

# **A Case Statement for Trauma-Informed Approaches**

**Ellen G. Smith, MD, FAAFP**

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## Case Statement for Trauma-Informed Approaches

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How many Central Pennsylvania

- Preschool and daycare students are expelled every year?
- High school students drop out of school every year?
- Youth (age 10-17) attempt or complete suicide every year?
- Youth are incarcerated every year?
- Infants die in Central Pennsylvania every year?

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We have the potential to:

- Decrease school expulsions by 40 % (Stevens, 2012)
  - Decrease high school dropout rates by 47 % (Porter, Martin, Anda, 2016)
  - Decrease youth suicide and suicide attempts by 98 %. (Porter and Davis, 2016)
  - Decrease in youth arrests for violent crime by 53%. (Porter, Martin, Anda, 2016)
  - Decrease in infant mortality by 43 % (Porter and Davis, 2016)
- 

### Executive Summary

School expulsions, including preschool and daycare expulsions, dropping out of school, suicide, criminal activity and infant mortality are all significantly influenced by adverse childhood experiences. Adverse Childhood Experiences (ACEs) are a serious public health epidemic that most of us don't know anything about. Adverse Childhood Experiences include abuse (physical, emotional and sexual), neglect (physical and emotional), household dysfunction (violence, mental illness, incarceration, divorce/separation and substance abuse), neighborhood violence, bullying, racial and other discrimination, immigration, etc. (Anda, Felitti et. al, 1998) Other ACE studies have included additional ACEs including, but not limited to: severe weather, English language learners (not being proficient in the English language), LGBTQ, bullying, transient populations, witnessed violence, deployed family member and serious medical conditions and/or death of a family member.

South Central Pennsylvania is experiencing a crisis of epidemic proportions due to adverse childhood experiences (ACEs) that is having an enormous impact on our community from birth to death. Childhood adversity and trauma are extremely common and are found across all socio-economic groups. The intention of this report is to outline the severity of the problem and its consequences and to consider trauma-informed approaches as a proven option to combat the negative effects of adversity.

This report is directed to the Greater Harrisburg community including but not limited to Cumberland, Dauphin, Lancaster, Lebanon, Perry and York Counties. We focus on educational institutions at all levels including the parents and guardians, physical and behavioral health care systems, local and state governments particularly human service and law enforcement departments, businesses of all types, the elderly and the community as a whole. If you don't fit into one of these categories, keep reading because this discourse will still pertain to you.

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Todd Garrison, a Montana businessman states, “If you want a strong community from which to draw employees, you want a healthy community,” Garrison reminds business leaders. “Your employees have ACEs; their kids have ACEs. This isn’t a problem for the YMCA or social services to figure out; this is a problem for your business.” (Reidy, C. 2016)

The Kaiser/CDC ACE Study published in 1998 by Felitti, Anda et al., is the seminal Adverse Childhood Experiences (ACE) study that brought to bear an understanding of the gravity of this problem. They measured 3 categories of adversity; abuse (physical, emotional and sexual), neglect (physical and emotional) and household dysfunction (domestic violence, divorce, substance abuse, incarceration and mental illness) occurring in the family of a child younger than 18 years of age. Each of the items, regardless of severity or frequency, was counted as one point on the ACE score for a possible score of 0 to 10. Obviously, ACEs are a form of trauma. In these populations, the study found a strong, graded response between the ACE score and adult health and life outcomes.

Those with four or more ACEs had a(n):

- 2-fold increased risk of cardiac disease, stroke, diabetes or cancer
- 4-fold increased risk of lung disease
- 12-fold increased risk of ever attempting suicide
- 7-fold increased risk of alcoholism
- 10-fold increased risk of ever injecting illicit drugs
- 2-fold increased risk of self-reported fair or poor health (Felitti, Anda et al., 1998)
- 2-fold increased risk of job problems
- 2.5-fold increased risk of absenteeism (Anda, Fleisher, et. al., 2004)
- 2-fold increase of academic failure (Blodgett et. al. 2019)
- **Most significantly, people with an ACE score of 6 or more had decreased life expectancies of 20 years compared to those with a score of 0.** (Figure 4) (Brown et al., 2009)

Child abuse and maltreatment are significant cost drivers in childhood adversity and trauma. “The estimated average lifetime cost per victim of nonfatal child maltreatment is \$210,012 in 2010 dollars. The estimated average lifetime cost per child maltreatment death is \$1,272,900. The total lifetime economic burden resulting from new cases of fatal and nonfatal child maltreatment in the United States in 2008 is approximately \$124 billion. In sensitivity analysis, the total burden is estimated to be as large as \$585 billion.” (Fang et. al, 2012)

Work has begun here in the greater Harrisburg community and we are finding that those surveyed have had much higher ACE scores than in the Southern California Kaiser Study and similar ACE scores to Philadelphia. (See Figure 1)

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**Figure 1**  
**Adverse Childhood Experiences Data-Kaiser—Philadelphia—Dauphin County**

<b><i>Number of ACEs</i></b>	<b><i>Kaiser California N = 17,737</i></b>	<b><i>Philadelphia Pennsylvania N = 1784</i></b>	<b><i>Dauphin County Pennsylvania N = 1674</i></b>
Had no adverse childhood experiences	48%	38%	31%
Had 1-3 adverse childhood experience	45%	48%	45%
Had 4 or more adverse childhood experiences	7%	22%	24%

Felitti, Anda et. al, 1998; Findings from Philadelphia ACE Study, 2013; and Dauphin County Data, 2019

As outlined above, human and economic costs of trauma affect all members of the community, businesses, healthcare organizations, the workforce and the government. However, there are opportunities to minimize the negative consequences of ACEs and to decrease ACEs in our younger generation. This includes building resilience in the community and individuals and becoming trauma-informed in schools, businesses, local and state government, medical organizations and communities.

Fortunately, other communities have started to address these issues and provide the Greater Harrisburg Area with some guidance. These communities have recognized and begun work to prevent and turn around the negative consequences of ACEs and have shown significant human and economic savings in the work. Following is information about these efforts.

Addressing Adverse Childhood Experiences and their grave impact on the health and success of our community is urgent and imperative. “A trauma-informed approach is an intentional way of considering behaviors and feelings in which understanding the impact of trauma is infused into all types of responses and all aspects of intervention. “(SAMHSA, 2014)

In her book, **The Deepest Well**, Pediatrician Nadine Burke-Harris describes a community with an epidemic of cholera. She states that one could prescribe dose after dose after dose of antibiotics or have the well checked and treated to stop the epidemic. She notes that treating the well mirrors identifying and preventing ACEs and managing the effects of ACEs.

