

**No School Alone:  
How community risks and assets contribute to school  
and youth success**

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## Executive summary

### **No School Alone: How community risk and assets contribute to school and youth success**

Passed in 2014, Substitute House Bill 2739 directs a review of the community factors that may influence academic success and youth well-being. The law directs that public data available in Washington be used as the basis for this analysis. Standardized academic test results over a five-year period ending in 2013, graduation rates, unexcused absences, school suspensions and transition to postsecondary education defined the academic measures for the report. Youth well-being was measured using multiple risk and protective factors from the Washington State Healthy Youth Survey.

Community is defined either by the school building or the school district. Community risk and protective factors include school demographic and teacher qualifications, census data describing economic and social characteristics, district risk profiles developed by the Washington State Department of Social and Health Services and multiple measures of adult well-being from the Behavioral Risk Factor Surveillance System.

Because of the significant number of community factors to consider, the first objective was to use statistical procedures to define the key predictors of academic success defined by standardized test results. Through this process, principal predictors from the various data sources were identified. The factors fell into three related but distinct themes: the nature of the school in terms of size, diversity and teacher qualifications; the economic assets or challenges facing the schools' communities; and indicators of social support and disruption in the community adults. Using school district state maps, we describe the pattern of risk across the state. Risk is not uniform across school districts, and the maps describe various profiles of risk.

The principal community risk and protective predictors were highly correlated with each other across the three domains. Single representative concepts were needed to capture school characteristics, economic resources and social assets and risks in a way that could accurately but more simply describe community influences. Based on a series of confirming statistical tests, three factors emerged as the primary descriptors of community characteristics that can influence academic success and youth development:

- The severity of adverse childhood experiences (ACEs) reported by adults
- The poverty level in the school communities
- Differences in school size and ethnic diversity

In this report, we test if the levels of the challenges resulting from ACEs in a community's adult population contribute to current conditions of disruption in children that make ACEs a multi-generational problem. While the effects of poverty on school performance guide long-term and significant investment policies, ACEs is a comparatively new idea and until very recently has not been tested as a policy planning tool. Several hundred peer-reviewed research studies consistently support the role of ACEs as arguably the most powerful single predictor of health and well-being in adulthood. However, equivalent results in childhood emerged only in the past few years. Exposure to ACEs begins very early in life, resulting in risks to the developing brain. This additional exposure to stress leads to the emergence of physical and social mechanisms of

coping that can interfere with development during childhood and compromise life success and health in adulthood.

Key findings in this report include:

1. Adult ACEs are common in every Washington community, but they are not equally distributed. One of every four adults reports experiencing three or more ACEs. These adults with high ACEs are shown in the research to have increased risk of health and social problems.
2. ACEs are not distributed equally across Washington communities. Across school districts, adults reporting high ACEs range from an estimated 11–51 percent of community residents.
3. Poverty and ACEs are only modestly related. In high ACEs communities, high-poverty schools are more common but this co-occurrence is modest. Poverty is a powerful independent influence on academic, youth and community success distinct from the impact of ACEs which occur across all income levels.
4. More than 300,000 students in Washington live in communities where more than 35 percent of adults report high ACEs. As the average number of high ACEs in the community increases, the academic success and well-being of the children are put at risk.
5. As the percentage of high ACEs in a community increases, fewer students pass Washington’s standardized academic assessments. Schools in higher ACEs communities report mean percentage of students passing the assessments 2–6 percentage points lower than in communities with lower ACEs. This translates to thousands of students living in a high ACEs community failing on these critical assessments each year.
6. The effect of ACEs is demonstrated beginning in elementary school-aged children and continues across grade levels and content areas.
7. Rates of suspensions increase in high ACEs communities.
8. Poverty, but not ACEs, is highly predictive of rates of unexcused absences, graduation from high school and progression to postsecondary education.
9. Using youth self-report from the Healthy Youth Survey, community ACEs are highly associated with greater reported risks for attitudes, beliefs and behaviors, reflecting greater risk for immediate problem behaviors and continuation of these risks as youth transition into adulthood. Higher community ACEs are associated with low neighborhood attachment, more positive attitudes toward drug use and lower levels of the social skills needed to succeed in schools and adulthood.
10. The Healthy Youth Survey includes questions that allow youth to report on their own experience of adversity. As these ‘youth ACE’ scores increase in schools, we find that standardized test results in 10<sup>th</sup> grade are significantly lower, reported risk behaviors are significantly higher and access to social supports and positive peer and community influences are reduced. While poverty continues to be an influence on youth well-being, community and youth ACEs are more consistent predictors of youth well-being.

Addressing community and youth ACEs offers significant opportunities for investing in current strategies and exploring new opportunities. Given the impact of ACEs in communities, effective strategies to address these challenges include:

1. ACEs describe the problem but not the solution. We can expand our conceptual model to align recognition of ACEs with strategies to prevent, mitigate and treat the resulting trauma. ACEs result in traumatic stress adaptations that are understandable and for which

we have tested interventions to improve how traumatized individuals think, manage emotions and relate to others.

2. If schools are not to be alone in addressing these challenges, schools need robust local partnerships to help maintain the will to act as well as identify the social and material capital needed to support sustainable change. In communities, trauma resulting from ACEs isolates neighbors and interferes with the social institutions and processes that allow us to have hope and support persistent local efforts to change. In key informant interviews conducted in nine communities as part of this study, community capacity to mobilize for collective efforts to help children is found to be under significant stress, given loss of resources in recent years. Yet many communities still find the way to work together to improve supports locally. As a result, community models to address community risk are known and can be scaled up to address the challenge of trauma from ACEs. Adopting an integrated understanding of ACEs and resulting trauma allows for a unified description of the problem, the nature of risk and the targeted strategies for prevention and intervention. Coordinated community efforts are tested strategies but require development of persistent leadership and sufficient resources to support convening, planning and accountability to guide effective interventions.
3. We need to invest in expanded public awareness in communities on the scope and consequences of ACEs and trauma. Based on well-established science and evidence-based intervention strategies, broad understanding of ACEs and trauma can create a common language and set of priorities to reduce the profound consequences of ACEs and trauma in communities, adults and children. Shared awareness can build consensus and shift norms in communities as evidenced by successful campaigns to reduce tobacco use, increase seat belt use and reduce rates of child maltreatment. Specific efforts are called for to:
  - a. Support educators in understanding the scope of the impact of ACEs and develop enhanced skills to identify and respond to the impact of trauma.
  - b. Educate parents. It is rare that a parent does not have the best intentions for the well-being of child. What we demonstrate is that many of these parents are themselves dealing with the consequences of their own childhood adversity. Understanding ACEs and the resulting trauma can reduce stigma and provide a common vocabulary with schools for efforts on behalf of students.
  - c. Use an understanding of trauma from ACEs as an intervention framework for students at greatest need. Schools are the primary system for the delivery of mental health services to vulnerable children, either through direct services or coordinated referrals. Evidence-based trauma-informed treatments are now much more common as part of the array of mental health services, yet there is little evidence these trauma-informed services are helping support schools. There is an opportunity to build well-coordinated education and treatment systems of care employing evidence-based services for trauma from ACEs as an essential service.
4. Sustain efforts to address the impact of poverty on communities and schools. As promising as the role of ACEs may be as a new explanatory model, poverty remains a central challenge to the success of communities, families and children. Schools can address ACEs and resulting trauma through three key strategies:
  - a. Integrate strong social emotional learning practices in the academic mission. Educational research demonstrates that high-quality social emotional learning

practices are highly predictive of school success. A variety of promising practices and evidence-based programs are available, but require high-quality and persistent implementation if they are to produce meaningful benefits.

- b. Increase access to early intervention and treatment resources for the most vulnerable students and families. Understanding trauma from ACEs as an intervention framework for students is essential. There is an opportunity to build well-coordinated education and treatment systems of care employing trauma from ACEs as an essential service.
- c. Investigate the potential to more formally use trauma-informed principles in student supports and learning strategies. While this work is early in development, a number of trauma-informed models complement social emotional learning in schools. These strategies may help reduce problem behaviors that compromise the success of schools by shifting resources to discipline and behavior management and away from universal high-quality education.

## A. Introduction

Passed in the 2014 legislative session, Substitute House Bill 2739 (Chapter 196, Laws of 2014) directs that an analysis examine the effects of community factors such as economic well-being, safety and family challenges on academic and youth success. In conducting this analysis, the Legislature specifies that existing data sources be used to describe communities, youth well-being and school success. This report addresses:

- (a) The prevalence of family and community health, safety and stability factors relevant to student success
- (b) The identification of resilience factors correlated with improved population outcomes even in populations with family, health, safety and stability challenges
- (c) Identification of key community factors that are predictive of community variation in academic, behavior and graduation outcomes
- (d) The value of using existing data sources as a framework to identify and track community factors
- (d) Discuss the implications of the findings for policy targeted at improving K-12 or post-secondary outcomes.

### 1. The case for community influences on academic success and youth well-being

The title of this report, No School Alone, intends to capture the key findings from this review. Community factors significantly contribute to the individual, peer and family factors that set the conditions for school success. The nature of the community a school serves directly influences the nature of what makes each school a community in its own right. This does not minimize the importance of high-quality educators, effective curriculum and learning materials, strong leaders and engaged parents for school success. Rather, the evidence indicates that these characteristics of schools as healthy communities are directly affected by the conditions in the surrounding community.

Berliner (2009) identifies six out-of-school factors that directly impact on the success of schools. These are:

1. non-genetic issues such as access to care in pregnancy that create prenatal challenges to development
2. inadequate access to health care
3. food insecurity
4. family stress and disruption
5. environmental pollutants that compromise health and
6. neighborhood factors such as access to social support and safety.

Berliner goes on to state, “Because America’s schools are so highly segregated by income, race and ethnicity, problems related to poverty occur simultaneously, with greater frequency and act cumulatively in schools serving disadvantaged communities. These schools therefore face significantly greater challenges than schools serving wealthier children and their limited resources are often overwhelmed” (p. 1).

Berliner neatly summarizes the challenge in examining community factors and their impact on academic success and youth well-being. Poverty, stress and community context are

interconnected influences that are challenging to disentangle. Legitimately, our social and educational policies have focused on blunting the impact of poverty. We confirm the central role poverty has in challenging the success of children and schools, but conclude that cumulative adversity and resulting stress are independent and powerful influences as well. The promise is that by focusing on adversity in addition to poverty, we open possibilities for a wide range of policy and community efforts to improve school and youth outcomes.

Poverty, while always a burden, is not an inevitable source of injury to children, families and communities. One of the conditions for how communities are healthy and nurturing places is addressed through part of this report but deserves far more systematic support. Through interviews conducted as part of this report, community leaders in nine Washington communities point us to lessons for how local action can help guide reducing the impact of poverty and adversity.

Attention to the role social environment plays in academic success and youth development has a long history, notably with the work of Hawkins and Catalano (Catalano, Fleming, Haggerty, Abbott, Cortes, & Park, (2005) and Jessor and Jessor (1977) among others. These concepts have been foundational to community work with at-risk youth, but they have had a primary focus on children at high risk of behavioral health and antisocial problems. These principles have helped support effective interventions for individual children that have to remain part of any solution; individual efforts even when reaching many children and families were not intended to address the needs of entire communities. While maintaining the legitimate focus on the child and family, population-level efforts are needed to address the conditions that are external to child and often beyond the resources of families and specific interventions to meaningfully influence. We need an expanded perspective of what are the collective responsibility and the community development goals that can complement effective individual interventions.

Much of the work on the effects of community is framed through the concept of neighborhood (Leventhal & Brooks-Gunn, 2004). The focus on neighborhood fits schools well, given the common focus on neighborhood enrollment areas and the role that schools have in creating neighborhood identity. Popkin, Acs and Smith (2009) provide a synthesis of several reviews that conclude that neighborhood matters but that our current understanding of why is dominated by a focus on the impact of poverty.

Whether or not poverty is the primary cause of individual and social burden, poverty concentrates in neighborhoods a litany of risks and poor outcomes for children and adults. These include low educational attainment, greater risk involvement in antisocial behaviors, involvement with the criminal justice system, addiction, violence victimization, increased risk of chronic health problems and employment failure (Ellen & Turner, 1997; Sampson, Morenoff, & Raudenbush, 2005).

The effects of poverty can be separated from other conditions that may be related to lack of economic resources but are not necessarily the direct consequences of poverty. Social isolation, lack of safety, limited access to cultural resources and limited opportunities for connection and social support are not inevitable results of poverty. Sampson, Raudenbush and Earls (1997) argue that building social cohesion and positive sense of community can significantly buffer



against the burden and disruption associated with poverty. This line of evidence argues that as individuals and as communities, we can be relationally and experientially rich in ways that buffer children from the consequences of poverty.

Reflecting the way we think about the role of risk in individuals and communities, our data is much more effective in describing loss than it is in describing success. The absence of a problem does not equate to positive resources, and we caution that this constraint on available data is also a constraint on the scope of opportunities we describe as we examine the effect of communities on academic success and youth development.

Finally, schools are themselves communities. How poverty is a concentrator of problems in communities applies equally to what the schools themselves face. As we consider how to address the impact of community on academic and youth outcomes, planning needs to address how community risk is reduced and capacity built within the school, between the school and the community, and in the community. In service of the multi-dimensional nature of the challenge, we include the school as the starting point for describing community.

## 2. Defining community and current data

Community in this report begins with the school. In Washington, more than 2,200 individual buildings or identified educational programs are tracked annually in educational data sets. Districts are both elements of larger communities or in many instances can contain multiple discrete communities. Rather than calling out specific districts, buildings or communities, we use buildings and districts to connect disparate data. We specifically do not identify buildings or districts at any point in this report. The goal of this report is to determine what differences across communities are associated with difference in youth academic and development outcomes in order to determine what productive tools for improvement may develop. The nature of these practice and policy tools is beyond the scope of this report.

The range of enrollment in buildings and districts creates some challenges for comprehensively looking at schools and community characteristics that may influence youth success. Small enrollment schools often do not have data reported because of concerns with protecting student information and because of unstable summary statistics on small numbers of students. As a result, a constraint on this report is that at the building level, a number of very small schools cannot be included.

Buildings are distributed across 295 school districts ranging in enrollment from 40 districts with less fewer than 100 students in the 2013 academic year to Seattle Public Schools with more than 51,000 students. To address this range in enrollment, we adopt the ‘locale’ strategy developed by the Washington State Department of Social and Health Services (DSHS) Research and Data Analysis (RDA) division <https://www.dshs.wa.gov/sesa/research-and-data-analysis/community-risk-profiles>. Locales organize Washington school districts into 118 groups, including large school districts as unique locales and grouping smaller districts based on similarities in student and community characteristics and area of the state. Fifty-nine of the locales are single district while the remaining 59 locales include two to 12 districts in a single locale. In the balance of this report, we discuss results for locales not districts. For smaller districts, school data are available at the district level but not summarized at the locale level for most measures. For these small

districts, we pooled results weighted by district enrollment to produce summary data for these locales.

Detailed public data (available at <http://reportcard.ospi.k12.wa.us/DataDownload.aspx>) describe the annual characteristics and academic progress using:

- Standardized test results in grades 3-10 for reading, math, writing and science (building and district grade-level results for academic years 2009–13)
- Graduation rates (building and district results for academic years)
- Postsecondary education progression (district results) available at <http://www.erdcddata.wa.gov/hsfb.aspx>
- Unexcused absences (district only)
- Disciplinary data (district only for academic year 2013)

In addition, the Washington State Board of Education and Office of Superintendent of Public Instruction (OSPI) cooperate in development and reporting of school data using the ‘achievement index’ framework to provide a common framework for reporting school performance and progress <https://eds.ospi.k12.wa.us/WAI/>. This 2013 data are available at the school and district level and provide useful information that supplements school summary data identified above.

Adequate yearly progress (AYP) defined under federal education law is not included in this report. The majority of Washington schools are not meeting AYP, and as a result, there is little variation across buildings and locales to describe.

Four data resources describing community risks and assets are identified in this report:

- RDA locale risk characteristics use multiple data sources to address key characteristics of community (availability of drugs, economic and social deprivation, drug use and criminal behavior in adults), youth involvement in drugs and criminal acts, school climate and child abuse referrals. RDA community risk information is available both at the level of the school district and the locale. We chose to use locale to organize the data to permit more stable estimates of risk across small districts.
- Behavioral Risk Factor Surveillance System (BRFSS) is a national household survey conducted with 15,000–20,000 Washington state adults annually to describe health status and associated risk and protective factors. BRFSS data are organized in Washington at the locale level. BRFSS data are pooled across 2009–12 administrations with appropriate weighting corrections for the specific wave of assessment.
- Healthy Youth Survey (HYS) is a voluntary anonymous survey of approximately 200,000 students in grades 6-10 conducted in most but not all Washington state schools. HYS addresses involvement in risk behaviors such as drug use and violence, attitudes and beliefs on prosocial values and affiliation, and experiences in school. For this report, we restrict HYS data to the 2012 survey in grades 8 and 10. This restriction reflects comparability and scope of questions in these older adolescents.
- U.S. census information is drawn from the 2010 census and more recent updates at the building ZIP code and district level. Data drawn from the census include economic and social well-being such as educational achievement in adults, single-parent household, percentage of families living at or below federal poverty level, Supplemental Nutritional Assistance Program, or SNAP (food stamps) enrollment and employment in adults.

## B. Assessing academic success and youth well-being

State academic test results in this report are presented as the percentage of tested children in a school or district who ‘met standard’ or passed the assessment. School standardized met standard percentages are highly correlated<sup>1</sup> across buildings in the five years of results reviewed in this report (correlations range from  $r=0.77$  to  $r=0.99$  across all subject areas and grade levels). While the percentage of students who met standard varied significantly across testing years, comparative standing of schools in any given year did not change greatly on average. This pattern of correlations was confirmed for 2009–12 academic years. In the 2013 academic year, the available data at the district level had substantial missing data across districts and were not included in our analyses. This reporting issue reflects reporting constraints as many districts participated in field testing of the new Smarter Balanced assessment system Washington State is transitioning to now.

Standardized assessments in Washington assess reading, math, writing and science. Measurements of Student Progress (MSP) and High School Proficiency Exams (HSPE) testing have until this year assessed reading and math in grades 3–8. In recent years, high school math and science assessment has changed to ‘end of course’ assessments in specific content courses, including algebra 1/integrated math 1, geometry/integrated math 2 and biology. Washington is transitioning to new assessment mechanisms under the Smarter Balanced initiative beginning this academic year.

In addition, we use the Washington State Achievement Index, which is a common metric for measuring test outcomes, progress toward improvement and graduation rates in high schools. The index serves as a useful common tool for assessing success across schools.

**Table 1: Content Area and Grades Assessed Using Standardized Assessment**

Subject Area	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 10
Reading	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Math	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Writing		Yes			Yes		Yes
Science			Yes			Yes	Yes

HYS risk behavior measures will serve as principal measures of youth adjustment examining the role of school and community variables describing community risks and assets. There presently is no comparable data source describing youth adjustment that represents the majority of communities in Washington. Examples of HYS available data include self-report of substance use, quality of life, health status and school affiliation measures.

### 1. Organizing the data for analysis

The data from the school and community sources identified involve a large and often highly correlated set of school and community indicators. To bring order to this complex landscape, we

<sup>1</sup> Correlations range from 0, no association, to 1.00, a perfect association. A positive correlation indicates that as values on one variable increase, so do the values on the other variable. A negative correlation indicates that as values on the first value increase, values on the second variable decrease.

first looked within data sources to determine key factors associated with academic success. We focused on academic success because (1) academic success is highly associated with other measures of youth well-being, and (2) our data from HYS, while a rich resource, is not representative of all districts.

*Reducing the data to the most effective predictors of school success.* The statistical techniques used to identify key factors are technically beyond the general audience intention of this report. Detailed statistical results are provided on request in support of the conclusions presented in this report. In brief, we employed a statistical procedure — generalized estimating equations — that allow us to control for differences in locality (building, district, locale) as we look for patterns of relationships and key variables in highly correlated sets of data (Hanley, Negassa, Edwardes and Forrester, 2003). Within each set of data (e.g., school descriptions of student and teacher characteristics), we introduced the variables together and determined which variables were significantly associated with standardized test results after accounting for the influence of the other variables under consideration. This process allowed us to focus on the most predictive variables within each data set to simplify the combination of information across the multiple data sets.

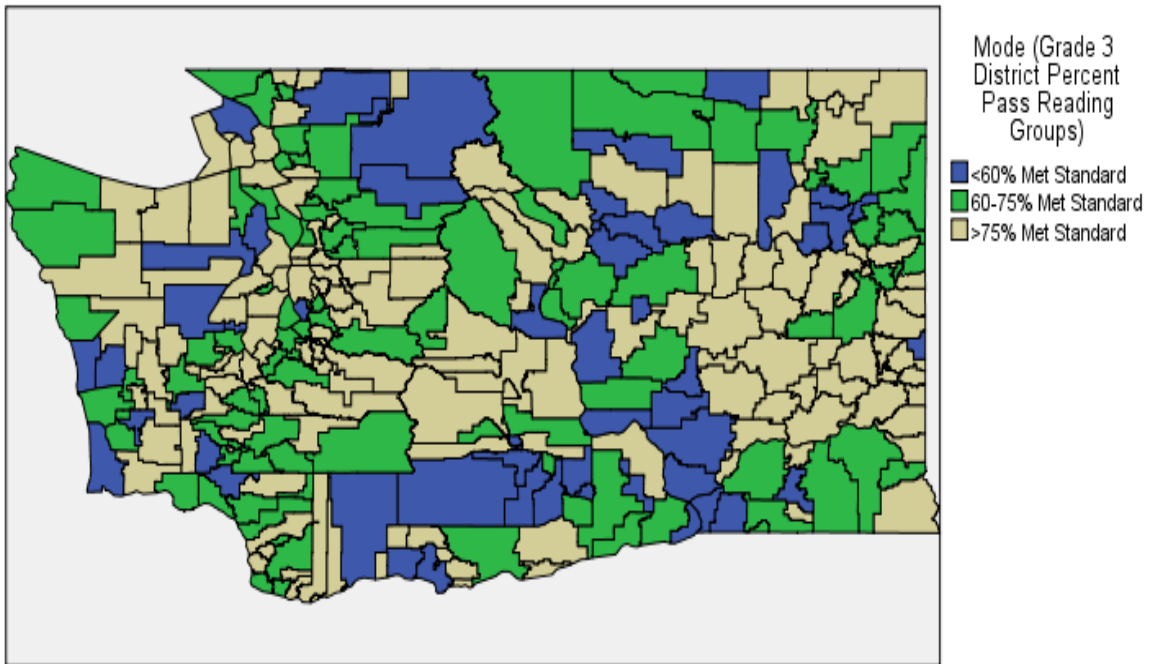
In each of the following sections, we present the primary identified community risk and protective factor predictors in maps of Washington state defined by school districts<sup>2</sup>. It is not possible to map all data because the smallest level of community in the data that can be effectively described is the school district. Some data are at the level of the building and cannot be mapped effectively. Data are organized in two or three level groups to permit mapping. The grouping of data reflects the distribution of the specific variable but attempts to group roughly in equally sized groups across districts.

*Standardized test results.* We examined the most recent five years of Washington state standardized tests organized both at the building and district level. As noted above, the 2013 academic year was a transitional year that included statewide piloting of the new Smarter Balanced assessment system. There were multiple indicators of missing data across districts that resulted in limitations on the 2013 standardized test data. As a result, we focus our principal analyses on results in the 2012 academic year. Depending on the grade span of the schools, districts can have annual standardized test results on up to 20 specific content areas across the schools. While we systematically tested all these standardized test outcomes, for this part of the report we summarize Grade 3 Reading and Math and Grade 8 Reading and Math results for the 2012 academic year across districts. Please note that for this series of maps of district performance, we maintained the same reporting scale although the average percentage of students meeting standard for math is consistently lower than the results for reading.

