Exploring Adverse Childhood Experiences in Appalachia

A Summary of Findings

January, 2018

The Appalachian Regional Commission (ARC) is an economic development agency of the federal government and 13 state governments focusing on 420 counties across the Appalachian Region. ARC's mission is to innovate, partner, and invest to build community capacity and strengthen economic growth in Appalachia to help the Region achieve socioeconomic parity with the nation.

ORAU provides innovative scientific and technical solutions to advance national priorities in science, education, security and health. Through specialized teams of experts, unique laboratory capabilities and access to a consortium of more than 100 major Ph.D.-granting institutions, ORAU works with federal, state, local and commercial customers to advance national priorities and serve the public interest. A 501(c)(3) nonprofit corporation and federal contractor, ORAU manages the Oak Ridge Institute for Science and Education (ORISE) for the U.S. Department of Energy (DOE). Learn more about ORAU at www.orau.org.

This report contains a summary of input from ACEs stakeholders and experts resulting from a series of ThinkTank[©] sessions. For more information about this project, please contact:
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Table of Contents

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Introduction

[Adverse Childhood Experiences (ACEs)](#) are strongly predictive of future health problems throughout one's lifespan, including the development of opioid addiction and other substance use disorders (Adverse Childhood Experiences, 2017). One study found that for every additional ACE score, the rate of the number of prescription drugs used increased by 62% (Forster, Gower, Borowsky, & McMorris, 2017). ACEs also increase the likelihood of illicit drug use, with each ACE increasing the likelihood of early initiation by two-to-four fold (Dube, et al., 2003). Organizations such as the *Campaign for Trauma Informed Policy and Practice* recommend that "any strategy to address the opioid epidemic recognize the role that trauma and ACEs play in addiction, and incorporate trauma-informed prevention and treatment" (Blanch, 2017).

Exploration of ACEs in areas with high rates of opioid addiction is warranted, particularly in [Appalachia](#), where overdose mortality rates among 25 to 44 year olds are greater than 70 percent higher than the non-Appalachian U.S. (The Walsh Center for Rural Health Analysis, 2017). To date, no large-scale studies have been undertaken to understand how children in Appalachia may experience ACEs differently than other parts of the nation, including exploration of socioeconomic and cultural factors and their impact on the types of ACEs experienced, the likelihood of experiencing ACEs, or factors that mitigate the impact of ACEs and enhance resiliency. Between July and December 2017, ORAU worked with the Centers for Disease Control and Prevention (CDC)'s Division of Violence Prevention and the Appalachian Regional Commission (ARC) to gain a better understanding of ACEs in Appalachia and explore opportunities to address ACEs in order to impact the opioid epidemic. What follows is a summary of the activities conducted and the outcomes produced.

Establishment of an Appalachia ACEs Expert Working Group

ORAU, ARC, and CDC sought recommendations for ACEs experts working in the Appalachian Region to participate as an advisory group by providing input on existing research and best practices, topics for additional exploration, and assist with developing a plan for further stakeholder engagement. A total of eight experts were selected and agreed to participate in the working group. They included:

- Kathy Szafran, West Virginia
- Dr. Mike Brumage, West Virginia
- Dr. David Mathews, Kentucky
- Dr. Stephen Crane, North Carolina
- Jim McKay, West Virginia
- Dr. Scott Hambleton, Mississippi
- Dr. Larke Huang, SAMHSA

- Dr. Derek Ford, CDC

ORAU facilitated a series of conference calls and a ThinkTank© session with the experts to discuss how ACEs are uniquely impacting the Region, including intervention challenges and opportunities. From these activities, ORAU developed a list of questions, probes, and a sampling strategy to use in recruiting stakeholders to participate in one of two Stakeholder ThinkTank© sessions.

Stakeholder Engagement

Following the sampling strategy and using an email template developed by ORAU, experts were asked to help recruit stakeholders to participate in two ThinkTank© sessions – one for stakeholders working in central Appalachia (Kentucky, West Virginia, and Tennessee) and one for stakeholders working in southern Appalachia (Mississippi, Alabama, Georgia, and South Carolina). Stakeholders were defined as professionals whose work focused on childhood trauma and ACEs, and those whose work focused on the prevention and treatment of substance use disorders – particularly opioids. Advanced knowledge about ACEs was not necessary. Stakeholders were sought from the following fields:

> *Behavioral health, hospitals and community health centers, schools, local government, social services, law enforcement, faith-based organizations, non-profit organizations, and other related fields*

> *More about ThinkTank© from Group Systems*
>
> *ORAU uses ThinkTank©, a browser-based software, to facilitate collaboration and build consensus among diverse groups – both large and small. Trained ORAU facilitators design activities in ThinkTank© to capture, synthesize, and prioritize ideas and directions. Using the tool makes group work easier and more productive whether attendees participate virtually or face-to- face.*

Interested stakeholders were asked to register for the ThinkTank© sessions using a survey link to provide contact and additional information about their field and familiarity with ACEs.

Forty-five stakeholders participated in the ThinkTank© sessions – 33 from central Appalachia and 12 from southern Appalachia. Emphasis was given to recruit participants from counties classified as distressed by ARC. Six of the 45 stakeholders worked in counties classified as distressed; those counties include Floyd, Clay, Leslie, Bell, Martin, and Breathitt Counties in Kentucky and Scott County in Tennessee. An analysis of the stakeholder demographic information collected via the registration survey can be found in *Appendix A.*

During the ThinkTank© session, stakeholders were asked to provide input to a series of questions aimed at understanding the types of ACEs that exist in Appalachia; socioeconomic, cultural, and gender factors that increase the likelihood of experiencing ACEs; and how to increase resiliency and address ACEs in Appalachia.

Summary of Stakeholder Input

Additions to the ACE Scale

Experts described several traumas routinely experienced by children in Appalachia that are not currently captured in the scales developed from the [CDC-Kaiser Permanente Adverse Childhood Experiences (ACE) Study](). These included

- Death of an attachment figure (drug overdose or on-the-job accident)
- Bullying (in-person, online)
- Food insecurity
- Homelessness/transience/displacement
- Witnessing overdose(s)
- Parental unemployment
- Gang violence and shootings
- Repeated ruptures in attachment
    - Multiple divorces
    - Multiple cohabiting relationships (including multiple introductions of step and half siblings)

Stakeholders discussed the amplification of *witnessing overdoses* and *death of an attachment figure* in the Region as being a direct result of the opioid epidemic. One participant who worked in a southern Appalachia school system shared that ten students in her school had lost a parent to an overdose in one year. Stakeholders from the southern Appalachia ThinkTank© session were also quick to point out that homelessness does not always manifest as one might initially think (i.e., people living in a tent, car, or other make-shift shelter). In many communities, youth may be living in one house with multiple other families or may move constantly from one home or shelter to another.

Contributing Factors

One of the most pervasive themes that emerged from both ThinkTank© sessions was the role that poverty and economic decline play as a contributing factor to experiencing ACEs. Stakeholders discussed economic decline as leading to a lack of job opportunities which can create a situation of hopelessness and increased stress. Another theme that emerged in many of the activities was the concept of multigenerational experiences. This concept, which stakeholders defined as the passing of behaviors, values, and norms within and across generations in a family, was described as being particularly acute in some Appalachian communities. For example, stakeholders described situations in which a child may live in close proximity to grandparents, parents, and siblings all of whom have issues with substance use or all of whom have experienced physical abuse in childhood as the behavior was passed from generation to generation. Of note, a few stakeholders added that positive behaviors and values (e.g., an appreciation for the outdoors, strong family ties) can be passed down and may act as a buffering factor for ACEs.

Cultural factors such as the acceptability of violence (e.g., domestic violence, corporal punishment in schools), value of privacy, and influence of religion in the discipline of children and how one is expected

to cope with hardships were all seen to contribute to the prevalence of ACEs in Appalachia. Stakeholders explained that cultural factors, multigenerational experiences, and the frequency of ACEs in the Region have led many people to accept or normalize ACEs (e.g., "it's just the way things are here"). Additional contributing factors mentioned by stakeholders included

- Geographic isolation
- Lack of community resources (e.g., transportation, interventional resources, and public recreational opportunities)
- Poor caregiver health
- Lack of perceived value or importance placed on education
- Stigma given to Appalachian children by those outside the Region

Gender Differences

Exploring gender differences among children who experience ACEs was of particular interest to the expert working group. When probed, stakeholders reported that males were more likely to present earlier with behavior problems resulting in suspension or expulsion from school or incarceration. Social and cultural expectations that males should be tough and resist showing emotion can hinder males from wanting to openly discuss their experiences and seek out assistance. Stakeholders indicated females more often experienced sexual abuse due to substance use in the family, and had a later onset of behavioral responses to ACEs as compared to males. The behavioral responses for females often include self-harm or becoming involved in physically or sexually abusive relationships – most often beginning in middle school. According to the stakeholders, females are also more likely to receive counseling or care in response to ACEs and more intervention programs exist that are specifically geared towards females.