Addressing adversity early in a child’s lifetime is the most effective way to mitigate its’ effects, although not always possible. Garcia et al. have found a 13 % return on investment over 35 years with high quality birth to 5-year old childcare compared to lower quality care or [traditional] at-home care. For female children, there were higher rates of high school education, years of education, adult employment and adult labor incomes. For male children, there were lower rates of drug use and hypertension and higher rates of adult employment and labor income. Additionally, this child care study showed indirect positive effects on maternal

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education, labor force participation and parental income. (Garcia, Heckman, Leaf & Prados, 2016)

Preventing ACEs is the most effective and cost-efficient way to minimize their effects. Several programs have proven effectiveness and are available in many of our communities. In experimental trials from birth to two years, Nurse Family Partnership (NFP) has verified reductions in abuse and neglect by 48 %, reduced emergency room visits by 56% and reduced child hospital days for injuries and ingestion of toxic substances as well as preparing children to enter school more prepared. The Positive Parenting (Triple P) Program “provides parents with tools to raise healthier children and deal with stressors” and has shown to reduce the rates of child maltreatment... by over 20 % while it also decreased out of home placements and childhood injuries.” (“Trauma-Informed Approaches Need to be Part of a Comprehensive Strategy for Addressing the Opioid Epidemic” June 2017)

The “Self-Healing Communities” report is an important document in trauma-informed work. The approach undertaken in many communities Washington State has been very successful because they recognize that “health and social problems occur in the context of family, community and culture” and that social problems “are linked together through childhood adversity. We have evidence that [ACEs] are so widespread that we cannot use direct services to address them ...The turning point occurred [in Washington state] when their theory of change shifted from solely adding or enhancing direct service programs to incorporating layers of strategy that supported parents as agents of culture change.” They began working to “improve parent skills so they can give sound advice and be good mentors to their children, and, in turn [parents] will gain skills and relationships to give sound advice to the community—and that advice will make a better system of help for them and for other families” (Porter, Martin and Anda, 2010).

Economic successes included

- \$120 million per year taxpayer savings from 2002 to 2006 conservatively estimated for 3 network-improvement projects per community.
- The \$35 dollar saved for \$1 spent for this investment was impressive (Porter, Martin, Anda, 2016)

Cowlitz County, WA had many public health, education and justice system successes over 10 to 15 years:

- 62 % decrease in births to teen mothers
- 43 % decrease in infant mortality
- 98 % decrease in youth suicide and suicide attempts (Porter and Davis, 2016)
- 53% decrease in youth arrests for violent crime
- 47 % decrease in high school dropout rates (Porter, Martin, Anda, 2016)
- 85% decrease in school suspensions
- 40 % decrease in school expulsions (Stevens, 2012).

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Developing trauma-informed approaches have been shown to lower unemployment, improve mental and physical health, decrease suicides and overdoses, lower costs of health care, decrease incarcerations, improved academic success, etc.

To ignore the impact of the adversity and trauma caused by ACEs on our community is to place our community in peril of long-term dysfunction that saps our vitality and quality of life. To confront this epidemic requires that we address the problem by intervening differently. We must work steadily and gradually towards becoming a trauma-informed community and developing trauma-informed solutions in all businesses, health care organizations, courts, local and state governments, etc. to stop the severe problems we have in our communities. This will need to be incremental and intentional and we, fortunately, have proven models available.

The intent of this case statement is to provide an overview of the issue of and typical outcomes from ACEs as well as the concepts of self-healing communities and trauma-informed approaches. It is not meant to be a comprehensive manual for implementing trauma-informed approaches, as that must be customized for each organization and community and is beyond the scope of this paper. If we don't recognize this problem and its severity, we cannot move forward. We must come together to solve this problem!

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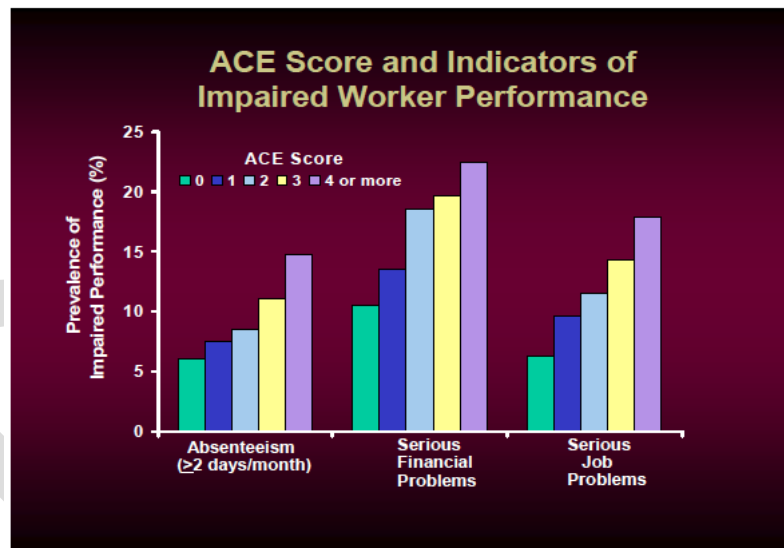
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### Scope of the Problem

Adverse Childhood Experiences (ACEs) directly and proportionally affect academic success, work performance due to poor executive function (punctuality, focus and follow through) (see Figure 2), interpersonal relationships, financial and legal troubles, physical and mental health including substance abuse and ultimately an early demise. (see Figure 3) The reason for these negative effects is that adversity in childhood causes brain changes that increase impulsivity, risk-taking and poor decision making and decrease self-regulation, learning, organization and healthy behaviors. ACEs are increasing with each generation and are higher in people of color and those in poverty.

Trauma is defined by SAMHSA (Substance Abuse and Mental Health Services Administration) as “resulting from an event, series of events, or set of circumstances that is experienced by an individual as physically or emotionally harmful or life threatening and that has lasting adverse effects on the individual’s functioning and mental, physical, social, emotional, or spiritual well-being.” (SAMHSA, 2014)

**Figure 2**  
**Impaired worker performance with higher ACE scores**



(Anda, Fleisher et al., 2004)

However, the most significant statistic regarding ACEs is the 20 year decrease in life-expectancy for those with an ACE score of 6 or more. This has been adjusted for the increase in health-threatening behaviors such as tobacco, alcohol and substance abuse that are often blamed for early death. This data shows that this is clearly a profound public health and societal problem that must be addressed directly and promptly. (See figure 3)



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**Figure 3**  
**Life Expectancy is decreased by 20 years with an ACE score of 6 vs. 0**

**LIFE EXPECTANCY**

People with six or more ACEs died nearly **20 years earlier on average** than those without ACEs.