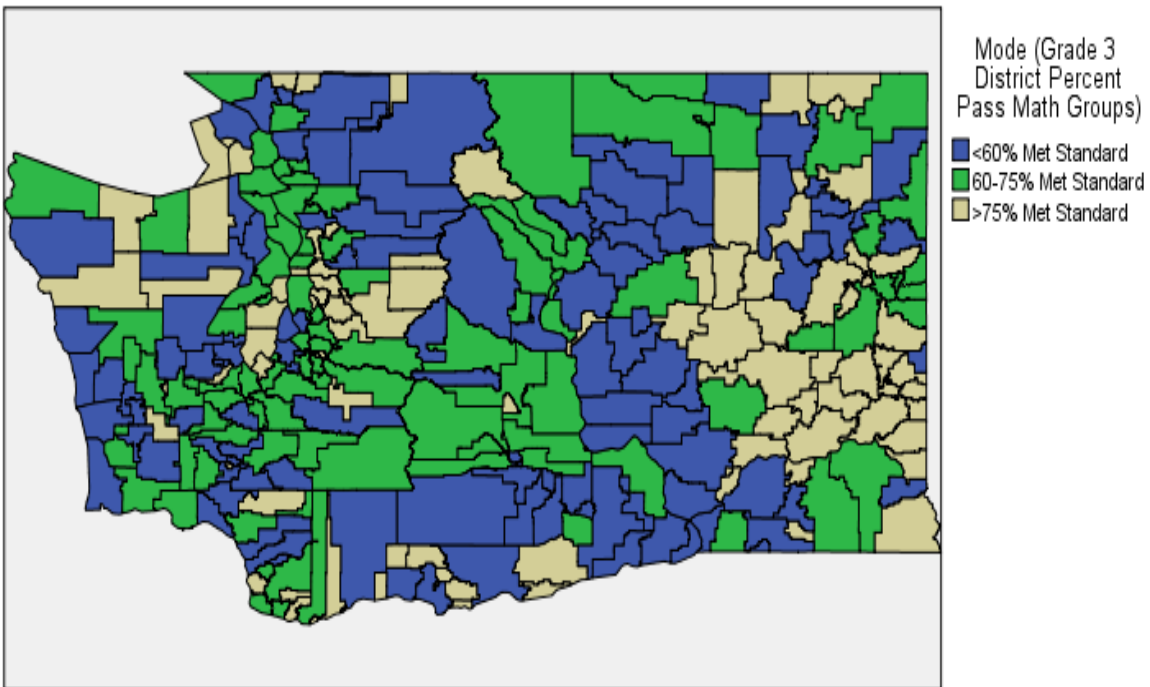
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<sup>2</sup> Maps were developed using publicly available U.S. Census GIS shapefiles in QGIS Brighton 2.6 and SPSS version 22 statistical mapping software.

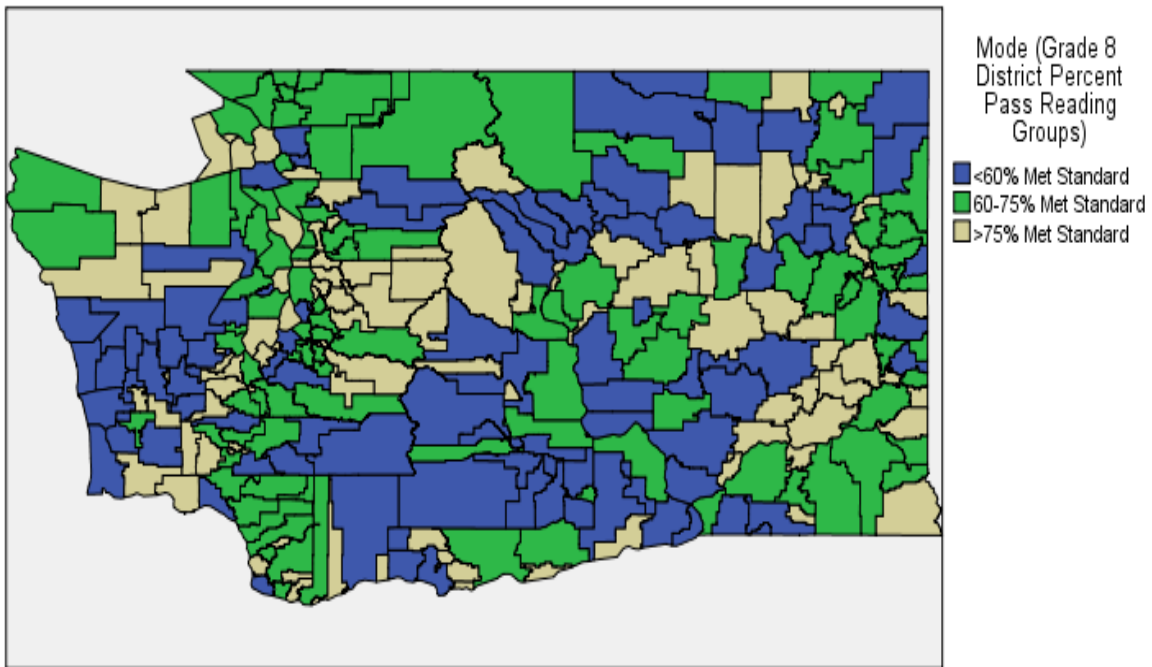
**Figure 1: Distribution across school districts of the percentage of students meeting standard on the 2012 Grade 3 Reading Assessment**



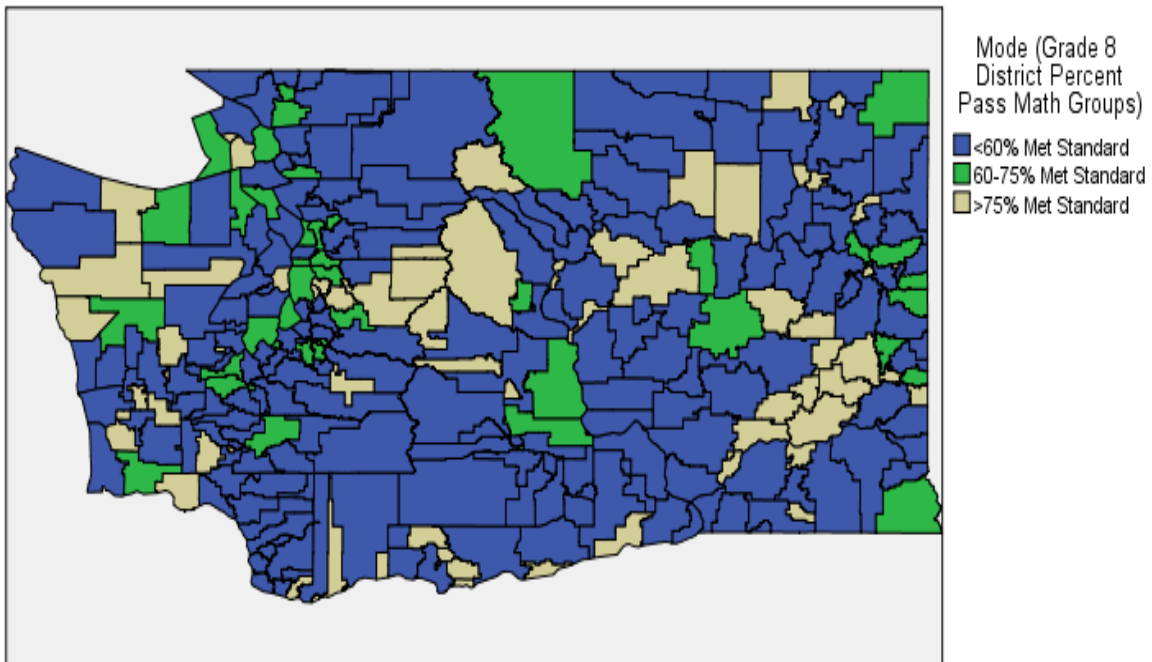
**Figure 2: Distribution across school districts of the percentage of students meeting standard on the 2012 Grade 3 Math Assessment**



**Figure 3: Distribution across school districts of the percentage of students meeting standard on the 2012 Grade 8 Reading Assessment**



**Figure 4: Distribution across school districts of the percentage of students meeting standard on the 2012 Grade 8 Math Assessment**





*School building and district standardized test data.* Looking across tested grades and five years of data, the school characteristics determined to be optimal predictors of standardized assessments results are percentage of students eligible for free- and reduced-price meals (FRM); the percentage of enrolled students who are Hispanic; the average years teachers have been in practice; the percentage of teachers with at least a master's degree; and the type of community in which the school is located. We used 2013 data to describe schools and district characteristics.

Free and reduced price meal eligibility is a commonly used indicator of poverty, while years of experience and advanced degrees are at least indirect measures of teacher quality. In the 2013 academic year, 30 percent of all Washington students were free- and reduced-price meal eligible, 18 percent were Hispanic, the average years in practice for teachers was 17 years and 59 percent of teachers across the state had an earned master's degree or more advanced education.

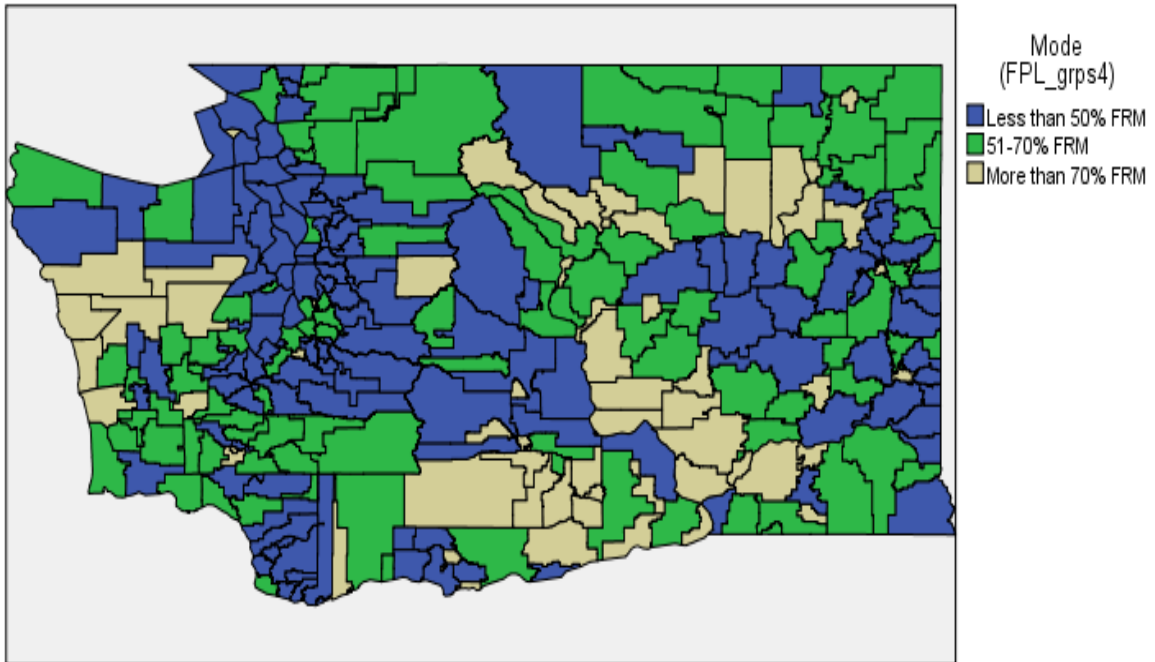
As Hispanic enrollment increases in buildings and districts, poverty risk increases. Similar patterns occur for percentage of enrollment of African-American and American Indian/Alaskan Native enrollment, but the distribution of students in these groups was concentrated in specific districts and did not allow for effective statewide analysis. Percentage Hispanic enrollment is highly correlated with free- and reduced-price meal eligibility ( $r=0.60$ ) across school buildings and across locales.

Length of time teaching and advanced degrees are modestly (correlations of 0.15-0.20) but consistently associated with higher rates of standardized test passes percentages.

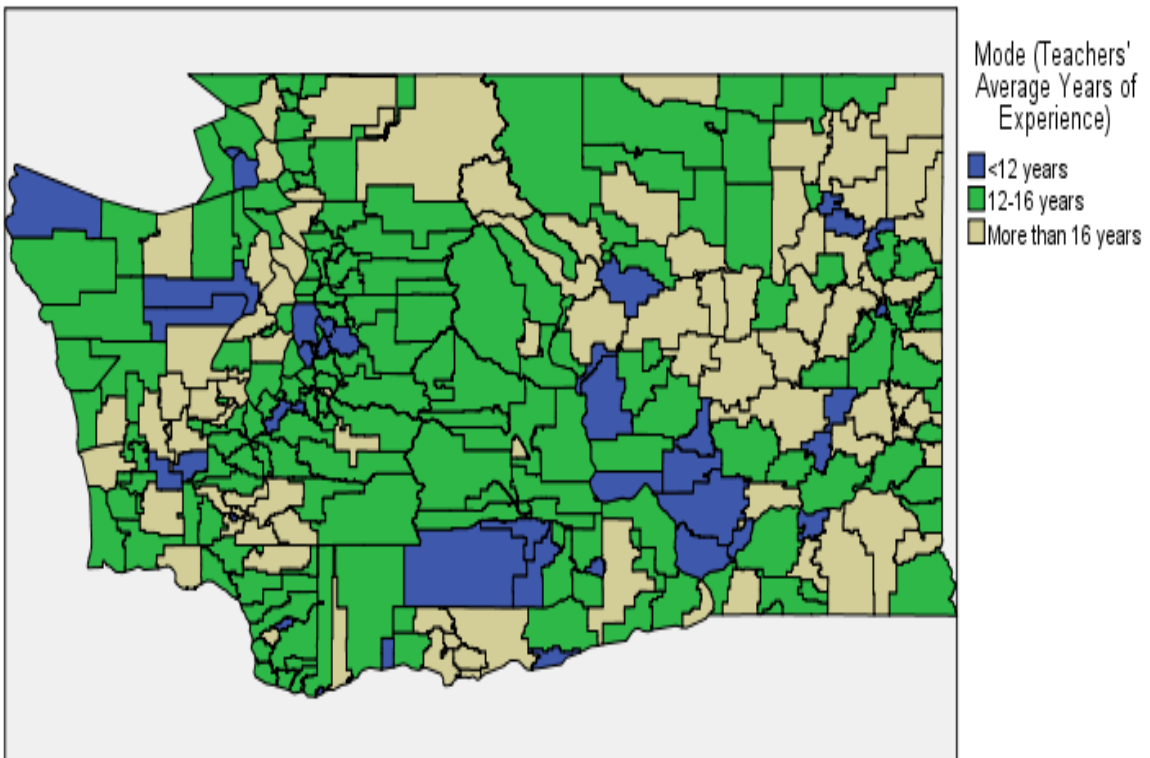
Community type was drawn from National Center for Education Statistics (NCES) data <http://nces.ed.gov/>. NCES is a federal education data resource. School buildings were characterized as urban, suburban, small town and rural, based on NCES designations. These designations are at the level of the individual school building and not summarized in the following district-level state maps. Urban and suburban school buildings report significantly higher standardized test percentages of students meeting standard on multiple assessments across the five years reviewed.

We examined the potential role of district funding, but on review determined that the available data are influenced by too many funding rules and consideration to permit a consistent metric describing the level of resources available per student.

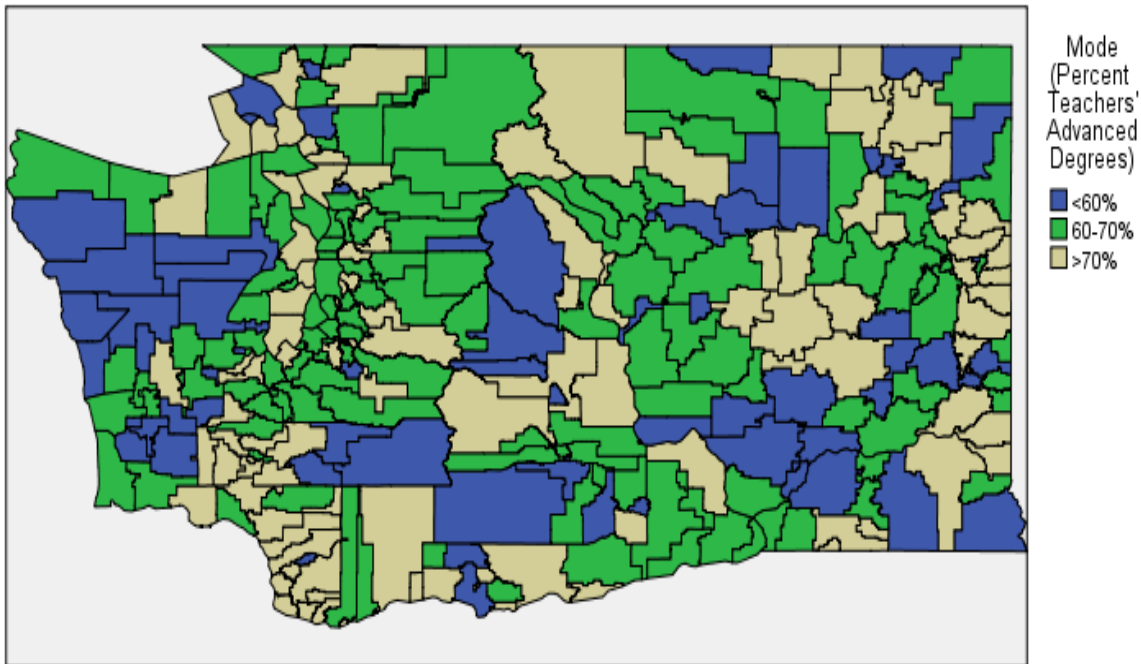
**Figure 5: Distribution across school districts free- and reduced-price meal eligible students**



**Figure 6: Distribution across districts of average years of teaching experiences**





**Figure 7: Distribution across districts of the percentage of teachers with advanced degrees**

While there is meaningful variation across school districts, the main academic performance and community risk in these district maps demonstrates that risk and academic challenges are highly associated with experience and preparation of teaching staff, lower family income, more racially and ethnically diverse communities and more rural and small town districts.

*Locale Community and Youth Risk Indicators.* The DSHS RDA community risk measures include multiple measures:

- percentage of residents enrolled in SNAP
- percentage of clients enrolled in Temporary Assistance to Needy Families (TANF)
- rate per 1,000 residents arrests for violent crime
- rate per 1,000 residents with accepted referrals for child maltreatment
- rate per 1,000 students reported incidents of weapons at school
- rate per 1,000 residents intimate partner violence (IPV) reported offenses
- rate per 1,000 total arrests for juveniles 10–17 years of age
- rate per 1,000 births to teens 10-17 years of age

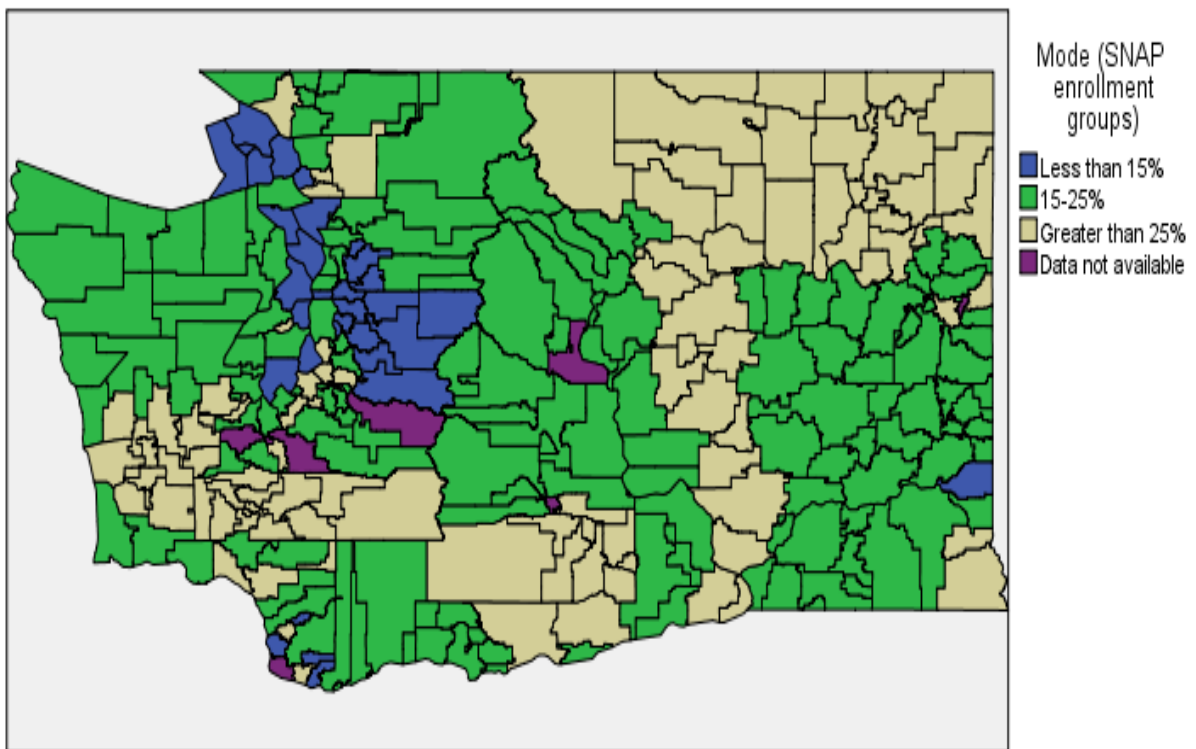
Because the available data are presented at the level of locales, we used a different statistical procedure (linear regression) to identify the principal predictors of academic success. RDA reports track risk over a 12-year period, but for these analyses we used the most recent report of risk from either 2012 or 2013. Through this analysis, we determined that significant predictors of academic success include:

- percentage of residents enrolled in SNAP
- rates of adult violent crime arrests
- rates of IPV offenses
- rates of teen (and younger) births

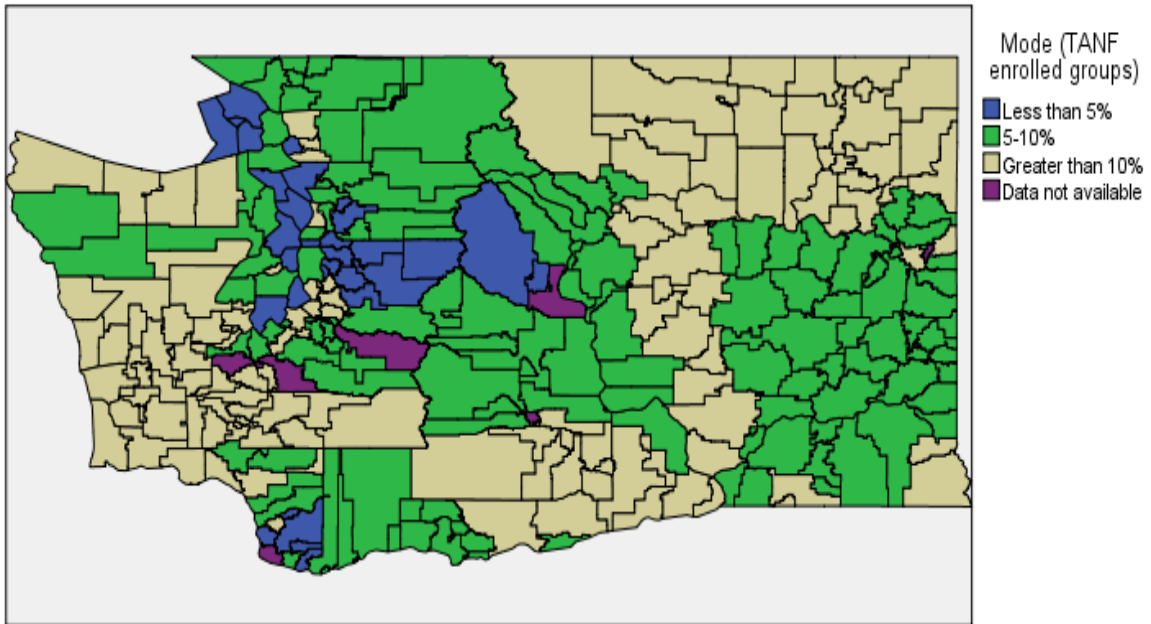
As community residents' use of SNAP, rates of adult violent crime, rates of IPV incidents and rates of teen and younger births increase, school districts have lower percentages of students meeting standards on the state assessments.