Resiliency

The expert working group emphasized the need to include resiliency in any discussions of ACEs in Appalachia. They believed that identifying factors that buffer the effects of ACEs and promote resiliency are key to helping those who have experienced ACEs and to preventing ACEs from occurring in subsequent generations. When asked to describe factors that may buffer the effects of ACEs in Appalachia, stakeholders routinely mentioned

- Strong, supportive family ties
- Sense of community, social engagement
- Religion (church, youth groups)
- Sports
- Outdoor and community activities/programs
- Supportive schools
- Counseling and support groups
- Appalachian tenacity, self-reliance

Resource Needs

Stakeholders were asked about challenges and other needs in order to address ACEs in the Region. Stakeholders emphasized the need for more trained behavioral health providers, transportation, and

additional school-based prevention and intervention programs. Additionally, stakeholders felt the community at large needed to be educated about ACEs. Stakeholders indicated that community education should address misunderstandings around how ACEs manifest in children, and promote engagement and utilization of resources. More targeted education and engagement of political representatives, the faith-based community, and other community leaders was also seen as an important need.

Due to the geographic isolation and multigenerational experiences common in the Region, stakeholders reported a need for more home visiting programs focusing on intergenerational work. To address the ongoing opioid epidemic and resultant ACEs, a few stakeholders mentioned the need for more substance abuse treatment options. Finally, stakeholders were in agreement for the need to somehow catalog the available resources in a community and collaborate to ensure all community members can access them. For a list of effective programs and best practices mentioned by stakeholders, see *Appendix B.*

Expert Review and Discussion of Findings

Responses from both ThinkTank© sessions were analyzed and summarized into the following categories in preparation for expert review:

1. Additional ACEs
2. Contributing factors
3. Buffering factors
4. Challenges and other needs

For the full thematic summary with expert input included, see *Appendix C.*

A ThinkTank© activity was produced for each category and presented to members of the expert working group during a series of calls to gather feedback on the information collected from the stakeholders. Additionally, the experts were asked to complete four separate assessment activities; one to rate the prevalence and severity of each of the additional ACEs identified by the stakeholders, a second and third to rate the prevalence and strength of impact of the contributing factors and buffering factors, and a fourth and final assessment activity prioritizing the list of needs identified in order from greatest need to least need. A total of three expert working group members participated in the assessment activities. Below is a summary of key findings from the expert review.

Additions to the ACE Scale

The experts felt that the additional ACEs identified by the stakeholders were mostly "dead on," and recommended some additional information that was used to expand the list of ACEs and the list of contributing factors in the thematic summary (see *Appendix C*). Results of the voting revealed that *parental/caregiver unemployment* and *repeated ruptures in attachment* were the most prevalent, and that *death of an attachment figure*, *witnessing an overdose*, and *repeated ruptures in attachment* had the most severe impacts on a child. All of these items were unanimously rated as high prevalence/severity on a three-point Likert scale (i.e., low = 1, medium = 2, high = 3). Average rankings for all of the ACEs are shown on the following page.

ACEs (not included in 10-item scale)

Prevalence in Appalachia

Severity in Appalachia
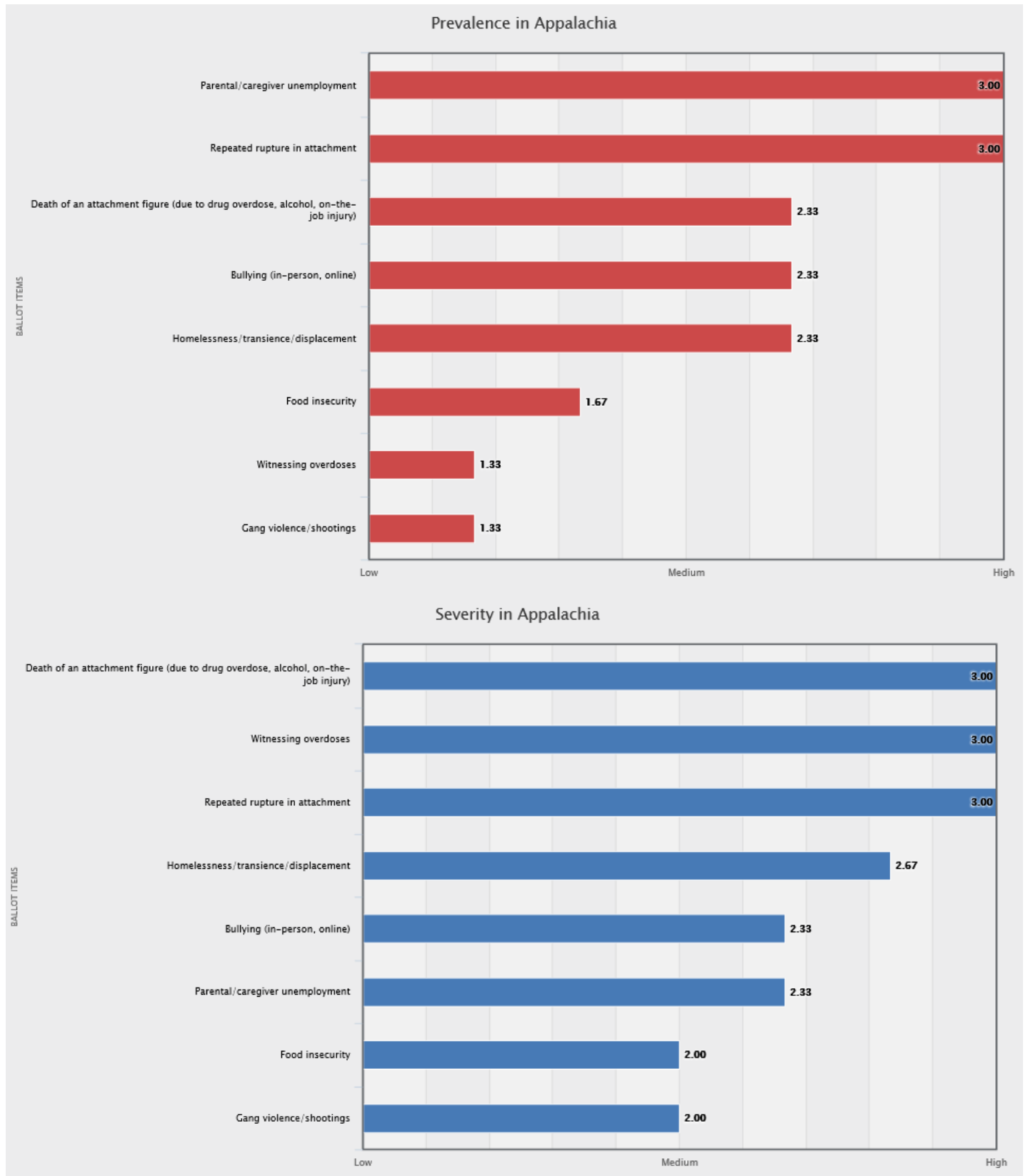
Contributing Factors