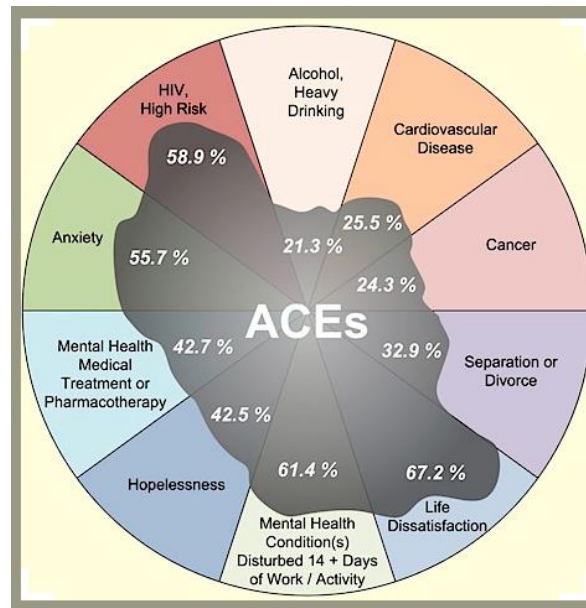


(Adverse Childhood Experiences, 2019)

Attributable Risk is the amount of risk of an issue attributed or assigned to the influence of that issue. “A third of binge drinking in the population is attributable to ACEs; 1 in 5 cases of asthma; 40% of depression; 67% of suicide attempts; 61% of having disturbed, disruptive days where one’s mental health kept him or her from doing usual activities; 67% of life dissatisfaction and 52% of disability interrupted days. Almost 56 % of anxiety disorders and 54% of marijuana use is attributable to Adverse Childhood Experiences. (Lowe, M. (Webinar), 2016). (See Figure 4) (The numbers are different from above and Figure 4 because they were calculated in different locations) In general, between 25 and 70 % of our community problems are attributable to ACEs. To put this in perspective, in 2017 there were 1.4 million suicide attempts in the United States. Sixty seven percent of these attempts are attributed to ACEs. If we eradicate ACEs, we have the opportunity to save 940,000 lives per year!

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**Figure 4**  
**Attributable Risk of ACEs**



(The Washington State Family Policy Council Legacy, 2017)

Dauphin County has disproportionately high ACE scores compared to the Kaiser ACE study and comparable to Philadelphia's scores (figure 1). It should be noted that those taking the ACE survey in Dauphin County are self-selected and those in the other studies were randomly selected. ACEs contribute to local issues of poverty, violence, academic challenges, substance abuse, family issues, legal troubles, financial problems, poor employee performance, physical and mental health insurance costs, sick days, terminations, etc. The effect on organizations is lower profit margins, unsatisfied employees, more disciplinary actions, more unscheduled days off, higher turnover and thus, higher training costs, and often-unsatisfied customers.

If our collective responses continue to focus on disciplinary action and short-term solutions, our public and private organizations will accomplish less because they are not addressing a root cause of the problem —the pervasive trauma in peoples' lives. If communities and governments continue to provide band-aid solutions; abuse, neglect, incarceration, mental illness, intimate partner violence, separation/divorce and substance abuse will continue to rise and our epidemics of child abuse, drug overdoses, suicides, incarceration, mental illness, violence and poverty will persist as will poor academic and vocational success, chaotic relationships and unsustainable physical and mental health costs. This is untenable ethically, economically and relationally. This downward spiral is not inevitable which means it will be more tragic if we let it occur.

ACE scores are increasing with each generation and among those living in poverty and/or of color, so all of these issues will likely worsen if left unaddressed. Adversity not only affects the current population, it is passed to the next generation through our genes via epigenetics and

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through intergenerational transmission. (Figure 5) Addressing ACEs is not going to resolve all of society's issues, but there is evidence that ACEs contribute to about half of our above-mentioned current issues. (Figure 4) (The Washington State Family Policy Council Legacy, 2017)

**Figure 5**  
**ACEs, ACE-Attributable Problems, Intergenerational Escalation**

**Table 4**  
**ACEs, ACE-Attributable Problems, Intergenerational Escalation**

<i>Adverse Childhood Experiences (ACEs)</i>	<i>Increased Risk: Problems, Co-Occurrence</i>	<i>Intergenerational</i>
<b>Abuse or Neglect:</b> <ol style="list-style-type: none"> <li>1. Physical abuse</li> <li>2. Sexual abuse</li> <li>3. Emotional abuse</li> <li>4. Physical neglect</li> <li>5. Emotional neglect</li> </ol>	<ul style="list-style-type: none"> <li>• Dysregulation (emotion, memory, attention, learning, reactivity, sleep, immune function, pain, arousal, violence)</li> <li>• Alcohol, tobacco, drug dependence</li> <li>• Mental health or emotional problems that restrict activities</li> <li>• Serious and persistent mental illness</li> <li>• Adult incarceration</li> <li>• Divorce</li> <li>• Homelessness</li> <li>• Disability that impedes daily functioning</li> <li>• Education (low academics, school suspensions, no high school graduation, no secondary degree)</li> <li>• Unemployment</li> <li>• On-the-job injury or illness</li> <li>• Health risk or disease (obesity, cardiovascular disease, cancer, asthma, diabetes, autoimmune disease, chronic obstructive pulmonary disease, ischemic heart disease, liver disease)</li> <li>• Dissatisfaction (with life, neighborhood, sexuality, relationships, self)</li> </ul>	<b>ACEs for Next Generation:</b> <ul style="list-style-type: none"> <li>• Physical, sexual, or emotional abuse</li> <li>• Physical or emotional neglect</li> <li>• Any of five categories of household dysfunction</li> </ul>
<b>Household Dysfunction:</b> <ol style="list-style-type: none"> <li>6. Drug-addicted or alcoholic family member</li> <li>7. Mentally ill, suicidal or depressed family member</li> <li>8. Incarceration of household member</li> <li>9. Parental discord—separation, divorce</li> <li>10. Violence against a parent</li> </ol>		<b>ACE Health Effects and Other Factors:</b> <ul style="list-style-type: none"> <li>• Poverty</li> <li>• Homelessness</li> <li>• Parent with chronic disease</li> <li>• Parent chronically dissatisfied</li> <li>• Social isolation</li> </ul>