Please note in the following maps describing these four community risk indicators that there is missing data due to RDA data quality control rules. Both adult violent crime rates and IPV incident rates are frequently missing for communities.

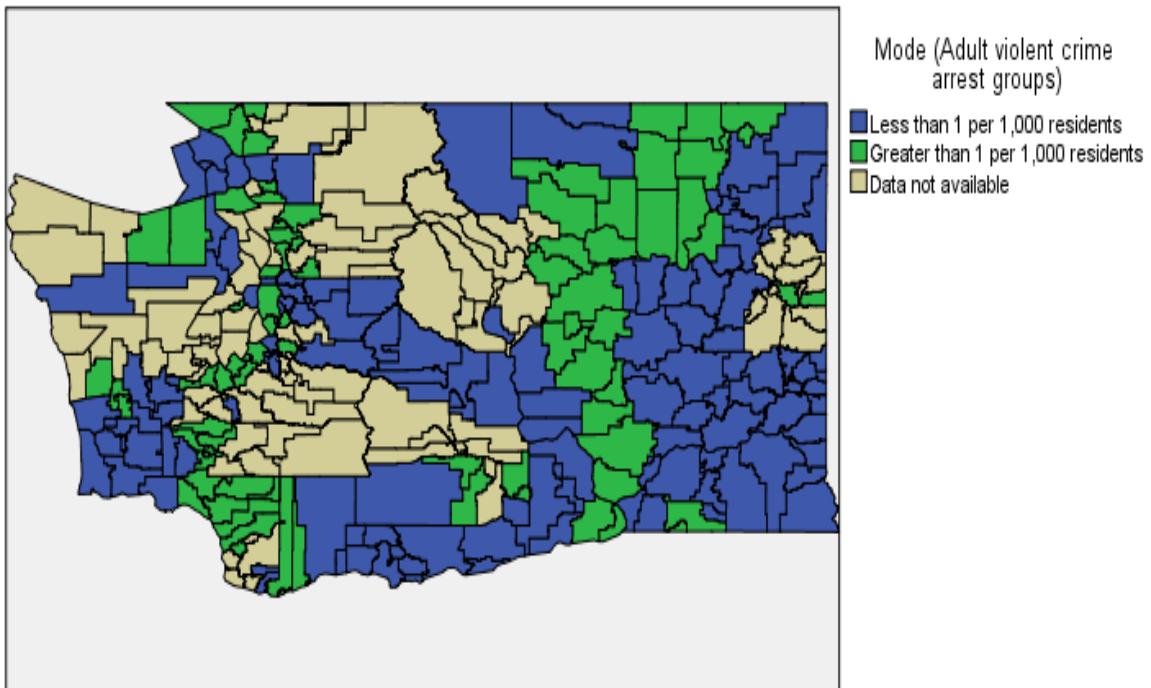
**Figure 8: The distribution across districts of the percentage of residents enrolled in SNAP**



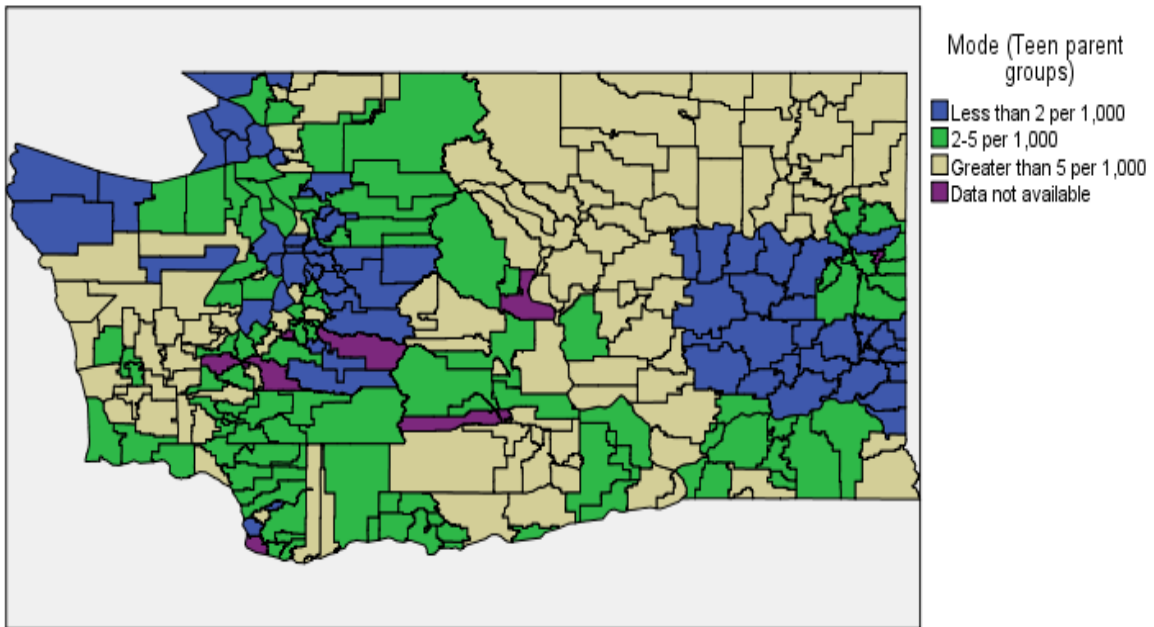
**Figure 9: The distribution across districts of the percentage of residents enrolled in TANF**



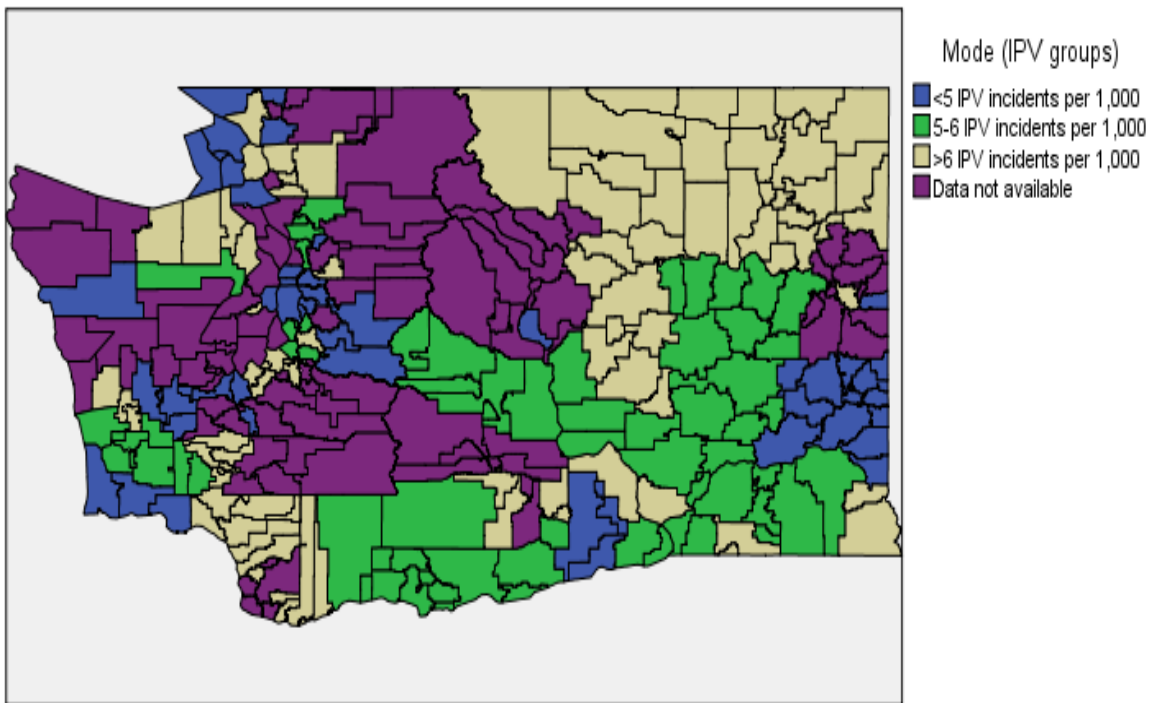
**Figure 10: The rate per 1,000 residents in districts of adult violent crime**



**Figure 11: The rate per 1,000 residents in districts of young parents (10-17 years old)**



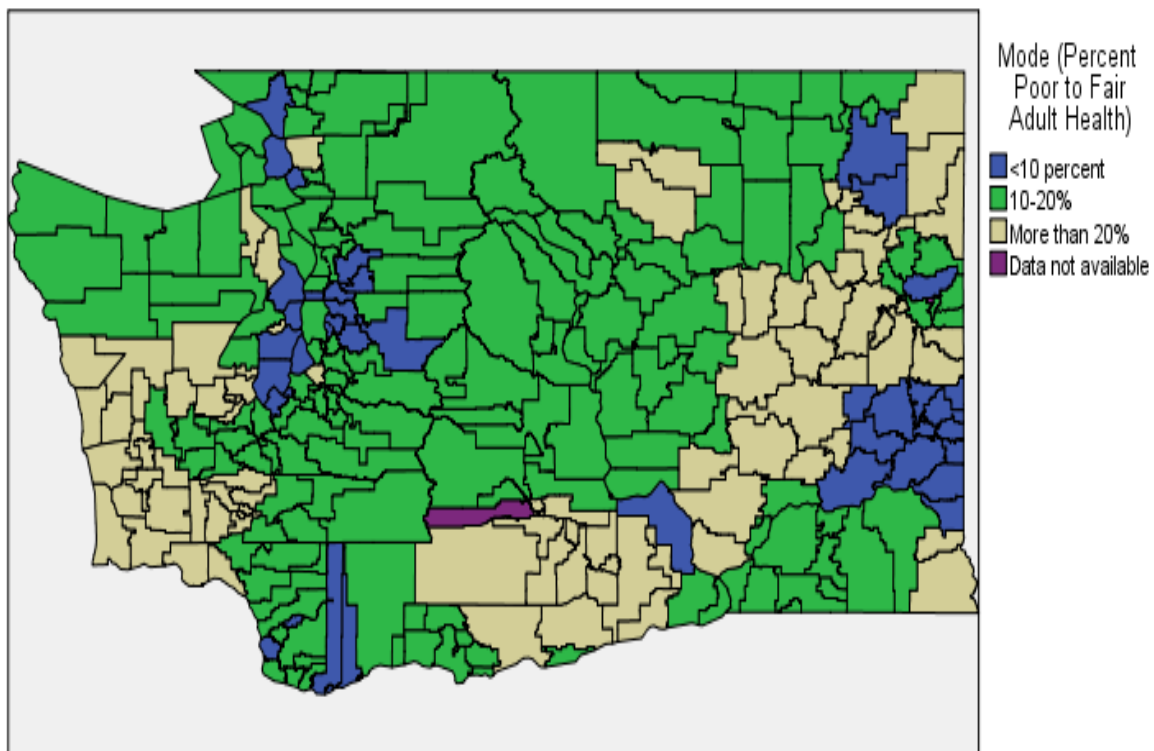
**Figure 12: The rate per 1,000 residents in districts of IPV incidents**



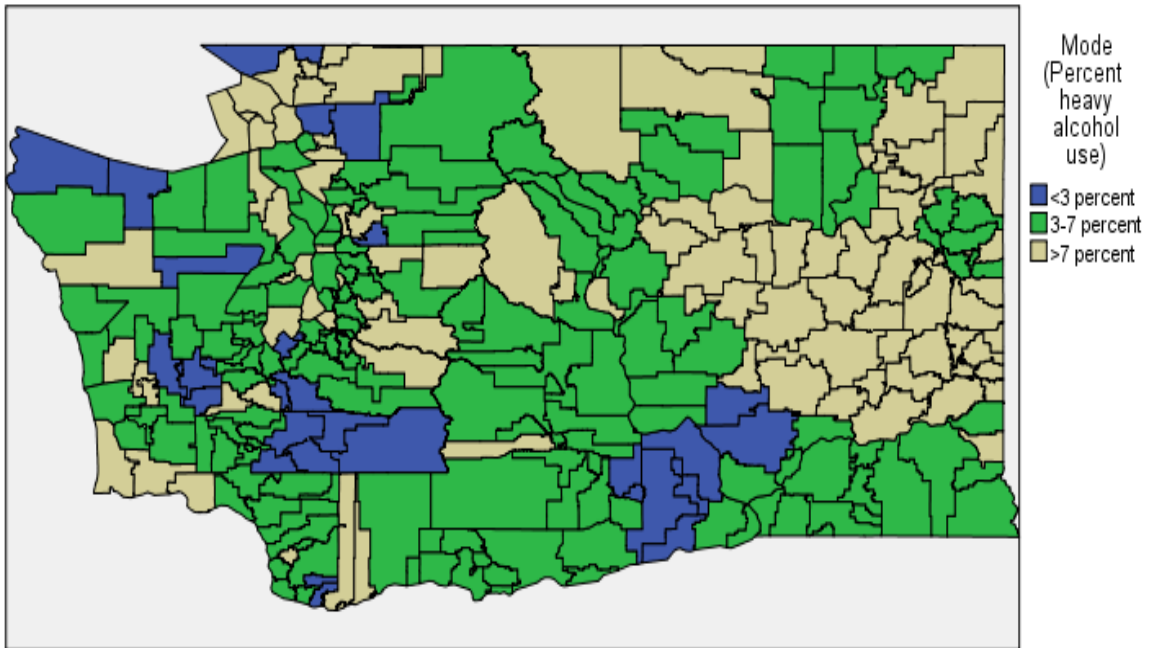
*Behavioral Risk Factor Surveillance System (BRFSS) predictors.* BRFSS presents extensive data on the health status of Washington households, but for this report, we focused on the community risk and protective factors. BRFSS data are summarized at the level of the district/locale. These include multiple indicators of well-being and distress, community resources and individual risk history. BRFSS data are limited to adults 18–64 years of age to more closely reflect parenting-age adults. The BRFSS variables based on our analysis predictive of academic outcomes are:

- adults with fair to poor health (scale score)
- heavy alcohol consumption
- level of life satisfaction
- hungry but did not eat because of not enough money in past 12 months (food insecurity)

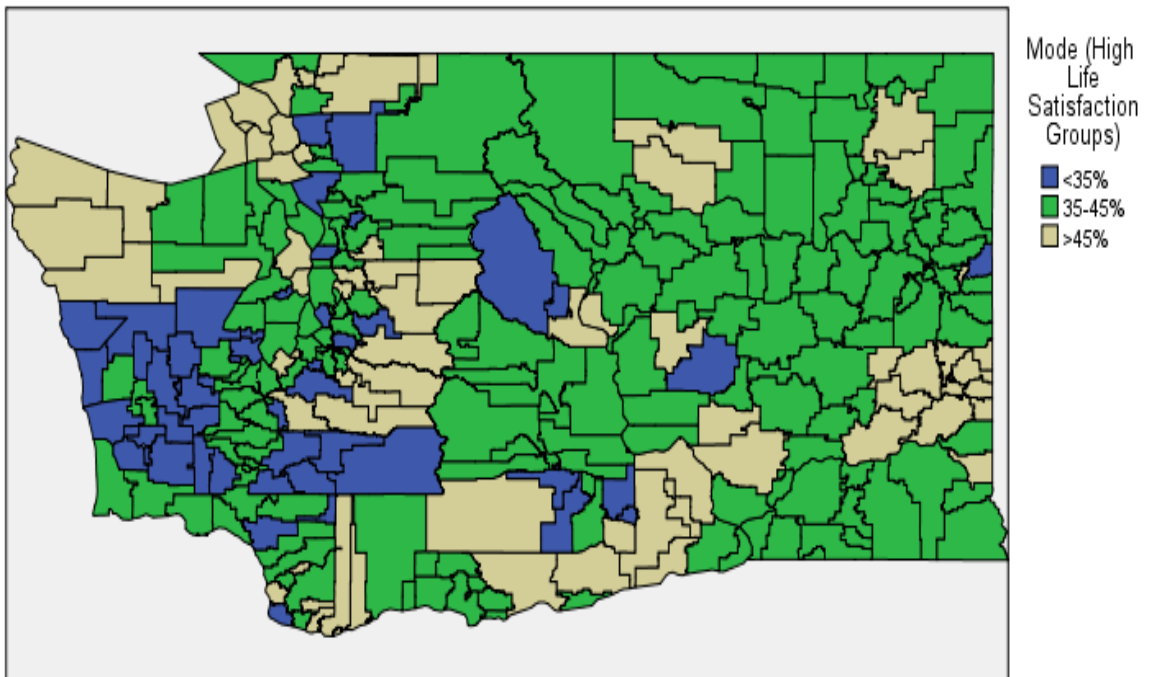
**Figure 13: The percentage in districts of adults reporting poor or fair health**



**Figure 14: The percentage in districts of adults reporting heavy alcohol use**



**Figure 15: The percentage of adults in districts report low, moderate or high life satisfaction**





### *Census Variables*

Census data was associated by ZIP code with school buildings for this report. District data are available and summarized at the district level, based on summary information available through the U.S. Census. A limited number of fields addressing community risks and assets was identified including:

- employment
- SNAP utilization
- percentage of community living below federal poverty level
- single parent households
- educational attainment (percentage of population with postsecondary degrees).

As employment and educational attainment increase in the community, academic achievement increases. As SNAP enrollment, percentage of single parent homes and percentage of families living below the federal poverty level increase, academic performance is reduced.

Because this information is associated at the building level, summary maps describing the impact of these census variables are not provided.

### *Healthy Youth Survey Risk and Protective Factors*

Because of limitations with the HYS data, we do not present district specific results and associations with academic outcomes. HYS results are presented separately later in this report.

## **2. Summary of the process to identify key community and school predictors of academic success**

With various and often related ways to describe community risk and protective factors, our first task was to reduce more than 100 potential community characteristics to a more manageable set of factors to address. The next table summarizes the information presented above.

**Table 2: Principal Individual Risk And Protective Community Factors**

Type of Risk/Protective Factor	Source: School Data	Source: Census	Source: DSHS RDA Community Risk Factors	Source: BRFSS
<b>Economic</b>	FRM eligible percentage of students	Percentage SNAP enrollment	Percentage SNAP enrollment	Hungry because of lack of money
<b>Economic</b>		Percentage residents in poverty		
<b>Community</b>	Percentage Hispanic enrollment		Rates of violent adult arrests	
<b>Community</b>	Type of community			
<b>Family/Social Supports</b>		Percentage single parent households	Rates of teen parents	Level of life satisfaction
<b>Family/Social Supports</b>		Percentage post-secondary degrees	Rates of IPV incidents	Poor reported health
<b>Family/Social Supports</b>				Percentage heavy alcohol consumption
<b>School Capacity</b>	Teacher experience			
<b>School Capacity</b>	Teacher education			

We conclude that there are four related but potentially independent dimensions of risk and protective factors that emerge from the existing public data tied to school districts and buildings and are predictive of academic success:

- Level of economic resources
- Characteristics of the community
- Staff educational experience and preparation
- Level of family and social risk and resources in the community

Even after the steps to reduce the number of factors under consideration, these key variables are often highly correlated within the economic, community, family and school areas as well as highly correlated across areas. We propose that two concepts organize these factors effectively: the level of family and social demands and the impact of poverty.

## **C. Adverse childhood experiences and poverty as organizing principles in addressing community factors that impact academic success and youth development**

### **1. Introducing ACEs as the organizing principle for social risk.**

ACEs emerged in the late 1990s with the first publications from the landmark self-named study (e.g., Anda et al., 2006). This ongoing research documents that persisting stressful experiences and disruptions in key relationships accumulate in childhood, with progressively increasing risk of poor developmental outcomes. The original ACEs scale included 10 important, specific examples of risk, but the more central concept is any issue that creates inescapable stress and disrupts key relationships early in life.



With accumulating types of disruption, the prospects of lifelong health and social problems increase in a stepwise manner often referred to as the ACE dose effect. The effects are profound in terms of the risk of illness and social problems that can interfere with transitions to successful adulthood, and represent persistent risk across the lifespan. Conservative estimates are that 25 percent of adults in the United States experience three or more ACEs during childhood (Anda et al., 2006).

The findings of the original ACEs study have been independently replicated by multiple research teams. ACEs are now an established concept defining arguably the principal social determinant of health and social well-being. As this report is submitted, more than 800 peer-reviewed published studies have used ACEs as a critical explanatory framework.

Blodgett and colleagues (2014a, 2014b) documented in Washington state samples of elementary and preschool children that ACEs exposure is pervasive in public education. In a random sample of 2,100 elementary children from schools in Spokane, , one in five children has already experienced two or more ACEs. Blodgett et al. (2014a) also document based on schools' records that as ACEs in children increase, academic and school success is compromised. In the 10 percent of children known to have experienced three or more ACEs, academic failure was four times more likely, serious attendance problems were five times more likely and serious school behavior problems were six times more likely. While ACEs were more common in high-poverty schools, at least 10 percent of students were identified with multiple ACEs in all schools participating in this study. Blodgett (2014b) also demonstrated in a Head Start program that ACEs are common in preschool children and directly impact school readiness measures based on independent teacher assessment. As a result, ACEs is a well-established mechanism for defining risk with documented direct effects on academic success and youth well-being.

While ACEs describe the risk and consequences, it does not define strategies for response. Parallel with the ACEs research, the concept of complex trauma has emerged to describe both the process of exposure to multiple adversities and the process of how we adapt as human beings to these persistent childhood adversities (van der Kolk et al., 2005). Rather than focusing on single threats in the lives of children, complex trauma resulting from ACEs provides both promising and evidence-based treatments now in broad use.

Complex trauma risk is significantly associated with poverty and increases in several key diverse communities with the result that rates of exposure to complex trauma often are far greater than this 25--30 percent general population estimate. The result is that schools are assured to have significant numbers of complex trauma-exposed children in every classroom and that the scope of children in need will increase in our most vulnerable community schools.

The academic consequences of trauma exposure on academic success are direct and causal. Using child maltreatment as the most extensively studied indicator of complex trauma exposure, numerous studies link child maltreatment to poor academic outcomes. Maltreated children demonstrate increased absenteeism, decreased cognitive functioning, low academic achievement and increased use of special education services (Leiter & Johnsen, 1997; Crozier & Barth, 2005).