Experts generally agreed with the stakeholders on the factors that contribute to ACEs in Appalachia. One expert noted that peer support groups can be either a contributing or buffering factor depending on the positivity of the influence.
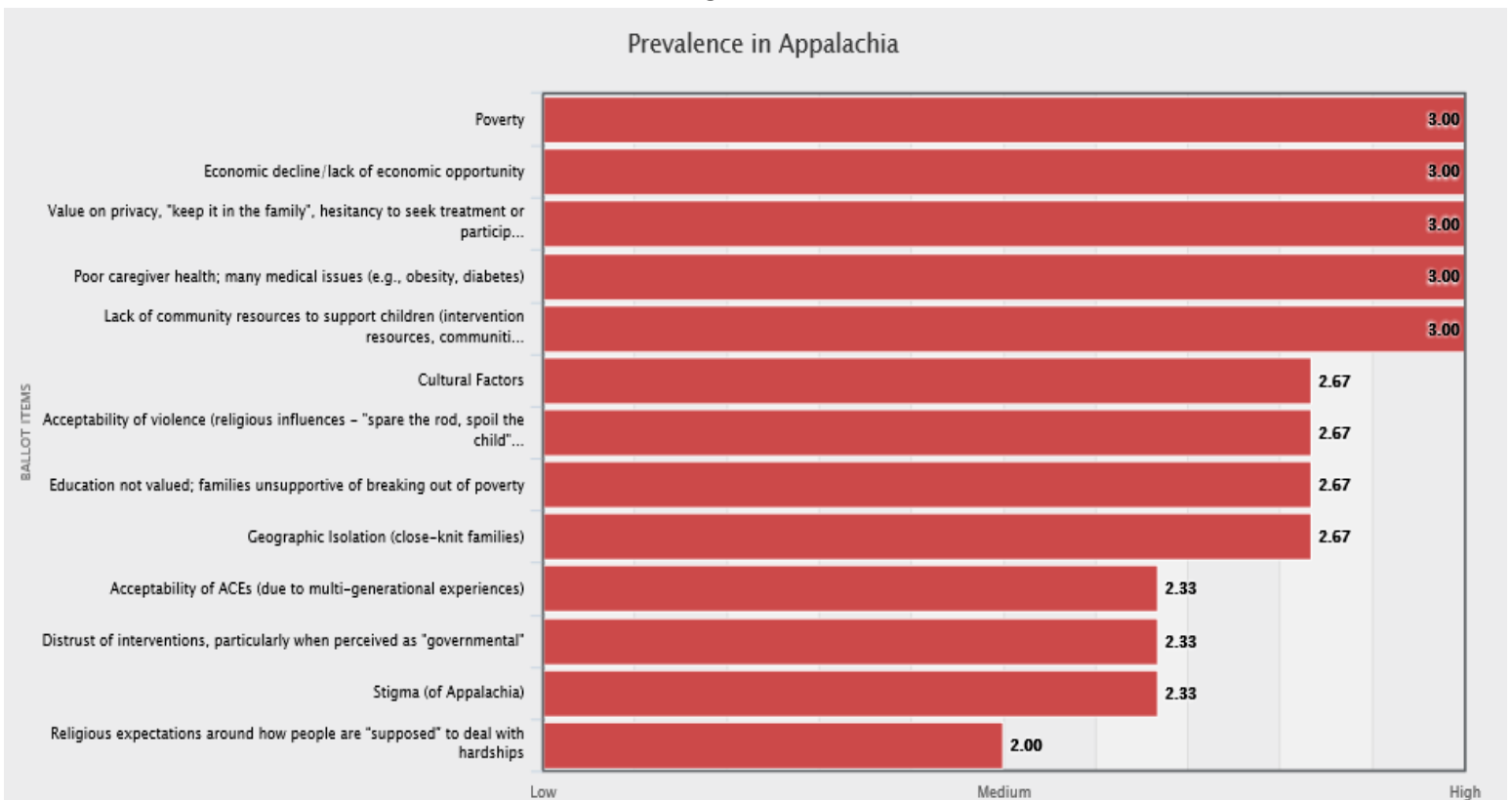
The following contributing factors were unanimously rated as being highly prevalent in Appalachia:

- Poverty
- Economic decline/lack of economic opportunity
- Value on privacy and "keeping it in the family;" hesitancy to seek treatment or participate in interventions
- Poor caregiver health due to many medical issues (e.g., obesity, diabetes)
- Lack of community resources to support children including intervention resources, community venues such as the YMCA, and transportation to and from programs
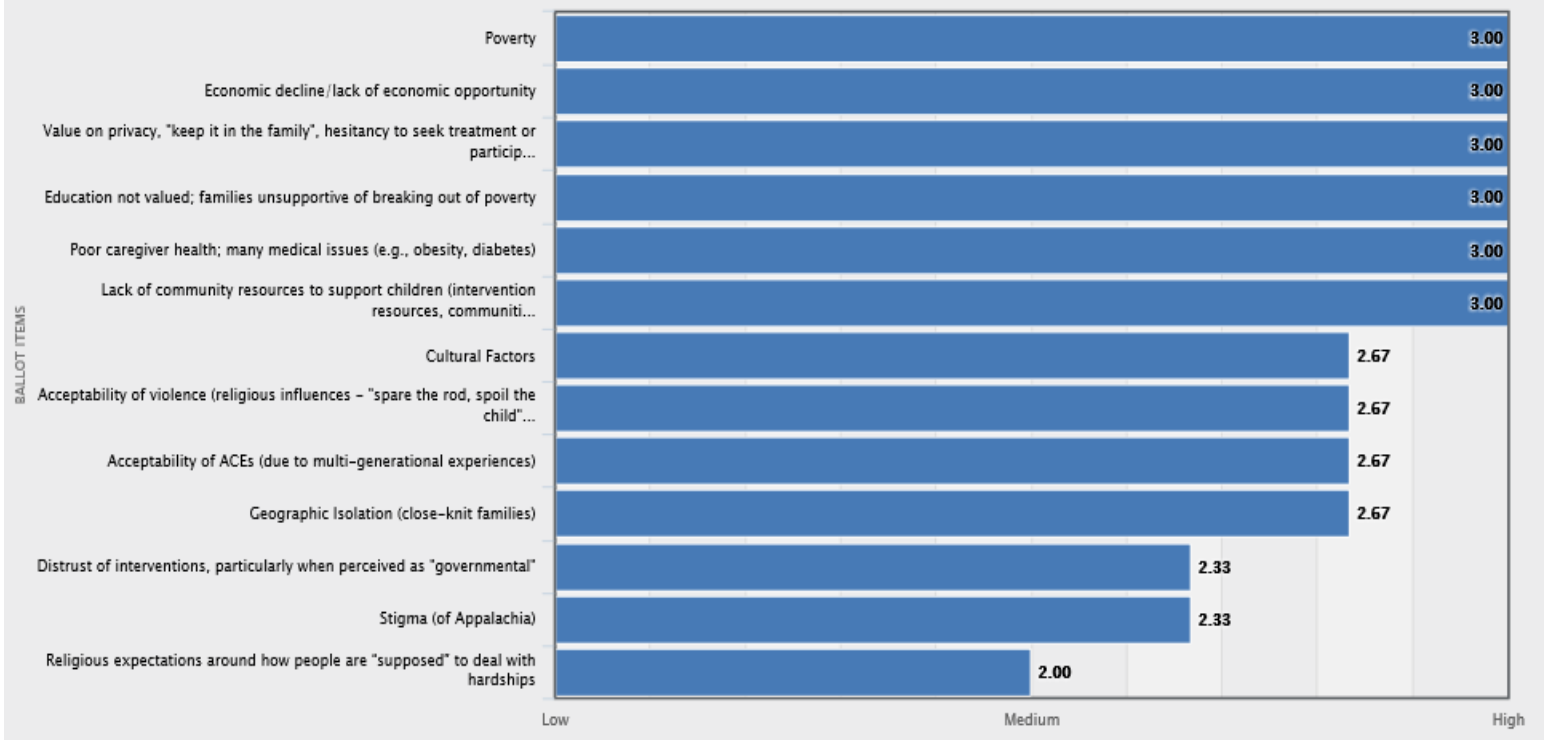
The same five contributing factors were unanimously rated as "high" in terms of the strength of the impact they have on children, with one more factor added to the list – *education not being valued as families are unsupportive of breaking out of poverty*. Average rankings for all of the contributing factors are shown on the following page.

Contributing Factors

Prevalence in Appalachia

STRENGTH OF IMPACT ON ACES IN APPALACHIA

Buffering Factors

Experts concurred with the buffering factors listed by the stakeholders. They noted that *presence of one caring adult* may be a particularly important buffering factor – although there was some discussion that a caring adult could be an element of the buffering factors already listed (e.g., a particular coach in sports or pastor in a church youth group).
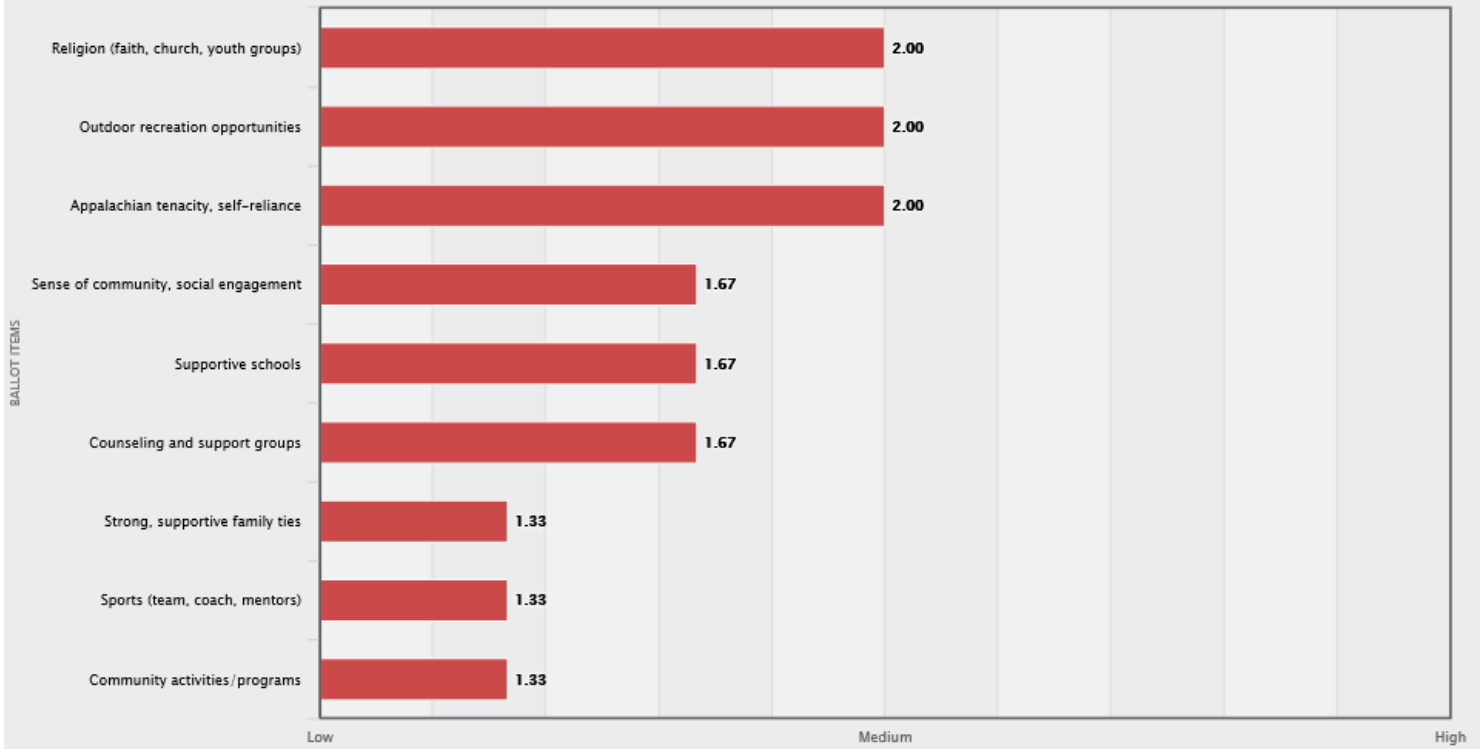
None of the buffering factors were rated as being highly prevalent in Appalachia. *Religion*, *outdoor recreation opportunities*, and *Appalachian tenacity/self-reliance* were all unanimously rated as "medium" prevalence. *Strong, supportive family ties*; *sports*; and *community activities and programs* were rated as the least prevalent buffering factors.