Source: Foundation for Healthy Generations, 2014

(Porter, Anda and Martin, 2016)

### Supporting Research

#### Kaiser/CDC ACE Study

The seminal ACE study was published in 1998 by Felitti, Anda, et al. They measured three categories of adversity; abuse, neglect and household dysfunction occurring before 18 years of age. The abuse could be physical, emotional and/or sexual and the neglect could be physical and/or emotional. Household dysfunction includes living with household member(s) who were substance abusers (including alcoholism), domestic violence (now called intimate partner violence), separated or divorced (now most include single parenthood), mentally ill or suicidal and/or ever imprisoned. Each of these items, regardless of severity or frequency, was counted as one point on the ACE score for a possible score of 0 to 10. The study cohort included 17,337 largely college educated and primarily Caucasian southern Californians all of whom had health

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insurance with Kaiser Permanente. The information was collected via a questionnaire mailed to patients after a standardized medical evaluation (more or less a comprehensive physical examination). The prevalence of ACEs in this study is shown in Figure 1.

We know that more adversity results in more negative consequences. Those with four or more ACEs had:

- 2-fold increased risk of cardiac disease, diabetes, stroke or cancer
- 4-fold increased risk of lung disease
- 12-fold increased risk of ever attempting suicide
- 7-fold increased risk of alcoholism
- 10-fold increased risk of ever injecting illicit drugs
- 2-fold increased risk of self-reported fair or poor health (Felitti, Anda et al., 1998)
- 2-fold increase in job problems
- 1.2-fold increase in Financial problems
- 2.5-fold increase in absenteeism increased (Anda, Fleisher, et. al., 2004)
- Most significantly, people with an ACE score of 6 or more had decreased life expectancies of 20 years compared to those with a score of 0. (Brown et al., 2009)

Multiple subsequent studies have corroborated their findings.

#### **Pennsylvania Data**

Every year, the Behavioral Risk Factor Surveillance Systems (BRFSS) do household telephone surveys and ACE data has been included recently. In 2016 in Pennsylvania, respondents with a household income of less than \$15,000 were 2.5 times more likely to indicate that during childhood they had four or more adverse childhood experiences than respondents with a household income of \$75,000 or more. Those with 4 or more ACEs were 1.7 times less likely to complete high school and 2.4 times less likely to complete college than those with no ACEs. Those with 4 or more ACEs were 2.1 times more likely to have asthma and 3.0 times more likely to smoke. This demonstrates the interrelationship between ACEs and poverty in Pennsylvania. (2016 Adverse Childhood Experiences Division of Health Informatics, 2018)

#### **Philadelphia ACE Survey**

In 2013, Philadelphia completed a similar ACE survey of 1,784 adults via telephone call. They removed the question about separated or divorced parents and added questions about neighborhood safety and trust, bullying, witnessing racism and being in foster care. The prevalence of ACEs in Philadelphia is outlined in Figure 1. These ACE scores are significantly higher than the above Kaiser study. (Findings from the Philadelphia ACE Survey, 2013)

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#### **Dauphin County Data**

Throughout 2017 and 2018, Dauphin County Human Services (Pennsylvania) has been showing the film “Resilience” to their staff and the community. During each showing, the audience is invited, anonymously and voluntarily to complete and submit their ACE score to add to what we call the “Dauphin County ACE Score” as compared to the Kaiser and Pennsylvania data (see Figure 1). This survey is not equivalent to the Kaiser and Philadelphia surveys, because the Dauphin County respondents have self-selected by coming to see the Resilience film either as part of their work in the human services field or as members of the community. The data is included for an awareness of how significant ACEs are in this area. (Smith, E. 2019, May 20. In-Person Interview with Randie Yeager)

#### **Broad Outcomes from Quality Early Childhood Programs**

Elango et al. have done an extensive analysis of the long-term benefits of quality early childhood programs. It is beyond the scope of this case statement to go deeply into the research, however they have highlighted several programs including the Perry Preschool Project (PPP opened in 1962 and continued until 1967 and served preschool-age children who attended 3 hours per weekday with a weekly home visit for 2 years) and Carolina Abecedarian Project (ABC which opened in 1972 and continued until 1982 and served children birth through preschool who attended 8 hours per weekday) and followed the cohorts not for years but for decades.

A tangible example they describe is “skills complement investment” in which early skills increases the capability of gaining more life skills going forward. “By fostering early-life skills, early childhood education establishes a foundation which facilitates the accumulation of skills later in life. Early childhood education promotes life-cycle skill development by increasing the stock of future skills that promote the productivity of future investment. This feature of life-cycle investment [notes that]...it is more productive to invest in disadvantaged children early in life rather than to remediate disadvantage later in life...Enriched, early-life investment helps disadvantaged children capture many of the same benefits of later-life investment that are experienced by their more advantaged peers...PPP caused a 56% increase in the high school graduation [rate] for females and a 29% increase in employment at age 40 for males. Other beneficial effects include criminal activity, employment, health behavior and welfare take-up.” (Elango et al., 2015)

Garcia et al. have found a 13 % return on investment with high quality birth to 5-year old childcare compared to lower quality care or [typical] at-home care. This group was followed until they were 35 years old. For females, there were higher rates of high school education, years of education, adult employment and adult labor incomes. For males, there were lower rates of drug use and hypertension and higher rates of employment and labor income.