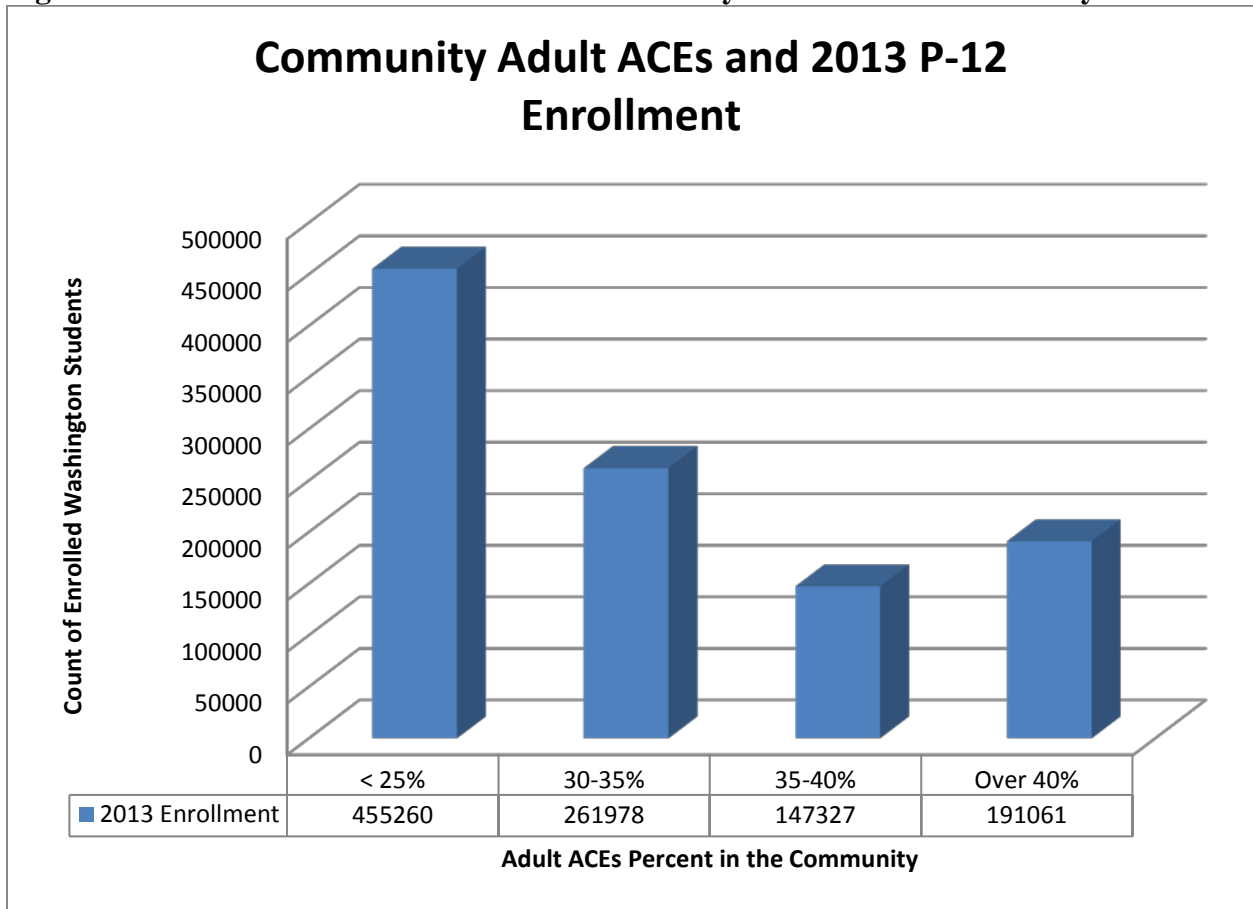
Specific behavioral and emotional challenges in maltreated children include significant increased risk for substance abuse, disruptive classroom behavior, emotional problems and conduct issues. Unaddressed, these behavioral challenges contribute to poor academic performance and school achievement (e.g. Hawkins et al., 2001; Wilson et al, 2001). These same negative academic outcomes, as well as a number of family characteristics identified as risk factors for violence, maltreatment and other family disruption, have also been demonstrated as the most significant risk factors for school dropout (Alexander et al., 2001). In Crozier and Barth's (2005) large-scale predictive study, academic performance in maltreated children deteriorated as the number of risk factors associated with children increased. This finding is consistent with the complex trauma proposition that it is the persistence and complexity of risk that is a critical predictor of developmental risk.

Understanding the role of trauma and its roots in neurobiological science provides a comprehensive way to view the social, emotional and behavioral challenges many children are facing. Trauma-informed planning also presents a unique opportunity for schools to understand how to respond to these challenges across the universal, selective and indicated continuum in a more effective manner. As we consider the impact of complex trauma for education, these biological risk pathways directly affect learning, memory and sequential reasoning as critical skills and provide the basis for K-12 education to address trauma not only as a contributor to problem behaviors but as a fundamental threat to students' readiness to learn.

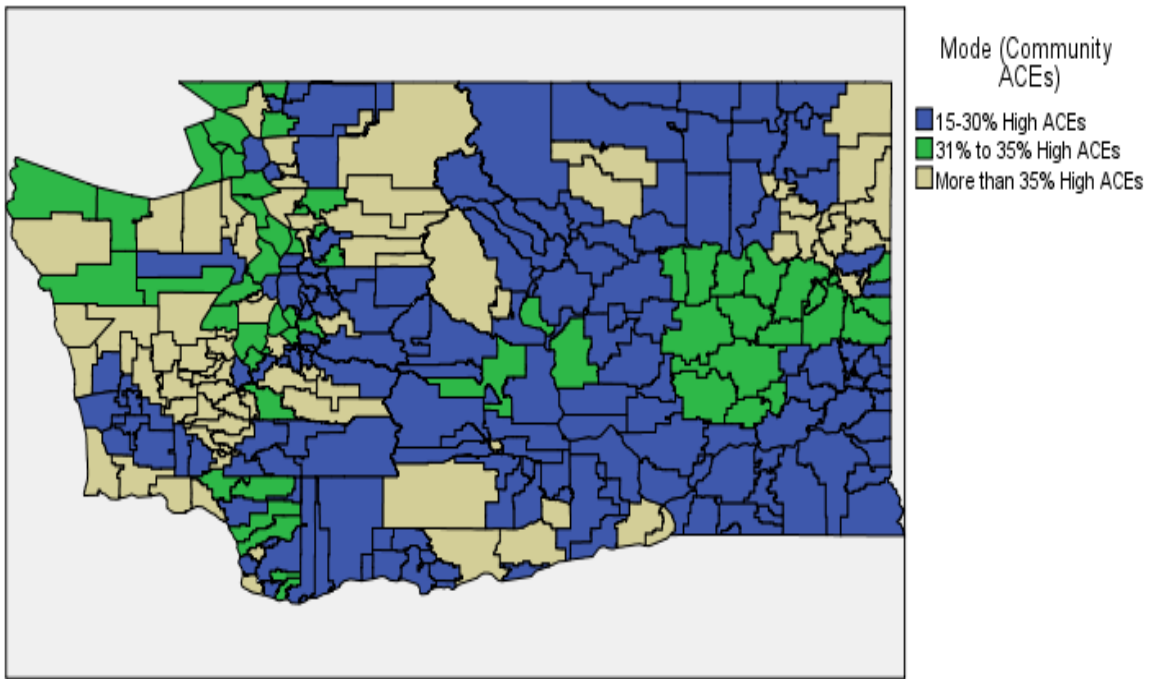
*The scope of ACEs in school's communities.* ACEs risk is high in the majority of Washington state communities. We define community ACEs by the percentage of adults interviewed in BRFSS who report that they experienced three or more ACEs while growing up. In the Washington state BRFSS data, based on more than 32,000 adults who responded to the ACE questions, 27 percent of Washington residents report they experienced three or more ACEs before the age of 18. In the general ACEs literature (Anda et al., 2006), adults experiencing three or more ACEs are at significantly increased risk of health and quality of life problems. We refer to 'high ACEs' in the remainder of this report to reflect the percentage of adults in communities who reported three or more ACEs.

ACEs are common among adults in all communities but include a substantial range when we look at distribution across the 118 locales that include the 295 districts. Mean ACEs in adults 18–64 years old range from 11 percent to 51 percent. About 45 percent of students and schools in Washington are in communities with comparatively lower levels of adult ACEs, defined here as less than 25 percent of the adults. However, approximately one in every three students and schools in Washington is in communities where more than 35 percent of adults report high ACEs.

**Figure 16: Distribution of 2013 student enrollment by levels of adult community ACEs**



**Figure 17: The distribution of adult ACEs in Washington school district communities**



Schools in Washington educate children in communities with a broad range of reported ACEs in the adult population.

**Table 3: The Distribution of School Buildings by Level of Community Adult Aces**

Adult Community ACEs Groups	Count of School Buildings	Total 2012 Enrollment
15% to 30% High ACEs	975	44%
31% to 35% High ACEs	545	24%
More than 35% High ACEs	743	32%
Total	2263	

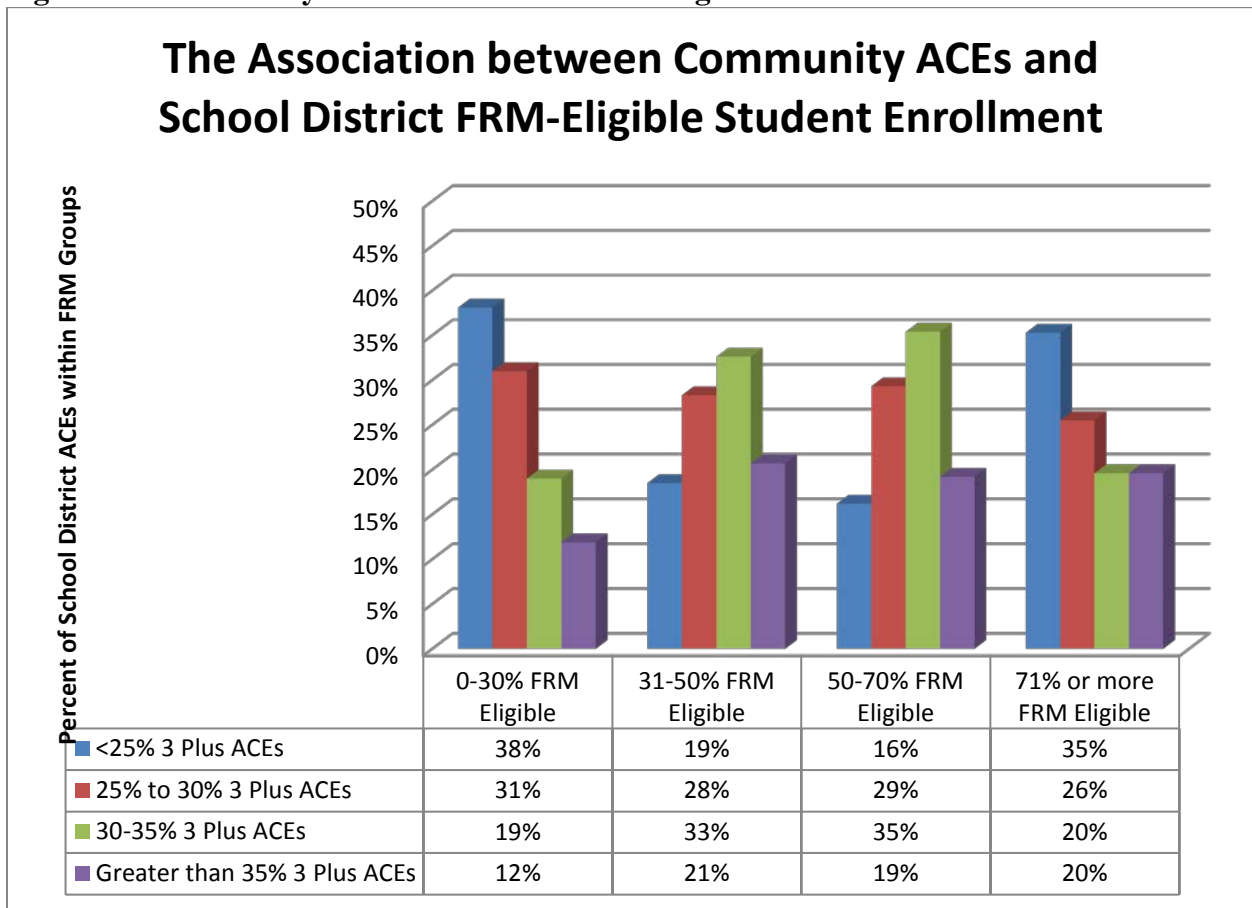
**2. The relationship between community ACEs and poverty.**

A common misconception regarding ACEs is that ACEs are closely associated with level of poverty. It is correct that rates of ACEs increase in families who live in poverty, but the relationship is complex. The conditions that contribute to poverty also contribute to ACEs. For example, intimate partner violence and caregiver mental health or substance abuse problems are highly associated with risk of loss of economic self-sufficiency and are primary contributors to the concept of ACEs.

We find that at the level of Washington state’s school district communities, ACEs and poverty are not significantly related. At the district level, the relationship between community ACEs and

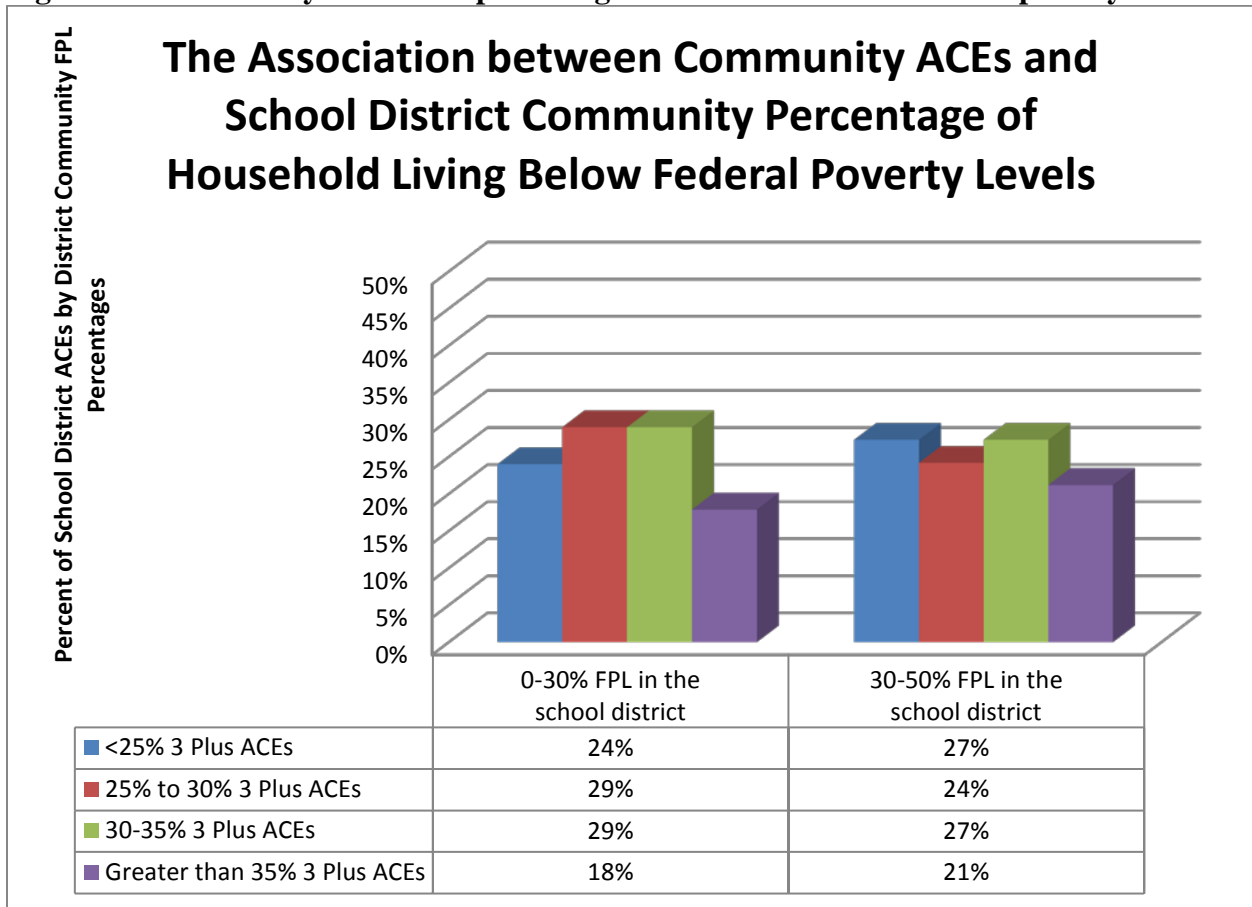
district FRM-eligible population and community percentage of school-age household living in poverty are not statistically related. The results are presented in the next two figures.

**Figure 18: Community ACEs and district FRM-eligible enrollment**



Chi Square ( $df=9$ ) = 16.3, not statistically significant

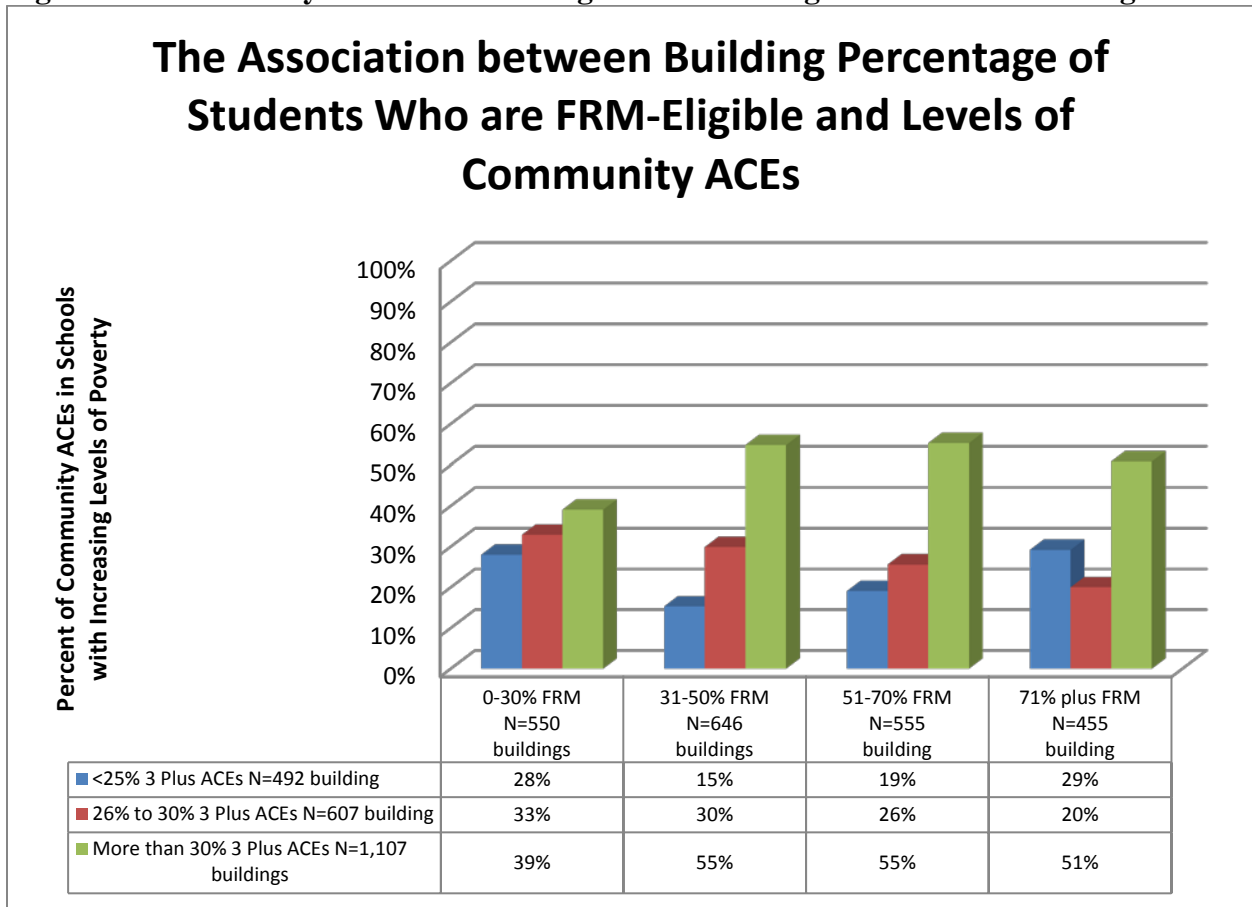
**Figure 19: Community ACEs and percentage of households below federal poverty levels**



Chi Square ( $df=3$ ) = 0.6, not statistically significant

However, community ACEs in school districts are associated with level of poverty in school buildings. To examine this relationship, we associate district-level community ACE estimates with each school within the district. This is a very crude estimation strategy because we are assigning the same level of risk described by ACEs to all schools in a district irrespective of the level of risk that may be in a specific school. Even with this crude estimate, across Washington, schools with increasing levels of poverty are much more likely to be situated in communities with high ACEs.

**Figure 20: Community ACEs and Building Level Percentage of Students FRM-eligible**



Chi Square ( $df=6$ ) = 70.8,  $p<.001$

- a. The relationship between community ACEs and the risk and protective factors identified as predictors of school outcomes.

Community ACEs are associated with multiple school, BRFSS, census and RDA risk measures. Because these measures are highly correlated with each other within each data source, we report only on the association of community ACEs with the variables identified as the principal predictors from each data source. We find that community ACEs are associated with differences in Hispanic enrollment, SNAP enrollment, violent adult crimes, IPV incidents, reported hunger in the past 12 months, higher life satisfaction and self-report of heavy alcohol consumption. ACEs were not associated with rates of teen parenting, or teachers’ experience and education. Because of data limitations, the association of ACEs with census measures of single parent households and educational attainment is not reported.

Percent Hispanic enrollment in districts is associated with lower levels of ACEs in communities. In the districts with more than 30 percent Hispanic enrollment, 26 percent of residents reported high ACEs compared to 31 percent for districts with less than 30 percent enrollment [ $F(2, 292)=9.4, p<.001$ ; Percent of variance accounted<sup>3</sup> = 6%).

Community ACEs are not related to teachers' years of experience or percentage of teachers with advanced degrees.

As community ACEs increase, the use of SNAP based on RDA community risk summaries increases. SNAP enrollment in districts with mean community ACEs greater than 30 percent have a mean SNAP enrollment that is 4 percentage points higher than districts with mean ACEs under 30 percent [ $F(1, 287) = 12.2, p<.001$ , percent of variance accounted for = 4%).

Adult violent crime rates increase in schools' communities as ACEs increase. The rate of violent crime per 1,000 residents across school districts increases in a linear manner with increasing ACEs in the community.

**Table 4: Community ACEs Groups and Rates of Adult Violent Crime**

Percentage High Community ACEs	Rate of Adult Violent Crime Arrests/1,000 residents
<25% 3 Plus ACEs	0.6
25% to 32% 3 Plus ACEs	0.9
More than 33% 3 Plus ACEs	1.4

$F(2, 201) = 18.3, p<.001$ , percent of variance accounted for = 15%

Rates of IPV incidents increase in school communities with higher ACEs. School communities with less than 25 percent ACEs have significantly lower IPV incidents.

**Table 5: Community ACEs Groups and Rates of IPV incidents**

Percentage High Community ACEs	Rate of IPV incidents per 1,000 residents
<25% 3 Plus ACEs	5.7
25% to 32% 3 Plus ACEs	6.6
More than 33% 3 Plus ACEs	6.9

$F(2, 200) = 3.4, p<.05$ , percent of variance accounted for = 3%

At the district level, community ACEs are not significantly related with rates of teen parenting.

<sup>3</sup> While we limit presentation of statistical results in the body of this report, we do present summary statistical test results as we present findings. This includes the statistical test result, significance of the statistical test and the percent of variance accounted for. Percent of variance accounted for is an indicator of the meaningfulness of the finding; as the percent of variance accounted for increases, the importance of the finding increases. Generally, in social sciences and education, percent of variance accounted for in the range of 4-6% would be considered a useful finding for further investigation in planning.



School districts' community ACEs are significantly related to BRFSS estimates of hunger, defined as percentage of respondents reporting they were hungry because of food cost in the past 12 months.

**Table 6: Community ACEs Groups and Adult Report of Hunger**

Percentage High Community ACEs	Percentage of BRFSS Respondents Reporting Hunger
15% to 30% High ACEs	7.4
31% to 35% High ACEs	10.0
More than 35% High ACEs	10.9

$F(2, 292) = 5.6, p < .004$ , percent of variance accounted for = 4%

ACEs are significantly associated with report of the percentage of respondents in BRFSS saying that their satisfaction with life is high. As ACEs increase in school communities, life satisfaction is lower.

**Table 7: Community ACEs and Percentage of Residents Reporting High Life Satisfaction**

Percentage High Community ACEs	Percentage of BRFSS Participants Reporting High Life Satisfaction
<25% 3 Plus ACEs	43.5
25% to 30% 3 Plus ACEs	41.1
30% to 35% 3 Plus ACEs	40.1
Greater than 35% 3 Plus ACEs	38.1

$F(3, 291) = 9.5, p < .001$ , percent of variance accounted for = 9%

ACEs are also associated with residents' reports of health problems in BRFSS. As ACEs in the community increase, the percentage of residents reporting poor health increase.

**Table 8: Community ACEs Groups and Percentage of Adults Reporting Fair/Poor Health**

Percentage High Community ACEs	Percentage of BRFSS Participants Reporting Fair/Poor Health
<25% 3 Plus ACEs	15.8
25% to 30% 3 Plus ACEs	16.3
30% to 35% 3 Plus ACEs	18.6
Greater than 35% 3 Plus ACEs	19.3

$F(3, 291) = 5.4, p < .001$ , percent of variance accounted for = 5%

Community ACEs are significantly associated with the percentage of BRFSS respondents reporting heavy alcohol consumption. In school communities reporting more than 30 percent ACEs, 6.2 percent of residents report heavy alcohol consumption compared to 5.6 percent in communities with less than 30 percent ACEs [ $F(1, 293) = 5.8, p < .02$ , percent of variance accounted for = 2%].