Strong, supportive family ties, while rated as the least prevalent buffering factor, was unanimously rated as having a "high" impact – meaning if the prevalence of this factor were increased, it would have the strongest impact on ACEs in Appalachia. *Supportive schools* was also unanimously rated as having a "high" impact. The group was split on whether *counseling and support groups* was an impactful buffering factor; each expert selected a different rating (i.e., one low, one medium, and one high vote) resulting in the lowest average ranking. Average rankings for all of the buffering factors are shown on the following page.
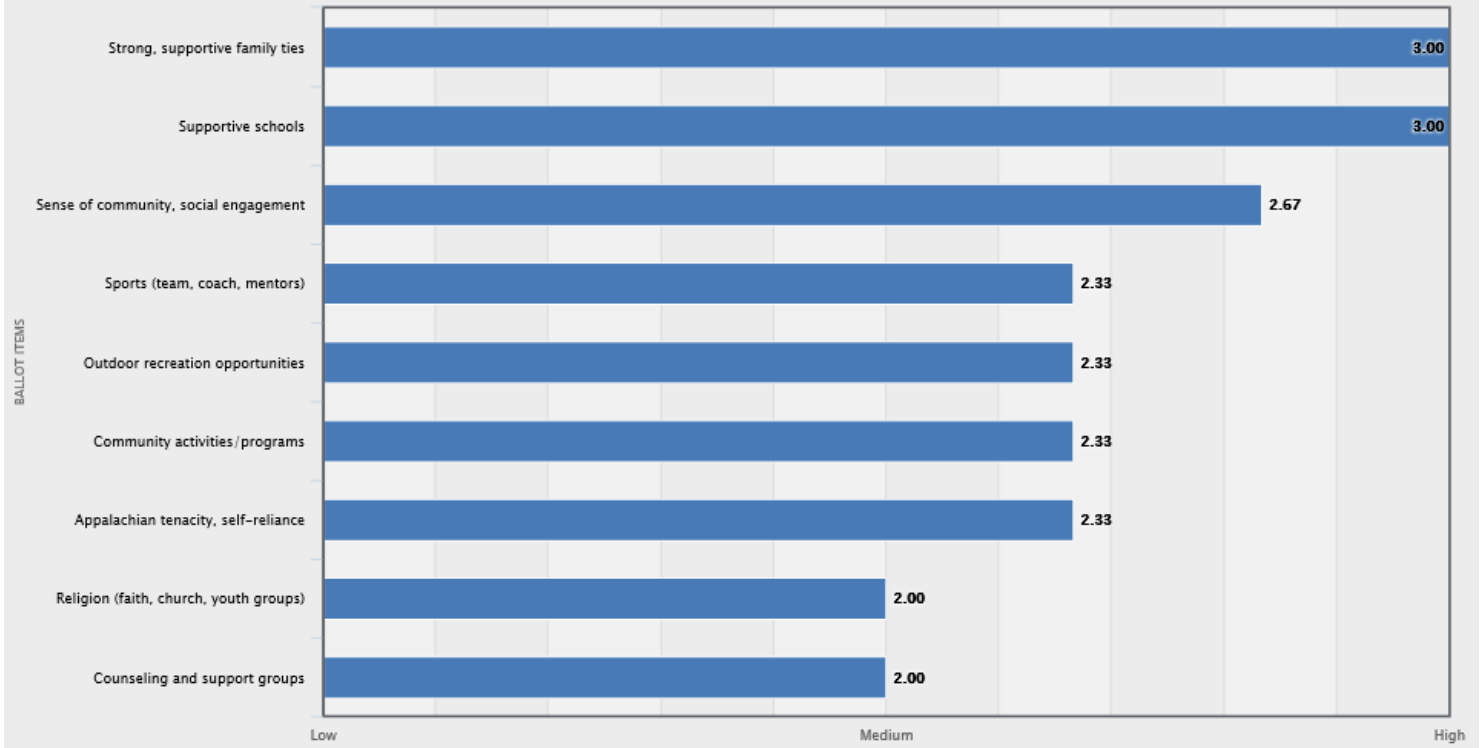
Buffering Factors

Prevalence

Ballot Items	Value
Religion (faith, church, youth groups)	2.00
Outdoor recreation opportunities	2.00
Appalachian tenacity, self-reliance	2.00
Sense of community, social engagement	1.67
Supportive schools	1.67
Counseling and support groups	1.67
Strong, supportive family ties	1.33
Sports (team, coach, mentors)	1.33
Community activities/programs	1.33

Scale: Low — Medium — High

STRENGTH OF IMPACT ON ACES IN APPALACHIA

Ballot Items	Value
Strong, supportive family ties	3.00
Supportive schools	3.00
Sense of community, social engagement	2.67
Sports (team, coach, mentors)	2.33
Outdoor recreation opportunities	2.33
Community activities/programs	2.33
Appalachian tenacity, self-reliance	2.33
Religion (faith, church, youth groups)	2.00
Counseling and support groups	2.00

Scale: Low — Medium — High

Resource Needs

The experts proclaimed that the list of resources needed to address ACEs in Appalachia "hit the nail on the head," and discussed the need to include some of these needs in state policies moving forward. When asked to rank the list of needs in order of priority to address, all three experts were in agreement that *improving multi-sector engagement to address ACEs* was most critical. Experts emphasized that ACE programs in Appalachia should recognize changing family dynamics resulting from the opioid crisis – most notably that many grandparents are raising grandchildren due to parental incarceration, overdose, and alternative custodial arrangements.

The following represents the full list of ranked needs in order of priority:

1. Improved multi-sector engagement to address ACEs (politicians, faith-based, law enforcement, community leaders)
2. School-based intervention programs
3. Education and communication to the "general public" in Appalachia promoting intervention awareness and encouraging them to use available resources
4. Home-based intervention programs focused on intergenerational work
5. Catalogues and lists of available resources
6. Trained behavioral health providers for all programs in the Region
7. Improved transportation to facilitate participation in community activities and interventions
8. Substance abuse treatment programs

Conclusion and Next Steps

The experts believed that improved awareness of the concept of ACEs and their impacts on children was necessary to garner needed support for grant programs for local organizations and engagement from community leaders throughout the Appalachian Region. "Once there is an awareness," said one expert, "we can look at best practices, services, and meeting the true needs of the community." As a next step, they recommended that CDC issue an Appalachian report and plan for addressing ACEs and their contributing factors as a root cause for substance use issues – most importantly, opioids. They believed this would help pave the way for local organizations to develop their own plans and interventions. These plans and interventions should involve broad groups of stakeholders (e.g., physicians, schools, behavioral health) and encourage all service providers to include questions about ACEs and resilience together in their treatment and educational plans. As one of the experts said, "it is important to remember that this is not just a behavioral health issue or a mental health issue, it's an everyone issue."

"Ritualized compulsive comfort-seeking (what traditionalists call addiction) is a normal response to the adversity experienced in childhood, just like bleeding is a normal response to being stabbed."