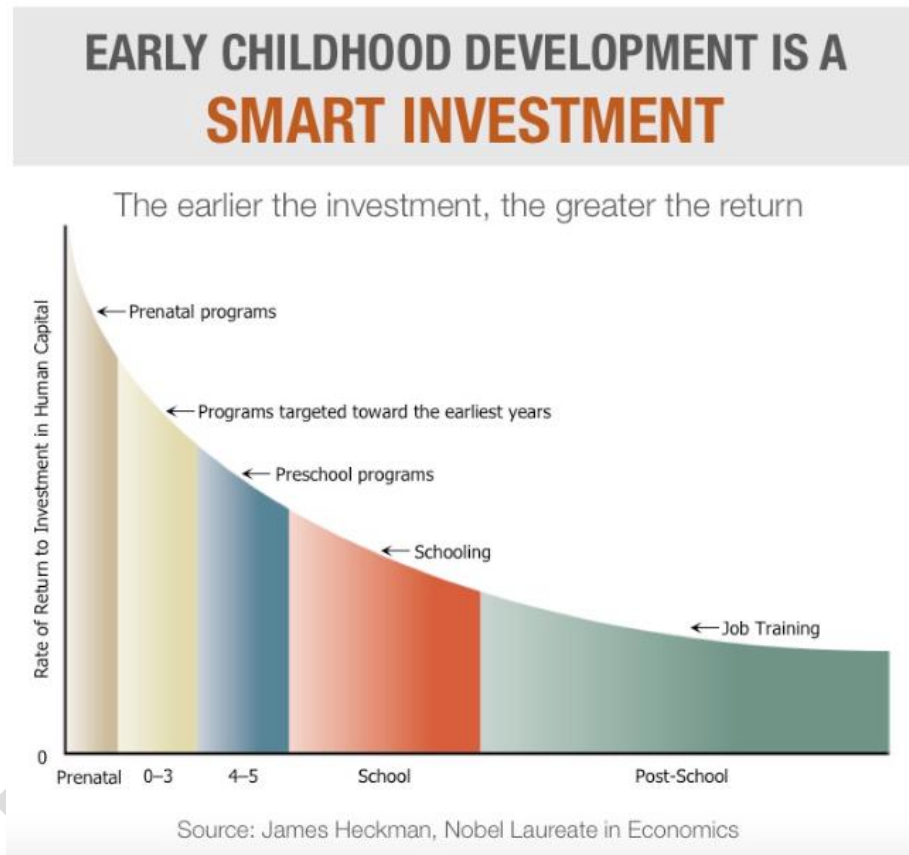
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Additionally, the study showed positive effects in maternal education, labor force participation and parental income. (Garcia, Heckman, Leaf & Prados, 2016)

In these studies of high-quality early childhood programs with long-term follow up; impressive academic, employment, legal and return on investment were found. Starting early to address ACEs multiplied the effectiveness and impact. (See Figure 6)

Figure 6



### School Outcomes

Walla Walla Washington's Lincoln (Alternative) High School became trauma informed and lowered out of school suspensions by 85% and expulsions by 40 % within one academic year. (Stevens, 2012) Suspended students "miss important instructional time [and] are at greater risk of disengagement and diminished educational opportunities." Suspensions are disproportionately given to black students over white students. Suspensions also increased the risk of early school dropout. Not surprisingly, "higher rates of out-of-school suspension correlated with lower achievement scores" for the entire school. (Stevens, 2012).

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**Washington State Data and Results**

Washington State has overcome many of the same issues we have in our area. Cowlitz County, Washington suffered great economic adversity with the loss of the aluminum, timber and fishing industries and the eruption of Mount St. Helens in the 1980s followed by a large urban landslide in 1998. This resulted in high chronic unemployment (>15%), increased infant mortality, violence, youth suicides and school drop outs many of which were in the worst quartiles of the state.

The community decided they should not just enhance individual services, but instead “incorporate layers of strategy that supported parents as agents of culture change. They began working to improve parent skills so they can give sound advice and be good mentors to their children, and, in turn [parents] will gain skills and relationships to give sound advice to the community-and that advice will make a better system of help for them and for other families.” They had extensive education and training across multiple disciplines including the child welfare and educational systems.

After seeing Cowlitz County’s early work, the Washington State Family Policy Council (no longer in existence) started a Self-Healing Communities Model (SHCM) initiative with ten community networks, including Cowlitz County. Each community network picked three of seven areas of focus from the following list: child abuse and neglect; family violence; youth violence; youth substance abuse; dropping out of school; teen pregnancy; or youth suicide. (Porter, Martin & Anda, 2016) They reported that “community networks convene and empower the local citizenry to work together to solve the community’s problems. They do not run programs, nor directly deliver services, rather they create collaboratives among local service providers from multiple disciplines to best align resources and services to meet local community needs.” This shows that community wide efforts, without adding services per se can create significant changes in ACE scores, which potentially can decrease adverse outcomes in the community. (Hall et al. 2012)

Their “Self-Healing Communities” report notes that “the Washington experience produced stunning results for a small investment. The budget for the Community Network partnership using the Self-Healing Communities Model (SHCM) was, on average, \$3.4 million per year between 1994 and 2011 for ten communities. Avoided caseload costs per-year in child welfare, juvenile justice and public medical costs associated with births to teen mothers were calculated to be \$27.9 million, based on prevented cases between 2002 and 2006 (Porter, Martin, Anda, 2016).

The Washington State Family Policy Council showed a statistically significant decrease in high ACE scores (3 and above) in young adults (18 to 34 years of age) via community capacity building from 1997 to 2007, whereas, the non-Self-Healing Communities in Washington State and national ACE scores continued to rise with each decade. (Hall, 2012) Because of the



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progressive nature of adversity and associated costs for public services throughout the life course, plus lost tax revenue from productivity loss, the taxpayer savings from network-improved rates from 2002 to 2006 were conservatively estimated at an average of \$120 million per year for three projects in each network as outlined above. “The cost/benefit ratio for this investment is impressive; for every dollar spent, 35 dollars were saved.” Additionally, they saw statistically significant ( $p < 0.05$ ) decrease in out of home (foster) placements of youth, juvenile suicides (in large communities), teen violence, high school dropouts and births to teen mothers (in large communities). (Porter, Martin and Anda, 2016)

As noted in the Executive Summary, their results included:

- \$27.9 million “per-year avoided caseload costs in child welfare, juvenile justice and public medical costs associated with births to teen mothers were calculated based on prevented cases between 2002 and 2006.”
- \$120 million per year taxpayer savings from 2002 to 2006 were conservatively estimated.
- The cost/benefit ratio was \$35 dollar saved for every \$1 spent for this investment.(Porter, Martin, Anda, 2016)

Over 10 to 15 years in Cowlitz Co., Wash.:

- 62 % decrease in births to teen mothers
- 43 % decrease in infant mortality
- 98 % decrease in youth suicide and suicide attempts (Porter and Davis, 2016)
- 53% decrease in youth arrests for violent crime
- 47 % decrease in high school dropout rates (Porter, Martin, Anda, 2016)
- Out of school suspensions decreased by 85%
- School expulsions decreased by 40 % (Stevens, 2012).
- Similar results were seen in other counties. (Porter, Martin and Anda, 2016)