It is not possible to appropriately test the census data for SNAP enrollment and percentage of families with school-age children living below federal poverty levels. These two census variables

are associated with buildings based on census ZIP code data where district information is not available. ACE results are estimates assigned to buildings based on their district results, and direct comparisons result in inappropriate statistical tests.

We propose that ACEs can be effectively used as a single measure to describe multiple indicators of community social and health risk in school communities. This is consistent with the extensive ACE literature based on individual risk and adjustment. The key assertion from the ACEs literature is that the experience of risk in the population is significant and persisting.

### 3. The relationship of poverty on non-economic risk.

We choose to use FRM-eligible enrollment as our measure of poverty. It is available at both the district and building level and is our most sensitive estimate of poverty at the community level, given the available data and focus on school success. As expected, FRM-eligible enrollment is highly associated with SNAP enrollment and percentage of families in the communities living below federal poverty and report of going hungry because of the cost of food. FRM-eligible enrollment is also highly associated with a number of key school characteristics:

- As FRM eligibility increases in buildings and districts, teacher experience and advanced education is lower
- Increasing FRM-eligible enrollment is highly correlated with percentage of Hispanic enrollment
- Life satisfaction in communities is lower in districts with high-FRM enrollment
- Teen parenting is higher in communities with high-FRM enrollment
- IPV incidents increase in communities with high-FRM enrollment
- The percentage of adults with poor health increases in high-FRM school districts

District FRM enrollment is not significantly associated with RDA rates of adult violent crimes or percentage of residents with heavy alcohol consumption.

FRM percentages in districts are highly correlated with percentage of Hispanic enrollment at both the district and building levels. At the building level, the correlation is  $r=0.60$ . The next table presents the percentage Hispanic enrollment across districts as a function of the level of FRM-eligible students in the district.

**Table 9: The Relationship in Districts of FRM-eligible and Hispanic Enrollment**

Level of FRM-eligible Students by District	Percentage Hispanic Enrollment in Districts
Less than 50% FRM	11.2
51% to 70% FRM	18.7
More than 70% FRM	44.7

$F(2, 281) = 62.5, p < .001$ , percent of variance accounted for = 31%

FRM-eligible enrollment across districts is significantly associated with both teachers' years of experience and earned advanced degrees. In districts with more than 70 percent FRM-eligible students, years of teaching experience and percentage of teachers with advanced degrees are significantly lower. The following tables present the relationship between FRM-eligible enrollment and teachers' experience and advanced education across school buildings in the state.

**Table 10: Mean Years of Teachers' Experience by District FRM- Percentage Enrollment**

Level of FRM-eligible Students in Buildings	Mean Years of Teacher Experience
Less than 50% FRM	13.5
51% to 70% FRM	13.8
More than 70% FRM	12.3

$F(2, 2,203) = 13.3, p < .001$ , percent of variance accounted for = 1%

**Table 11: Percentage of Teachers with Advanced Degrees by Districts' FRM Enrollment**

b\Level of FRM-eligible Students by District	Percentage of Teachers with an Advanced Degree
Less than 50% FRM	69.7
51% to 70% FRM	67.5
More than 70% FRM	63.3

$F(2, 2,260) = 36.3, p < .001$ , percent of variance accounted for = 3%

District FRM eligible enrollment is significantly associated with the rate of IPV incidents in the community.

**Table 12: Districts' Percentage FRM Enrollment and Rates of Community IPV Incidents**

Level of FRM-eligible Students by District	Mean IPV incidents rate per 1,000
Less than 50% FRM	5.5
51% to 70% FRM	7.2
More than 70% FRM	7.0

$F(2, 192) = 11.1, p < .001$ , percent of variance accounted for = 10%

In higher FRM eligible districts, the rate of teen parenting is significantly greater.

**Table 13: Districts' Percentage FRM Enrollment and Community Teen Parents Rates**

Level of FRM-eligible Students by District	Mean Teen Parenting rate per 1,000
0-30% FRM-eligible	2.6
31% to 50% FRM-eligible	7.5
50% to 70% FRM-eligible	8.8
71% or more FRM-eligible	12.6

$F(3, 280) = 2.8, p < .04$ , percent of variance accounted for = 3%

Life satisfaction reported in BRFSS is higher in school districts with lower levels of FRM enrollment.

**Table 14: Districts' Percentage FRM-eligible Enrollment BRFSS Mean Life Satisfaction**

Level of FRM-eligible Students by District	Mean BFRSS High Life Satisfaction
Less than 50% FRM	42.2
51% to 70% FRM	39.4
More than 70% FRM	39.9

$F(2, 281) = 7.3, p < .001$ , percent of variance accounted for = 5%

The percentage of community adults reporting poor to fair health increases in districts with higher levels of FRM enrollment.

**Table 15: Districts' Percentage FRM Enrollment and Adults Reporting Poor/fair Health**

Level of FRM-eligible Students by District	Percentage of Adults with Fair or Poor Health
Less than 50% FRM	14.8
51% to 70% FRM	18.5
More than 70% FRM	21.6

$F(2, 281) = 30.5, p < .001$ , percent of variance accounted for = 18%

We conclude FRM-eligible enrollment across school districts and buildings is an effective single measure of poverty and is highly associated with a number of social and school resource challenges that are associated with academic success.

#### **D. Using ACEs and free- and reduced-price meal program enrollment to understand academic success**

Community ACEs and FRM-eligible enrollment are related but distinct concepts that help to consolidate the wide variety of social, health and economic factors significantly correlated with academic outcomes. Having two primary tools to describe community risk helps introduce a simplified way of addressing risk and helping to guide policy and practice discussions. In the balance of this report, rather than look at the wide range of potential risk and protective factors, we use ACEs and FRM enrollment as the framework for examining the effect of community factors on academic success and youth well-being.

In Washington state, Hispanic enrollment is highly associated with both ACEs and FRM eligibility. In communities with higher Hispanic enrollment, poverty and related economic risks are higher but reported ACEs in the community are lower. As Hispanic student enrollment increases in school districts, the relationship with our identified social risk and protective factors is complex and reinforces that Hispanic enrollment has a distinct set of influences on understanding the risks and assets in communities. As the percentage of Hispanic enrollment increases<sup>4</sup>:

- rates of adult violent crime arrests are significantly higher
- percentage of adults reporting health concerns is higher
- percentage of adults reporting heavy alcohol consumption is lower
- percentage of parenting age adults with a postsecondary degree is lower
- percentage of single parent households is higher
- rates of IPV incidents are equivalent

<sup>4</sup> Specific analyses for differences across levels of Hispanic enrollment are not detailed in this report but available upon request. The ethnic characteristics of a community are not characteristics that we can influence, and the principal goal in identifying differences based on Hispanic enrollment is to establish why controlling for the significant effects of Hispanic enrollment is necessary to more clearly identify the unique effects of poverty and Adversity in the community. We also note again that while race is an equally important factor, the distribution of race across Washington schools does not permit us to include race in these analyses at a level equivalent to the documented effects of Hispanic enrollment.

- teen parenting rates are equivalent
- life satisfaction is equivalent

Based on these findings, Hispanic school enrollment represents a third factor that has its own distinct set of influences on community and school risk and protective factors, while at the same time is associated directly with our measures of both poverty and adversity in communities.

In the following analyses, community ACEs and FRM eligibility are treated as our principal community influences on academic success and youth well-being. Hispanic enrollment is addressed in these analyses but statistically is treated as a covariate in district and building analyses to help clarify the relative contribution of poverty and adversity in the community.

Analyses are conducted at the level of building for most comparisons. Multiple measures are available for the majority of buildings. These building-level measures include FRM-eligible percentages, percentage Hispanic enrollment, grade-level standardized tests, unexcused absences and graduation rate, which allow us to look at patterns of relationships across the more than 2,000 school buildings in Washington state. The percentage of high ACEs associated with a building is an estimate based on the district or locale results from the BRFSS household surveys. Disciplinary practices, homeless student risk and student mobility are available only at the district level.

Our analysis methodology — analysis of variance with covariates (ANCOVA) — is consistent across the measures of building and district academic success indicators. We examine the unique difference among levels of community ACEs, levels of FRM-eligible enrollment and the possible interaction between levels of ACEs and FRM enrollment. We use Hispanic enrollment as a covariate to help clarify the unique contribution of ACEs and poverty on school performance.

In this report, we focus on academic performance in the 2012 academic year. Although not detailed in this report, we confirmed that the 2012 findings for standardized test results are consistent with the effects in the 2009, 2010 and 2011 academic years. As noted previously, 2013 was a transitional year for standardized assessment in Washington, and the data do not appear to be fully reflective of the patterns seen in the previous four years. Detailed analyses from the prior years are available upon request.

In the following sections, the findings for standardized test outcomes, graduation rates, unexcused absences and suspensions are presented. We complete the analysis with an examination of HYS results for grades 8 and 10 as principal measures of youth risk and resources in schools.

### **1. Standardized test results and community risk and protective factors.**

In this section, the impact of ACEs, FRM enrollment and Hispanic enrollment on standardized test results are reported by grade level. From grades 3–8, tests are the MSP-HSPE grade level tests used up until the 2014 academic year. Grade 10 science and math include several end-of-course assessments, including algebra 1, geometry, integrated math 1 and biology.

Because testing is done by grade across content areas, we examine the effects of ACEs, FRM enrollment and Hispanic enrollment at each grade level. We do not otherwise look at elementary, middle and high school differences because the level of grade combinations is so varied across Washington schools that it is not possible to group buildings consistently.

Please note that in the following results, we use more than one way to categorize ACEs and FRM enrollment. This is necessary given the distribution of buildings with respect to ACEs and FRM so we have sufficient school buildings in analyses to permit analysis. The following analyses at the building level describe students' academic progress across more than 2,000 schools in Washington.

For readers not as familiar with statistical tests, we are testing the unique contribution of each variable after accounting for influence of the other. For example, to report a significant result for ACEs means that ACEs has an effect on academic outcome even after accounting for the explanatory power of FRM and Hispanic enrollment. This is referred to as a 'main effect' in statistics. An interaction is significant if, for example, the impact of ACEs depends on the level of FRM enrollment in buildings. We do not report a significant ACE X FRM interaction unless there is evidence of a significant main effect for ACEs.

In addition to controlling for Hispanic enrollment, we also controlled across buildings for the count of students who were tested. While OSPI has good rules for not reporting small school or grade-level results, we still determined there was a wide range of students tested across buildings. Because count of participants can significantly impact the stability of percent reports, such as percentage meeting standards, we used the count of students tested as a covariate to minimize the impact of students assessed on outcomes. Although we don't address the impact on number of students tested further, we found that this covariate was highly associated with standardized test score results, and controlling for the count of students assessed is a critical element in looking across districts on the effect of community factors.

In an academic year, 20 standardized tests are administered to K-12 students in grades 3-8 and grade 10. Four content areas are tested, with reading and math tested every year and writing and science and math tested at three grade levels. The following table documents the statistically significant tests for ACEs, FRM enrollment and percent Hispanic enrollment in buildings.

In each content area test, there is a wholly consistent set of findings when there is a significant test for the three variables in question. Academic performance is lower within grade and content tests as:

- ACEs in the community increase
- FRM-eligible percentage of student increases
- Hispanic student percentage enrollment increase

We found no exceptions to how each of these factors influence standardized test performance.

**Table 16: Significant Main and Interaction Effects for ACEs, FRM Enrollment and Hispanic Enrollment on 2012 Academic Year Standardized Test Results**

ACEs	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 10
Reading	Yes		Main/Interaction with FRM	Main/Interaction with FRM		Yes	
Math	Yes	Main/Interaction with FRM	Yes	Main/Interaction with FRM	Yes	Yes	Main/Interaction (Geometry)
Writing		Yes			Yes		
Science			Yes			Yes	Main/Interaction (Biology)
FRM	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 10
Reading	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Math	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Writing		Yes			Yes		Yes
Science			Yes			Yes	Yes
Hispanic	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 10
Reading	Yes	Yes	Yes	Yes	Yes	Yes	
Math	Yes	Yes	Yes	Yes	Yes	Yes	
Writing		Yes			Yes		
Science			Yes			Yes	Yes

Blacked out cells – Test not given in that subject and grade level.

Yes – Significant effect on academic outcomes for the main variable of ACEs, FRM or Hispanic enrollment.

Main/Interaction- –For ACEs only, this reflects that there is a major effect of ACEs, and ACEs and FRM enrollment interact in a significant manner, influencing academic outcomes.

Clear, empty cell – No significant finding for the variable on the academic outcome.

The impact of ethnicity and poverty on academic success is systematic and significant. Race and ethnicity define the character of communities and are important to understand as characteristics that mediate academic success but are obviously not a focus for change. The public policy efforts to address the impact of poverty are extensive and represent structural and economic policies that are beyond the purpose of this report. Addressing community ACE risks in adults and children through community education, coordinated community responses, early intervention and strengthening remedial efforts offers strategies that are supported by research but require careful investment and disciplined implementation. In the balance of this report, while we report the impact of poverty and ethnicity in the findings, we concentrate on the role of ACEs as a vehicle for policy and intervention.

ACEs as a main effect or as an interaction with FRM-eligible enrollment is predictive of academic outcomes in 16 of the 20 content/grade standardized assessments. FRM enrollment has a significant effect on all assessments. Hispanic enrollment is a major influence in all grade levels except in grade 10, where Hispanic enrollment is not predictive of standardized test results for science.

The three principal variables were not related to change over time from the 2009–12 academic years. In each grade and content level, the relative standing of building in each year is generally consistent even when absolute pass percentages change. We did find that with minor variations, the results reported here for academic year 2012 were also found in the 2009, 2010 and 2011 academic years.

The next two tables provide the 2012 academic year percent met standard for the statistically significant ACEs and FRM enrollment analyses summarized above. The two tables include the difference in mean percent met standard between the lowest and highest group ACEs and FRM groups for each grade level and content area. The mean difference between the first and last ACEs groups of schools ranges from 2 to 6 percentage point differences. The mean differences between FRM enrollment school groups range from percent to 15 percent mean percentage points.

Based on this analysis, 32 percent of Washington school children in 2012 lived in communities where more than 3 percent of adults reported three or more childhood ACEs. Using a mean 4 percent lower success rate on standardized tests, the results indicate that 13,500 students in these high ACE community schools could have met standard if the factors resulting from high ACEs in the community were not a consideration.



**Table 17: ACEs Effects on Change in Mean Percent Met Standard on 2012 Standardized Tests**

Reading	Grade 3	Grade 4	Grade 5	ACEs	Grade 6	Grade 7	Grade 8	Grade 10
15% to 30% High ACEs	75	NS	74	15% to 30% ACEs	73	NS	67	NS
31% to 35% High ACEs	72	NS	74	More than 30% ACEs	70	NS	64	NS
More than 35% High ACEs	73	NS	71					
Difference	2		3		3		4	
Math	Grade 3	Grade 4	Grade 5	ACEs	Grade 6	Grade 7	Grade 8	Grade 10
15% to 30% High ACEs	67	64	66	15% to 30% ACEs	63	64	54	80
31% to 35% High ACEs	66	61	64	More than 30% ACEs	59	60	50	74
More than 35% High ACEs	64	61	61					
Difference	3	4	5		4	4	5	6
Writing	Grade 3	Grade 4	Grade 5	ACEs	Grade 6	Grade 7	Grade 8	Grade 10
15% to 30% High ACEs		65		15% to 30% ACEs		72	NS	NS
31% to 35% High ACEs		61		More than 30% ACEs		67	NS	NS
More than 35% High ACEs		60						
Difference		4				4	x	x
Science	Grade 3	Grade 4	Grade 5	ACEs	Grade 6	Grade 7	Grade 8	Grade 10
15% to 30% High ACEs			69	15% to 30% ACEs			66	67
31% to 35% High ACEs			68	More than 30% ACEs			60	61
More than 35% High ACEs			64					
Difference			4				6	6

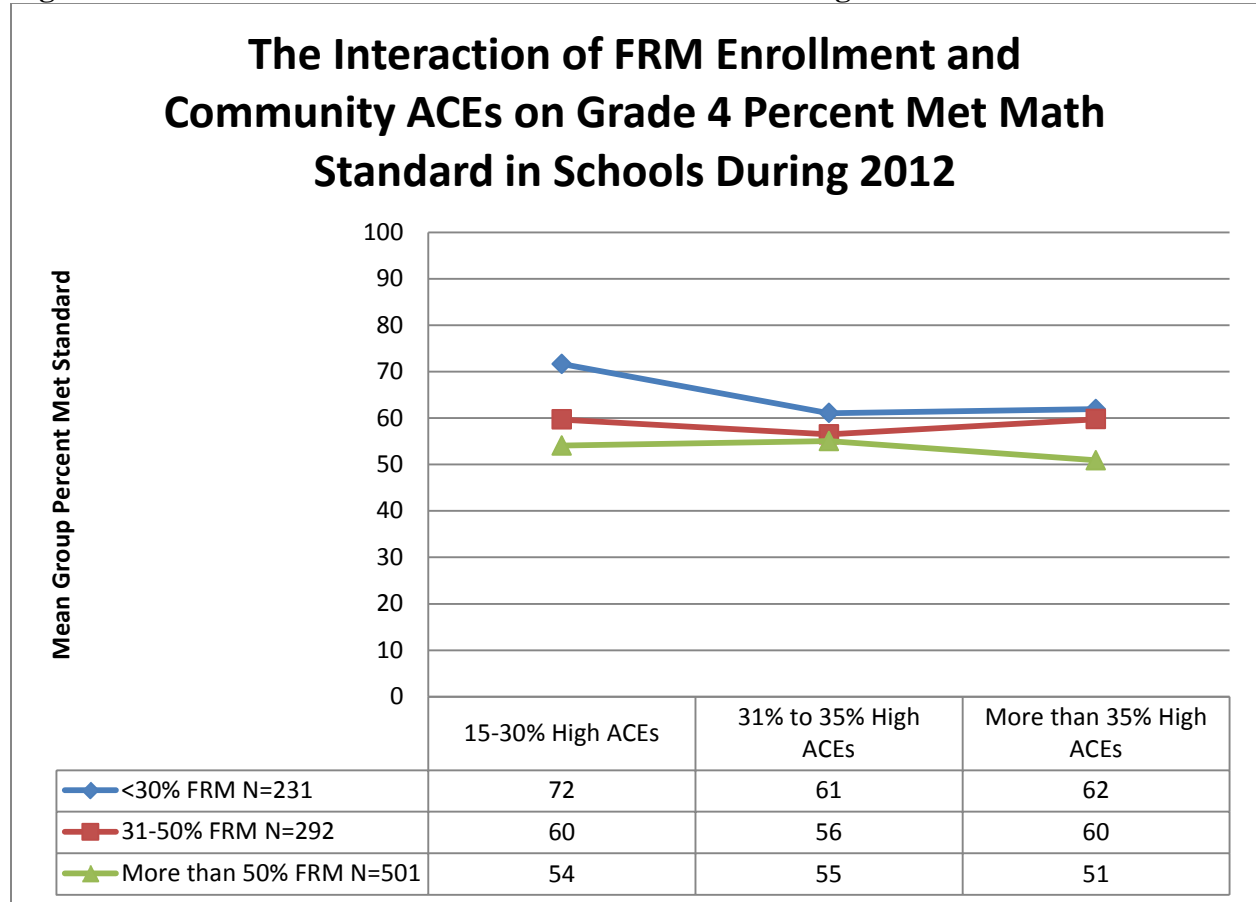
**Table 18: FRM-eligible Enrollment Effects on Change in Mean Percent Met Standard on 2012 Standardized Tests**

Reading	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 10
<30% FRM	77	77	78	77	78	72	83
31-50% FRM	75	73	74	73	74	66	80
More than 50% FRM	67	67	67	65	67	58	71
Difference	10	10	12	12	12	13	11
Math	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 10*
<30% FRM	71	69	70	68	69	60	84
31% to 50% FRM	67	62	64	61	62	51	--
More than 50% FRM	59	56	56	53	56	45	70
Difference	12	13	14	15	13	14	11
Writing	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 10
<30% FRM		69			74		83
31% to 50% FRM		63			73		82
More than 50% FRM		54			62		75
Difference		15			11		8
Science	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 10
<30% FRM			73			68	71
31% to 50% FRM			69			65	--
More than 50% FRM			59			57	57
Difference			15			11	13

In several of the grade-level standardized test results, we report a significant interaction between FRM enrollment and community ACEs. In all instances, the interaction was in the group with the lowest level of FRM enrollment. As FRM enrollment levels in groups of schools and districts increased, the interaction was not repeated. The next table provides an example of the interaction observed.

The interaction demonstrates that in the districts with the lowest level of poverty, ACEs have a significant independent effect on academic success. In this instance, examining grade 4 math percent pass in 2012, the average reduction in mean percent pass scores is an average of 10 percentage points when we compare the 146 buildings that are low poverty and lowest ACEs to the 46 buildings that are low poverty and in the highest ACE group. In effect, in low-poverty schools with high ACEs, school academic success on standardized test resembles the effect seen in high-poverty schools.

**Figure 21: FRM Enrollment and ACEs on Grade 4 Percentage Met Math Standard in 2012**



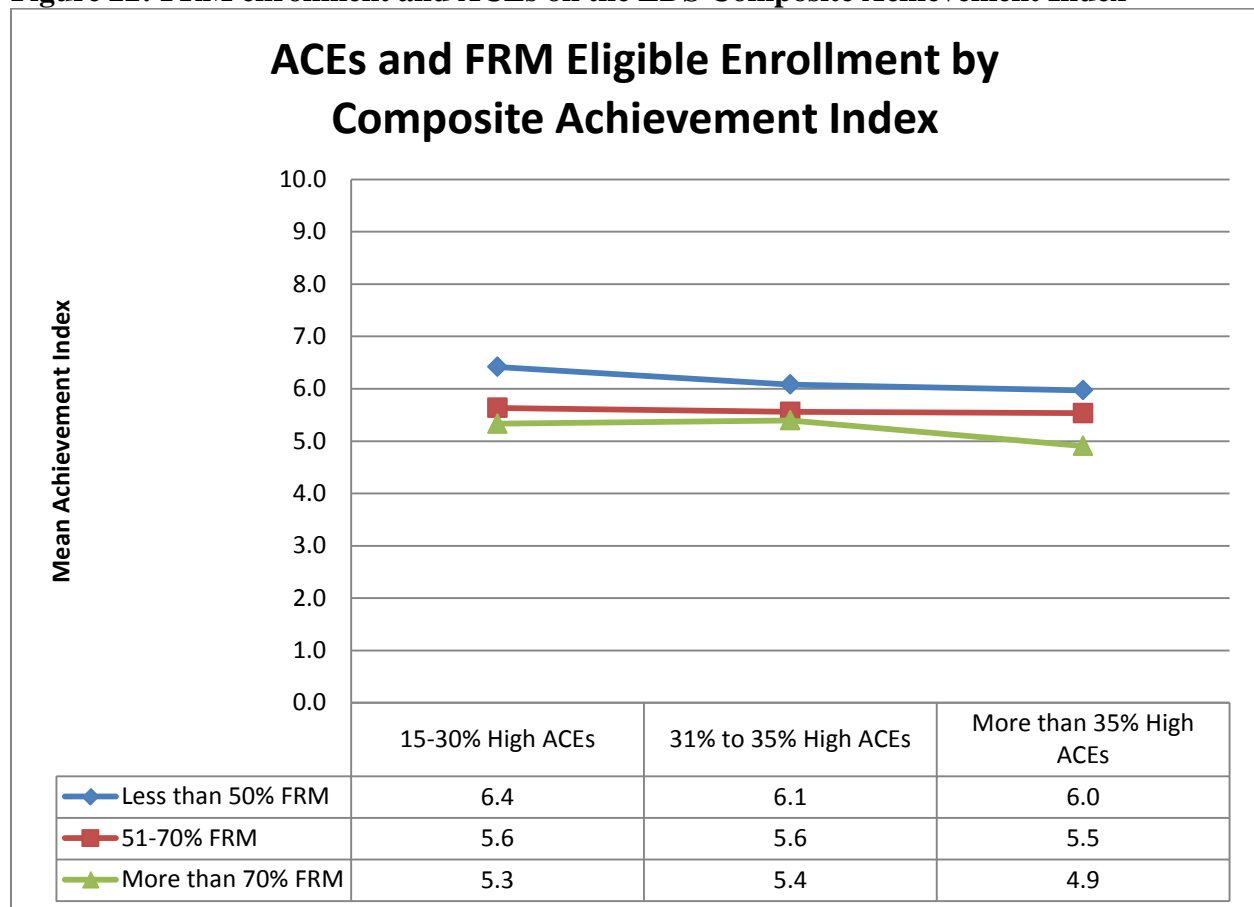
ACEs main effect:  $F(2, 1,013) = 6.0, p < .003$ , percent of variance accounted for = 1%  
 FRM main effect:  $F(2, 1,176) = 36.7, p < .001$ , percent of variance accounted for = 7%  
 Hispanic main effect:  $F(1, 1,176) = 37.4, p < .001$ , percent of variance accounted for = 4%  
 ACE X FRM interaction:  $F(1, 1,176) = 2.9, p < .001$ , percent of variance accounted for = 2%

## 2. EDS achievement index results

The Washington State Education Data System (EDS) Achievement Index is a collaboration of OSPI and the State Board of Education. The Achievement Index is intended to provide a single metric for assessing progress and includes growth gains over time as well as weight data to more fully reflect the progress of subgroups of students (e.g., ethnicity, race and income). The Achievement Index is reported annually, and the composite achievement index is a three-year weighted result including proficiency, measures of growth and college and career readiness measures if the school is a high school.