-Dr. Daniel Sumrok

Director of the Center for Addiction Sciences at the University of Tennessee Health Science Center's College of Medicine

Works Cited

Adverse Childhood Experiences. (2017, September 5). Retrieved from Substance Abuse and Mental Health Services Administration: https://www.samhsa.gov/capt/practicing-effective-prevention/prevention-behavioral-health/adverse-childhood-experiences

Blanch, A. (2017, July 14). *Policy Brief on ACEs and Opioid Addiction.* Retrieved from Campaign for Trauma Informed Policy & Practice: http://ctipp.org/News-And-Resources/ArticleID/13/Policy-Brief-on-ACEs-and-Opioid-Addiction

Dube, S., Feliti, V., Dong, M., Chapman, D., Giles, W., & Anda, R. (2003). Childhood abuse, neglect, and household dysfunction and the risk of illicit drug use: the adverse childhood experiences study. *Pediatrics, 111*(3), 564-72.

Forster, M., Gower, A. L., Borowsky, I. W., & McMorris, B. J. (2017). Associations between adverse childhood experiences, student-teacher relationships, and non-medical use of prescription medications among adolescents. *Addictive Behaviors, 68*, 30-34.

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Appendix A: Stakeholder ThinkTank© Participant Demographics

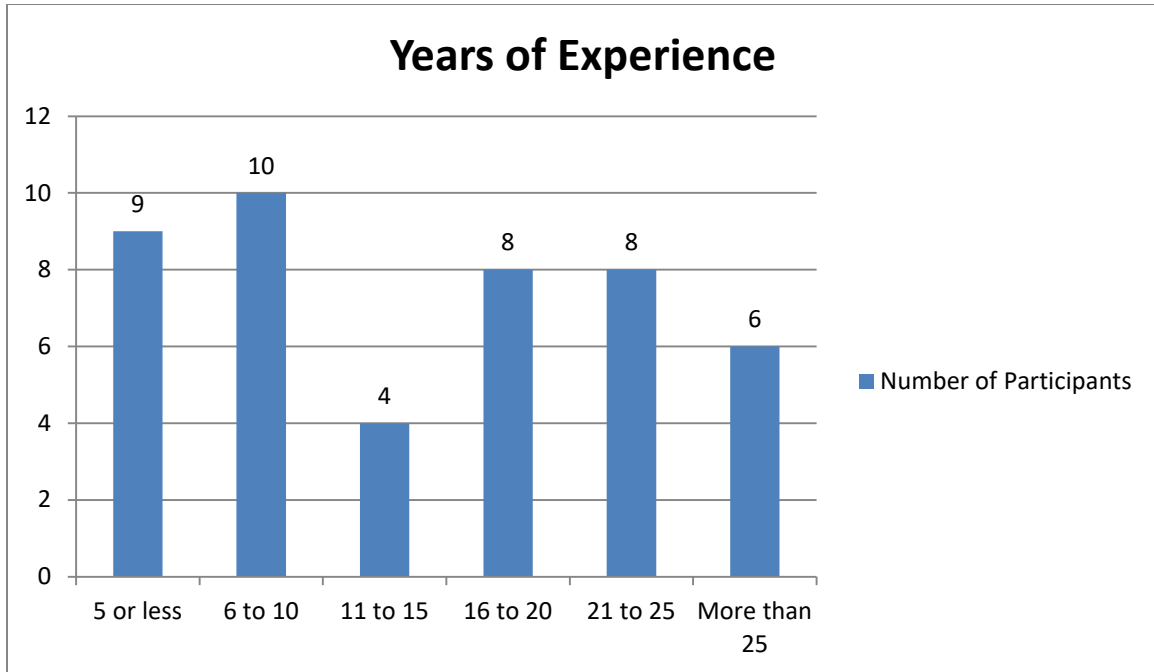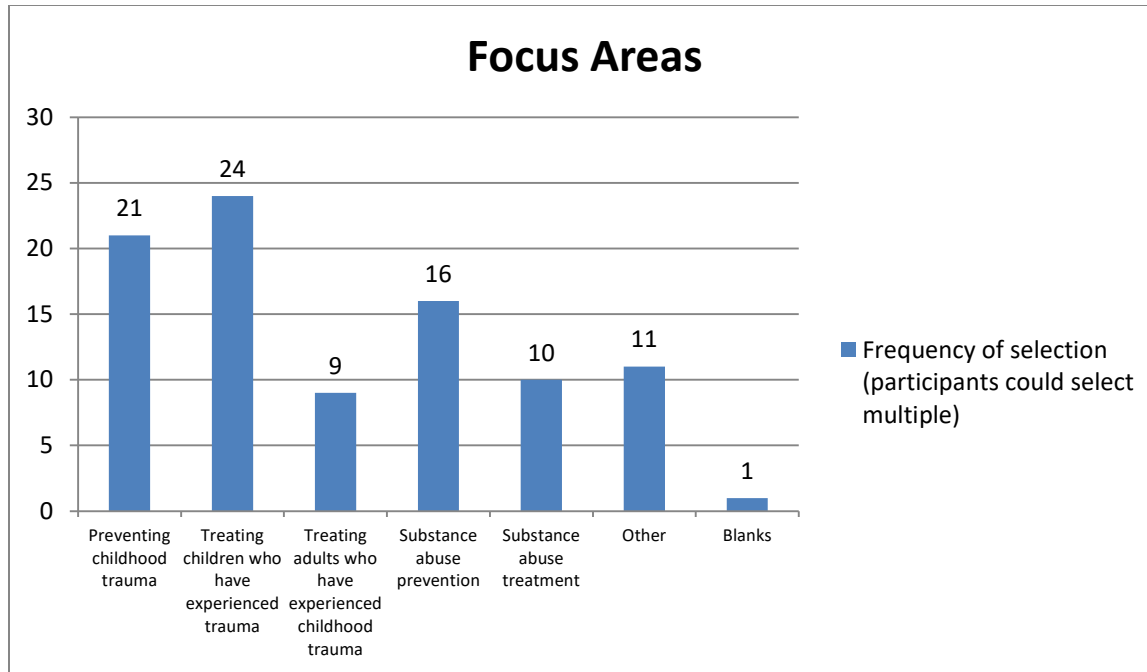**Participant Locations**

Sectors Represented
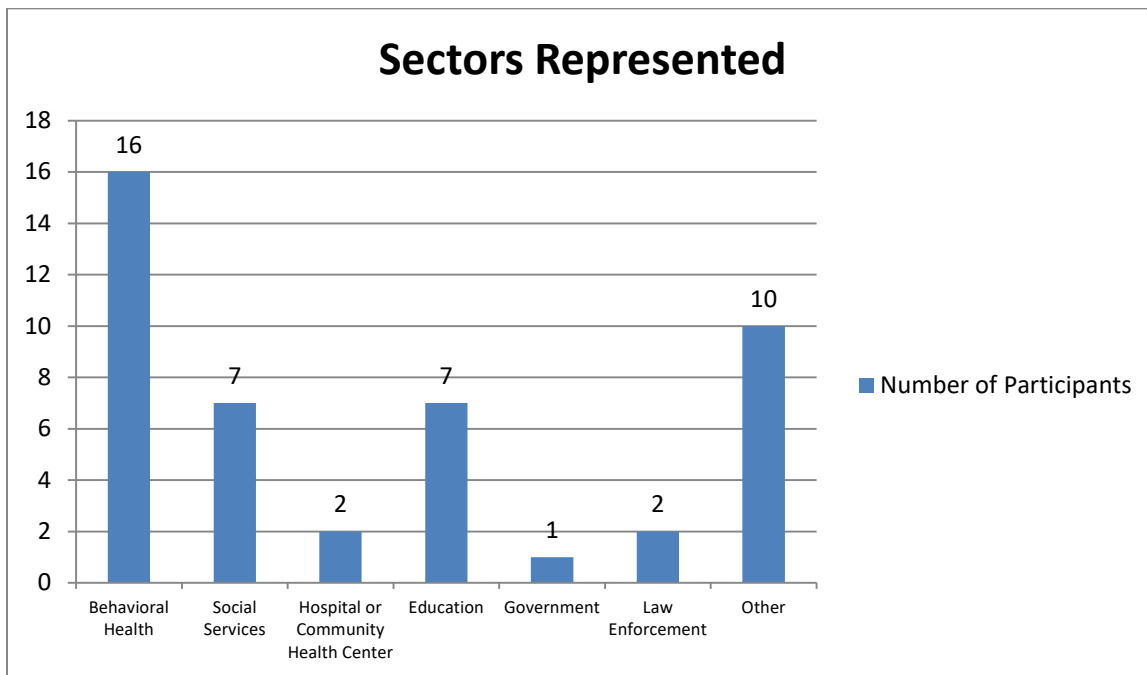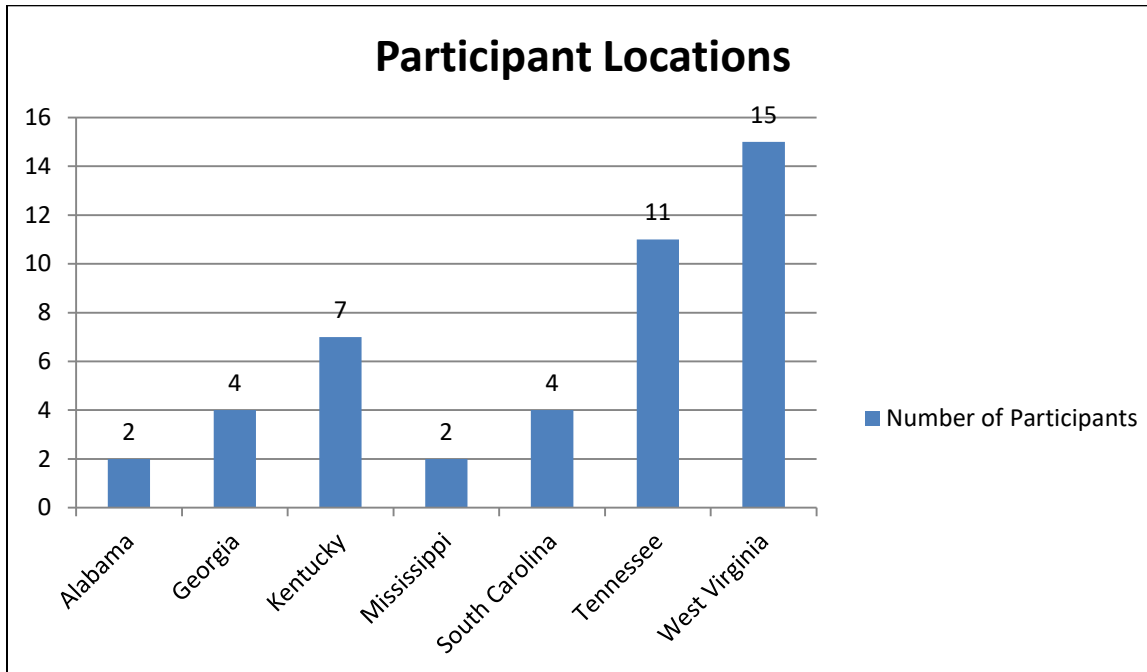
Other responses included:

