improving academic engagement and success. Teachers use trauma-informed practices in classrooms because the pervasive nature of trauma risk confirms that some significant percentage of children struggles in learning and behavior as a result. Using trauma risk principles, strategies such as increasing predictability, focusing on high quality relationships, allowing children to manage distress before rule violation occurs help children who are trauma exposed but are universally beneficial. Specific trauma-informed individual responses to children only emerge as children demonstrate that they lack the skills, emotional safety, and self-regulation to benefit in the routine classroom experience.

There are several models that guide complex trauma treatments and several of these are potentially guides to how trauma treatment creates a framework for prevention strategies. As an example of how complex trauma treatment models can help guide prevention practice, my team is adapting the Attachment, Self-Regulation, and Competence (ARC) Framework (Blaustein & Kinniburgh, 2010). Because we are actively testing a trauma-informed public health strategy in our P-12 work, I offer our experience with the ARC Framework as a case study of how a complex trauma treatment intervention and complex trauma principles can be used in an integrated public health approach.

The ARC model (Blaustein & Kinniburgh, 2010) is a components-based model with 10 core targets of treatment organized with four primary areas of treatment response: (1) impact of

traumatic stress; (2) normative and impacted attachment; (3) normative development; and (4) factors associated with resilience among stress-impacted youth. ARC provides a theoretical framework, core principles of intervention, and a guiding structure for providers working with these children and their caregivers, while recognizing that a one-size-model does not fit all. So, rather than a prescriptive model, principles and techniques are adapted through an active and adaptive cycle of practice. In contrast to manualized treatments, ARC is more aligned with Embry's (Embry & Biglan, 2008) concept of evidence-based 'kernels' where validated techniques are adapted to setting and individual.

ARC is designed for youth from early childhood to adolescence and their caregivers.

- Attachment: The construct of attachment describes the physiological, emotional, and behavioral interactions between a child and a primary caregiver. The ARC framework identifies two core foci of attachment-focused intervention which may be adapted across developmental stages and which may be implemented in various care-giving systems: 1) building, or re-building, healthy attachments between children who have experienced trauma and their caregiver(s) and/or 2) establishing the support system for healthy recovery which has been impacted or missing in the lives of children with early attachment loss and disruptions. These two intervention foci are targeted using four principles: caregiver affect management, attunement, consistent response, and routines and rituals.
- Self-regulation: Self-regulation allows one to modulate affective, physiological, cognitive, and behavioral experience and display through internal control. The development of self-regulation across various domains of functioning is influenced by both a child's temperament and experiences. Enhancing self-regulatory capacities is a primary target for intervention identified by experts on complex childhood trauma (Cook, et al., 2005). The ARC framework identifies three primary principles to improve self-regulation among complexly traumatized youth; these include affect identification, modulation, and affect expression.
- Competency. Development is a dynamic process, and each developmental stage is associated with key tasks that children must negotiate, drawing on emergent assets such as growth in cognitive functioning, as well as on past successes. In addressing both the enhancement of normative development and the establishment of external resources, three key targets are addressed: developmental tasks, executive functions, and self and identity.

Supporting research demonstrates that the ARC Framework meets the standards to be considered a promising evidence-based practice.

- In a young (0-12) child-welfare-involved population in Alaska, 92% of children completing treatment utilizing ARC achieved permanency in placement (adoptive, pre-adoptive, or biological family reunification), compared with a 40% permanency rate after one year for the state as a whole. Further, children who completed ARC treatment and had both a baseline and discharge data collection point exhibited significant reductions in behavior and emotional disorders using a well-validated child adjustment measure (Arvidson et al, 2011).
- In pre-/post analyses using HLM multi-level regression, adoptive children and their families completing an adapted 16-week ARC-based treatment demonstrated significant decrease in PTSD symptoms, significant reduction in broad behavioral symptoms, increases in maternal-reported child adaptive skills, and reduced parenting stress in mothers and fathers (Blaustein et al., in preparation).

- Examining the pool of children served by sites within the National Child Traumatic Stress Network, the final report of the Cross-Site Evaluation of NCTSN activities and services between 2005 and 2009 indicated that children receiving ARC-based treatment services demonstrated consistent significant reductions in behavioral problems and post-traumatic stress disorder that were equivalent to those observed in children receiving a well-validated trauma intervention, trauma-focused cognitive behavior therapy (ICF Macro, 2010, December).

The ARC Framework has proven useful in our effort to move whole educational systems to become trauma-informed. We needed a comprehensive conceptual framework that synthesized the risk and intervention research into a common language that individuals from distinct roles and backgrounds could accept. We need a framework that could guide both nonclinical and clinical responses in education settings. The ARC Framework has dual functions in our work plan. ARC serves as the common professional development language and set of constructs to guide school personnel trauma-informed interventions. Four coordinated school staff practices define the goals of this trauma-informed strategy to improve universal student outcomes:

- Adapt instructional practices based on an understanding of complex trauma's risk to age appropriate cognition and social/emotional development.
- Support social and emotional learning by positive management of emotional and behavioral responses associated with trauma exposure to reduce problem behaviors in the classroom as a mechanism to improve academic success.
- Adapt evidence-based classroom management practices to support the physical and social learning environments to positively manage trauma responses that impair the individual child's learning experience and the success of the overall class.
- Support effective identification, referral, and coordination strategies when additional supports are needed to supported affected students as they continue in typical classes.

In our P-12 work, the ARC Framework is used as common language to guide universal, selective and indicated responses to children and families. Our universal efforts include formal professional development trainings and a coaching and consultation model at three levels. First, we work cooperatively with school partners to change classroom and building practices to create practices that enhance social emotional competence, emphasize the relational impact of the teacher in supporting instruction, and use trauma-informed strategies to guide classroom and building management practices. Second, trauma-informed practice is developed to support assessment of barriers to school adjustment and learning to addressing setting, goal definition, and pacing of individualized learning plans. Third, coordinated learning supports for more complex students are managed through building 'trauma teams' where teachers, administrators, and student learning support staff develop common plans that use trauma-informed assessment information and care coordination. We support selective and indicated interventions as part of integrated building responses to students and their families with public health and mental health staff who are external agency staff based in buildings. Our current selective/indicated emphasis crisis management and family support and targeted use of complex trauma treatments with the most at-risk children and families as part of the overall educational support plan for the student.

3. Using ACEs assessments and data as universal prevention tools.

Until very recently, as powerful as the research regarding ACEs is, it has been a literature defining adult life course impact as a result of childhood experiences. Only recently has substantive data describing concurrent ACE exposure in children and its effects become available in nonclinical populations. Perhaps reflecting the amount time that Washington State has considered ACEs through a public health lens, much of the child ACEs impact work has come from Washington State. These findings are of great significance for two policy and practice reasons. First, documenting immediate ACEs effects in children create the conditions for committed and urgent participation by child-serving systems. Second, establish the immediate impact of ACEs in the lives of children can drive detailed assessment, services, and resource allocation decisions that can unite coordinated actions across child-serving systems and communities. APPI can use this rapidly emerging body of evidence to educate, form common cause, and begin to shape propositions for new support strategies.

> The emerging evidence of the real time costs and consequences of trauma can engage systems and provide immediate service goals to organize and focus changes in practice.

Lucenko et al. (2012) used Washington State used state administrative data with a focus on adolescents enrolled in Medicaid to examine adversity exposure and consequence in 125,123 DSHS clients served during 2008. The authors used a restrictive set of seven ACEs available in the data sets. These included domestic violence arrests of either parent, mental health disorders in the birth parent, substance abuse in the birth parent, criminal justice involvement in the birth parent, any family involvement in the child welfare system, any episode of homelessness in the family, and death of the parent. Forty-five percent of the youth had two or more the identified ACEs and 28% three or more ACEs. The authors find a direct dose effect between ACEs and youths' identified substance abuse and mental health disorders. Consistent with the early discussion about the potential signature impact of child abuse and neglect, Lucenko et al. report that child maltreatment history was associated with significantly greater odds ratios for the youth demonstrating mental health (3.4 odds ratio compared to the next most significant contributor at 2.5 odds) and substance abuse disorders (4.2 odds with child maltreatment compared to 2.5 for the next most significant contributing risk). This is the first significant use of administrative linked data systems to assess state clients. This demonstration of impact and feasibility of using administrative data suggests that APPI should examine this data resource as a major tool for assessing community level need and tracking change in an important subset of youth in Washington.

In work my team is conducting, we have also examined large data sets of children for whom we have both adversity measures and measures of behavioral, development, or academic performance (Blodgett, 2012b). Three separate studies have been completed the past two years or are underway.

- In a random sample of 2,101 elementary-aged children from a cross section of 10 elementary schools in Spokane County, we used a school staff reporting strategy to assess known ACE exposure and the behavioral, health, and academic risk of children. We found in these children ages 5-12 that one in five children had two or more ACEs. We also found a pronounced dose effect for ACEs with respect to academic failure, persistent

attendance problems, school behavior problems, and poor reported health after controlling for multiple other factors.

- In 5,443 children served in the state's Readiness to Learn program, we used a needs assessment protocol to identify eight potential ACEs. Readiness to Learn (RTL) is a consortia system involving 28 school-community partnerships to address nonacademic barriers to academic success. As a result, all children in RTL are at least at risk for academic failure. We examined the effects of ACEs on academic mastery, attendance, reported school behavior and emotional problems, and scores on a well-validated measure of social emotional adjustment. Forty-eight percent of enrolled RTL children had two or more ACEs (26% three or more ACEs). We found that even in this high risk population, there is a significant dose effect for adversity with odds ratios for all problems increasing significantly as ACEs increased. We have replicated this result in two program years now involving more than 10,000 unique children served in RTL.
- In a US Department of Justice funded randomized control trial we are testing our trauma-informed public health model in Spokane Head Start as an early learning system. As part of this intervention, we have introduced voluntary screening of ACEs reported by parents regarding their youngest enrolled child and their own experiences growing up. Voluntary participation in the screening is greater than 80% of all enrolled families. In the first 200 completed screens we find that 61% of parents and 42% of children based on parental report have experienced three or more ACEs. We find that children ACE risk is strongly associated with parents' report of their own ACE experiences growing up. We also find that as children's ACE scores increase, their social emotional development scores on a validated measure of development (Devereux Early Childhood Assessment) are significantly impaired. These findings demonstrate that ACE exposure can be document in a general population low income population in children under five years of age with document evidence of development risk.