Using the 2013 composite achievement index, we confirm that the three identified community factors each is significantly related to achievement. While there is an overall effect for poverty such that higher poverty schools have lower achievement scores, as ACEs increase in communities, school performance is lower. Higher scores on the index reflect increased academic performance.

**Figure 22: FRM enrollment and ACEs on the EDS Composite Achievement Index**

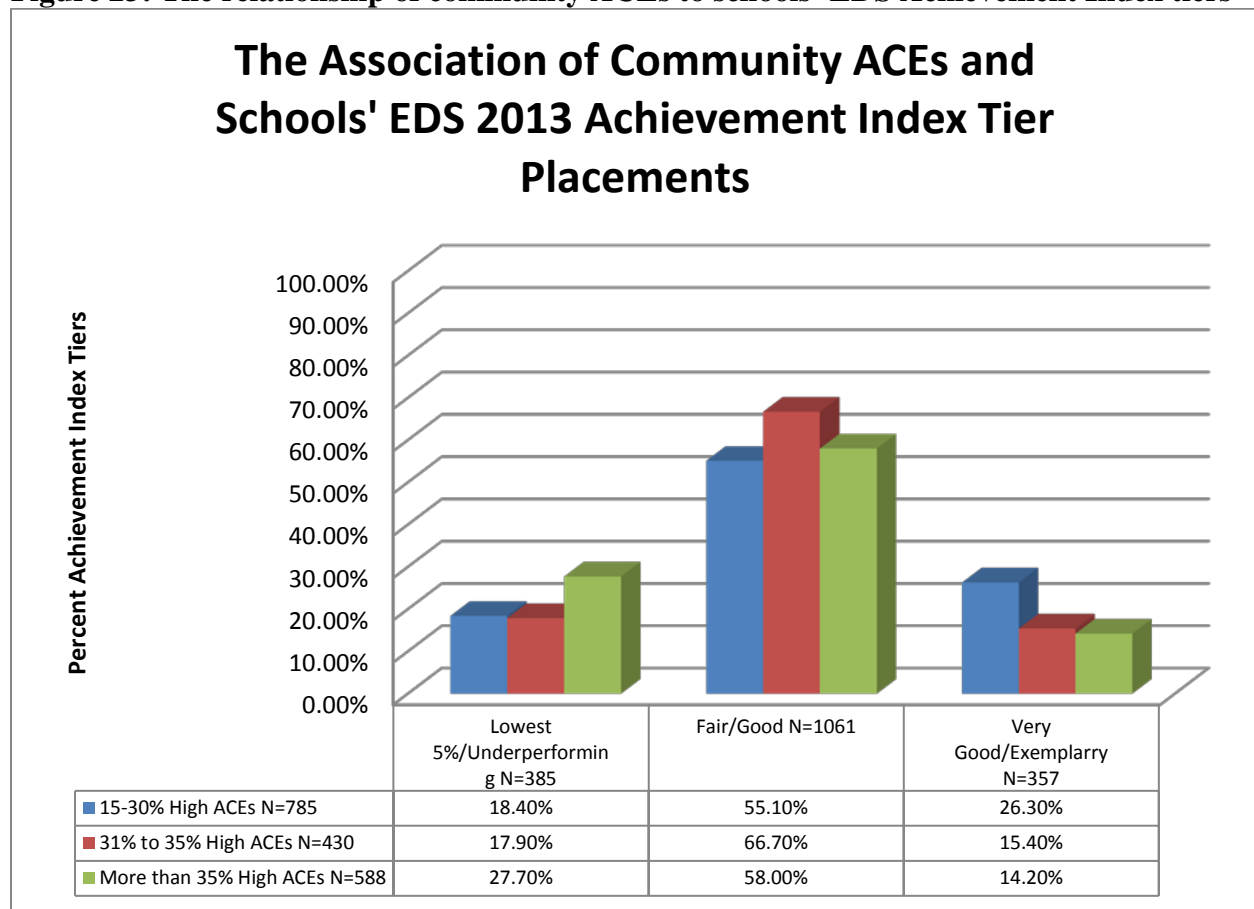


ACEs main effect:  $F(2, 1,176) = 11.9, p < .001$ , percent of variance accounted for = 1%  
 FRM main effect:  $F(2, 1,176) = 62.0, p < .001$ , percent of variance account for = 7%  
 Hispanic main effect:  $F(1, 1,176) = 8.1, p < .001$ , percent of variance accounted for = 7%  
 ACE X FRM interaction:  $F(1, 1,176) = 2.9, p < .02$ , percent of variance accounted for = <1%

Based on the Achievement Index, schools are classified in tiers from lowest 5 percent of schools to schools considered as exemplary. Using this tier structure, the next figures demonstrate the impact of ACEs in communities, FRM enrollment in schools and Hispanic enrollment percentages on schools' tier group placements. As community ACEs, FRM and Hispanic enrollment increase, more schools fall in the lowest 5 percent underperforming category, and schools are less likely to be categorized as very good or exemplary.

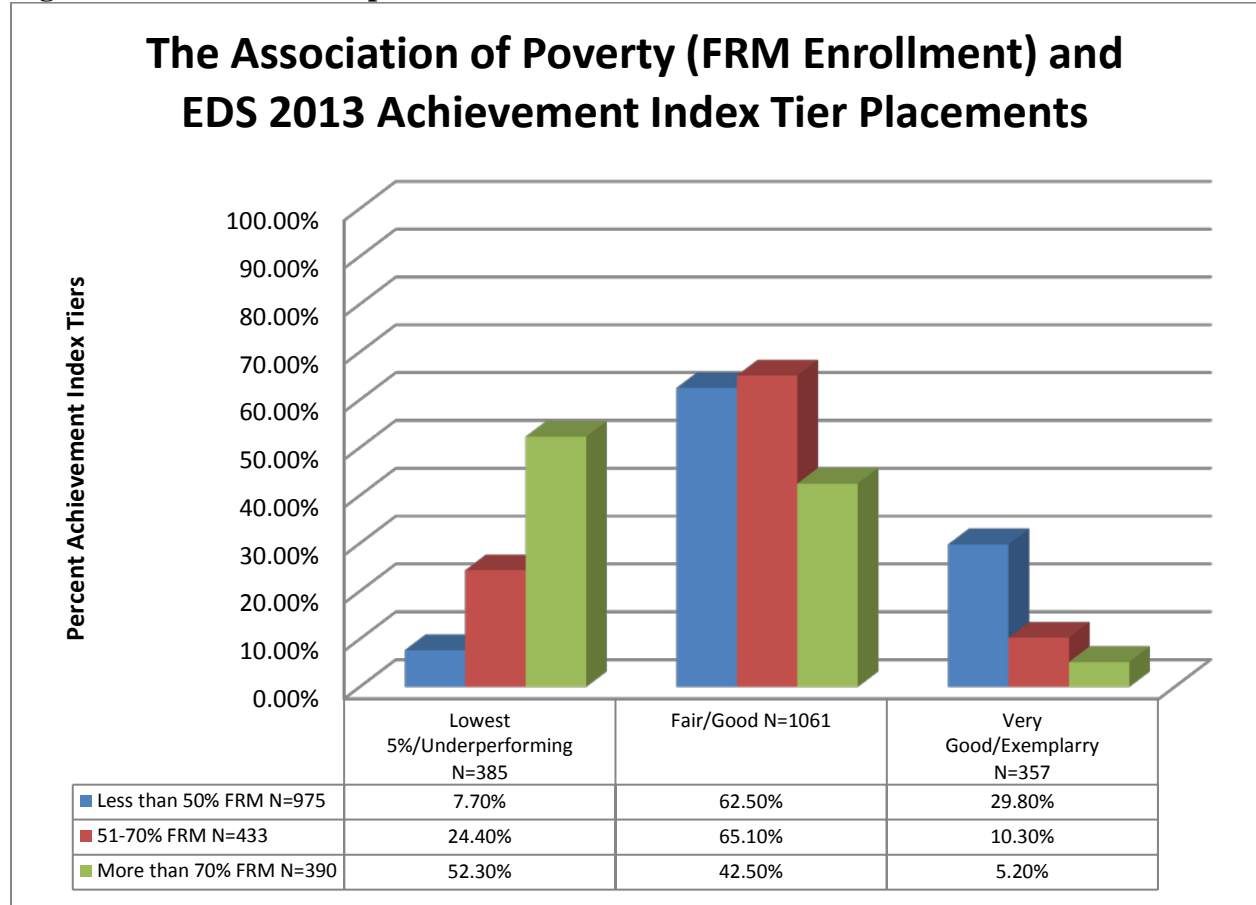
As we documented in the analysis of standardized test results, FRM and Hispanic enrollment demonstrate greater impact on tier designation than do ACEs. However, the impact of ACEs remains highly significant based on our examination of standardized test results as a unique factor affecting academic performance. Communities with lower levels of high ACEs in adults are nearly twice as likely to fall in the very good/exemplary tiers (28 percent of schools) compared to schools in communities with more than 35 percent of adults reporting significant ACE histories (14 percent of schools).

**Figure 23: The relationship of community ACEs to schools' EDS Achievement Index tiers**



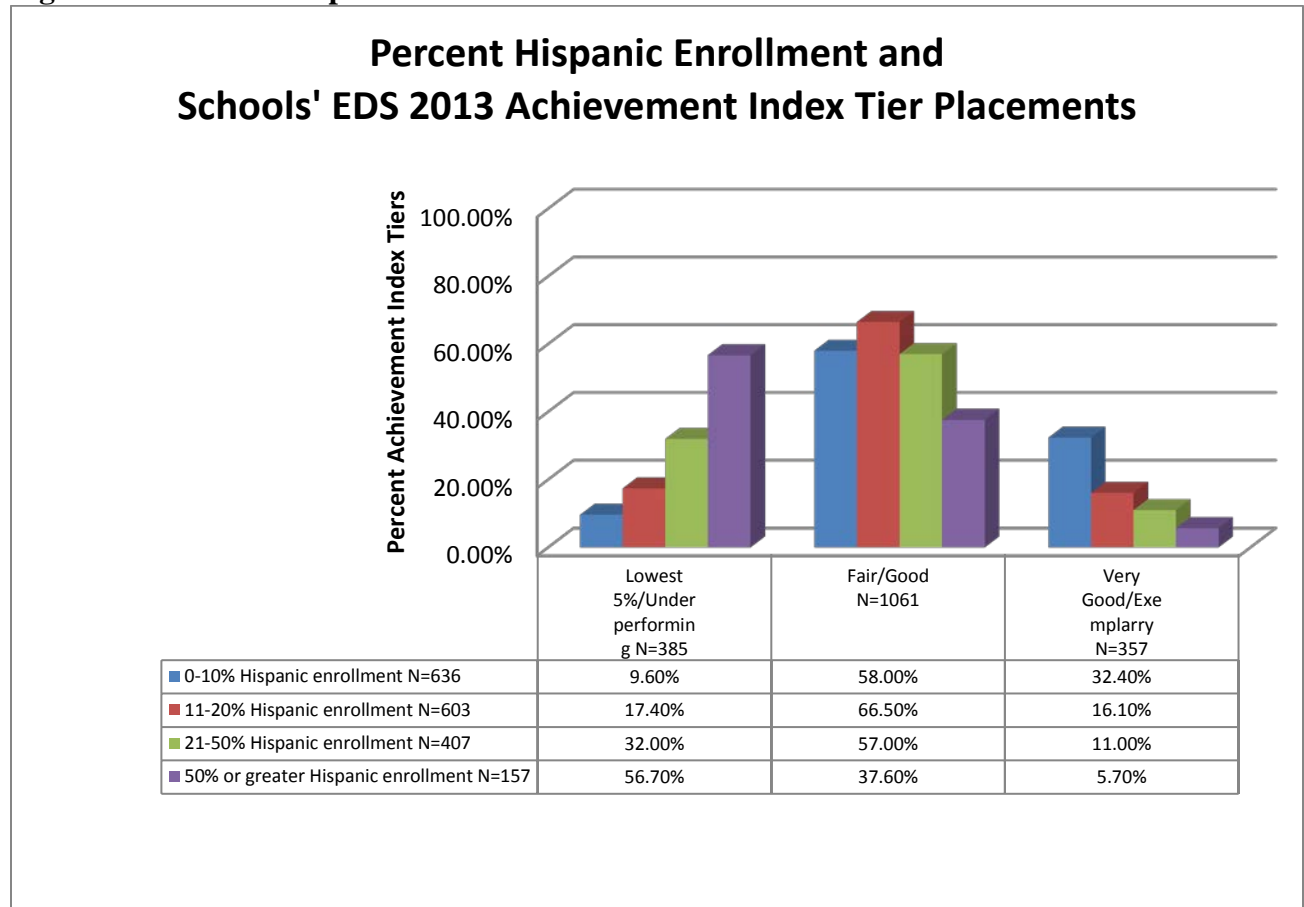
Chi Square (10) = 70.1,  $p < .001$

**Figure 24: The relationship of FRM enrollment to schools' EDS Achievement Index tiers**



Chi Square (10) = 481.5,  $p < .001$

**Figure 25: Schools' Hispanic enrollment on schools' and EDS Achievement Index tiers**



Chi Square (15) = 310.5,  $p < .001$

The Achievement Index also includes student populations of special interest at the building level. Population data address race, ethnicity, special needs and low-income students. As we noted before, although race is a critical factor to address in improving school outcomes, the nature of racial group distribution across Washington schools is such that we believe the data available for this report do not permit us to examine race effectively.

The Achievement Index data do include students with a disability and on an Individual Education Plan as those who are receiving special education services. The nature of the disability is not specified in the data, and includes cognitive, behavioral, learning disability and physical special needs students.

FRM enrollment is a significant predictor of mean percent pass rates for reading, math, writing and science scores for 2012 standardized test results. As FRM increases, percent pass averages go down. As percent Hispanic enrollment increases, average percent pass results also are lower across all four content areas. Higher community ACEs are associated with lower percent pass results only for science. Because these findings largely replicate the results reported above, we do not provide more detailed results here.

### 3. Graduation rates

The EDS Achievement Index program reports graduation rates for high school buildings as three-year averages through the end of the 2013 academic year. This three-year average graduation rate is based on the rate of extended five-year adjusted cohort graduation rate.

Graduation rates are significantly associated with FRM enrollment but not with either community ACE levels or Hispanic enrollment. As the level of poverty in high schools increases, graduation rates drop from 82 percent to 57 percent on average.

**Table 19: Differences in Graduation Percent by FRM-eligible High School Students**

FRM Percentage Enrollment in High Schools	Three-Year Average Graduation Percentage
Less than 50% FRM N=243	82%
51% to 70% FRM N=92	68%
More than 70% FRM N=58	57%

FRM main effect:  $F(2, 386) = 24.3, p < .001$ , percent of variance accounted for = 11%

### 4. Unexcused absences and suspensions

Unexcused absences and suspension policies vary significantly across districts. “According to RCW 28A.225.020, an unexcused absence means a student has not attended a majority of hours or periods in a school day, or has not complied with a more restrictive district policy and has not met the conditions for an excused absence.” Districts differ in terms of the local definition, and the result is that there is not a common definition accepted comprehensively. However, the 2011 definition provided above did set minimum definitional conditions. While suspension practices vary widely, the outcome of whatever the policy is results in a student suspended from school, and the count of these students is an indicator of both students with significant behavior concerns and children whose education is interrupted at least temporarily.

Unexcused absences are reported at the building level for grades 1-8. Unexcused absences are reported as percentage of unexcused absences for total days of enrollment cumulatively for enrolled students in the building. Building level reports of unexcused absences range from none to 12.5 percent.

FRM enrollment is significantly associated with unexcused absence percent of possible days enrolled. ACEs and Hispanic percent enrollment was not significantly associated with unexcused absences.

**Table 20: Unexcused Absences Percent by FRM-eligible High School Students**

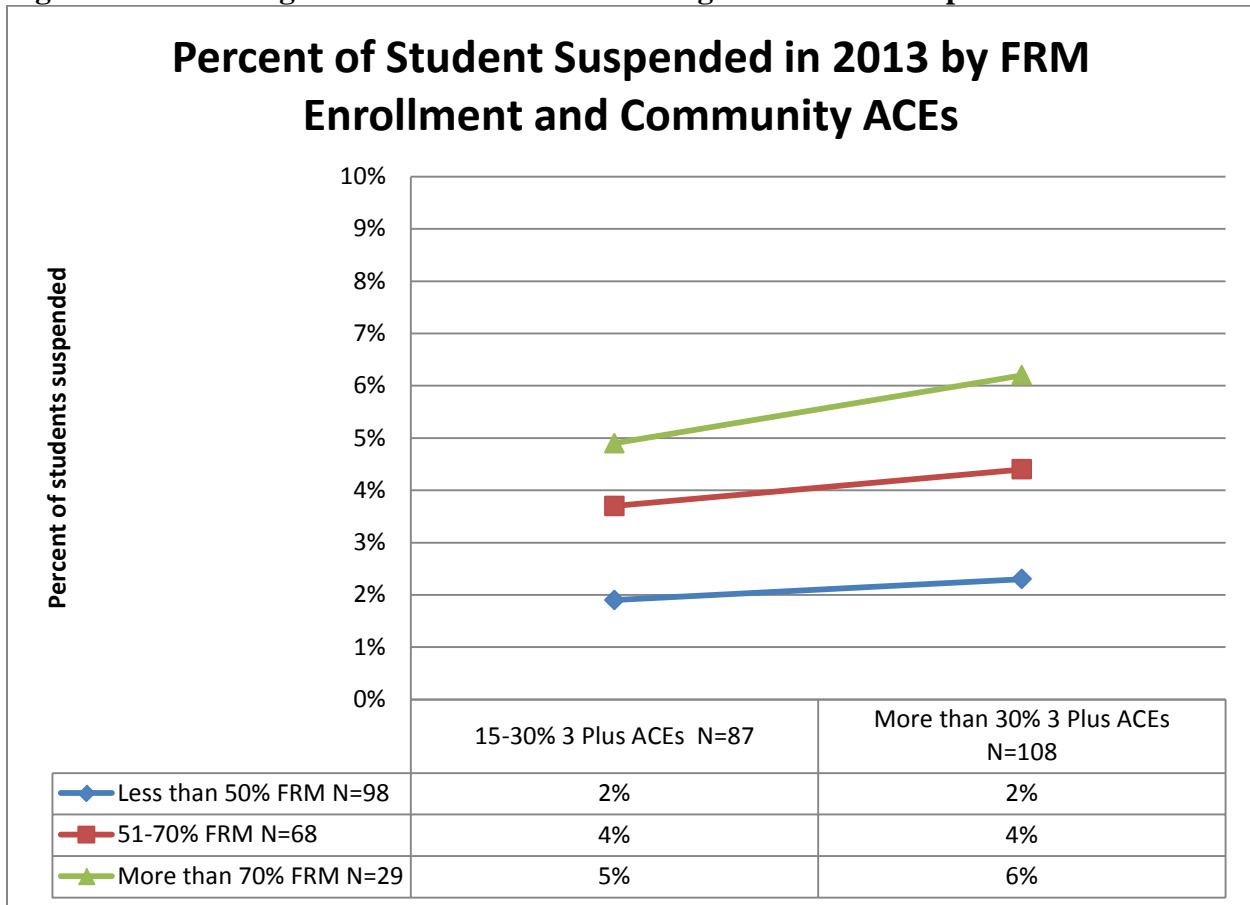
FRM Eligible Enrollment	Percent Unexcused Absences 2013
Less than 50% FRM N=858	0.3%
51% to 70% FRM N=409	0.5%
More than 70% FRM N=354	0.9%

FRM main effect:  $F(2, 386) = 33.2, p < .001$ , percent of variance accounted for = 4%



Suspension data are reported only at the district level. Using 2013 data, both FRM enrollment and community ACEs are associated with rates of suspensions. Hispanic enrollment was not associated with suspensions. Suspensions increase with higher levels of FRM-eligible enrollment and increasing levels of high ACEs in the community.

**Figure 26: FRM-Eligible Enrollment and Percentage of Students Suspended**



ACEs main effect: F (1, 187) = 5.2, p<.02, percent of variance accounted for = 3%  
 FRM main effect: F (2, 187) = 19.3, p<.001, percent of variance accounted for = 17%  
 Hispanic main effect: Not significant  
 ACE X FRM interaction: Not significant

We remind the reader that the findings for unexcused absences and suspensions should be interpreted with caution because of the range of definitional conditions leading to schools reporting of these two measures.

### 5. Postsecondary education progression

The Washington State Office of Financial Management (OFM) Education Research and Data Center (ERDC) provides consolidated data on postsecondary education and related workforce development experiences of high school graduates in Washington state. ERDC data are available at the building level, but small graduating class sizes result in problems with analysis of the data at the building level. As a result, the ERDC data were analyzed at the district level. Postsecondary education percentages are provided in categories for most districts. Data are

categorical, and for simplification of presentation, we used midpoints when ranges overlapped report categories for this report.

Neither community ACEs or Hispanic enrollment was associated with levels of graduates progressing to postsecondary education. FRM enrollment is associated with the percentage of high school graduates who progress to postsecondary education. Based on 2012 graduate information for 222 districts, districts with higher poverty have lower progress of students to postsecondary education. The next table presents the percentage of districts in 2012 that had greater than 60 percent of their graduating class progress to postsecondary education. In districts with less than 50 percent FRM enrollment, 58 percent these districts had high postsecondary enrollment compared to only three of 33 districts (9 percent) with more than 60 percent of their graduates progressing to postsecondary education.

**Table 21: FRM Enrollment in Districts and Progression to Postsecondary Education**

Postsecondary Enrollment	Less than 50% FRM N=106	51-70% FRM N=83	More than 70% FRM N=33
Greater than 60%	58%	30%	9%

Chi Square (6) = 45.8,  $p < .001$

## E. Youth well-being and risk in schools

The HYS is a voluntary, anonymous survey of youth in Washington schools. HYS describes a range of risk behaviors in adolescents, including substance use, tobacco use, alcohol use, reports of behaviors involving other risk behaviors (e.g., bullying, drinking and driving) and attitudes and beliefs that describe the youth's connection to peers, school, family and community. For this report, we employ the 2010 HYS survey results and link the survey to building-level 2010 academic results, 2010 BRFSS community ACE estimates and 2013 demographic characteristics.

Because of our interest in youth risk and the potential contributing role of ACEs in youth, we restricted the HYS data to 2010 grade 8 and grade 10. Key risk items and the ACE questions are specific to these later grades.