- Substance Abuse Treatment for Women
- Education, Community Outreach, Community Housing Improvement, Dental Clinic and Community Health
- Non-profit-substance abuse prevention organization/coalition

- Community-based non-profit leadership development, training and advocacy organization using an intergenerational model of community organizing
- Child Welfare / Adoption Agency
- Substance abuse prevention encompassing all of the occupations above
- School nurse
- NA & Recovery
- Epidemiology
- School counselor

Years of Experience

A bar chart titled "Years of Experience" showing Number of Participants. The values are: 5 or less: 9; 6 to 10: 10; 11 to 15: 4; 16 to 20: 8; 21 to 25: 8; More than 25: 6.

Focus Areas

Preventing childhood trauma: 21
Treating children who have experienced trauma: 24
Treating adults who have experienced childhood trauma: 9
Substance abuse prevention: 16
Substance abuse treatment: 10
Other: 11
Blanks: 1

Frequency of selection (participants could select multiple)

Other responses included:

- Work with programs that provide the above
- Providing education, training & advocacy families and children in school administrative hearing and youth court matters; advocating for children w/disabilities; education, advocacy and support for women , children and youth exposed to domestic and intimate partner violence;
- Training re: best practices in caring for traumatized children
- Helping to educate staff members in public schools about ACEs
- Training direct care providers and other professionals
- Recovery Coaching
- Parenting programs
- Tele-psychiatry evaluations, individual therapy
- Data collection of ACEs
- I see both adults and children who are victim/survivors of everything from Property Crimes to Homicide. Approximately 95% or more of the cases I work include alcohol and or drug abuse.
- Parent Child Relationships; Early Childhood Behavior Modification

Familarity with ACEs
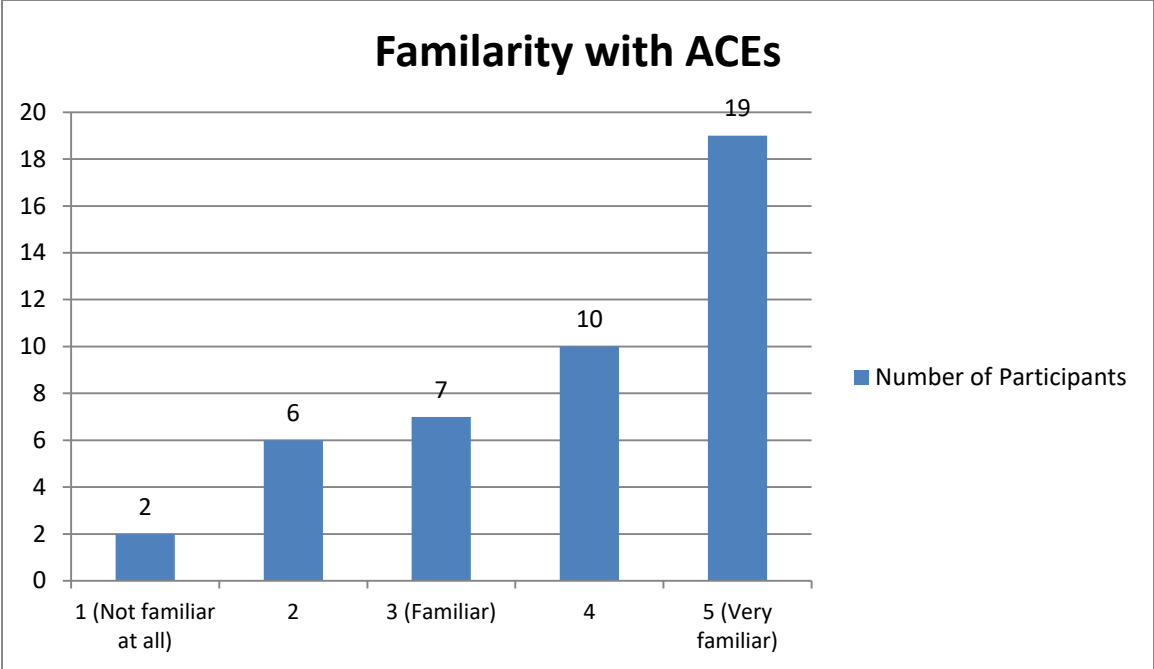
Appendix B: Programs and Best Practices Recommended by Stakeholders to Address ACEs

Best Practice Programs Recommended to Address Adverse Childhood Experiences (ACEs) in Appalachia		
Program Name/State	**Description**	**Links to Additional Information**
BOUNCE: Building Resilient Children and Families (KY)	BOUNCE: Building Resilient Children and Families (formerly the Coalition for Louisville Youth) is part of a five-year initiative known as Investing in Kentucky's Future launched in 2012 by the Foundation for a Healthy Kentucky to address the state's unmet health care needs. It is a bold endeavor to improve the future health of children in Louisville, fostering the skills to bounce back from adversity with resiliency and grit.	https://louisvilleky.gov/government/safe-healthy-neighborhoods/bounce
Trauma Informed Elementary Schools (WV)	Crittenton Services has designed a trauma-informed early intervention model (for pre-k through grade 1) to be used in the classroom, called TIES or Trauma Informed Elementary Schools. The vision of the TIES program is to address the effects of early childhood trauma, to interrupt the progression into substance abuse, poor health, diminished school engagement, unemployment, incarceration, and loss of life.	http://florencecrittenton.net/ties/
Kentucky Strengthening Families Approach (KY)	An approach that promotes six research-based protective factors into services and supports for children and their families in KY - parental resilience, social connections, knowledge of child development, concrete support in times of need, social and emotional competence of children, and nurturing and attachment.	http://chfs.ky.gov/NR/rdonlyres/AEA587BF-5334-4F35-ABA5-130F4CB2214F/0/KYFactSheetRevised82014.pdf http://chfs.ky.gov/NR/rdonlyres/CE0423F0-8B7B-4F89-9D3F-88D7F3EB1E70/0/SFKYbrochure8192014.pdf
Handle With Care (WV)	A statewide trauma-informed response to child maltreatment and children's exposure to violence. If a law enforcement officer encounters a child during a call, that child's information is forwarded to the school before the school bell rings the next day. The school implements individual, class and whole school trauma-sensitive curricula so that traumatized children are "Handled With Care." If a child needs more intervention, on-site trauma-focused mental healthcare is available at the school.	http://www.handlewithcarewv.org/index.php
Health Access Nurturing Development Services (HANDS) Program (KY)	A voluntary home visitation program for any new or expectant parents residing in KY. HANDS supports families as they build healthy, safe environments for the optimal growth and development of children. Services can begin during pregnancy or any time before a child is 3 months old.	http://chfs.ky.gov/dph/mch/ecd/hands.htm http://chfs.ky.gov/NR/rdonlyres/C1A0676C-02C8-44E3-8543-6FA8F26CCE2B/0/HANDSEnglishBrochure1.pdf
Hooked On Fishing-Not On Drugs® (HOFNOD)	HOFNOD, the flagship program of the national Future Fisherman Foundation, is implemented across the state with assistance from the Kentucky Department of Fish and Wildlife Resources. Run	http://www.futurefisherman.org/f3programs/hooked-on-fishing-not-on-drugs-hofnod/