### **Lifetime costs of child maltreatment**

Child maltreatment, including abuse and neglect are prevalent and affect the children’s lives but are also financially costly. “The estimated average lifetime cost per victim of nonfatal child maltreatment is \$210,012 in 2010 dollars, including \$32,648 in childhood health care costs; \$10,530 in adult medical costs; \$144,360 in productivity losses; \$7,728 in child welfare costs; \$6,747 in criminal justice costs; and \$7,999 in special education costs. The estimated average lifetime cost per child maltreatment death is \$1,272,900, including \$14,100 in medical costs and \$1,258,800 in productivity losses. The total lifetime economic burden resulting from new cases of fatal and nonfatal child maltreatment in the United States in 2008 is approximately \$124 billion. In sensitivity analysis, the total burden is estimated to be as large as \$585 billion.” (Fang et. al, 2012)



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The Perryman Group has done an in-depth analysis of the cost of maltreatment as well. They estimate that the total lifetime economic costs of nonfatal and fatal child maltreatment measured in 2014 dollars were \$5.8 Trillion and \$25 Trillion, respectively. The lifetime person years lost due to nonfatal and fatal child maltreatment were 5,712,406 and 117, 452, respectively, likely due to the fact that fatal child maltreatment is less common than nonfatal episodes. Total lost earnings from nonfatal child maltreatment was \$4.8 Trillion. (Suffer the Little Children, 2014) In summary, child maltreatment not only has emotional costs, there are also huge economic costs.

### Healthcare Savings Studies

In Australia, Browne estimated a \$9 billion healthcare cost savings via better educating and training about childhood trauma. “A report commissioned by Adults Surviving Child Abuse found that the economic impact of unresolved childhood trauma in Australian adults was \$9.1 billion annually...The research, by Pegasus Economics looked at four main symptoms of childhood trauma: alcohol abuse, mental illness, obesity and suicide or attempted suicide...It's an absolute travesty that in this country we are not providing services that enable people to recover and live their lives to full potential...[They] estimated the cost of mental illness to be \$7,686 a person annually, followed by obesity (\$6,042), suicide or attempted suicide (\$5,281) and alcohol abuse (\$4,983). Public money would be better spent on prevention and early intervention rather than treating symptoms.” They did not report the cost of training. (Browne et. al., 2015)

In another study, the only intervention was adding completion of and discussion about the ACE survey questions to the comprehensive two-visit health assessment with the health care provider. After a year of using the ACE questionnaire, a 35 % decrease in outpatient visits and an 11 % decrease in Emergency Department visits from the prior year were noted. Dr. Felitti noted “we realized that *asking*...with later follow-up in the exam room, coupled with *listening* and implicitly *accepting* the person who had just shared his or her dark secrets, is a powerful form of *doing*.” (Felitti, V. J. 2019) Early in the use of the ACE survey, there was concern that people might decompensate when asked these questions, but Dr. Felitti has stated that most people are very appreciative of the opportunity to discuss these issues with their provider.

### Health Care Cost for Victims of Intimate Partner (Domestic) Violence

A large health plan study showed that women (N=126) who were victims of Intimate Partner Violence (IPV, previously called domestic violence) cost their health plans \$1,775 in 1994 (\$3,001 in today's dollars) more compared to the general female plan population. Costs of general clinic use, mental health services, and out-of-plan referrals were higher at a statistically significant rate. Hospitalizations were more frequent but not higher in cost. Emergency room costs were not a driving factor as had been found in other studies. (Wisner et al., 1999)

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#### Economic Outcome Studies

The only prospective cohort study included follow up of about 35 years. The prospective cohort came from court substantiated cases of childhood physical and sexual abuse and neglect during 1967 to 1971 matched with non-abused and non-neglected children followed into adulthood (mean age 41). Outcome measures of economic status and productivity were assessed in 2003–2004 (N = 807).

The abused and neglected groups completed, on average, 11.2 grades whereas the control group completed 12.1 grades, a difference of almost a year of education and graduating or not graduating. Women with histories of abuse or neglect had a 14% greater likelihood of being unemployed in middle age and having a lower likelihood of having a bank account, owning stock, a vehicle or a home. Men were found to have more menial jobs at age 29 but by age 41 the job gap had closed and they did not have the same long-term economic issues noted for women. “Maltreatment appears to affect men and women differently, with larger effects for women than men. These new findings demonstrate that abused and neglected children experience large and enduring economic consequences.” (Currie et. al., 2010)

In the same cohort, marital stability was 7 % lower in the abused and neglected population compared to the controls. The odds of arrest as a juvenile or as an adult were 1.9 and 1.6 times higher, respectively for the abused and neglected population. (Widom, 2000)

Anda, Fleisher et. al (2004) evaluated the relationship between ACEs and employment outcomes. They found that as the ACE Score increased from 0 to 4:

- Job problems increased 2-fold
  - Financial problems increased by 1.2-fold
  - Absenteeism increased by 2.5-fold
- (See Figure 2) (Anda, Fleisher, et. al., 2004)

A small business in Central Pennsylvania, DASHER, hires a substantial portion of its workforce from the ranks of the economically fragile population, who are more likely to have more Adverse Childhood Experiences (ACEs). This population, having dealt with trauma without resources and safety nets more typical of the economically secure, is often more likely to need support to enable their success at work and to facilitate their contribution to the success of the company.

The company noted above uses active core values and focused hiring, coaching, training and problem solving to support employees to meet their goals. In the past year, they have seen a 40 % reduction in unplanned absences. Employee answering of phone calls in a timely fashion increased by 5 % over one year. (Smith, E. 2019, January 26. Phone interview with DASHER leadership team).

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Montana's response to ACEs is "Elevate Montana" which "is a movement dedicated to elevating the well-being and futures of our children through awareness and actions based on ACEs and trauma-informed approaches to build resilience in children and families."

Todd Garrison, executive director of ChildWise Institute, which manages Elevate Montana, "says his background in corporate finance helps him explain to business people why they should care about their workers' personal struggles. Business leaders understand the conventional idea of 'return on investment' in the form of reduced absenteeism, job-related injuries and health care costs, Garrison says. But it's when we talk to them about the other ROI—return on impact—that's when we get their ear. We talk about impacting their staff's personal growth, their health and their job satisfaction...all of which contribute to a healthier and more profitable business. If you want a strong community from which to draw employees, you want a healthy community," Garrison reminds business leaders. "Your employees have ACEs; their kids have ACEs. This isn't a problem for the YMCA or social services to figure out; this is a problem for your business." (Reidy, C. 2016)

### **Employee Assistance Program Outcomes**

Although Employee Assistance Programs (EAP) are not the same as universally addressing ACEs across organizations, they can be used as a proxy for what may be possible. They increase availability for employees with ACEs and/or struggling with the effects of ACEs to receive appropriate options for dealing with them. EAPs generally cost companies between \$12 and \$40 per employee per year, which is one third of one percent of average employer health care costs. The average return on investment for EAP is \$3 to \$10 for every dollar invested. In this study "57% of cases had improvement in ability to work productively after use of the EAP, 50 % had improved absence and/or productivity at work [and] 64% with work issues as the primary problem had improvement after EAP use."