The survey responses are summarized with respect to community, school, peer, and individual and family risk and protective factors that are aligned with the Hawkins and Catalano risk and protective framework (Catalano et al. 2005). The principal areas of youth well-being are:

- community risk and protective factors
- family risk and protective factors
- school risk and protective factors

Within most areas of the HYS risk and protective factors, there are multiple subscales.

While the majority of school districts and buildings support HYS administration, there are several constraints on the data that result in us not fully integrating HYS results with the overall building and district analyses presented to this point in the report. In particular, constraints in the data administration (specific questions excluded by local choice) and low participation rates in

some buildings or in response to specific questions lead us to be cautious about fully combining HYS with other data sources. Instead, for buildings with acceptable 2012 HYS participation counts on the majority of the risk and protective factors, we incorporated 2012 standardized test results, mean community ACE results and school building demographics describing percent FRM enrollment and Hispanic enrollment. As a result, we are able to use the same analysis framework focusing on the explanatory power community ACEs, FRM enrollment and Hispanic enrollment described in the earlier sections of this report.

In addition, HYS permits some enhanced analyses about the characteristics of the youth. Of particular interest for this report is that two questions in HYS can be used to provide an approximate measure of ACEs in the youths' personal experience (youth adversity). The two questions are:

- Have you ever been physically abused?
- Have you witnessed adult to adult violence (more than once)?

Both personal experience of child maltreatment and witnessing violence are highly correlated with overall ACE scores in multiple studies. This approach has been employed in earlier reports to describe the role of ACEs in youth in interpreting HYS results (Longhi, 2010). Longhi reports that youth adverse experiences are common. Forty-two percent of youth in 2002 and 2006 report experiences with one of the two types of adversity and 13 percent reported experiencing both types of adversity. Experience of youth adversity was associated with sharp increases in school problems, early adoption of multiple risk behaviors, school difficulties and increased health concerns.

Consistent with the rest of this report, HYS results are presented as either mean scale results or mean percent results for each HYS question or scale. As a result, we are describing the average characteristics of the youth in the building, not the experiences of individual youth.

Community ACEs and youth ACEs are not correlated significantly. This likely reflects the difference in questions and samples of youth and adults connected only by district geography. However, we find that both community and youth ACEs are significantly correlated with a variety of HYS risk and protective factors particularly for community and school factors. The correlations are not large, ranging from  $r=0.20$  to  $r=0.30$  or higher, but demonstrate consistent relationship that links community and youth ACE scores. We want to stress that we are correlating mean community ACE scores and mean youth ACE scores. The consequence is that each mean is an estimate that includes a wide range of individual responses, and this variability contributes to lower correlations.

Many of the HYS questions are very specifically about the attitudes and experiences of individual youth such that it is likely that individual questions about ACE history will be a stronger predictor (individual response to both ACE risk and risk and protective behaviors and attitudes) while the indirect community measure of ACEs are much more indirect concomitant mechanisms that may influence youth risk. Despite the differences in the levels of information we have, both community and youth ACE estimates for schools are associated with:

- early initiation of problem behaviors
- sense of personal lack of safety

- beliefs that problem behaviors are tolerated by their community
- lack of connection to school and neighborhood

Using the same logic detailed in previous analyses, community and youth ACEs were introduced in statistical tests (ANCOVAs) where FRM enrollment was treated as a main community factor in its own right while Hispanic enrollment and total enrollment in the school building were used as covariates to determine if there is an ACEs and FRM enrollment difference on standardized academic tests and on HYS risk and protective factors.

FRM-eligible enrollment was found to be a major independent predictor for both academic success and youth risk measures. The academic success findings replicate the results presented above and are not repeated here. The new finding from the HYS risk factor analyses is that FRM, with a few exceptions, is equally powerful in predicting youth self-report of risk. Consistent with the previous reports, increasing poverty is a direct predictor of increases in risk among youth.

In contrast to the continuing powerful influence of poverty, we found that Hispanic enrollment in schools generally was not a significant predictor of difference in youth risk.

When we examined the role of community ACEs on HYS risk and protective factors, we found multiple examples that community ACEs predict risk in the communities' youth. As community ACEs increase, the following HYS risk measures also increase:

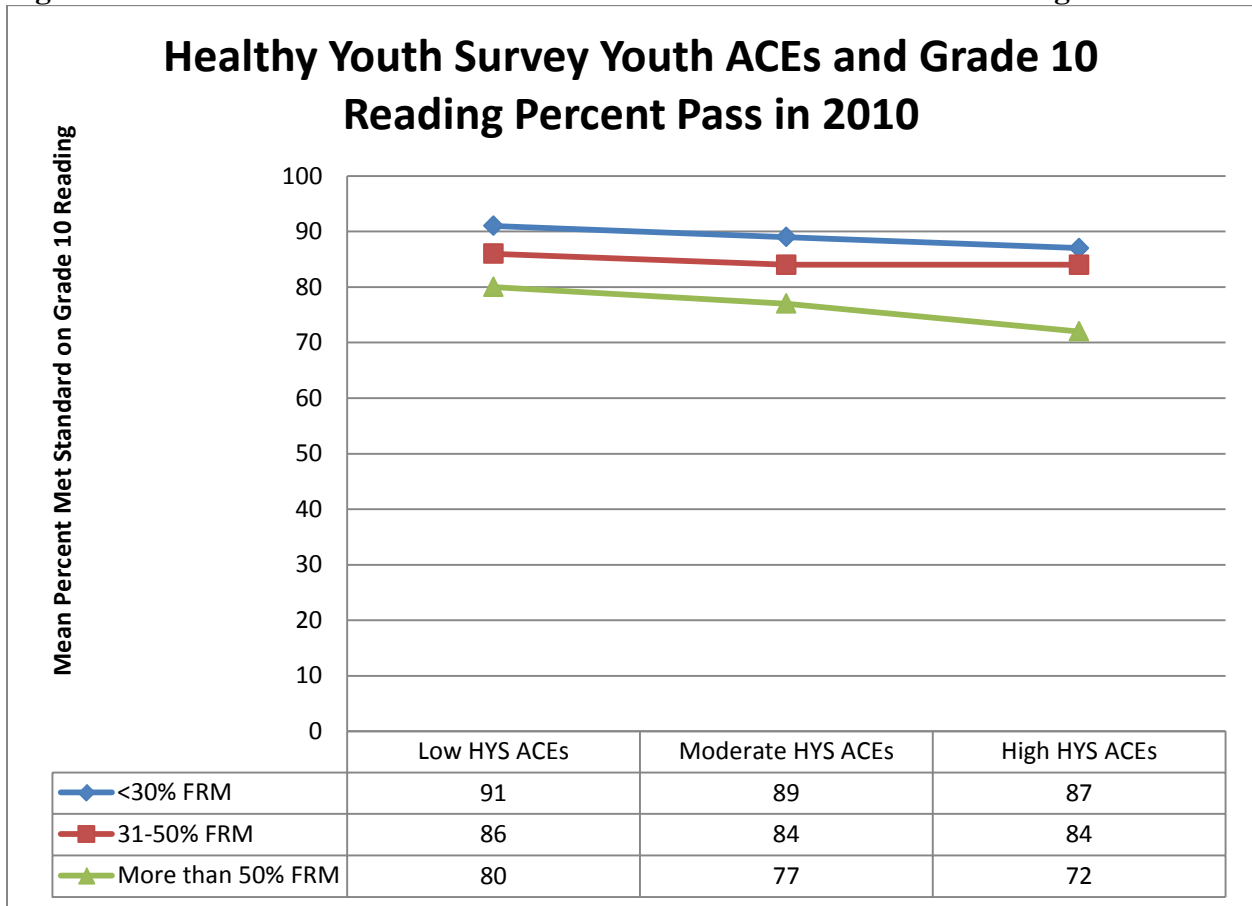
- Community Risk Factor: low neighborhood attachment in grade 8 youth (significant FRM independent effect, no effect for Hispanic enrollment). The statistical test results for community ACEs is  $F(2, 265) = 7.3, p < .001$ .
- Community Risk Factor: laws and norms favorable to drug use in grade 8 youth (significant FRM independent effect, no effect for Hispanic enrollment). The statistical test results for community ACEs is  $F(2, 265) = 4.5, p < .01$ .
- Peer-Individual Risk Factor: friends use of drugs in grade 8 youth (significant FRM independent effect, no effect for Hispanic enrollment). The statistical test results for community ACEs is  $F(2, 265) = 3.1, p < .05$ .
- Peer-Individual Protective Factor: social skills in grade 8 youth (low social skills are a risk factor; significant FRM independent effect and significant effect for Hispanic enrollment). The statistical test results for community ACEs is  $F(2, 260) = 3.1, p < .05$ .

We confirm that as communities' ACEs increase, the level of risk in the community is predictive of the level of risk in youth measured on both community challenges of norms and social connection and in terms of greater risk of antisocial peers and lower social skills critical to success in adolescence and adulthood.

When we introduce the youth ACEs variable from HYS as a predictor of academic outcomes, we found that FRM and Hispanic are large predictors of academic success as detailed earlier in this report. However, to create low, moderate and high youth ACE groups the mean scores for the two ACE questions in HYS were organized as the lowest 25 percent of school mean HYS ACEs (low youth ACEs group), the middle 50 percent of mean HYS ACEs (moderate youth ACEs group) and the highest 25 percent of building mean HYS ACEs (high youth ACEs group)

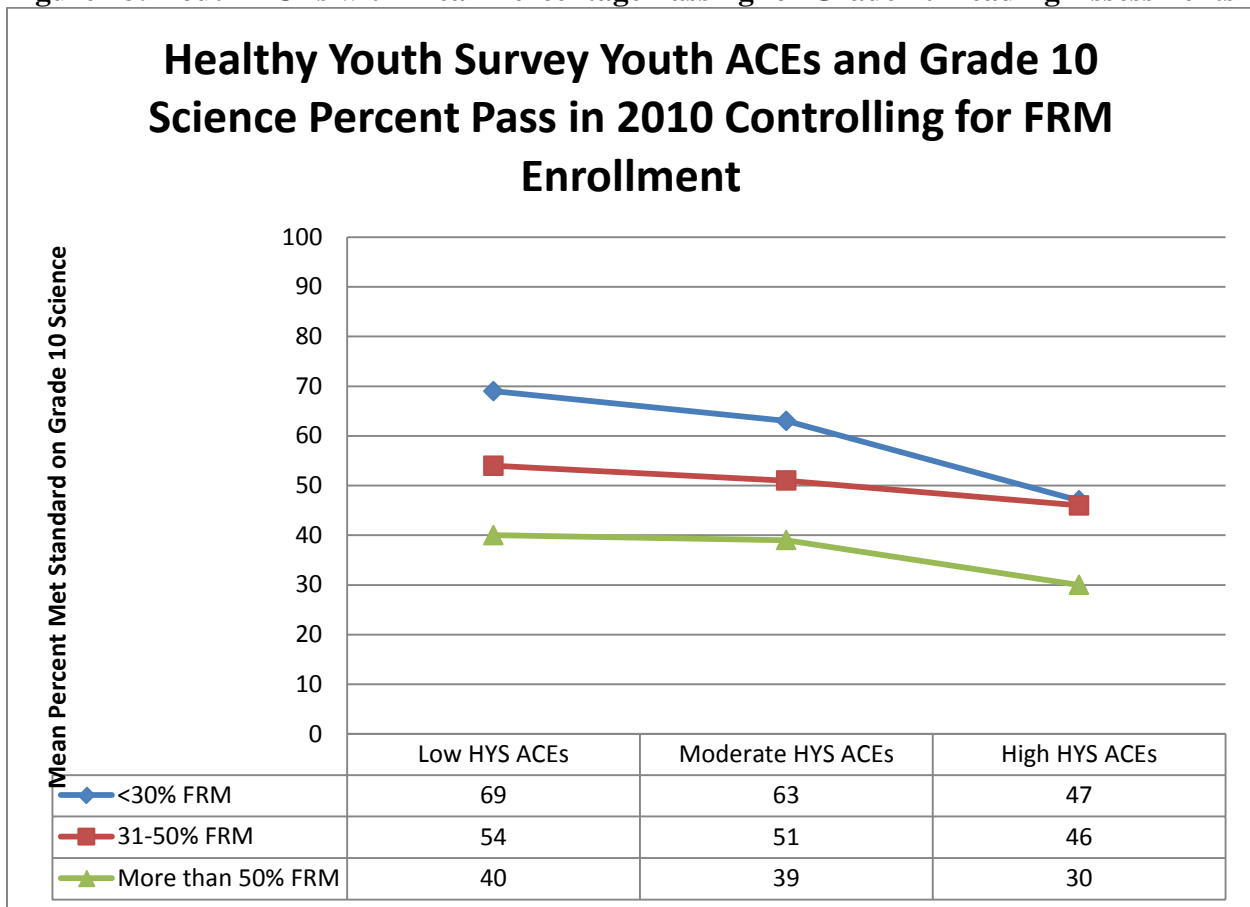
HYS youth ACE exposure is a significant predictor of standard test success. As the percentage of youth in a school reporting adversity increases, academic performance drops significantly for grade 10 mean school reading and science standard test results. The statistical test for youth ACEs effect on grade 10 reading is  $F(2, 170) = 4.9, p < .008$ . The statistical test for youth ACEs effect on grade 10 science is  $F(2, 176) = 18.1, p < .001$ . We confirm that in addition to the predictive power of community ACEs on schools' academic success, youth ACEs also are direct influences on academic performance.

**Figure 27: Youth ACEs and Mean Percent Pass Results for Grade 10 Reading Assessments**



Youth ACEs main effect:  $F(2, 170) = 4.9, p < .008$   
 FRM main effect:  $F(2, 170) = 32.6, p < .001$   
 Hispanic main effect:  $F(1, 170) = 4.6, p < .03$   
 Youth ACE X FRM interaction: Not significant

**Figure 28: Youth ACEs with Mean Percentage Passing for Grade 10 Reading Assessments**



Youth ACEs main effect:  $F(2, 176) = 18.1, p < .001$   
 FRM main effect:  $F(2, 176) = 42.5, p < .001$   
 Hispanic main effect:  $F(1, 170) = 18.3, p < .0001$   
 Youth ACE X FRM interaction: Not significant

The scope of effect for HYS youth ACEs is greater than what we had previously reported for community ACEs. This reflects that we are using samples of students from the schools to predict academic outcomes, resulting in much more sensitive potential measures. The lack of findings for grade 8 academic measures is noteworthy and likely reflects the multiple other influences, including development influences and education practices between these two grade levels.

We also find that youth ACEs as measured in HYS are highly predictive of youth risk on multiple measures. As youth ACEs increase in schools, risk increases on the following dimensions:

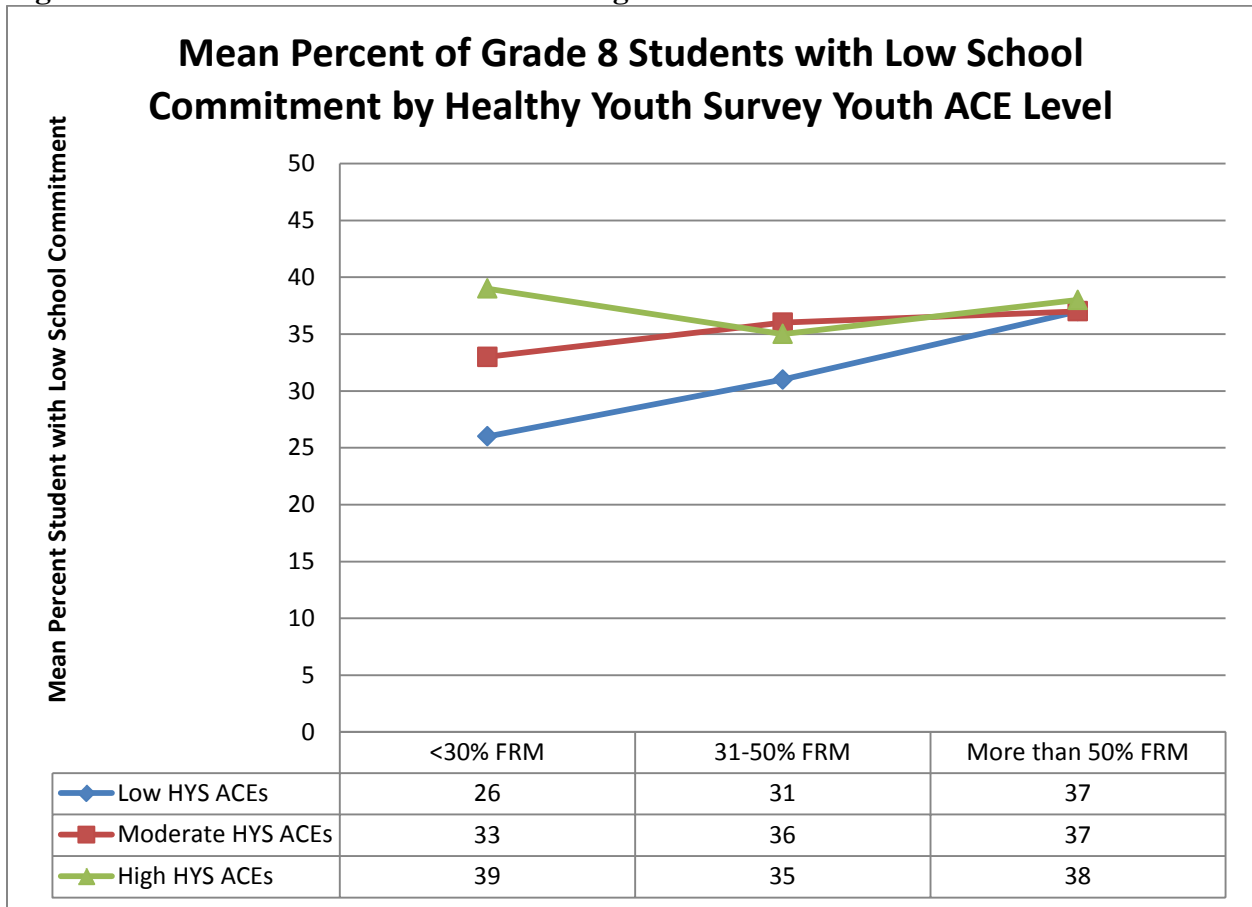
- community risk factor: low neighborhood attachment, grade 10
- community risk factor: laws and norms favorable to drug use, grades 8 and 10
- community risk factor: perceived availability of drugs risk, grade 8
- community protective factor: opportunities for prosocial involvement, grade 8
- family risk factor: parental attitudes toward drug use, grade 8
- school risk factor: low commitment to school, grade 8
- school protective factor: opportunities for prosocial involvement, grades 8 and 10

- school protective factor: rewards for prosocial involvement, grade 8
- peer-individual risk factor: early initiation of drug user, grades 8 and 10
- peer-individual risk factor: early initiation of problem behavior, grades 8 and 10
- peer-individual risk factor: favorable attitudes toward drugs, grade 8
- peer-individual risk factor: intentions to use drugs, grade 8
- peer-individual risk factor: perceived risks of drug use, grade 8
- peer-individual risk factor: friends use of drugs, grades 8 and 10
- peer-individual protective factor: social skills, grades 8 and 10
- peer-individual protective factor: belief in the moral order, grades 8 and 10
- peer-individual risk factor: interaction with antisocial peers, grades 8 and 10
- peer-individual protective factor: interaction with prosocial peers, grade 8

The multi-dimensional impact of youth ACEs on youth risk in HYS is striking. This in part reflects the fact that risk factors are highly correlated, but this does change the overall finding that there is a large and systematic association between youth adversity and youth risk. As we noted previously, poverty remains an important independent factor to account for some but not all risk factors. Indeed, the impact of youth ACEs on risk is frequently the principal predictor even after accounting for the influences of poverty measured by FRM enrollment percentage in schools. Similarly, across the risk measures, Hispanic enrollment has only isolated and limited independent predictive power.

Because of the number of significant findings for youth risk and protective factors, two examples are used as representative of the overall findings.

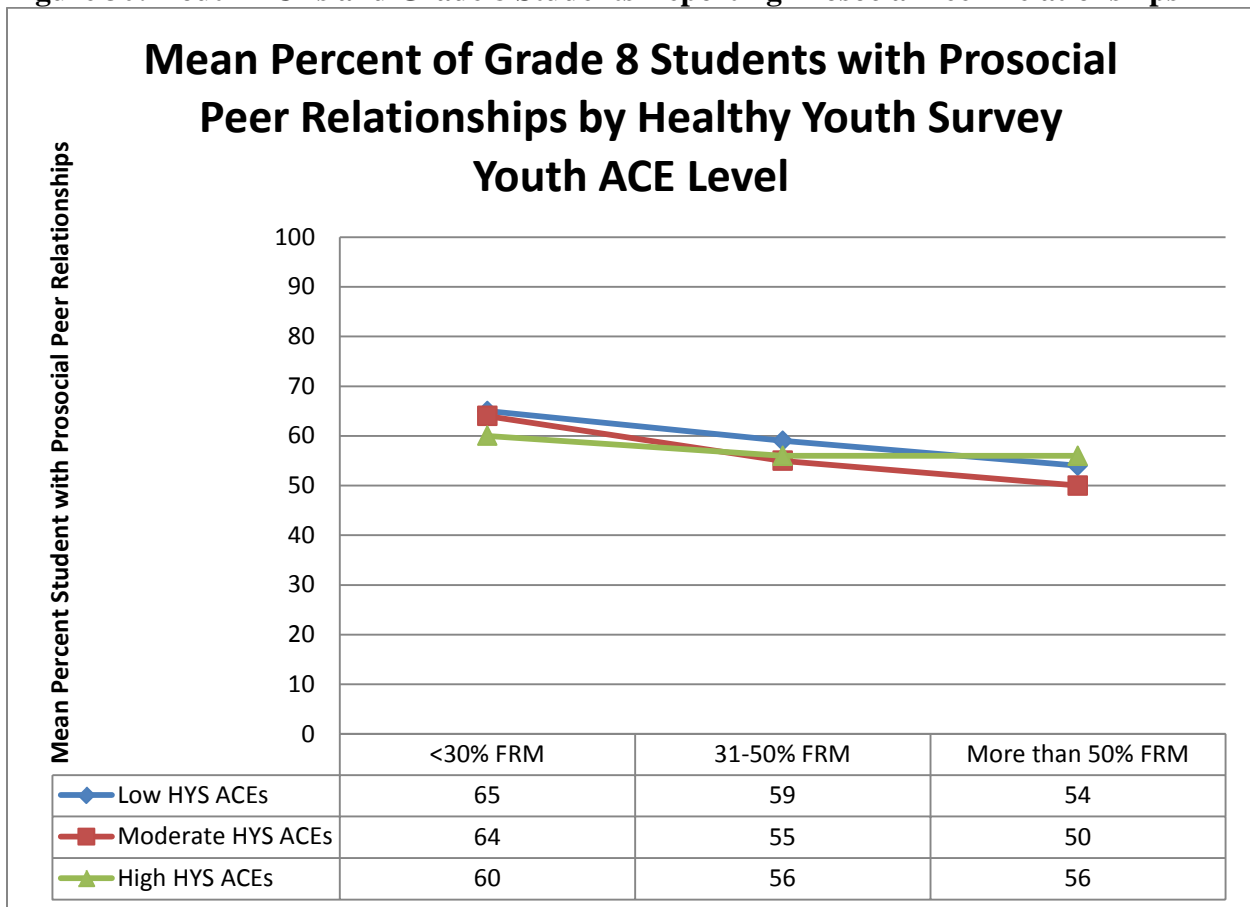
**Figure 29: Youth ACEs with Mean Percentage of Students with Low School Commitment**



Youth ACEs main effect:  $F(2, 243) = 8.7, p < .001$   
 FRM main effect: Not significant  
 Hispanic main effect:  $F(1, 243) = 30.8, p < .0001$   
 Youth ACE X FRM interaction: Not significant



**Figure 30: Youth ACEs and Grade 8 Students Reporting Prosocial Peer Relationships**



Youth ACEs main effect:  $F(2, 241) = 8.5, p < .001$   
 FRM main effect: Not significant  
 Hispanic main effect: Not significant  
 Youth ACE X FRM interaction: Not significant

In conclusion, we document with a large cross-section of youth in Washington state that both community ACEs and youth adversity as measured in the HYS are predictive both of academic success on standardized tests and of comparative risk and protective factors that are well-known indicators of health and social adjustment in youth persisting into adulthood.