Taken together, these four Washington State studies underscore that ACE exposure and trauma's consequences can be documented in nonclinical populations of children and youth with significant associated risk of development, behavioral, emotional, and academic risks uniquely predicted by ACE dose. Use of existing data systems and introduction of ACE screenings are both productive and feasible strategies. The four studies also demonstrate how the social cost of ACEs can be tailored to specific systems (in these studies, academic, early learning, and state services) to address impact and risk in ways that speak directly to the core mission of systems. In at least our experiences with the RTL, early learning, and K-12 partners we can also confirm that this tailored information itself becomes a critical resource in universal efforts to build the will to address change and a catalyst to attitude and belief changes.

4. Trauma-informed measurement of prevention outcomes.

APPI needs to systematically address the framework for measuring benefits of ACE/trauma prevention and mitigation. While this depends significantly on the level of prevention activities and audience, framing benefit assessments to address the core positive health goals- relationship quality, safety, mastery of developmental behaviors, and resilience- provide the domains for assessment of benefits across the range of potential activities. As public health actions move to addressing the struggles of at-risk individuals and families, including reduction of distress and specific skills improvement becomes an increasingly important complement to the measurement of positive health status. The current state of assessment practice does not sit easily with this

approach. While there are measures of assets in individuals and systems, assessment options are much more geared to measuring cessation of distress and dysfunction than measurement of growth. In its system and policy development role, APPI may want to consider support for matching assessment resources to its public health model as a critical development need for the overall success of community efforts.

5. Section Summary.

In summary, In order for population risk for children exposed to ACEs to be reduced meaningfully, prevention, early intervention, and treatment practices need to be integrated into the universal systems that serve children and families (Shonkoff & Phillps, 2000). Treatment systems play a critical role in a continuum of response to families but the scope of risk in children dwarfs the response capacity of our treatment systems. Often risk reduction and positive development strategies are distinct strategies from principles and methods that are effective in treatment services. Understanding trauma and ACEs exposure as the other side of the coin defined by the critical conditions for effective growth and adaptation as human beings offers an integrated approach to think of the public health continuum of universal health promotion, risk management, and remedial actions when required.

IV. The Evidence Base for Community Prevention Efforts.

Community's adoption of innovation is both a values-based discussion and an understandable methodology to guide high quality implementation. If we are to create effective prevention strategies, our success principally will be defined by the degree to which we engage communities and adapt our efforts to their unique culture, capacity, and needs. Practically, the scope of population demand in prevention is so great and local conditions so varied that efforts cannot be managed as a centralized function. Government and funders set prioritize policy and practices but the success of this framework will still depend on the creation of shared values, leadership, group cohesion, and resources defining each locality.

In a process parallel to understanding the person-process-context involved in individual adaptation to adversity, communities emerge and change through a community-process-context lens. As a result, choosing to address ACEs and trauma in a community is both a process of change for the community and a process of change for the individuals affected by trauma. In the next section, I briefly review implementation science where the focus exactly on these changes in institutions and communities is now seen as central to our success in delivery of the best quality services we have available to address complex problems like ACEs prevention and trauma mitigation. This is a significant change in our understanding of what is required for success given these 'soft' outcomes of organizational and community change have often been viewed as unimportant or too difficult to define, change, and measure effectively.

Spoth and Greenberg (2011) in their review of youth violence intervention adoptions identify five key challenges: readiness and mobilization of community teams; maintaining EBP implementation quality; sustaining community teams and EBPs; demonstrating community-level impact; and continuous, proactive technical assistance. I want to emphasize the first challenge they identify in the readiness and mobilization of communities. Effectively addressing how partnerships develop, create a real sense of common cause, and establish successful management structures are the critical set of actions in any successful community mobilization effort. Often,

well-intended and valued goals fail to be achieved because competing agendas and struggles over leadership are not addressed effectively as part of partnership creation and maintenance. The solution to these challenges is a uniquely local effort. Public policy and funding decisions are important to the degree they help facilitate this local development but policy makers and funders cannot direct this process in detail but rather at their best operate as facilitating partners of this locally driven process.

The science of community collaboration

Echoing Winston Churchill's comment regarding democracy, community collaborations to manage complex change are the worst strategy we can choose except for all the others. The values of collaboration- inclusion, increased access, and better coordination of care- drive these efforts. The success of coalitions in creating effective calls to action, building new partnerships, and engaging people in innovation is well-supported in the literature but the evidence (Allen, 2005; Halfors et al., 2002; Roussos & Fawcett, 2000) for the ability of large community collaboratives to change population risk is at best mixed (e.g., Miller et al., 2012) when studied in well-funded initiatives (children's mental health systems of care, coordinated community responses to reduce risk of domestic violence). This gap between being able to mobilize action and demonstrate meaningful change as a result reflects the limits in making causal claims for complex problems in often ambiguous community efforts. Evidence for the effectiveness of collaborative efforts is stronger in efforts defining smaller systems (e.g., schools as systems) and when looking at outcomes for specific strategies supported by larger collaboratives (e.g., adoption of new service strategies in a community). However, these more targeted indicators of change rely on the success of the larger, if more difficult to define, collaborations that typically are required for targeted efforts to be conceived and implemented.

Consistent with this distinction between complex and comparatively simple coalition efforts, Flaspohler et al. (2008) also make the useful distinction regarding the purpose of coalitions in prevention. They distinguish between research to practice translation efforts focused on how innovations such as new programs and policies are disseminated and community-centered models that focus on how new practice emerges and change in local communities. Both are legitimate approaches to innovation dissemination but the research-to-practice model with its emphasis on the adoption of the specific intervention currently dominates our science-to-practice discussions. Flaspohler and colleagues provide a highly useful separation of the capacity development demands that are shared and that are distinct depending on the focus of the coalition. This distinction is helpful in understanding community efforts and I will return to it in the next section. I would also suggest that this distinction can be very helpful in APPI's evolution as it decides which of the two approaches to prevention systems development it chooses to emphasis in the evolving discussion of Washington State community efforts to address ACEs and trauma.

In both research to practice and community-centered change efforts research on community collaboratives has moved in two primary directions. The first is to shift away from population risk change to emphasize more immediate social benefits such as capacity building in organizations, creation of social capital among partners, and workforce development (Nowell & Foster-Fishman, 2011). The argument is that these organizational and individual benefits have value in themselves and are actually predictive of longer term population health benefits and risk

reduction (Javdani & Allen, 2001). This is an important direction for APPI's evaluation strategy given these more immediate changes may be far more effectively measured in realistic timeframes. These 'soft' effects of collaboratives also are significant because in a public health framework change in awareness, community capacity, and individual skills are components of the 10 essential services that drive public health action.

The second direction, discussed in more detail in this section, is to focus on community collaboratives as complex intermediary structures for supporting innovative practices which in turn can drive change. In this approach, the success of collaborative efforts matters but primarily because of their role as vehicles for specific interventions that can drive individual and population benefits.

While each community setting is distinct, the range of potential interventions can define a common set of opportunities. Whenever possible, evidence-based practices (EBPs) should define the choice of interventions. The basic logic is difficult to argue with; significant problems deserve tested solutions. However, after more than 15 years of living in an EBP environment, four conclusions are clear from EBP experience and research:

- We have many gaps in EBPs once we start to fit the right intervention to the specific problems facing community and to the capacity within communities. We have a net of EBPs not a whole fabric of choices. Many of our most pressing problems addressing trauma do not have associated EBPs to draw upon.
- In the absence of EBPs, we have to develop interventions from best practice principles or adopt untested strategies. This describes the state of practice for most interventions targeting trauma outside of psychotherapy treatment settings.
- Even when we adopt EBPs, we routinely fail to reproduce the hoped for results.
- Why we fail is understandable and can guide better services and better community efforts to support the services.

In this section, I briefly summarize the lessons learned about effective adoption of innovation through the lens of the effective implementation of EBPs. Particularly in addressing trauma, community efforts will involve some mix of EBPs and new strategies if a range of actions along the continuum of care is to be supported. These implementation practices are equally applicable as we consider what is required to increase the potential success of new and promising practices.

As evidence based practice was originally conceived, it was not the use of curricula or manualized therapies (often referred to as evidence based treatments) that defined practice. Rather, evidence based practice (Sackett et al., 1996) was intended as a process in which individual practitioners integrate research with clinical expertise and patient values to provide the best quality of individual care. Despite this start, in the marketplace of services, evidence based treatments (manualized care and curricula) have come to dominate our starting assumptions about what defines good practice. In this framework, careful definition of the problems to be addressed, matching of client characteristics to services, and fidelity to the formally defined intervention define good practice. There is a significant debate about the predominance of evidence based treatments in our current approach to addressing complex problems (e.g., Westen et al., 2005). This focus on highly structured strategies potentially limits legitimate sources of evidence, limits the scope of problems to be addressed within evidence based practice

approaches, and limits how we identify and value alternative interventions (Littell & Shlonsky, 2010).

Given the state of trauma-informed and trauma-specific practices outside of treatment settings, a public health strategy for ACEs will require we recognize a range of strategies adapted to local conditions. The evidence-based treatment versus evidence-based practice debate is as a result an artificial distinction when the goal is to fit best practice and evidence to a range of challenges. As noted earlier, this broader conceptual approach also helps reconcile what Schorr identified as the tension between scientists and practitioners. Regardless of how evidence based practice is operationalized, the challenges of effective implementation apply to the spectrum of care we provide.

In examining community interventions, successful efforts involve both adoption of effective practices and the creation of effective shared policy to support practices. Where evidence based practice defines standards of care for individuals, evidence based policy uses these practice standards to support broad social gains and reduction in risk. This evidence based policy process uses research to answer three questions: (1) What exactly is the problem; (2) what are the possible service responses to address the problem; (3) what are the probable impacts of each solution under consideration (Urban Institute, 2003)? However, evidence based policy is more than the science-based policy (Garretsen et al., 2010; Littell & Shlonsky, 2010). Evolving policy involves values-based decisions to define the goals, the context of where and with whom the service will be used, knowledge of the capacity of practitioners responsible for implementing the program, and the acceptability of the service to clients, providers, and communities. Defining and managing these different factors defines if the evidence based practices succeed. The challenge in front of APPI appears to be to balance a public health vision with community-based partners that allows the evidence-based policy to guide the evidence-based practice aligned with the need and capacity in communities. With the APPI's commitment to distributed community action, this process of policy development will need to engage participating communities as full partners if the overall effort is to succeed. The success of APPI in managing this shared development process will largely determine if APPI meets its own goals.