The same article references the EAP for the Federal Occupational Health program study of 60,000 EAP clients over three years. The number of EAP employees reporting having "quite a bit" of difficulty performing their work fell by 10 % during that time. Additionally, monthly unscheduled absent or tardy days were decreased by an average of 1.46 days per month from the prior level of 2.37 days per month, a decrease of 40 %. Lastly, employees' perception of their own health status was significantly improved, even though the EAP did not address physical health at all. Importantly, the typical EAP client held three or four meetings with the EAP counselor. (Attridge et al., 2009)

The Hartford Group showed that use of the EAP decreased durations of psychiatric, musculoskeletal and cancer disability claims. Employees who used the EAP were twice as likely to return to work after short term disability and 4.5 times less likely to convert from short to long term disability. (Attridge et al., 2009)

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### Recommended Solution—Trauma-Informed Approaches

ACEs can be addressed via implementation of trauma-informed approaches and principles within a community, its schools and its many organizations. “A trauma-informed approach is an intentional way of considering behaviors and feelings in [an organization] in which understanding the impact of trauma is infused into all types of responses and all aspects of intervention.” (SAMHSA, 2014)

Developing trauma-informed approaches and cultures has the potential to increase productivity and profits and to minimize turnover, errors, overuse of sick days, etc. Additionally, societal benefits include lower unemployment, better mental and physical health, fewer suicides and drug overdoses, lower costs of health care, fewer incarcerations, improved academic success, etc.

“A program, organization, or system that is trauma-informed *realizes* the widespread impact of trauma and understands potential paths for recovery; *recognizes* the signs and symptoms of trauma in clients, families, staff, and others involved in the system; and *responds* by fully integrating knowledge about trauma into policies, procedures, and practices, and seeks to actively *resist re-traumatization*...SAMHSA identifies six key principles of a trauma-informed approach including: (1) safety, (2) trustworthiness and transparency, (3) peer support, (4) collaboration and mutuality, (5) empowerment, voice and choice and (6) cultural, historical and gender issues.” (SAMHSA, 2014)

Community Capacity, as outlined in Self-Healing Communities is a form of becoming trauma-informed. They used community decision-making, awareness of ACEs and their effects, strengths based appreciative action, focusing on improving parent skills and mentoring ability to their children, learning together and a culture of health, to name a few. (Porter, Martin and Anda, 2016)

General principles and strategies in becoming trauma-informed are essential within all businesses, educational institutions, government entities, etc., although the details will vary. Initially, educating all employees and particularly leaders about how adversity, especially childhood adversity, affects lifelong behavior and performance allows everyone to understand the significant prevalence of the issue and may minimize the sense that employees willfully perform poorly. Part of the education must include some explanation of how the brain changes with childhood adversity and what behaviors are common with these brain changes, particularly the negative effect on executive function which is involved with a person’s self-organization, planning, focus and impulse control. Education about how to practically overcome the effects of these brain changes is required as well.

Teaching about resilience helps take the sting out of the negativity of discussions about adverse childhood experiences (ACEs), identifies positive responses to adversity and reminds people of

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their successes and resilience to date. Educating students from high school onwards about ACEs and resilience will support their growth and understanding and students generally show great interest in learning about these issues. Involvement in sports, music, clubs, faith-based organizations and other activities has been shown to benefit students, likely due to having a sense of belonging and that “someone has my back.”

From general education about ACEs, an organization moves toward more specific implementation of a trauma-informed approach tailored to that organization. This includes looking more closely at the behaviors that occur related to ACEs and stress and identifying more effective techniques for dealing with these behaviors. Examples of techniques may include breaking down and/or writing down instructions, communicating in a less traumatizing fashion, acknowledging positive behaviors and strengths, carefully reviewing expectations, assessing for understanding and others. Additionally, in some cases the need for individual intervention will come to light and can be addressed.

One key concept in becoming trauma-informed is avoid asking, “What’s wrong with you?” and preferably start asking “What happened to you?” This question does not have to be probing but should come from a position of curiosity and support and a response should be entirely optional. Particularly important work will be identifying current (re)traumatization and triggering between employees, supervisors and customers/patients/clients. This is then followed by developing strategies to recognize and minimize re-traumatization. The employee-supervisor dyad as well as helper-client dyads can impose a power structure that increases the risk of re-traumatization and bullying which should be addressed. In organizations that have customers, clients, students and/or patients, it must be realized that most are likely to have prior trauma, as will the staff. Recognition of this fact as well as responding with trauma-informed approaches is necessary.

Significantly more than half of the population carry some early and/or ongoing trauma into the workplace, and some will have had extensive trauma. It is clear that in the majority of cases, working with (and guiding) traumatized employees through training, compassionate and accountable interactions and developing a trauma-informed culture can result in better outcomes, as outlined in this case statement.

In secondary education, there is strong evidence of improved graduation rates and decreased suspensions and expulsions with becoming trauma-informed. Sometimes people assume becoming trauma-informed does not hold people accountable for their actions; this is incorrect, and accountability frequently improves in a trauma-informed environment.

Leadership and Human Resource Departments must understand adversity and resilience on a deeper level. Both departments are involved in disciplinary actions and terminations. Frequently the behaviors that lead to these decisions are rooted in adversity. For example, sometimes employees don’t do the job well because they are unable to effectively organize

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their work and/or communicate with a supervisor and/or focus on the work particularly if there are significant current stressors in their work and/or personal lives. Supervisors tend to repeatedly use the same techniques to manage employees because that is what they know and/or what works for them, which in some cases is not only ineffective, but can be triggering, retraumatizing or anxiety producing for the employee, thus resulting in a vicious cycle. These situations can be improved with trauma-informed approaches. Over time, the organization must intentionally look at their culture, policies and procedures regarding being trauma-informed. Practices that are traumatizing must be identified and replaced in both the formal and informal policies at work.