	in coordination with local organizations including Operation UNITE.	http://operationunite.org/youth-initiatives/hofnod/
	Designed for ages 5 and up, this on-going program places caring adults in a mentoring relationships with youth to provide a fun alternative to using drugs while teaching youth fishing and conservation skills. UNITE provides free training for adult facilitators and assists coalitions with start-up costs.	
Expanded School Mental Health Model (WV)	Expanded school mental health (ESMH) is a comprehensive system of mental health services and programs that builds on core services typically provided by schools. The framework includes the full continuum of prevention, early intervention and treatment. In 2006, the West Virginia Departments of Education (WVDE) and Health and Human Resources (DHHR) established a formal agreement to work together to improve and expand school-based mental health services.	https://wvde.state.wv.us/counselors/documents/WVESMH3ierModelComponentsat-a-glance.pdf https://livewell.marshall.edu/mutac/wp-content/uploads/2014/09/Why-ESMH-Final-8.18.14.pdf
Circle of Security	Organization/model provides curriculum on the early intervention models to increase attachment and security.	https://www.circleofsecurityinternational.com/about
Trust Based Relational Interventions (TBRI)	Developed by Dr. Karyn Purvis and Dr. David Cross at the Texas Christian University Institute of Child Development, Trust-Based Relational Interventions® (TBRI®) is an emerging intervention model for a wide range of childhood behavioral problems. It is a family-based intervention that is designed for children who have experienced relationship-based traumas such as institutionalization, multiple foster placements, maltreatment, and/or neglect.	https://www.attachmenttraumanetwork.org/understanding-attachment/treatment/tbri/ https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3877861/ http://www.nashvillechildrensalliance.org/clinical-counseling
Tennessee's Early Intervention System (TEIS) (TN)	Tennessee's Early Intervention System is a voluntary educational program for families with children through age 2 with disabilities or developmental delays. Programs support families in helping their child's development, help the child participate in family and community activities, and encourage the active participation of the whole family in the child's development.	https://www.tn.gov/education/early-learning/tennessee-early-intervention-system-teis.html https://www.kidcentraltn.com/article/tennessee-s-early-intervention-system-teis
Attachment, Regulation and Competency (ARC)	ARC is a framework for intervention with youth and families who have experienced multiple and/or prolonged traumatic stress. ARC identifies three core domains that are frequently impacted among traumatized youth, and which are relevant to future resiliency. Designed to be applied flexibly across child- and family-serving systems, ARC provides a theoretical framework, core principles of intervention, and a guiding structure for providers. ARC is designed for youth from early childhood to adolescence and their caregivers or caregiving systems.	http://www.traumacenter.org/research/ascot.php http://arcframework.org/
Adoption Support and Preservation (ASAP)	The Adoption Support and Preservation Program (ASAP) provides post adoption services to help adoptive parents succeed on every level by providing a state-wide, seamless system that supports children and families with pre and post adoption services that promote permanency and also help	http://www.tnasap.org/

(TN)	communities nurture adoptive families. ASAP provides individualized, in-home care; crisis intervention; post adoption relief team building; support groups, adoption preparation classes, advocacy, and community education.	
Nurse-Family Partnership (national, TN)	Nurse-Family Partnership nurse home visitors work with low-income women who are pregnant with their first child, helping these vulnerable young clients achieve healthier pregnancies and births, stronger child development, and a path toward economic self-sufficiency.	https://www.nursefamilypartnership.org/locations/tennessee/
Parents as Teachers	The Parents as Teachers Evidence-Based Model is the comprehensive home-visiting, parent education model used by Parents as Teachers Affiliates. The model provides services to families with children from prenatal through kindergarten. Affiliates follow the essential requirements of the model, which provide minimum expectations for program design, infrastructure, and service delivery. Parents as Teachers provides support for affiliates to meet those requirements as well as further quality standards that represent best practices in the field.	https://parentsasteachers.org/evidence-based-model/
Infant Mental Health Endorsement (IMH-E®)	The Association of Infant Mental Health In Tennessee Promotes The Healthy Social And Emotional Development Of Tennessee Children From Birth Through Age 5.	http://aimhitn.org/
The Neurosequential Model (NMT)	The Neurosequential Model is a developmentally-informed, biologically-respectful approach to working with at-risk children. Not a specific therapeutic technique or intervention; it is a way to organize a child's history and current functioning. The goal of this approach is to structure assessment of a child, the articulation of the primary problems, identification of key strengths and the application of interventions (educational, enrichment and therapeutic) in a way that will help family, educators, therapists and related professionals best meet the needs of the child	http://childtrauma.org/nmt-model/ https://childtrauma.org/wp-content/uploads/2013/08/Perry-Bruce-neurosequentialmodel_06.pdf
The Martinsburg Initiative (WV)	The Martinsburg Initiative is an innovative partnership that has developed a model solution to the problem of opiate addiction and abuse. Spearheaded by the Martinsburg Police Department and the Berkeley County Schools; the new partnership will include an array of community, faith-based, health, and law enforcement leaders and organizations. Through a strategic focus that targets at-risk children and troubled families, the initiative will assess, identify, and eliminate the basic causes of drug abuse. Founded upon a school-centered and family-based approach, The Martinsburg Initiative will build strong families and empower communities. While multifaceted in scope, The Martinsburg Initiative's primary objective will be focused on opiate, and specifically heroin, prevention. This groundbreaking effort will apply the recognized science of Dr. Vincent Felitti's Kaiser Permanente Adverse Childhood Experiences (ACE) Study through a neighborhood school-based strategy that has never been done before.	http://www.martinsburgpd.org/martinsburg-initiative/

Calm Classroom	Mindfulness program. Any teacher with a K-12 classroom can get free access to Calm's paid subscription service. Teachers will have unlimited access to our growing library of guided meditations and mindfulness exercises, including Calm Kids, our programs tailored for age groups from pre-K through high school.	https://www.calm.com/schools
Attachment and Bio-behavioral Catch-up (ABC)	The Attachment and Bio-behavioral Catch-up (ABC) intervention was developed by Dr. Mary Dozier to help caregivers provide nurturing care and engage in synchronous interactions with their infants. Young children who have experienced early maltreatment and/or disruptions in care can often behave in ways that push caregivers away. ABC helps caregivers re-interpret children's behavioral signals so that they provide nurturance even when it is not elicited. Sessions are implemented by parent coaches who provide parenting training in the parent's home for weekly one-hour sessions over a period of 10 weeks. Caregivers and the identified child (between ages 6 months and 2 years) must be at all sessions. Other family members, partners, and children are welcome to attend.	https://www.infantcaregiverproject.com/about_us
Parent Child Interaction Therapy (PCIT)	Parent-child interaction therapy (PCIT) is an evidence-based treatment for young children with emotional and behavioral disorders that places emphasis on improving the quality of the parent-child relationship and changing parent-child interaction patterns. Children and their caregivers are seen together in PCIT. Most of the session time is spent coaching caregivers in the application of specific therapy skills. Therapists typically coach from an observation room with a one-way mirror into the playroom, using a "bug-in-the-ear" system for communicating to the parents as they play with their child.	http://www.pcit.org/what-is-pcit1.html
Teacher Child Interaction Therapy (TCIT)	Teacher-Child Interaction Training (TCIT) is a classroom adaptation of PCIT that helps train teachers to better manage difficult students.	https://pcit.ucdavis.edu/wp-content/uploads/2012/08/3_TCIT-Presentation-for-Conf.pdf
Child Advocacy Center (CAC) and Multidisciplinary team (MDIT) approach (WV)	In West Virginia, the law mandates a multidisciplinary team (MDIT) approach, (involving the collaboration of legal, social work, and other professionals), in dealing with child abuse. West Virginia code also mandates a periodical case review, requiring the MDIT members to review all open investigations of child abuse. In some counties, the MDIT includes a Child Advocacy Center (CAC). The CAC has three broad goals, which are (a) to make the process of reporting child abuse as easy and free of trauma as possible for the child, (b) to help coordinate the investigation, and (c) to be a strong support and resource center for the child and his family throughout and subsequent to the investigation.	https://calio.dspacedirect.org/handle/11212/3522
Building Strong Brains	Building Strong Brains: Tennessee ACEs Initiative is a major statewide effort to establish Tennessee	https://www.tn.gov/dcs/program-areas/child-health/building-strong-brains-tennessee-aces-