1. Overview of Implementation Science.

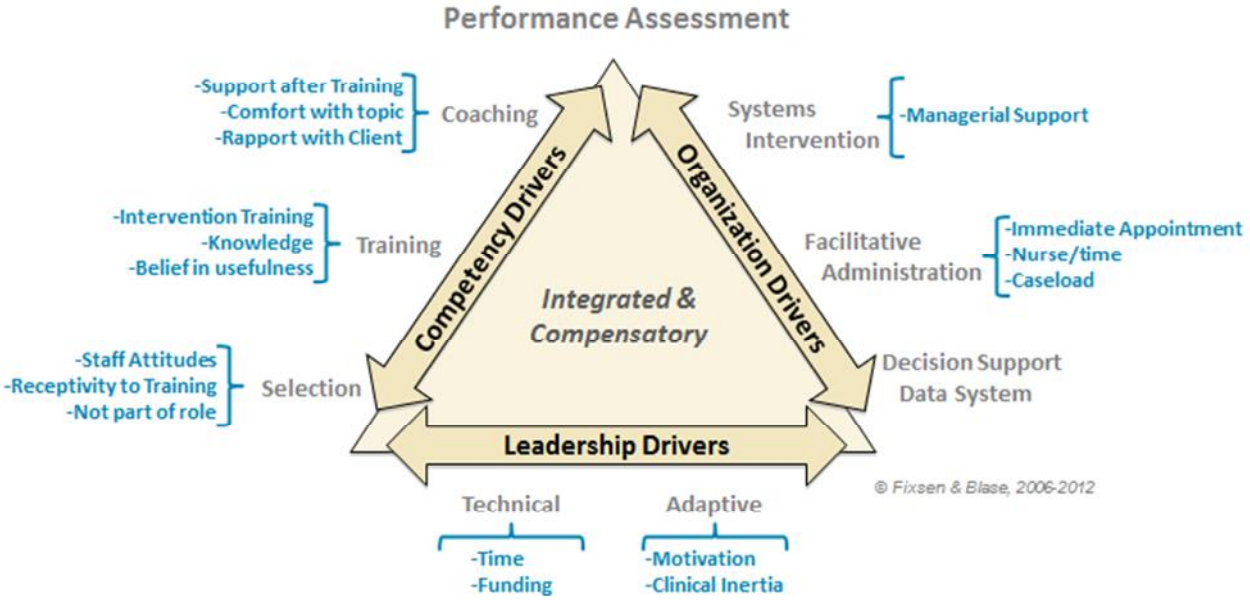
Fixsen et al. (2005) provided an extensive synthesis of the implementation success of program across diverse fields. They conclude that failure of evidence-based practice is the norm but that the causes of failure are understandable. While Fixsen and colleagues are among the best known voices address implementation challenges, implementation science is now established as the companion body of work needed to create the conditions for evidence based practice success (e.g, Foster-Fishman et al., 2007). Implementation science is now an integrated arm of the National Institutes of Medicine and is becoming a pervasive framework across federal funding initiatives.

The essence of implementation science is that adoption of evidence based practice depends on high quality systems change in the implementing organization. These organizational 'drivers' address organizational practices in: staff selection and development, organizational buy-in, effective use of information in problem solving, and effective supervisory practices. While there are several models competing in the dissemination of implementation science, Fixsen and colleagues have formed a widely recognized National Implementation Research Network

(NIRN) which provides one strategy proposed to support effective implementation. Notably, they argue that the process of implementation from selection of a service to full effective implementation with fidelity is a 2-4 year change process if we are to expect replication of EBP benefits. The next figure provides the NIRN model as a widely employed example of the elements involved in the cycle of improvement.

The NIRN model captures several key guidelines for consideration in APPI development work. Organizations have to make a commitment to evidence-based adoption and the persistent effort needed to succeed. This includes leadership support that addresses both the technical and practical conditions for practice change, information systems adequate to guide practice in a timely manner, an investment in persistent professional development, creation of clear staff commitment, and commitment to persistent supervision to support change and quality of care.

National Implementation Research Network Implementation Driver Model



http://nirn.fpg.unc.edu/learn-implementation/implementation-drivers

In NIRN's model, APPI may serve as an 'intermediary organization'. An intermediary organization has the role to help agencies move through the process of entering and managing the cycle of implementation. If APPI adopts this role, carefully considering the capacity needs of APPI to fulfill this role will be a development investment in its own right.

In summary, as APPI develops a public health approach to the prevention and mitigation of ACEs and trauma, it does so with an incomplete set of tools to the tasks, the need to invest in promising as well as proven strategies, and the absolute certainty that adoption of these innovations can only occur with systematic attention to what communities will accept and what agencies can learn to do well with significant support. The good news is that the framework for addressing these steps is now well-defined and a companion set of principles has emerged to guide community development efforts.

2. Community-based Implementation Systems Framework.

In prevention science, these same principles of implementation science have been adapted to guide community based prevention efforts. This approach is now widely accepted as the definition for community-based prevention practice (e.g., Wandersman et al., 2008). Reflecting work that emerged from the National Institutes of Health and within community psychology/prevention science (Wandersman et al., 2008), The Interactive Systems Framework for Dissemination and Implementation (ISF) organizes the practice and research evidence for how complex community efforts can adopt evidence-based innovation effectively. As Wandersman and colleagues argue, the significance of the ISF approach is that in a manner analogous to implementation science in agency practices, ISF moves our focus away from individual adoption of practices to the "infrastructure or systems" needed to advance high quality prevention efforts in communities.

The ISF defines three interactive systems needed to move from concept to effective action in communities. The three systems are:

- The Prevention Synthesis and Translation System (PSTS) with responsibility for synthesis of research into user-friendly materials and training
- The Prevention Support System (PSS) or intermediary organization which works with communities to support successful adoption and implementation, and
- The Prevention Delivery System (PDS) which is defined by the community representatives who accept responsibility to deliver the innovative practices.

This is not as much a structural model as it is a functional model. For example, support and synthesis may sit in the same organization or in complex partnerships where functions are shared across multiple delivery partners. What is critical is that the integration of the three functions be resourced and valued by all participants. Since the introduction of this three-way model in the last decade, several articles have appeared that use this framework to evaluate complex community efforts including efforts that focus on specific ACEs (e.g., community-based substance abuse prevention (Firesheets et al., 2012); and adolescent violence prevention (Backer & Guerra, 2011; Miller et al., 2012) as well in more general prevention efforts (e.g., .

The ISF model complements the key components of effective community prevention efforts outlined in the general prevention practice literature review (e.g., Stith et al, 2006) which are:

- Communities are ready for change;
- Effective coalitions are created and supported to guide the prevention effort,
- Programming is valued because it fits the community's perceived need and capacity;
- Quality of care (fidelity of practice) is a shared value; and
- There is adequate commitment of resources to training, technical supports, and accountability in practices.

These principles apply whether we are discussing community-based prevention efforts delivered to communities by professional agencies and systems, prevention efforts by communities to address their own identified needs, or blended models including both agency and community members in coalitions. In each instance, the success in creating effective and equitable structures that support the three ISF systems defines the success in the adoption of innovative practices in communities. Definitions of roles, leadership, governance, participant voice, and resource use need to evolve formally. Commitment to the continuing efforts needs to maintain these structures

needs to be seen as a valued and commonly held priority. To the degree that this structure is not developed, inadequately maintained, or viewed as inequitable for partners, community innovation fails.

In summary, APPI's assessment of community efforts and investment in local community collaboratives needs to be guided by systematic strategies to support the role of community collaboratives. Implementation science and related systems principles have advance to the point where there is an increasingly detailed framework to guide building capacity and facilitating adoption of specific interventions. In ACEs and trauma, these interventions will have to include development and testing of innovations in practice. Implementation science and the Implementation Systems Framework provide a roadmap for how API can support local community efforts in moving forward.

In the following summary of community efforts, initiatives have incorporated elements of effective implementation practice but few have called out what they did successfully and how it contributed to their measurable success in creating services and changing risk. To the degree these programs have been silent on these systemic lessons, valuable evidence for how implementation succeeds is missing. APPI can help address this in the future by adopting this consensus focus on implementation structure and its success in local community efforts to prevent ACEs and mitigate the effects of trauma.

V. Community Programs Defining ACEs-related Collaborative Efforts.

In this section, I begin by addressing positive youth development efforts and then transition to initiatives that address risk populations and specific problem behaviors. I call positive youth development and allied strategies out specifically because the logic of a public health informed efforts requires we have positive health goals to organize our efforts.

Specific treatment systems and strategies, while often dependent on strong community networks for their success, are not addressed in this report. In part, I have not included these programs because of the sheer scope of information that would have to be reviewed. More specifically, I have approached this review to address where expansion of efforts conceived and managed in local communities can be supported to mitigate ACE exposure and reduce the effects of trauma. I have also not attempted to address the range of more targeted service partnerships such as school-based health clinics which are significant service innovations but do not meet the scale of collaboration to be comprehensive community collaborative service efforts. Given my emphasis on a public health framework, these omissions of services result in an incomplete description of the continuum of services needed in communities to address ACEs and trauma. While critical, treatment services are not central to evolving a public health response but rather reflect part of the continuum needed for comprehensive action. In part 2 of this section, I do return to treatment systems where multi-partner and often community-based strategies have been used to improve treatment services.

> "Valuing collective actions to accomplish a common good also has potency in reducing violence, particularly in communities whose profiles would suggest high levels of social disorganization."
>
> Daro & Dodge, 2009

Multi-sector community collaborative efforts can be roughly divided into three development tracks. The first involves a range of positive youth development efforts which may or may not involve cross-sector efforts but because they are so extensive in communities and so foundational to a public health response to ACEs and trauma I include here as a distinct system. The second broad collaborative strategy is centered in two or more formal service system such (mental health, substance abuse, juvenile and criminal justice, child welfare, and education) with the goals of increased coordination of services to increase access and quality of care. The third domain of collaborative efforts involve more comprehensive multi-sector and community-centered efforts that combine governmental, nonprofit, education, and private sector partners in capacity building, engagement, and service improvement efforts. These three general tracks involve many variations and blending but recognizing focus and partners can help organize the various community efforts that have emerged in Washington and across the country.