There is not one way to become trauma-informed and this is just an overview of possibilities. Consultants at different levels of intensity and cost are available as are extensive resources on the internet. Many communities, educational institutions and health care systems are becoming trauma-informed using internal resources, particularly because practical information about trauma-informed approaches are becoming more widely available. (See ACEsConnection.com under General Resources) Collaboration with other similar organizations may be available and beneficial as well. Becoming trauma-informed is not an easy process, but it is necessary due to the fact that most of the workforce and population has a history of trauma and this affects how people see and function in the world including at work.

While becoming trauma-informed, it is also important to simultaneously collect data about outcomes during the process. This should not be a huge nor onerous undertaking and it is often data already being collected. For example, data collected could include productivity, numbers of unscheduled days off, graduation rates, disciplinary actions, error rates, employee terminations and/or employee or customer satisfaction measures. The Return on Investment and Return on Impact (see Todd Garrison in Economic Outcome Studies Section above) for becoming Trauma-Informed hold potential far beyond the typical adjustments made in organizations on a regular basis.

### **Call to Action**

We have the potential to:

- Decrease school expulsions by 40 % (Stevens, 2012)
- Decrease high school dropout rates by 47 % (Porter, Martin, Anda, 2016)
- Decrease youth suicide and suicide attempts by 98 %. (Porter and Davis, 2016)
- Decrease youth arrests for violent crime by 53%. (Porter, Martin, Anda, 2016)
- Decrease infant mortality by 43 % (Porter and Davis, 2016)

The goal of becoming trauma-informed is to improve the quality of life of our populations and simultaneously the success of businesses, schools, governments, physical and mental healthcare and communities. Healthier and more effectively educated employees are more productive, present at their job more days each year and are less distracted. The work

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environment and culture improve because people are less likely to inadvertently re-traumatize each other.

Some say this is unreachable and people won't be held accountable and non-producers will be carried as dead weight. Being trauma-informed does not mean being unaccountable, it means expectations are clearly explained, assistance and support provided and if an employee does not follow through, the employer compassionately releases the employee to find another opportunity. When employees leave in this fashion, there is much less drama and trauma, thus decreasing the negative effect on all involved, including the person being terminated.

The "Self-Healing Communities" report presents a trauma-informed approach called Community Capacity that has been very successful in communities and is worthy of looking to for guidance. They recognize that "Health and social problems occur in the context of family, community and culture." (Porter, Martin and Anda, 2010).

ACEs may be our biggest public health epidemic of the generation, as evidenced by the opioid epidemic, suicides, academic failures and poor work performance, but it does not have to bring us to our knees. Becoming trauma informed also has potential in decreasing or closing the "school to prison pipeline." Gradually becoming trauma-informed in our communities, businesses, schools, human services, families and elsewhere will gradually decrease these negative outcomes related to the ACEs epidemic. There is adequate data from varied sources, as outlined above, to support this assertion. Each one of us must now consider the pros and cons of this recommendation, do our own research and make a commitment to take action.

### **Conclusion**

Trauma is prevalent in the Greater Harrisburg Area as evidenced by the Dauphin County "ACE score" noting that 73% of community members and employees who present to watch and discuss the Resilience film have at least one adverse event before the age of 18. Childhood trauma is particularly detrimental because it impacts the brain in many undesirable ways including poor executive function that results in poor self-control, decreased working memory and mental flexibility and inability to focus and sequence work. The effect is poor academic and job performance, poor physical and mental health, substance abuse, legal issues and incarceration to name a few. There is no question that this causes serious issues that impact the Greater Harrisburg Area. Although childhood trauma affects brain function in foundational ways, adult trauma is also detrimental and impactful. There is a large volume of literature that quantifies the negative effects of trauma and adversity. Some of the literature is outlined in this report and the General References section at the end of this Case Statement provide opportunities to learn more. Fortunately, there is also a significant volume of literature demonstrating that these negative effects of trauma can be mitigated with appropriate action.

In order to address the issue of trauma, we must recognize that trauma is common, and that we cannot identify a history of trauma by looking at, living near or working with another



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person. We cannot develop a program that is just for “them” because most of us are “them” and vice versa. Of note, implementing trauma-informed approaches appears to benefit those without trauma as well. The critical solution is to minimize adverse events and trauma in general, but our greatest priority as well as the maximum return on investment of \$13 benefit for \$1 spent is to immediately focus on our children before they start kindergarten. (Garcia, Heckman, Leaf & Prados, 2016)

Trauma-Informed approaches include education about what trauma is, how widespread trauma is, trauma’s effects and how to minimize trauma and the long-term effects. The recognition and promotion of resilience in people, families, communities, health care, social services, legal and correctional programs, businesses and schools is required. Acknowledging people’s challenges due to trauma in a manner similar to how we accommodate those with disabilities is likely to improve outcomes. Whereas some believe accountability may be lost in trauma-informed approaches, in fact, people are still held accountable and frequently perform better because they are feeling safer and/or less traumatized. Particular areas of focus include creating safe environments in schools, communities, homes, businesses, etc. Avoiding actions and language that retraumatize and trigger others helps increase a sense of safety.

This healing work cannot just be in schools, childcare entities, social services and families; it must be a community wide effort, although that may not be the initial focus in all communities. The Self-Healing Communities report effectively describes how community efforts can lead to profound results including lowering the frequency of school expulsions, drug use, juvenile arrest and suicide as well as profound cost savings. Another direct service program is not the answer to this problem, the solution is to come together as communities and to work together as well as becoming trauma-informed in our schools, businesses, healthcare and social service organizations, etc. This is not an easy issue nor a forgone conclusion, but it is part of the solution to our various current crises including suicide, drug use and overdoses, excessive incarceration and mental health challenges. Fortunately, most returns on investment have been positive.

This Case Statement clearly outlines the magnitude of the epidemic of adversity and trauma and the successes in several communities. Many think there is great potential to duplicate others’ success in the Greater Harrisburg Area. The Greater Harrisburg Area has an opportunity to move towards becoming trauma-informed and therefore build more resilience and success here. A number of other communities have started on this journey and are making progress towards becoming trauma-informed. Included in this report are data from communities who have tracked their work and successes. It is clear from this data that the Greater Harrisburg Area has the opportunity to lower the rate of suicides, incarceration, overdoses and mental health problems and increase the rates of academic/job success, productivity and life satisfaction. It is imperative that we start this process of becoming trauma-informed now.



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