(TN)	as a national model for how a state can promote culture change in early childhood based on a philosophy that preventing and mitigating adverse childhood experiences, and their impact, is the most promising approach to helping Tennessee children lead productive, healthy lives and ensure the future prosperity of the state.	initiative.html
Development Assets	Search Institute works with schools, programs, families, and communities to use the Developmental Assets framework to measure and increase the external supports and internal strengths they need to grow up successfully. The framework of Developmental Assets combines a research-based approach to child and youth development with practical, actionable ways that communities can work together to prepare young people for success in some type of college, a career, and citizenship.	http://www.search-institute.org/what-we-study/developmental-assets
Resiliency for Appalachia Youth (RAPP)	RAPP is a partnership of three comprehensive behavioral health centers in Southern WV. RAPP provides evidence-based treatment (TF-CBT; PCIT) to children and families and training child serving agencies in Region 6, Southern WV. RAPP is a collaborative effort between, FMRS Health Systems, Inc., Southern Highlands Community Mental Health Center and Seneca Health Services, Inc. RAPP is funded by the Substance Abuse and Mental Health Services Administration (SAMSHA) and is a National Child Traumatic Stress Network (NCTSN) partner. They also do a great deal of marketing and public awareness campaigns regarding childhood trauma and treatment available.	https://www.facebook.com/ResiliencyforAppalachia/
Healthy Connections Coalition (WV)	A workgroup of over 20 different organizations within the community whose mission is to help support every adult struggling with substance abuse in both recovery and parenting so that no infant/toddler has to experience the long lasting effects of adverse childhood experiences. Plan is to have a case manager that will follow the parent/infant dyad from pregnancy to age of kindergarten entry.	https://www.healthyconnections.info/
Trauma-Focused Cognitive Behavioral Therapy (TF-CBT)	Trauma-Focused Cognitive Behavioral Therapy is a research-supported intervention model for children aged 3-18 who are experiencing significant emotional and behavioral difficulties related to traumatic life events.	https://tfcbt.org/
Healthy Grandfamilies Initiative	Healthy Grandfamilies is designed to address the unique needs of families in which grandparents are raising grandchildren through education and access to resources and professional support. The program consists of nine workshops focusing on topics such as communications, technology, social media, nutrition, legal issues, stress management, navigating the public school system, 21st Century parenting and more. Participants are provided three months of free follow-up services with a Licensed Social Worker. Such services include assistance with locating community resources, confidential help in meeting unique family needs and advocacy services.	http://www.wvstateu.edu/announcement/2016/04/04/W-Va-State-University-Launches-Healthy-Grandfamili.aspx

Triple P – Positive Parenting Program	The Triple P – Positive Parenting Program® is a parenting and family support system designed to prevent – as well as treat – behavioral and emotional problems in children and teenagers. It aims to prevent problems in the family, school and community before they arise and to create family environments that encourage children to realize their potential. Triple P draws on social learning, cognitive behavioral and developmental theory as well as research into risk factors associated with the development of social and behavioral problems in children. It aims to equip parents with the skills and confidence they need to be self-sufficient and to be able to manage family issues without ongoing support.	http://www.triplep.net/glo-en/home/ http://www.triplep-parenting.com/us-en/triple-p/?cdsid=0c617e0334607ddbd5c66953daf3731c
Palmetto Basics (SC)	The Palmetto Basics offers practical, everyday ways to foster school readiness. Provides a framework of messaging for all parents that is non-threatening and provides resources and tips.	http://palmetto.thebasics.org/
Compassion House (GA)	Hosts various classes for the community and their families (they supervise visitations between parents and their children in DFCS custody) including parenting classes, relationship classes, restoration from trauma and loss class.	http://www.compassionhouseinc.com/
Family Frameworks (GA)	Family Frameworks started under the Healthy Marriage Initiative, a Federal Grant that encouraged communities to strengthen the bonds of families. Since 2004 we have grown and offer classes and resources to help families in our community access vital information in their time of need. Regularly visit local high schools to educate on making good choices at a young age.	http://familyframeworks.us/programs/
Parent Cafes	Engages participants in guided conversations as a way to facilitate partnerships and to develop parent leadership to build protective factors necessary for families to raise thriving children. Follows the world café model – www.theworldcafe.com.	http://abuse.publichealth.gsu.edu/files/2014/06/PCA-Georgia-6.16.14webinar-Parent-Cafe.pdf
Second Step	A web-based social and emotional learning curriculum for students and educators.	http://www.secondstep.org/ http://www.cfchildren.org/press/press-releases/georgia-division-of-family-and-children-services-office-of-prevention-and-family-support-increases-focus-on-committee-for-childrens-second-step-social-emotional-learning-program/
Parent Project Inc. (AL)	The Alabama State Department of Education (ALSDE) in collaboration with the Juvenile Judicial System and the National Parent Project® is facilitating a statewide training program as a wraparound support for parents to reduce dropouts, discipline referrals, and teen suicides and to empower the parental position.	https://www.alsde.edu/sec/pss/Discipline/PARENT%20PROJECT%20IMPLEMENTATION%20GUIDE.pdf

Scholars of Peace (MS)	The Scholars of Peace program is Nollie's Community Service Learning for Social change action research project designed to promote positive socio-economic change in Holmes County, MS. The goal is to engage K-12 students, their parents and schools in learning activities, community-based service-learning placement experiences, and special student-designed projects that address social and environmental needs specified by community-based organizations.	http://nolliejenkinsfamilycenter.org/?page_id=301
Circle of Parents	Circle of Parents is a national network of parent-led self-help groups, where parents and caregivers share ideas, celebrate successes, and address the challenges surrounding parenting. Since West Virginia launched Circle of Parents in 2012, a total of 90 people form 26 organizations have participated in Facilitator Training Workshops. All of the organizations have started or have plans to start groups in various parts of the state.	https://www.teamwv.org/circle-of-parents-landing/
Project Yoga	No information available. Recommended by Melissa Tornabene, RN - Wood County Schools.	

Appendix C: Thematic Summary of Inputs from Stakeholders and Experts

Additions to the ACE Scale

- Death of an attachment figure (due to drug overdose, alcohol, or on-the-job injury) – defined as someone of great importance who provided a sense of psychological safety or nurturing
- Bullying (in-person, online)
- Food insecurity[1]
- Homelessness/transience/displacement
- Witnessing overdose(s)
- Parental/caregiver unemployment
- Witnessing violence/shootings (including gang-related)
- Repeated ruptures in attachment
  - Multiple divorces
  - Multiple cohabitating relationships (including multiple introductions of step and half siblings)

Gender Differences

Males

- Social/cultural expectations prevent boys from discussing ACEs or being targeted for interventions
  - "Be tough," taught not to come forward, expected to not be impacted or show emotion
- More likely to be expelled, suspended, or incarcerated (due to behavioral responses to ACEs)
- More likely to present earlier with behavioral problems (in response to ACEs)

Females
- Higher incidence of experiencing sexual abuse due to an opioid addiction in the family
- More likely to receive counseling or care in response to ACEs
- More programs available targeting females
- Later onset of behavioral responses to ACEs (e.g., self-harm or engaging in physically or sexually abusive relationships often beginning in middle school)

Contributing Factors

- Poverty
- Economic decline/lack of economic opportunity
- Living in a neighborhood with prostitution, drug dealing, or two or more abandoned or burned-down houses
- Cultural factors

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[1] One expert felt it was important to develop a definition for this ACE

- o Religious expectations around how people are "supposed" to deal with hardships
- o Acceptability of violence
    - ▪ Prevalence of domestic violence
    - ▪ Religious influence (i.e., "spare the rod, spoil the child")
    - ▪ Corporal punishment in schools
- o Acceptability of ACEs (largely due to multigenerational experiences)
    - ▪ "Just a way of life"
- o Value on privacy and encouragement to "keep it in the family," resulting in hesitancy to seek treatment or participate in group interventions
- o Distrust of interventions, particularly when perceived as "governmental"
- o Education not valued; families unsupportive of breaking out of poverty
- Geographic isolation (resulting in close-knit families)
- Poor caregiver health; many medical issues (e.g., obesity, diabetes)
- Lack of community resources to support children
    - o Interventional resources
    - o Community recreational venues (e.g., YMCA)
    - o Transportation to and from programs
- Stigma of Appalachia from outside the Region
- Lack of peer support or negative peer involvement

Buffering Factors
- Strong, supportive family ties
- Sense of community, social engagement
- Religion (church, youth groups)
- Sports
- Outdoor and community activities/programs
- Supportive schools
- Counseling and support groups
- Appalachian tenacity, self-reliance

Challenges and Other Needs
- Education of ACEs to the general public in Appalachia
    - o To promote engagement and utilization of resources
    - o To address misunderstandings around how ACEs manifest in children (i.e., misbehavior versus stressed behavior)
    - o Include catalogue of available resources
- Trained behavioral health providers (for all programs in the Region)
- Home-based intervention programs focusing on intergenerational work
- School-based prevention and intervention programs
- Substance abuse treatment programs

- Improved multi-sector engagement to address ACEs (politicians, faith-based, law enforcement, community leaders)
- Improved transportation (to facilitate participation in community activities and interventions)