In this section, I briefly review the scope and intent of areas of systems based and community collaborative practices that have been employed in Washington State and are related to core risks and consequences of ACEs and trauma. I have incorporated the materials provided but also conducted a search on other initiatives that while frequently included in WA state communities were not identified in the materials provided. Where information specific to a local program is available, I include local program results. However, many programs that are important to APPI's mapping of existing practices and the foundation in local communities are not reflected in available local program evaluations despite being significant resources or significant parts of the history of collaborative efforts in the state. In these instances, I provide an overview of the approach and the evidence supporting its application. I begin this discussion with positive youth development and the related efforts captured in mentoring and social emotional learning supports. I then review system improvement efforts that are particularly related to ACEs mitigation and trauma response. Finally, I summarize approaches and findings that reflect primarily community efforts to address child and youth supports and specific ACE risks. As detailed earlier in this report, the community network developed through the Family Policy Council stands as one of the most extensive and durable examples of such community collaboratives.

1. Evidence supporting the positive youth development service perspective.

The positive youth development perspective shares most core principles with resilience and social emotional learning. Rather than consider these as distinct literatures, it is helpful to see positive youth development as a companion set of work implementing these core principles in different practice settings. The positive youth development literature adds value by focusing our attention on specific strategies that can guide effective program services. Among these focus points are: efforts to improve the quality of parenting practices, a strong emphasis on reinforcing attachment to peers and family, consistent access to positive role models, engagement with supportive institutions such as schools, churches, and cultural groups (Park, 2004). These efforts are argued to be effective in their own right or as complements to more target remedial efforts including psychotherapies (Weisz et al., 2005).

Positive youth development is commonly defined around five domains of activity and developmental focus often referred to as the 'Five Cs": Competence, Confidence, Connection, Character, and Caring (Roth & Brooks-Gunn, 2003a; Lerner et al., 2005). Based on an

assumption of the adaptability of human beings, positive youth development assumes an inherent demand towards growth and the ability to regain from deficits in the five core foci of development. The proposition is that increasing the quality and degree of capacity in the five domains actively promotes developmental success while any deficits are indicators of increasing risk for intrapersonal and interpersonal risk. This approach borrows heavily from developmental neurobiology, attachment theory, and resilience for its scientific foundation. "Youth development programs can be distinguished from ameliorative services by their emphasis on promoting normal development and recognizing youths' need for both ongoing support and challenging opportunities." (Roth & Brooks-Gunn, 2003a, p. 172).

Consistent with the previous discussion regarding trauma and resilience, the five developmental domains are each placed at risk because of ACEs and trauma adaptations. Activities that focus on increasing individual capacity in the five developmental domains can mitigate the effects of trauma and consistent with resilience theory may also reduce exposure to later ACEs (Masten & Obradovic, 2006). To achieve positive growth and buffer the potential impact of ACEs, there is not a prescriptive set of actions but rather three broad areas of effort that Roth and Brooks-Gunn (2003a, 2003b) identified as the 'big three' tasks of positive youth development: (1) supportive, persistent, and caring relationships with responsible adults, (2) exposure to activities that build practical and social skills; and (3) the opportunity to use these skills as both participants and as leaders where the child contributes to their group and community. Other widely disseminated models such as the Search Institute's 40 developmental assets, provide proposed areas of specific development that fit well under this three domain umbrella. These three domains align with the need for attachment and the need to earn resilience through action and relationship as discussed earlier in this paper.

The conceptual foundation for positive youth development is extensively documented, and the evidence for the effectiveness of this approach generally justifies the widespread adoption of this strategy. While originating from similar assumptions and developmental principles, positive youth development interventions vary widely. Programs vary with respect to the scope, setting, strategies, and persistence of efforts. Differences particularly with respect to intensity and persistence appear to distinguish programs. Generally, more intensive and persistent programs show more potent effects. A number of literature reviews highlight the case for positive youth development although on a modest research literature compared to other areas of social service investment.

Terzian et al. (2011), echoing findings from several other reviews, proposed seven well-documented strengths-based developmental intervention strategies that are adaptable as part of broad community-based actions. These seven strategies are:

1. Support and strengthen family functioning.
2. Increase connections between students and their schools.
3. Make communities safe and supportive for children and youth.
4. Promote involvement in high quality out-of-school-time programs.
5. Promote the development of sustained relationships with caring adults.
6. Provide children and youth opportunities to build social and emotional competence, and
7. Provide children and youth with high quality education during early and middle childhood.

Terzian and colleagues review is instructive because it situates positive youth development programs in broader social efforts in communities such as educational quality and investment in youth programming. As much as the Five Cs are characteristics of programs, they are also characteristics of families, neighborhoods, and communities. This underscores the value for APPI of considering broad pro-youth capacity policies in addition to support specific programs and problem-focused collaborative efforts.

Catalano et al. (2002) conducted a review of literature and found 77 published program reports of positive youth development interventions. Of these publications, 25 were determined to be of sufficient detail and rigor to be reviewed and to show positive gains on one or more of the measures of youth growth and youth adjustment. Other potentially valuable programs were either early in development or lacked effective evaluations that permitted any assessment of impact. Significantly, only half of the 25 studies involved extended follow-up permitting examination of persistence of effects. In this, positive youth development efforts are like many community efforts and the quality of evaluation limits our ability to assess objective benefit. Sixteen of the 25 programs reviewed by Catalano and colleagues involved experimental comparison group designs. Based often on short term benefit, Catalano and colleagues conclude 19 of the 25 programs contributed to significant gains in positive development (e.g., positive peer relationships, self-efficacy, interpersonal skills) and 24 of the 25 programs documented reductions in problem behaviors (e.g., drug use, aggression, truancy). In achieving the reported benefits, common themes emerged across the programs reviewed: (1) a focus on social, cognitive and emotional self-management skills; (2) support for increased self-efficacy (a belief in the ability to try things with reasonable prospects of success) in youth; (3) individual change supported by consistent messages about values and standards in the youths' social settings; (4) an emphasis on creating relationships with peers and adults; (5) increased experiential opportunities and recognition of youth; (6) intentionality and structure in program delivery; and (7) persistence of efforts with the most effective programs exceeding nine months of participation.

In roughly the same period of time, not only did the Catalano et al. (2002) review support the overall effectiveness of positive youth development but multiple independent reviews drew the same conclusions regarding demonstrated benefits of this general approach (American Youth Forum, 1997, 1999: Brounstein & Zweig, 1999; Durlak & Wells. 1997, 1998; Elliot, 1999; Greenberg et al., 1999; National Research Council and Institute of Medicine, 2002; Roth & Brooks-Gunn, 2003a, 2003b). More recent research (e.g. Lerner et al., 2005) continues to support the general effectiveness of the positive youth development approach. As a result, as APPI reviews its program and policy options, there is a compelling case for the likely return on investment in strategies based on positive youth development practices.

The scope of positive youth programs is extensive and available in evidence based review sites such as the Substance Abuse and Mental Health Services Administration's National Registry of Evidence Based Programs and Practices and the U.S. Department of Education's What Works online registry of programs. These programs are widely disseminated across Washington State and other than to call out the foundational work of David Hawkins and Richard Catalano at the University of Washington, a review of specific positive youth development programs in use in Washington communities would turn this review into a book.

> "One program, even an extraordinarily good program, cannot do it all. Young people do not grow up in programs, but in families, schools, and neighborhoods. Our best chance of positively influencing adolescent development through programs lies in increasing the web of options available to all youth in all communities, and ensuring that those options take an approach consistent with the youth development framework." p. 171
>
> Roth & Brooks-Gunn, 2003a

Three allied youth development systems are widely implemented across the United States and share a great deal with the positive youth development literature but because they have evolved in their own traditions are worthy of specific attention from APPI in its development work. These strategies are mentoring programs; school based social emotional learning programs and curricula in schools; and after school programs. As I argued earlier in this paper, relationship quality is a critical preventive and ameliorative resource for trauma and social emotional learning defines the positive development focus that trauma exposure places at risk. Rather than seeing these three strategies as distinct from positive youth development, I would recommend APPI consider them as major threads in a common emphasis on building the resilience and capacity of children and youth in communities. There is a wide range of mentoring, after school programs, and social emotional learning practices across Washington communities. The scope is too varied to be presented in a a detailed review within this paper.

Mentoring research. Mentoring is a widely employed strategy with applications in working with at-risk youth, improving academic outcomes across educational levels, and in workplace employee development. In all three arenas, the intended benefit is emotional support, modeling of behavior, specific skills acquisition, and counsel in navigating complex physical and social environments. Eby et al. (2008) conclude in their comprehensive meta-analysis that, "Results demonstrate that mentoring is associated with a wide range of favorable behavioral, attitudinal, health-related, relational, motivational, and career outcomes, although the effect size is generally small." (p. 254). In independent reviews, DuBois et al. (2002) and Rhodes and Lowe (2008) reached the same conclusion of small overall effect sizes for mentoring generally but also concluded that mentoring programs for disadvantaged children and youth, mentoring with experienced and trained mentors, and mentoring programs of greater intensity and duration consistently showed greater effect sizes. Again, the mentoring literature documents that quality, intentionality, and persistence leads to better services.

Social emotional learning (SEL) efforts as core educational activities. For more than a generation our national educational policy emphasis has been on highly structured, accountability-driven academic practices to improve academic success in the United States. While this strategy has dominated, the role of social emotional learning has continued to steadily evolve as a formal area of curricular and program work in P-12 education. Indeed, social emotional competencies are among the principal predictors of academic success (e.g., Wang et al. 1997). The rising focus on social emotional learning as a core component of education is not at the expense of academic rigor. Rather, social emotional learning emphases are defensible first because they support better academic outcomes and then because they support overall developmental outcomes for children.

School success is a critical developmental resource but one that has to be developed persistently in the child. Durlak et al. (2011), updating findings from previous reviews (e.g., Zins et al., 2007), conducted a meta-analysis of more than 200 school-based curricula and intervention programs. The authors conclude that, "Compared to controls, SEL participants demonstrated significantly improved social and emotional skills, attitudes, behavior, and academic performance that reflected an 11-percentile-point gain in achievement." p. 405. Using the acronym SAFE (sequenced, active, focused, and explicit) to describe program practice, the authors found that the average effect size for program benefits significantly increased when programs employed these four strategies in program design. In the review, Durlak et al. also found that high quality implementation consistent with the principles associated with implementation science contributed to greater benefits for participants. This recent review captures an extensive literature confirming that well-designed, intensive, and well-implemented school social emotional learning practices are significant developmental assets for communities. As is the case for positive youth development programs, the evidence based list of social emotional learning programs is extensive (e,g., The Collaborative for Academic, Social, and Emotional Learning (CASEL) 2013 Guide to Effective Social and Emotional Learning Programs http://casel.org/guide/) and represents a range of programs beyond the ability to detai in this paper.

In Washington State, almost all schools employ some social emotional learning curricula and some schools and districts invest significant effort in evidence based programs. To my knowledge, there is no mapping of program practices available for Washington schools but anecdotal information suggests that programs such as Second Step, Positive Behavior Supports in Schools, Character Counts, and specific targeted curricula (e.g. Kelso's Choice) reflect a significant part of current practice. However, the experience in Washington likely reflects the national experience where often programs are only partially implemented, drop in and out of active utilization, and often do not have evidence bases that meet common standards as research-based programs (Zins et al., 2007). As a result, as APPI looks at school based social emotional learning practices as an important candidate for community program efforts, APPI will be well-served to focus on the quality of programs selected, intensity and persistence of the strategies, and implementation quality to produce the benefits reflected in the overall research.

After school Extended Learning Programming. Approximately 8.4 million children annually participate in some form of afterschool programming (Afterschool Alliance, 2009). The term 'afterschool' is something of a misnomer given programs can run before school, after school, in the evenings, on weekends, and over summer vacations and holidays. These are programs intended to provide safe, supervised, and supportive settings for children and youth out of the home or school Programs activities include nutritional services, academic coaching and tutoring, arts and cultural enrichment, and recreational activities. Represented by a range of specific models, afterschool programs the intent of quality afterschool programs is to expand learning through developmentally appropriate social, academic, physical, and emotional activities. When these characteristics define programs, it may be more appropriate to refer to these programs as extended learning supports.

Generally, the results for afterschool programs mirror the findings for positive youth development generally. Afterschool program participants, compared to nonparticipants, have

been found to show increased academic success, greater school affiliation, reduced risk behaviors, and increased social skills (Huang & Dietel, 2011; Mahoney et al., 2005; Metz et al., 2008; Vandell et al., 2007). The effects sizes are generally small but consistently supported across reviews. Durlak and Weissberg (2007) reviewed 73 afterschool programs evaluated in comparison group studies and concluded that affective, social, and academic improvements were reliably supported. Benefits may not increase with greater levels of afterschool involvement (Roth et al., 2010) but rather as a function of access versus no access in comparison studies as a as a function of the quality (SAFE- sequenced, active, focused, and explicit) of the programs and professional preparation of the staff. As a result, afterschool programs help complete a range of community programs for youth development, safety, and support for APPI to consider as community based solutions.

Summary of Positive Youth Development and Allied Strategies. The cumulative evidence for positive youth development, mentoring, afterschool programs, and school-based social emotional learning strategies rivals the scope and quality of evidence we have most of the treatment strategies we have traditionally relied on in conceptualizing interventions for children and youth. The argument is not if these program strategies are effective but how do we improve the consistency of application in these community efforts dominated by highly variable service delivery quality and dosage. Consistent with the challenges outlined in implementation science, these programs often are poorly supported, poorly resourced, and delivered by professionals in significant need of developmental assistance in their practice. When these challenges are addressed, these community based solutions are impactful and offer the foundation for large scale public health responses. APPI should consider the policy and large scale practice implications of addressing these quality issues as the significant challenges to improving practice.

The link of these youth development strategies to ACEs and trauma is direct and powerful. These programs, at their best, address specific efforts to support safety, relationship, and skills development as the foundations for successful neurodevelopment. These programs also provide a network of supervisory and safe environments that may contribute to reduced risk of additional exposure to adverse experiences.

Like every other potent intervention we do with people, the negative effects of these programs also need to be addressed. Strikingly, the literature on positive youth development and its allied strategies largely limits itself to a discussion of positive to no effects. From psychotherapy research, we know that deterioration effects and adverse responses because of abuse and poor practice are real concerns in otherwise beneficial services. One of the most obvious concerns is that the power of positive caring adults can be undone by neglect and abuse when vulnerable children are placed in the care of predatory or incompetent adults. I would recommend to APPI that part of any developing discussion include addressing this issue of workforce safety and competence as a core consideration.

While I have focused on the programmatic literature for positive youth development, mentoring, afterschool programs, and social emotional learning programs, it is useful to recall that goals and strategies that are reflected in these programs also occur naturally as part of effective families, schools, and communities. These natural assets are also integral parts of the communities APPI

hopes to partner with. The implication of this is that as valuable as programs are they sit within naturally occurring assets. A critical part of the APPI development discussion will need to be how to assess need and fit for program investment within the naturally occurring assets of individual communities.

The National Research Council and Institute of Medicine (2002) conducted a review of the state of youth developmental practices. The conclusions and recommendations from this report remain fresh as we consider community youth development efforts in Washington:

- Children make progress in development and risk reduction even when solutions are partial. Gains in some areas are beneficial even if assets in other areas are under-developed. "Individuals do not necessarily need the entire range of assets to thrive; in fact, various combinations of assets across domains reflect equally positive adolescent development." p. 6.
- "Having more assets is better than having few. Although strong assets in one category can offset weak assets in another category, life is easier to manage if one has assets in all four domains" (physical, intellectual, psychological, and social). p. 7
- "Continued exposure to positive experiences, settings, and people, as well as opportunities to gain and refine life skills, supports young people in the acquisition and growth of these assets." p. 7.
- "Programs with more features are likely to provide better supports for young people's positive development." p. 8
- "Adolescents who spend time in communities that are rich in developmental opportunities for them experience less risk and show evidence of higher rates of positive development. A diversity of program opportunities in each community is more likely to support broad adolescent development and attract the interest of and meet the needs of a greater number of youth." pp. 10-11.

In summary, I recommend that APPI invest significantly in asset building and strengths based youth development as established strategies supported by extensive evidence based literatures. This emphasis on social capacity building is aligned with the public health essential task of defining the universal positive health goal to be supported. These programs also are the essential natural and supplemented conditions for skills development and experiences of mastery essential to developing resilience in children and adolescents. What is reinforced in all three literatures is that quality, intentionality of practices, and persistence define programs that will produce significant gains.

As powerful as these positive development supports are, they are not a full replacement for more targeted supports for vulnerable children. In one of the largest youth development studies, research findings from the National 4-H Study of Positive Youth Development (Phelps et al., 2007) demonstrates that promoting positive development and responding to emerging behavior risk in youth involve complementary but distinct strategies. Children at risk benefit from the positive foundation but skills deficits and emotional distress require specific responses to maximize potential benefit.

2. Coordinated community-based service system improvement efforts.

The second major area of community-based change efforts specific to ACE mitigation and trauma response involve multi-partner efforts to improve coordination of care for the most

vulnerable children and families. Typically, these efforts are organized around improving access to care, coordination of care for co-occurring needs, and improving service outcomes for clients identified for formal treatment services. This strategy has been used extensively in state and federal funding strategies over the past 20-30 years and Washington communities have used these strategies often. These efforts are often referred to as system of care, coordinating councils, or coordinated community responses.

a. Mental health focused system of care initiatives.
For children and youth with mental health disorders, only 10-20% of children with diagnosable conditions have access to specialized mental health care. Although less so now because of the loss of capacity in the overall system, children with serious problems frequently were treated in restrictive out-of-home placements or were involved with multiple systems including juvenile justice, child welfare, and substance abuse treatment because of a lack of sufficiently intensive coordinated services in the community.

Across Washington and the United States, we continue to struggle with inadequately funded children's mental health services and effective coordination of care. Thirty years ago, the idea of intensive coordination and shared services across multiple systems arose as a set of efforts named system of care integration (SOC). Behan and Blodgett (2003) reviewed the system of care literature as part of Washington State practice in 2003 and found modest evidence of success which were confirmed in more recent summaries of the literature (e.g. Anderson et al., 2005; Knapp et al. 2012). This at best mixed body of results still characterizes current findings the systems of care literature and continues to inform policy recommendations such as in Healthy People 2010. Despite these constrained findings, the concept of SOC practice has a compelling logic- coordination of services should support better care and outcomes- and remains an attractive approach for complex change including addressing actions for children with special health care needs under the Affordable Care Act.

Faced with profound gaps between mental health needs in children and access to service, federal demonstration and capacity building efforts in states and communities began with the Children and Adolescent Service System Project (CASSP) movement in 1984, gave rise to the system of care concept (SOC) (Duchnowski, et al., 2002; Neill, 1997; Stroul, 1996; Lourie, Stroul, & Friedman, 1998) and continues today in competitive 'systems of care' grants awarded through the Substance Abuse and Mental Health Service Administration to communities and states.

SOC integrated service programs always included efforts to modify the intensity and quality of agency coordination with coordination across systems the principal intent of the collaboration. SOC integrated service models focus on specific clinical techniques that offer distinctive services to families. As central values of SOC practice, family empowerment and cultural competence are considered as primary goals to be achieved in governance, service design, and assessment of service benefits. SOC practice shares a focus on changing the structure in which services are provided and use of funds to identify gaps in service. Programs focus on coordination of services to meet participant need, increased planning and coordination across professional systems, reduction of financial barriers to service access, creation of multi-disciplinary teams, and an emphasis on care coordination as a critical professional function. The programs do not address innovation in individual services rather emphasizing established evidence based practices

although arguably the emphasis on multi-disciplinary teams and intensive care coordination around individuals could be called service innovations. SOC programs focus on older children and adolescents and services to children under age 8-10 are rare. Programs addressed a range of problems although most programs shared a common focus on youth with the most complex needs often demonstrating risk or a history of restrictive placements and had needs that cut across multiple systems.

Currently in Washington, Yakima County, the Lummi Nation, and the DSHS Division of Behavioral Health and Recovery have active SOC grants. In the past 30 years, more than 100 communities have received SOC grants. Evaluation findings for the three active Washington State SOC projects are not presently available but lessons from the overall SOC literature are still instructive.

Accessible at https://www.childwelfare.gov/management/reform/soc/build/evaluation.cfm), local program evaluations from some funded SOC communities testing have been encouraging in uncontrolled repeated measures designs. However, negative findings in these programs are rarely reported. Staff report changes in practice and policies that support the 'system-ness' in work with high risk children across systems. In many of the specific community evaluations, there have been statistically significant and frequently individually meaningful changes in the lives of very complex children. Reported changes in cost, quality of access to services, reductions in the level of restriction in care, and functional resources of children are consistent with the intent of the SOC interventions. Families and children like the model of service better and satisfaction with services may be associated with greater participation and as a result greater therapeutic benefit (Rosen, Heckman, Carro, & Burchard, 1994).

The two large comparison group studies, the Fort Bragg study (Bickman, Bryant, & Summerfelt, 1993, 1995; Bickman 1996) and the Stark Ohio study (Bickman, Noser, & Summerfelt, 1999) testing SOC principles found limited system change but no evidence that the changes resulted in meaningful clinical benefit for children in the SOC interventions. While SOC values are deeply infused into our thinking about mental health service delivery to children, it appears that broad system strategies are exceptionally challenging and evidence for their benefit has yet to emerge. Smaller scale, intensive, coordinated work to develop specific treatment strategies informed by SOC principles has been more successful. Several cross system interventions (e.g., Wraparound, Multisystemic Therapy) reflect the value of using SOC principles focused on the content and not exclusively the structure of services. While I would not recommend abandoning SOC community efforts, recognizing the complexity of such efforts and understanding that documented outcomes are not available at the community level will help APPI as it considers strategies to move forward.

Despite the lack of evidence consistently supporting SOC practice to date, the logic of coordination and shared effort on behalf of vulnerable families remains a dominant framework for national and state practice. For example, the Substance Abuse and Mental Health Services Administration (SAMHSA) continues to fund mental health focused SOC initiatives for older children and adolescents. SAMHSA also has expanded to serving younger children and is now entering its third wave of funding of Project LAUNCH communities- 35 communities, states, and tribes to date- applying SOC principles to at-risk children ages birth to 8 years old. Yakima

County is the local partner with the Washington State Department of Health for a five year grant ending in Fall 2013[4].

The evaluation discussion currently active in SOC and Project LAUNCH efforts has turned increasingly to quality improvement strategies informed by high fidelity adoption of evidence based practices and the technical support intended to inform system coordination based on implementation science and Implementation System Framework principles (e.g., Israel et al., 2007). Whether these efforts will result in consistent evidence of system change related to improved client outcomes remains to be seen. The practice and experiences of the Yakima community and Lummi Nation are likely to influence local capacity and partnerships but these local programs have unknown influence on communities across the state.

My recommendation to APPI is that the cautionary tales of large scale system change from SOC be considered in designing the overall system and local program expectations. Summarized in a research brief (Louis de la Parte Mental Health Institute, 2004) that echoes several reviews of SOC practice (Brannan et al., 2002; Israel et al., 2007; Vinson et al., 2001), the following conclusions of SOC implementation over the last 30 years remain timely targets to address in new community efforts:

- Prior experience with integration efforts helps with greater success.
- If prior integration has previously included a small group of participant agencies, expanding the network is very difficult.
- Continuity of governance participants and effective governance structures are critical to the success of local program and system innovation efforts.
- Consistent with Implementation Systems Framework recommendations, there has to be an explicit infrastructure to support dissemination and effective implementation of innovations in practices and policies. This is a continuous effort.
- Creating timely and clinically meaningful information to guide individual, agency and system practice is essential but few SOC-inspired initiatives ever attain this goal.

b. Safe Schools Healthy Students.

Safe Schools Healthy Students (SSHS) is a federal program that began in the late 1990s as a collaborative of the US Departments of Education, Health and Human Services, and Justice. More than 350 districts and other local education agencies have received more than $2 billion. Funds were distributed through multi-year awards supporting locally defined plans and school-community partnerships. Grantees were required to address: school safety and violence; reduce alcohol and other drug use and initiation; enhance early childhood social emotional learning and development; address mental health needs of students; and increase family and community connections in schools. Consistent with many of the recommendations regarding implementation science practice, grantees were expected to address needs based on information, adopted evidence-based practices, and use performance data to guide program development and refinement.

[4] Please note that my center has been the Washington State Project LAUNCH evaluator for the past two and half years.

Eight communities in Washington have been awarded SSHS grants. Unfortunately, this funding source effectively ended in 2011 although a minimal presence in federal policy continues. SSHS are important because in these eight communities the grants were significant catalyst programs for community collaborations. Also, while local program reports are not easily accessible, SSHS has supported a cross-site national evaluation that attempted to address overall benefit about collaborative actions centered on schools. The evaluation reports are available at http://www.sshs.samhsa.gov/community/evaluation.aspx.

The national evaluation used existing data sources, interviews, and surveys to assess perceived change in school capacity and self-reported student risk. Change was measured against pre-award/start-up measures of risk and need with each grantee measured against its own baseline status. Student self-report included past 30-day alcohol, tobacco, and marijuana use; experienced and perceived violence; and access to school- and community-based mental health services. However, programs were not required to report on all areas of activities each year. Unfortunately, differences in local data practices, tools, and areas of data collection were common resulting in variable data quality and limiting the sensitivity of measurement across participating districts. With this limitation in mind, the SSHS cross-site evaluations with the group of 57 districts suggest some important findings. First, local districts varied widely in terms of implementation success underscoring that even when guidance to address implementation challenges is identified in the design of funded work, actual success is highly variable. Even with this variability in performance, the aggregate experience was that access to school-based mental health services, access to community-based mental health services, and report of experienced violence were improved across the programs. However, youth outcomes were mixed and nearly half of the indicators of youth wellbeing showed negative effects or no change.

While SSHS infused significant resources into local communities, the decision not to use standardized assessment practices to support program impact evaluation significantly constrained the evidence for the overall program. Some of the results from the national evaluation suggest benefit but these are limited by significant data problems reported in the evaluation. In many respects, SSHS nationally is a recent case study of how failure to build robust evaluation into program efforts can jeopardize the resource and leave us with modest ability to draw lessons from significant local efforts. APPI would benefit from being aware that in several key communities, SSHS was a significant resource until very recently. Specifically, in Spokane and the Yakima area, SSHS helped advance early dissemination of ACEs and trauma awareness.

c. Juvenile justice and child welfare practice integration.

1. Juvenile justice. Washington State has adopted or has outlined a number of initiatives that while not reflecting broad-based community are significant capacity building steps in local communities. These system capacity and outcome improvement efforts are noteworthy because they represent critical capacity in the public health continuum.

The Washington State Department of Social and Health Services (DSHS) has committed to a 'Prevention Redesign Initiative' in the past two years. Aligned with the federal strategic prevention framework detailed elsewhere in this paper, the Redesign Initiative is intended to address high need communities with tailored community responses through a coordinated response including DSHS, the Office of the Superintendent of Public Instruction, and local

agencies that adopt and adapt evidence based practices to local community conditions. This state initiative may prove to be well-aligned with the APPI effort as part of the continuum of efforts to mitigate ACEs and trauma's more severe consequences.

In the Juvenile Rehabilitation Administration (JRA), a long term effort has been underway since 2003 to integrate evidence-based practices into JRA's routine practice. This 'Integrated Treatment Model" initiative has included multiple specific services for incarcerated youth, youth in community care settings, and youth paroled back to the community. Specific evidence-based practices include Functional Family Therapy, Family Integrated Transitions (FIT, a multi-component program including mentoring and Multisystemic Therapy as a home based services), Dialectical Behavioral Therapy, Functional Family Parole (FFP, an adaptation of Functional Family Therapy), and specialized services addressing substance abuse and sexual offenders. As part of this overall effort, most JRA enrolled youth also are assigned mentors as part of the overall supervision strategy. In a recent report (DSHS RDA, 2010), more than 3,500 youth received one or more elements of these services in 2008.

Two evaluations support the benefits of core elements of the overall JRA Integrated Treatment Model. Aos (2004) conducted an outcome evaluation and cost-benefit analysis of FIT and determined that there was a significant reduction in recidivism with a resulting cost benefit ratio of more than three dollars for each dollar committed to the intervention. Because of loss of support due to the recession in 2009, Lucenko et al. (2011) were able to conduct a comparison of rates of recidivism and employment in youth receiving or not receiving FFP. The authors found that youth receiving FFP were less likely to re-offend, more likely to be employed, and earned more income in the year following release. As a result, two critical components of the JRA Integrated Treatment Model have been documented to be cost effective and to result in superior outcomes. It also should be noted that even effective strategies are at risk because of the depth of current funding resources.

Models for Change, funded by the John D. and Catherine T. MacArthur Foundation, is a juvenile justice reform effort involving 16 states through several funded networks involving multiple communities in each state. Washington State is identified as one of four core state partners involved in this national effort. Washington State communities involved in this effort include Spokane, King, Clark, Pierce, and Benton-Franklin counties. While a significant collaborative practice initiative including multiple agencies in each locality, no current impact evaluation was found in this review. An ambitious research agenda is underway and APPI will likely benefit from the evidence as findings begin to emerge.

2. Child maltreatment prevention. Zimmerman and Mercy (2010) and Daro and Dodge (2009) both make strong cases for why a public health perspective on the prevention of child maltreatment is needed but is still work to be done. Reviewed by Daro and Dodge (2009), these programs include Triple P, Strengthening Families, Community Partnerships for Protecting Children, Strong Communities, and the Durham NC Family Initiative. In Washington State, Triple P and Strengthening Families are active programs in multiple communities. Daro and Dodge present summary evidence for the feasibility and benefit of the Durham Family Initiative, Strong Communities, and Community Partnerships for Protecting Children. Overall, the evidence for these three programs documents child maltreatment reductions of variable

success and confirm the feasibility of these programs in local communities. Because Triple P and Strengthening Families are active in Washington State, I focus the balance of this section on these two programs.

Triple P (Positive Parenting Program; Prinz et al., 2009; Sanders, 1999; Sanders et al., 2000, 2002, 2007) proposes a comprehensive phased response from broad community awareness building, to targeted education provided by trained professionals with natural contacts with parents and children, to phased clinical interventions based on complexity and need of the child and family. Triple P has generated significant interest in the US and internationally with more than 50 research reports. However, the evidence for Triple P has been principally based on positive efficacy trials of its formal intervention services. The exception to this statement is the Prinz et al. (2009) study that tested the full program model in 18 intervention and comparison communities. Evidence from this trial demonstrated that rates of substantiated child maltreatment cases, out of home placements, and injury hospitalizations for children all improved in the Triple P intervention communities. As a result, there is positive evidence that Triple P, as a public health informed intervention, may be a confirmed strategy to prevention of child maltreatment. Ten counties in Washington State are utilizing elements of the Triple P program.

Strengthening Families works with early learning provider systems in communities to address improved professional practices and services intended to increase knowledge of parenting and child development, parent resilience, social connections for families, support in crisis, and support for the social emotional competence of children. In Washington State, Strengthening Families is led by the Department of Early Learning as the successor organization for the state's children's trust and community-based child abuse prevention program, Council for Children and Families. Part of the overall effort includes cross-system coordination of efforts with child welfare. Daro and Dodge (2009) note that the empirical evidence for the component strategies supported by Strengthening Families is well-established but that the national Strengthening Families Initiative has yet to be tested as a specific strategy. As a result, Strengthening Families is a critical infrastructure step but impact on community risk of child maltreatment needs to be determined.

Other specific intervention strategies including parent education and home visiting services for young families are effective interventions (Daro, 2009) but represent specific strategies rather than a comprehensive community response. Washington State has been a significant leader in the build-out of home visiting specifically. The scope of home visiting services may be such in the future that these efforts will be significant components in comprehensive responses. However, at this time, the scope of the available programs is far less than the identified need.

In summary, Washington State is poised to expand both its juvenile justice and child maltreatment early intervention and prevention activities but at this time neither sector supports comprehensive prevention response systems. With the infrastructure being created with Triple P and Strengthening Families, the prospects for prevention work addressing child maltreatment risk is particularly noteworthy. Triple P is a particularly promising practice for APPI to continue to assess. Triple P's phased response and evidence of child maltreatment impact may make it a useful model for considering more comprehensive ACE identification and trauma intervention response strategies. The principal constraint in considering Triple P is that the initial and

recurring costs are far greater than most communities can address without the identification of persisting supports that currently do not exist.

d. Substance abuse coordinated community prevention efforts. *Strategic Prevention Framework-State Incentive Grant (SPF-SIG).* SPF-SIG is a program of the Substance Abuse and Mental Health Services Administration (SAMHSA) intended to support states, territories, and federally recognized tribes 'strategic prevention framework'. The strategic prevention framework directs states and local communities to:

- Assess their prevention needs based on epidemiological data,
- Build their prevention capacity,
- Develop a strategic plan,
- Implement effective community prevention programs, policies and practices, and
- Evaluate their efforts for outcomes.

http://www.samhsa.gov/prevention/spf.aspx.

SPF-SIG focuses primarily on the substance abuse prevention and school systems. SPF-SIG is a complementary effort to SAMHSA's mental health systems of care and Project LAUNCH initiatives intended to broadly disseminate coordination and principles at the state and local levels. The program goals are to: prevent the onset and reduce the progression of substance abuse, including childhood and underage drinking; reduce substance abuse-related problems; and build prevention capacity and infrastructure at the state, tribal, territorial and community-levels. SPF-SIG has been a national infrastructure funding mechanism with the last funding cycle beginning in 2010. To date 49 states and 19 tribal entities. In a national implementation and cross-site evaluation study, 26 states funded in 2005 and 2006 provided information into a planned large scale test of the implementation of the strategic prevention framework.

In Washington State, two cycles of funding that addressed capacity building and prevention programs in multiple communities. A separate SPF-SIG grant was awarded to the Nooksack Indian Tribe in 2004. SPF-SIG efforts supported school focused efforts in large urban, small urban, and rural communities. The first cycle of state activity, from 1999-2002, funded 18 local communities as well as state infrastructure development. SPF-SIG in Washington State has been influential because of its contribution to the current state Prevention Redesign Initiative intended to direct common prevention activities supported with state funds.

The state evaluation programs in the first and second funding cycles identified four highly effective communities with evidence of significant reduction in substance abuse risk indicators compared the other communities (Roberts & Longhi, 2003[5]) further reinforcing that local implementation conditions principally determine program outcomes. The national cross-site evaluation (Buchanan et al., 2010), which included Washington State's second cycle of efforts in 12 communities beginning in 2004, found that infrastructure improvements and implementation of the strategic prevention framework with good adherence occurred in most of the participant states. However, at this time, the outcome information from the SPF-SIG national cross-site evaluation has not been released.

[5] Similar findings were reported in an undated Powerpoint presentation from Langer & Becker summarizing findings from the 2004 Washington State cohort. No more comprehensive report of Washington state evaluation finding were identified in the review for this paper.

In summary, SPF-SIG awards in Washington State have been significant capacity building efforts with unfortunately limited evidence of efficacy. APPI will benefit from recognizing the resource benefits of SPF-SIG in local communities and the evidence that SPF-SIG was influential in articulating the overall prevention strategy currently guiding prevention efforts in state partner agencies.

f. Domestic violence[6] coordinated community responses,

The community response to intimate partner violence (IPV) presents the best existing example of how grassroots community mobilization can change the face of legal and social service responses to ACEs. Beginning primarily as a feminist self-help and advocacy response emerging in the 1960s, by the late 1980s and 1990s, national norms changed and response systems emerged in the shelter system, legal response expectations, and acceptance of domestic violence as a public health problem.

As the scope of response to victims' needs grew, concerns regarding fragmentation of services and resulting ineffective responses mounted. The concept of a 'coordinated community response' evolved from local work in Duluth Minnesota to create a, "system of networks, agreements, processes and applied principles created by the local shelter movement, criminal justice agencies, and human service programs." Coordinated community response (CCR) emerged as a national model for local community mobilization and integrated responses in the United States and internationally (Gamache et al., 1988; Hart, 1995; Murphy & Fanslow, 2012; Syers et al., 1992; Tolman & Weisz, 1995). The general practice quickly spread across the United States with multiple local variations.

In 1996, the Centers for Disease Control funded two cycles of 10 communities as test sites for CCRs. The intent was to examine process and benefit for this widely adopted practice. Spokane was one of these communities from 1996 to 2003[7]. Spokane was one of several communities funded for six years while other communities received only three years of funding.

Like many demonstration programs, the goal was principally to develop the structure in the communities and then to develop local evaluations for these programs. The 10 CCR communities varied in strategies based on local vision and capacity but shared a common approach of developing prevention and response initiatives that would "target community attitudes and beliefs about IPV, increase opportunities for victim assistance through direct and indirect services, and increase accountability for perpetrators" (Klevens et al., 2008, p. 347) with the intention of reducing levels of IPV in the community. While a single large scale demonstration program, these communities served as the major test of the CCR strategy. At the end of the six years, a comparison study was conducted using a large scale random digit dial telephone survey (N=12,039) in the 10 intervention communities and 10 comparison communities (Klevens et al., 2008; Post et al., 2010).

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[6] The preferred term for the Centers for Disease Control and the World Health Organization is intimate partner violence (IPV). IPV is a more inconclusive term address physical violence but recognizing coercion, intimidation and psychological abuse as common and critical elements of the public health problem. Domestic violence is increasingly an anachronistic term associated principally with criminal justice defined behaviors and responses.

[7] Please note that I was the research partner for the Spokane program from 1999 through 2003.

Community IPV rates were not reduced in the intervention communities compared to the 10 control communities. However, victims' contact with IPV services increased in several of the intervention communities, and women's report of past year aggression exposure in the intervention communities with the full six years of intervention funding including in Spokane. In an independent random digit dial survey study including 3,200 participants in four waves comparing Spokane and Snohomish County, Blodgett and Stapleton (2003) found that Spokane residents exposed to radio and television message were significantly more likely to hold pro-intervention in IPV compared to residents who report minimal or no exposure to the public awareness campaign. While not meeting the original goal of reducing population level IPV victimization, these results demonstrate that measurable community change is possible with evidence of increased service utilization, reduced exposure to risk, and change in attitudes.

Coordinated community response to IPV demonstrated at least modest short term benefits to broad community mobilization efforts. Because the CDC study included a large scale comparison group study describing population level change, this demonstration program of the CCR strategy is unique among community level mobilization studies. The goal of shifting population risk in 3-6 years of meaningful but multi-dimensional effort was exceptionally ambitious. The fact that any progress was demonstrated is noteworthy. I can also report that because we could not sustain funding in Spokane during the recession of the early 2000's, our community effort collapsed quickly despite the broad success it experienced engaging more than 200 members for the six years. This experience is not uncommon but a cautionary tale for APPI about initial investments without sustainability plans integrated from the beginning.

3. Community multi-sector capacity and response improvement collaboratives.

In Washington, a small number of durable community consortia efforts specific to elements of ACEs and trauma have operated for some time. These have been allied to or complemented efforts from the local FPC community networks. What distinguish these efforts from the previous programs is that they, like the community network system, have been more explicitly developed within communities in response to need and funding opportunities. I briefly review Communities that Care which originated from the work of Hawkins and Catalano and while having a national reach has been adopted at least for periods of time in Washington communities. I then briefly summarize available information for Communities in Schools and Readiness to Learn programs that currently are active in many Washington communities.

a. Communities that Care. Communities that Care (CTC) developed explicitly from the work of Hawkins and Catalano at the University of Washington, CTC is a formal system for the adoption of prevention science practices in communities using a staged approach to implementation. While materials are free, there are costs associated with staff, training, and data collection. CTC is a significant strategy for APPI not only because of its Washington State origins but because it is an explicit example of how prevention science principles can be formalized into a community mobilization effort consistent with the recommendations I have reviewed in this paper.

CTC is being tested in a continuing randomized control trial, The Community Youth Development Study (CYDS), involving 24 communities in seven states. Although the intervention phase of CYDS is complete, follow-up of a cohort of 4,407 youth. Early findings

(e.g., Hawkins et al., 2009; Hawkins et al., 2012) demonstrate that in the 12 CTC intervention communities, children from Grade 5 to Grade 8 are less likely to engage in early tobacco use, delinquent behaviors, and report reduced exposure to violence. Using the Washington State Institute for Public Policy cost-benefit analysis methodology and assumptions of persisting benefit, Kuklinski et al. (2012) propose that highly effective CTC implementation may result in $5.30 in savings for each dollar of CTC implementation cost.
By any standard the CYDS test of the Communities that Care intervention model is a landmark study. The early findings demonstrate that in well-financed research programs, the population level changes proposed in community collaborative efforts can be demonstrated at meaningful levels. CYDS represents the critical step of documenting benefit but the translation of these benefits in more standard community settings is still work to be completed. With that reminder, I recommend that APPI consider the model recommendations and findings of Communities that Care as a primary reference for its developing work.

b. Communities in Schools. Communities in Schools is a national alliance involving more than 200 affiliate community and state organizations including 13 local affiliate communities in Washington State. Communities in Schools and Readiness to Learn (summarized in the next section) use related strategies to situated supportive people and resources in schools to address nonacademic reasons for school risk. Indeed, several Readiness to Learn implementing programs are Communities in Schools (CIS) agencies. CIS uses a national to state to locally sustained network strategy. In the 2010-2011 school year, CIS operated in 2,700 schools nationally serving 1.26 million students. CIS supports case coordination, monitoring of at-risk students, and the use of curricula and program supports endorsed within its model.

CIS has conducted independent program evaluation (ICF International, 2010) of the national model and building level randomized control studies to assess its effectiveness. Across these studies, 'high implementing' CIS sites were found to have benefits with moderate effect sizes on dropout and graduation rates and small effects on academic performance and attendance.

While not a general prevention program, Communities in Schools is a widely supported community collaborative structure with positive research results. The school success focus should not be minimized as vehicle for prevention practices given the role of schools as immediate supports and the established predictive power of education for social adjustment, economic success, and health. It is noteworthy that benefits in CIS are associated with 'high implementing' sites. This underscores the challenge of effective implementation one more time. As APPI looks at vehicles and key community partners, Communities in Schools will need to be engaged given the central role of schools in accessing and addressing the needs of children, youth, and their families.

c. Readiness to Learn. Operating in Washington State for 20 years, Readiness to Learn (RTL) in delivers services to more than 7,000 vulnerable children through 28 locally defined community consortia. Consortia vary in complexity from a school district and social service partnership relationship to multi-partner consortia. Established under the same legislation creating the FPC's community networks, RTL programs' mission is to address the nonacademic reasons for academic failure.

While RTL consortia have a common mission, the nature and range of the specific services varies widely and is defined by local priorities. Despite this variability, RTL's efforts fall into four principal domains intended to reduce barriers to academic risk: (1) increasing access to basic needs; (2) creating supports for academic skill building; (3) addressing health care access and problem resolution, and (4) creating social-emotional supports for children and families in distress. RTL programs differ in their emphasis across these four service themes resulting in a range of interventions operating from a common set of values.

For the past seven years, my center has been the evaluator for the state RTL program (Blodgett et al., 2012). We have produced annual evaluation reports for each year documenting findings from a common evaluation strategy across the consortia. In the 2010-2011 academic year, we introduced an ACEs measures based on needs assessment information collected about the students and families enrolled in RTL. As summarized previously, we found significant levels of ACE exposure and direct effects on social emotional adjustment and academic risk as students entered RTL services. We also found that ACEs serve as a powerful moderator on RTL outcomes. What is clear from multiple years of evaluation is that while academic, health, and basic need response help create the framework for effective RTL services, it is the focus on social emotional development and risk that drives change in the programs.

The following results from the 2010-2011 RTL evaluation report are reproduced here to provide greater detail on the scope and impact of ACEs in school age children. In addition, I reproduce the key outcome findings from the evaluation. I provide the information in some detail because it serves as an example of how more systematic evaluation integrated into complex community consortia services is feasible and can produce meaningful results.

Using rigorous statistical analyses, we can demonstrate the dose effect of ACEs directly impacts academic success. We have duplicated this result for two years. In the following table, I present the odds ratios for behavioral

Odds Ratios for School and Behavioral Problems with Increasing ACEs in the RTL Population

	Academic Failure*	Poor Attendance	School Behavior	Behavioral Health Problems
Four or More ACES N=663	2.0	5.3	3.1	6.5
Three ACEs N=756	1	3.0	1.5	2.0
Two ACEs N=1,141	1	2.5	1.6	1.8
One ACE N=1,612	1	1.6	1.2	1.2
No Reported ACES N=1,020	---	1	1	1

This demonstrated relationship between ACEs and current school and behavior problems in RTL students is significant because few studies have examined the impact of ACEs in school populations.

We also examined the relationship of ACEs in RTL students on our outcome measures.

- There is a clear dose effect for ACEs on teacher and parent Strengths and Difficulties Questionnaire (SDQ) Total Difficulties scores. As ACEs increase, level of social emotional distress increases.
- There is a clear dose effect for ACEs on school attendance in the marking period prior to RTL supports in this academic year. As ACEs increase, the rates of attendance drop significantly.
- In high school students, as ACEs increase, GLE mastery is significantly lower. We did not find this pattern in Grade K-8.

The following figures summarize the significant effects for ACEs on adjustment, attendance, and academic progress.

RTL is one of the consortia-based community programs available with a common evaluation program permitting outcomes to be assessed over time. In the 2010-2011 school year, we were able to document the following key findings in addition to the significant impact of ACEs:

- Without more intensive RTL supports, many students in RTL demonstrate persisting emotional distress and fall further behind on key academic measures.
- As ACEs increase, poor outcomes increase principally reflecting that RTL services are not reducing distress and dysfunction over time.
- As a short-term intervention program, RTL results in significant progress for students in the program for one academic year.
- Each year, two-thirds of students are new and most are in RTL for only one year.
- New RTL students make significant gains in social-emotional adjustment and academic progress on multiple measures.
- New students improve adjustment with more intensive RTL supports.
    - New students increase mastery of academic learning standards with more intensive RTL supports.
    - Attendance, truancy risk, and suspension risk all are reduced with more intensive RTL supports.
- Thirty-seven percent of RTL students were returning in 2010–11. The percentage of returning students remains consistent over time. Students who continue longer in RTL represent some of the most complex students. While new students demonstrate significant gains in RTL, this group of returning students do not improve over time.

While RTL's evaluation struggles with data quality challenges and equal cooperation across consortia, RTL demonstrates that useful information for continuous quality improvement can be achieved even in modestly funded community efforts. With its documented benefits, RTL is one of the few available examples of a complex consortia-driven intervention system for youth available.

Discussion

As APPI evolves in its policy and program development efforts, it does so with some strong foundations. The evidence for prevention programs and for the family of activities associated with positive youth development is well-established. The result is that there is a family of strategies that can be treated as evidence-based practices ranging from highly structured manualized curricula and services to principles-driven practices that are well-supported in

evidence. The scope of these specific programs is large and creates an opportunity for flexibly adapting to the preparation and resources in specific communities. I do not recommend APPI operate from some restrictive list of practices. Rather, the core of a coordinated effort would be better defined through a set of principles, clarity about levels of evidence for any given strategy, and support in understanding fit to people, settings, and communities to be served.

If APPI is to serve as funder, policy advocate, and direct support agency, there are some inherent challenges to navigate. This is particularly true if, as recommended in this paper, APPI chooses to address the need for an intermediary organization in implementation science terms or as the roughly equivalent 'prevention support system' identified in the Implementation Systems Framework. To the degree APPI may emerge as a significant funding mechanism, the potential conflicts of trying to be both a funder and an implementation 'intermediary organization' needs to be considered carefully. While this dual role is being attempted elsewhere, there are inherent conflicts when the same entity attempts to help build practice and hold individuals and agencies accountable for performance. In trauma-informed terms, this may be an inherently unsafe dilemma in which to place funded communities. It may, however, be possible to primarily serve as funder and to guide the process by setting policies and expectation about how funds are to be used.

APPI would be well served if it helped communities become more sophisticated in selection of program approaches and understanding of the evidence supporting these decisions. This could be effectively incorporated in requests for proposals guidance but would require some active education from APPI to help with local community consortia and agency awareness and critical appreciation of research. Because I am deeply immersed in this type of work, I can attest that the level of sophistication in communities varies from well-developed to effectively nonexistent.

While the level of awareness is rapidly changing, I would also advise APPI consider the need for continuing ACE and trauma awareness building. Like the Family Policy Council, my center has been intensively engaged in a public awareness campaign for much of the past decade and has done introductory trainings to more than 16,000 individuals across the Northwest. Despite our efforts and the great effort of others, we still routinely find that the majority of people in groups we train have no awareness of ACEs and trauma. APPI needs to consider how to maintain the public health awareness efforts if it is to mobilize the scope of support needed to effect significant community change. I would also suggest that this is a time limited task and at some point we will have saturated our target communities.

APPI needs community consortia to emerge and prosper if the mission of ACE mitigation and trauma response is to succeed. While the evidence for specific prevention strategies is well-established, the evidence for adoption of innovation and successful formation of consortia to effect system change is charitably, mixed. It is not for trying across the spectrum of programs summarized in this review. Several billion dollars of investment in systems of care and other consortia-based strategies have produced bright case examples and routinely dismal outcome results at the levels of policy, agency practices, and individual outcomes. The challenges of implementing evidence based practice within individual agencies further complicate the 'innovation uptake' task which APPI has laid out for itself.

In each of the specific areas of community work allied with ACEs and trauma response that I reviewed, the story is the same. This is complex long term work that produces incremental change. When communities succeed they do so because of stable leadership and governance, a clear sense of mission and methods, investments in coordination functions, and a commitment to the use of information to guide timely continuous quality improvement to guide the system and the services. These lessons from community practice are documented repeatedly in the evaluation reports and peer-reviewed journal articles. The result is that APPI has a clear statement of the problem. In implementation science and the Implementation Systems Framework, APPI has a methodology for engaging these demanding problems.

If APPI does not systematically organize around the implementation challenges, APPI will repeat the problem of bright case studies and poor overall impact. Taking on this task itself involves some significant risk. The problem and recommended solutions are well articulated but the guidelines for how to effectively improve implementation has not been tested rigorously. This is concerning because APPI will have to build the solution as action unfolds but this also may be an arena where APPI could be a leadership group helping others learn not only about ACEs and trauma response but also about how to implement implementation practices in complex community settings.

Finally, I proposed the start of a trauma-informed public health framework to guide APPI practice. While the foundation of this framework is grounded in science and practice, I offer it not necessarily for APPI adoption but because there is a critical need to debate how ACEs mitigation and trauma response fits systematically into and advances existing practice and policy. There is nothing as practical as a good theory. The evidence from ACEs, development neurobiology, and trauma treatment literatures cumulative defines a revolution for each of us as practitioners, communities, and policy makers. Clearly articulating not just the what and the how but the why of this work will ultimately determine if the revolution fails or evolves into a new model of care.

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