### **F. Building community capacity to change risk**

Given the power of local community characteristics as predictors of academic and youth outcomes, it is doubtful we can progress to solutions without strategies significantly tailored to the unique characteristics of the specific community. The multi-dimensional nature of the problems described in this report also calls for coordination across multiple stakeholders and community members. If locally guided solutions are to be supported, the critical questions are what level of community capacity to address these issues already exists and what needs to happen to meet the minimum conditions that can support meaningful efforts?

The critical points for policy makers are that (1) community capacity building is practical if difficult and messy work, and (2) community-guided change can support meaningful improvement of health, academic and youth development goals if executed effectively.

Chaskin (1999) defines community capacity to address pressing local challenges as the mechanisms and quality of working relationships that empower communities to join together to respond to crisis, improve access to care and quality of services, and improve the conditions for health in the community's families and children. The anecdotal and case study evidence for the power of local collaboration and capacity building is compelling (Lavarack, 2006), and there is growing experimental evidence of the ability of these community-guided processes to produce meaningful change (Backer & Guerra, 2011; Miller et al., 2012; Firesheets et al., 2012; Hawkins et al., 2009; Hawkins et al., 2012; Wandersman et al., 2008). Using the Washington State Institute for Public Policy cost-benefit analysis methodology and assumptions of persisting benefit, Kuklinski et al. (2012) reviewed one program, Communities that Care, which employs these community capacity principles in a specific model and concluded that highly effective implementation may result in \$5.30 in savings for each dollar of implementation cost.

Wandersman and colleagues emphasize that the task is to raise the level of adaptive community efforts to a level equal to our focus on high-quality specific interventions. Stith et al. (2006) have reviewed the empirical evidence for effective community response with the key features being:

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

We know that community capacity building is feasible and can support meaningful change. However, this work is not easy and does require shared responsibility. If these efforts fail or insufficiently supported, we risk wasting social capital and hope. In addition, if these community response structures perceived as inequitable for partners, the efforts fail because such efforts are not consider as fair and responsive to the range of community needs.

For years, this capacity building function was the key mission of the Washington State Family Policy Council (FPC). While many other community initiatives occurred in the same time period, FPC was a steady resource in more than 40 communities, As part of its work, FPC used a mixed-method qualitative comparison study design to examine community networks' success in reducing in key youth risks (Hall, Porter, Longhi, Becker-Green, & Dreyfus, 2012). The function of FPC-supported community networks was to convene community members to guide local efforts to improve youth outcomes identified as priorities by the local community. The networks serve a convening, guidance and accountability role but did not directly provide services.

In two studies reported by Hall et al., there is evidence that high-capacity community networks demonstrate meaningful changes in several indicators of social stress and youth risk. While these changes could not be solely attributed to the effects of the community networks, the differences in risk reduction between networks in high- and low-capacity communities is at least indirectly

supportive of the role local community capacity can play in addressing the range of local challenges detailed in this report. Although community capacity-building efforts are notoriously difficult to assess, the broader community change literature supports the potential of Hall et al.'s conclusion that, "... building community capacity ... [may] reduce the impact of ACE in the current generation and the number of ACE experienced by the next" (page 333).

As part of the present report's data collection, the Foundation for Healthy Generations, a nonprofit based in Seattle, completed a qualitative interview study with 47 leaders in nine communities across Washington. The interviews were conducted as part of the overall plan because research indicated from the outset that we would confirm broad variation in community risks and that updating community capacity descriptors for a cross section of Washington communities could help with recommendations for next steps.

The nine communities were randomly selected but included communities that were active community network sites included in the Hall et al. studies. Because Foundation for Healthy Generations includes staff responsible for the Hall et al. studies, we were able to build on a common descriptive strategy in this interview study. This included both capacity index scores (Longhi & Porter, 2009) and designing the interviews to align with widely employed models for community capacity building (Flaspohler et al., 2012). Key findings from the current study demonstrate that:

- Communities varied in Community Capacity Index Building scores from a low of 8.3 to a high of 16.8 on a 20-point scale.
- Community Capacity Index scores for communities that received state funds from 2001 through 2011 in 2015 are generally consistent with the average scores of these communities from 2003 to 2007 across all dimensions of the Community Capacity Index. Communities with rising scores received private or federal funding for coordination. One community with falling scores lost three sources of funding and critical staff almost all at once.
- Communities with low scores differ from those with high scores in scope of cross-system and resident engagement, breadth of interrelated strategies employed and their understanding of complex and interrelated factors that contribute to child and family problems and attitudes of informal and formal leaders, particularly the degree of efficacy, optimism, compassion and hope reported by key informants.

High-scoring communities demonstrated a different capacity than low-scoring communities — there was an emergence of properties. Reviewers and interviewers of the key informant interviews described that "Some communities have been able to tap into the soul of their community — with real grassroots empowerment and engagement, joint ownership and co-creation, welcoming, attitude of seeking and celebrating diversity, honoring each view of the world, empathy and focusing on community 'being' rather than just on community 'doing'." This is an important point because hallmarks of effective community capacity building include a strong relational model of work and a commitment to shared power as key conditions.

The authors of "Neurons to Neighborhoods" (2000), a landmark National Academy of Medicine review, integrated developmental neuroscience discoveries in ecological and developmental

models with the intent “to promote greater understanding of the antecedents and causal pathways that lead to disparities in health, learning and behavior” (Shonkoff, 2010). This work is now actively guiding aspects of Washington state policy development in collaborative work led by Dr. Shonkoff and colleagues through the Frontiers of Innovation initiative. Efforts in the Department of Early Learning and the recently funded “Essentials for Childhood” grant from the U.S. Centers for Disease Control and Prevention are examples of how trauma-specific work is emerging in state policy and capacity-building discussions. We note this work for its potential alignment with legislative recommendations that may follow from this report.

In 2009, the National Academy of Sciences report “Preventing Mental, Emotional and Behavioral Disorders in Youth” made eight recommendations for policy makers. This report affirms the importance of multi-disciplinary and multi-domain partnerships that improve the whole context for child and family life and are not limited to the child or child and family domains. The report to policy makers states t: “*Leaders at the national, state and local levels need to pursue specific strategies such as... development of state and local systems involving partnerships among families, schools, courts, health care providers and local programs to create coordinated approaches that support healthy development*” (O’Connell et al., National Academy of Sciences, 2009).

The full Foundation for Healthy Generations report is included as an appendix to this report. The report details the elements that distinguish high- and low-capacity communities and some key findings that are critical to next steps. Communities across Washington lost significant capacity over the past seven years with the recession and consequent disruption to the state and resources in local communities. Communities that maintained capacity were characterized by having been effective in diversifying the small planning investments they had. Findings that were consistent across communities from high to low Community Capacity Index scores include the following:

1. **Recent child and family challenges require nimble action in a world with more restrictions and rules.** Interviews across all nine communities revealed some common themes about child and family challenges that communities were addressing during the past two to four years. These included loss of resources for child and family serving systems, increased homelessness, increased poverty-related challenges among families and mental health, and “the challenge in every community right now is mental health.” (interviewer comment)
2. **Need for more flexibility and respect for locally powerful solutions.** Overall, community identity and positivity provided perseverance and commitment to goals regardless of the difficulty of the context. However, there is a clear theme that as resources were lost, more restrictive rules and centralized management complicated local efforts. Community leaders report having an increased understanding of what is necessary to solve community-level problems and increased awareness and use of scientific evidence, including developmental neuroscience, epigenetics, the Adverse Childhood Experience Study and resilience science (NEAR). Community leaders also have greater recognition of co-occurring problems and the cumulative impact of multiple problems on family life. The ACE Study and NEAR science are generating both cooperation and competition, as well as more compassion and empathy. “We are more able to see the person as a whole – as they are and not just as a customer or client.” (key informant comment)

3. **Need for sustained community capacity-building funding.** Capacity building funding “to better support having these conversations,” is limited and short-term. “We truly need that capacity funding because people are so busy rowing the boat, it’s hard to take the time out to see where you’re rowing it to. That capacity building learning insures that we have someone who is constantly looking, monitoring where we are rowing.” (key informant comment) Key informants agreed that funding for capacity building, convening and facilitating reflection about the effectiveness of local partnerships and strategies with the entire community is essential. Community leaders explained that they have tried to raise funds for coordination of system-wide capacity building, but “we can’t seem to keep it.”
4. **Value of neutral convener-coordinator; communities commonly discussed the loss of community public health and safety networks and Readiness to Learn program.** With the persistent budget crises of the past several years, Washington lost critical capacity and communities struggle as a consequence. [Our] network was maintained through combining programs and funds. “[The network is seen as agile in its] multi-layered approach to get information out through a variety of methods” and shift to asset-based messaging, highlighting data supportive of parenting and teen behavior. Combining programs “has broadened the conversation” about community context and needs. (key informant comment)
5. **Importance of data that are meaningful and useful to local leaders.** Commitment to learn and use new data was also a theme, but people expressed lack of confidence. “We should be using data” but lack of meaningful information or lack of a person to help create meaning from the data “gets in the way of our being able to use data powerfully.” Funding for innovation and training is scarce or short-term. Key informants identified the inability to commit limited resources to provide training in ways that would be more productive.
6. **Importance of ACEs in shifting thinking and aligning work.** After more than 10 years of community conversations, ACEs is now an accepted planning framework for risk in communities. “ACEs have been a powerful force for bringing people together — inviting common vision and alignment of actions.” (reader comment) Moving from intervention to prevention reflects a change in thinking and attitude. People seemed to understand tertiary prevention better — and understand that preventing escalation of a problem, or intergenerational transmission of risks, especially ACEs, is important. And what is included in “prevention” has shifted. People talked about the Affordable Care Act, community health improvement plans, early childhood systems ... cuts in funding caused people to move to highest priority, which was often tertiary prevention with an eye toward improving next generation outcomes. (reader comment)

Communities with low scores differ from those with high scores in the scope of cross-system and resident engagement. Differences from low- to high-scoring communities in process, practices and protocol for reducing social isolation and engaging families are striking. In high- and middle-scoring communities, key informants talked about recruiting business and faith leaders to expand resources available to improve child and family life. Communities scoring in the high and middle-high categories report reaching to Hispanic families for cultural sharing, leadership, advocacy and problem solving. In one community, escorts are provided to Hispanic parents to

increase comfort speaking to the City Council; in another community, invitations are specifically designed to welcome Hispanic families and enroll them as peers in problem solving.

Communities vary in the degree to which professionals welcome new groups and/or new methods for improving outcomes. Communities with low scores differ from those with high scores in the breadth of interrelated strategies employed and their understanding of complex and interrelated factors that contribute to child and family problems. Communities with high scores differ from those with lower scores in the attitudes of informal and formal leaders, particularly the degree of efficacy, optimism, compassion and hope reported by key informants.

In summary, while there are a number of positive indicators of how some communities have weathered the storm of the past several years, collectively we have lost real community capacity in Washington, and some communities will need strategic supports to regain what we had in years past.

## **G. Discussion and Recommendations**

This report demonstrates that there is wide variation across the state in community success in creating the safety and conditions for success critical for many their children. In effect, we describe two Washingtons: one in which schools and their communities help the majority of their children prosper and other communities where loss takes too many children away from their promise. It is not an overstatement to say that collectively we are failing many of our children, and when this is so, we pay not only now but in the loss of the potential of these children as they transition to adulthood.

The key findings from the report are:

1. Adult ACEs are common in every Washington community, but they are not equally distributed. One of every four adults report experiencing three or more ACEs.
2. ACEs are not distributed equally across Washington communities. Across school districts, adults reporting high ACEs range from an estimated 11–51 percent of community residents.
3. Poverty and ACEs are only modestly related. In high-ACEs communities, high-poverty schools are more common but this co-occurrence is modest. Poverty is a powerful independent influence on academic, youth and community success distinct from the impact of ACEs, which occur across all income levels.
4. More than 300,000 students in Washington live in communities where more than 35 percent of adults report high ACEs. As the average number of high ACEs in the community increases, academic success and well-being of the children is put at risk.
5. As the percentage of high ACEs in a community increases, fewer students pass Washington’s standardized academic assessments. Schools in higher ACEs communities report mean percentages of students passing the assessments 2–6 percentage points lower than in communities with lower ACEs. This translates to thousands of students living in our high-ACEs communities failing on these critical assessments each year.
6. The effects of ACEs begin in elementary school-aged children and continue across grade levels and content areas.
7. Using youth self-report from the HYS, we have clear indicators of what are pathways connecting adversity and risk in youth. Community ACEs are highly associated with

greater reported risks for attitudes, beliefs and behaviors reflecting both greater risk for immediate problem behaviors and continuation of these risks into adulthood. Higher community ACEs are associated with low neighborhood attachment, more positive attitudes toward drug use and lower levels of the social skills needed to succeed in schools and adulthood.

8. The HYS includes questions that allow youth to report on their own experience of adversity. As these ‘youth ACE’ scores increase in schools, we find that standardized test results in grade 10 are significantly lower, reported risk behaviors are significantly higher and access to social supports and positive peer and community influences are reduced. While poverty continues to be an influence on youth well-being, community and youth ACEs are more consistent predictors of youth well-being.

The organizing role of ACEs and poverty as the major themes define the fields we need to support continuing success and organize recovery in Washington’s communities. However, the specific challenges resulting from adversity and poverty have to be addressed within local realities. A critical finding of this report is that we have both low-poverty communities with high levels of ACEs and high-poverty communities with lower ACEs. The mix of assets and risks in each community calls for tailored actions guided by common policies and investments.

The report from community leaders in nine representative communities is that we have lost critical local capacity. This is due to loss of resources and loss of infrastructure for community response and policies that may improve consistency and accountability but potentially at the cost to local coordination of efforts on behalf children and families. The need to rebuild this capacity is significant.

Given the evidence of such significant local variation, the policy question is what will define smart investment in supporting local guidance of state investments without sacrificing gains in program standards and accountability. There are established as well as promising research bases to guide smart policy and investment. We recommend the following areas for consideration.

**ACEs describe the problem but not the solution.** We can expand our conceptual model to align recognition of ACEs with strategies to prevent, mitigate and treat the resulting trauma. ACEs result in traumatic stress adaptations that are understandable and for which we have tested interventions to improve how traumatized individuals think, manage emotions and relate to others.

Over the past 25 years, a national consensus developed on how to assess and treat both acute and chronic trauma. In mental health treatment, this includes more than 20 evidence-based treatments, several of which include specific cultural adaptations. Not only do we have the range of treatments to build upon, but we have a consensus vision of what are the key elements of trauma-informed care, which creates a basis for expansion of this work to a range of professionals and parents. Understanding trauma is not a specialty; it is a common framework for individuals who work on behalf of children.

**Reinvigorate and make targeted empirically supported investments in building local community capacity to support state educational and service investments.** If schools are not

to be alone in addressing these challenges, schools need robust local partnerships to help maintain the will to act and identification of the social and material capital needed to support sustainable change.

In communities, trauma resulting from ACEs isolates neighbors and interferes with the social institutions and processes that allow us to have hope and support persistent local efforts to change. The community-capacity research base supports well-documented, formal intervention targets that can serve as guides for how to not simply adjust to what has been lost in recent years but how to do so with targeted investments that can meet performance standards that assure accountability. But because trauma from ACEs steals hope and isolates in our most affected communities, investments effective local institutions will have to be made before the self-managing potential of community capacity building efforts are likely to be realized.

**Invest in expanding public awareness of the scope and consequences of ACEs and trauma in communities .** Washington state has been known nationally as a leader in the adoption of ACEs and trauma-informed practices. Despite loss of capacity in some communities in recent years, there is an infrastructure and public awareness in communities to build. Evidence of these statements include the identification of ACEs response as one of two required parts of federal maternal and child block grant funding, the Department of Early Learning’s online educational modules on brain development and the emerging work between the state and the Frontiers of Innovation initiative, Essentials of Childhood grant and other local efforts.

Based on well-established science and evidence-based intervention strategies, broad understanding of ACEs and trauma can create a common language and set of priorities to reduce the profound consequences of ACEs and trauma in communities, adults and children.

Shared awareness can build consensus and shift norms in communities as evidenced by successful campaigns to reduce tobacco use, increase seat belt use and reduce rates of child maltreatment. Specific efforts are called for to:

1. Support educators in understanding the scope of the impact of ACEs and develop enhanced skills to identify and respond to the impact of trauma.
2. Educate parents. It is rare that a parent does not have the best intentions for the well-being of his/her child. What we demonstrate is that many of these parents are themselves dealing with the consequences of their own childhood adversity. Understanding ACEs and the resulting trauma can reduce stigma and provide a common vocabulary with schools for efforts on behalf of students.
3. Use an understanding of trauma from ACEs as an intervention framework for students at greatest need. Schools are the primary system for the delivery of mental health services to vulnerable children either through direct services or coordinated referrals. Evidence-based trauma informed treatments are now much more common as part of the array of mental health services, but there is little evidence these trauma-informed services are helping support schools. There is an opportunity to build well-coordinated education and treatment systems of care employing treatments for trauma from ACEs as essential services.



**Sustain efforts to address the impact of poverty on communities and schools.** As promising as the role of ACEs may be as a new explanatory model, poverty remains a central challenge to the success of communities, families and children. The local variations we described also reflect some statewide issues that are resistant but critical problems. Perhaps the most striking example of the impact of poverty is that many of our most vulnerable schools also are challenged by having teaching staff with lower levels of experience and fewer teachers with advanced degrees. This is a long-standing and well-known problem, yet we know that teacher quality is among the best indicators of schools' ability to help their students succeed. While significant investment has been and is made to address this issue, the results of this report underscore how sustaining what is done and prioritizing what else could be done is a central policy discussion.

**Invest in schools adopting social emotional practices and response to the trauma children bring to schools.** As we consider the impact of complex trauma for education, these biological risk pathways directly affect learning, memory and sequential reasoning as critical skills and provide the basis for K-12 education to address trauma not only as a behavioral concern but as a fundamental threat to students' readiness to learn. Schools can address ACEs and resulting trauma through three key strategies.

First, we need to reinforce the current efforts to integrate strong social emotional learning practices in the academic mission. Multiple reviews of the literature identify social emotional competence as one of the principal predictors of academic success. Strong social emotional learning practices benefit all students, but are foundational to supporting traumatized children. A variety of promising practices and evidence-based programs are available, but require high-quality and persistent implementation if they are to produce meaningful benefits.

Second, research on social emotional adjustment demonstrates that there are three inter-locking developmental goals to support in children: high-quality and predictable attachment to caring adults; increasing mastery in emotional and cognitive self-regulation; and increasing competency in social interactions (Kinniburgh et al., 2005). Improved services for at-risk students call for aligning supports with a more-universal emphasis in schools on the developmental well-being of all children, with an emphasis on social emotional competency (Sugai et al., 2000). If we are to develop an optimal continuum of response to the developmental needs of children, we need a single concept to organize how we understand both the conditions that facilitate academic success and the contributors to progressive risk of academic failure. In this proposal, we contend that complex trauma offers this conceptual framework by integrating the principal risks to development with a strengths-based set of learning goals that are aligned with the conditions supporting social emotional competence in children.

Third, social emotional health and well-being in schools need to be aligned with the mission of public education to educate all children. Intervention services need to be a part of a comprehensive approach to social emotional development as the major contributor to academic success (Adleman & Taylor, 2005; Sugai et al., 2000). Sugai et al. (2000) refer to creating the 'host environments' in which mental health in school interventions can succeed. Adelman & Taylor (2006) suggest a public health approach to addressing the mental health needs of children in schools, using a comprehensive, integrated approach to address the full continuum of emotional, behavioral and learning problems. They argue that addressing mental health needs of

students is not solely about providing interventions for children with diagnosed mental disorders or identified pathology; it is instead about both, “(1) promoting healthy development as one of the keys to preventing psychosocial and mental health problems and (2) focusing on comprehensively addressing barriers to development and learning” (p. 295). This approach allows schools to address the needs of all students while promoting a mechanism for more formal and sustained engagement for children with progressively greater and more complex need.

The recent adoption of Response to Intervention (RTI) framework in the Individuals with Disabilities Education Act extends these public health principles to education. RTI involves three phases of coordinated effort. Tier 1 includes universal supports and programs addressing a common student need. Tier 2 involves planned, brief interventions with students demonstrating early evidence of concerns in the targeted goal area (e.g., early truancy concerns) with the goal to have the intervention be time-limited and minimally invasive for the student. Based on response to the tier 2 intervention, tier 3 supports involve more sustained and intensive efforts based on student need. RTI offers a conceptual model for how schools integrate social emotional development as a universal strategy for academic success. Leading authors addressing social emotional supports in schools (Adelman & Taylor, 2008; Sugai et al., 2000) have identified the natural alignment of RTI with social emotional responses in schools, but this opportunity still needs to be adopted in school practice. In the present proposal, the central role of RTI requires that we not simply introduce treatments in schools in isolation but rather see these interventions as part of integrated and continuous student support efforts.

We recommend that reversing the loss of school counselors, nurses and psychologists has to be a priority discussion of how we increase access to early intervention and treatment resources for the most vulnerable students and families. Sugai et al. (2000) reports an estimated 10–20 percent of school-age children in any year demonstrate emotional and behavioral barriers to learning significant enough to warrant formal behavioral interventions while a larger number of children experience psychosocial problems that place them at risk of not maturing into healthy and successful adults. Adelman & Taylor (2008) estimate the overall need may be as high as 30 percent of enrolled children nationally, and in low-income districts, this percentage of children likely exceeds 50 percent of enrolled children. Some children may progress to a formal mental health disorder, but many more suffer from the effects of trauma, including academic failure and poor developmental outcomes. As a result, effective trauma response needs to support a continuum of responses including but not limited to diagnostically driven trauma treatments.

Finally, there is an emerging field that specifically addresses integration of trauma-informed practices in educational practice. These strategies complement and do not substitute for strong social emotional learning practice. However, traumatized children may not be able to benefit from many social emotional learning practices because coping overwhelms their ability to participate effectively in their own education. Examples include the development work OSPI has done in compassionate schools education and the intervention efforts under development by our center at Washington State University. While this work is early in development, a number of trauma-informed models complement social emotional learning in schools. These strategies may help reduce problem behaviors, which compromise the success of schools by shifting resources to discipline and behavior management and away from universal high-quality education.

## H. References

- Adelman, H. S., & Taylor, L. (2008). School-wide Approaches to Addressing Barriers to Learning and Teaching. In B. Doll & J. Cummings (Eds.), *Transforming School Mental Health Services: Population-based Approaches to Promoting the Competency and Wellness of Children*. Thousand Oaks, CA: Corwin Press.
- Anda, R., Felitti, V, Bremner, J. D., Walker, J. D, Whitfield, C., Perry, B., Dube, S., & Giles, W. (2006). The enduring effects of abuse and related adverse experiences in childhood. A convergence of evidence from neurobiology and epidemiology. *European Archives of Psychiatry and Clinical Neuroscience*, 256(3), 174-86.
- Alexander, K. L., Entwisle, D. R., & Kabbani, N. S. (2001). The dropout process in life course perspective: Early risk factors at home and school. *Teachers College Record*, 103(5),760-822.
- Berliner, David C. (2009). *Poverty and Potential: Out-of-School Factors and School Success*. Boulder and Tempe: Education and the Public Interest Center & Education Policy Research Unit. Retrieved 12/15/14 from <http://epicpolicy.org/publication/poverty-and-potential>
- Blodgett, C., Lanigan, J., Harrington, R., Lohan, J., Short, R., Turner, N., Winikoff, J. (2014a). Adverse Childhood Experience and Developmental Risk in Elementary Schoolchildren. Manuscript in preparation.
- Blodgett, C. (2014b). ACEs in Head Start Children and Impact on Development. Manuscript in preparation.
- Catalano, R., Fleming, C., Haggerty, K., Abbott, R., Cortes, R., & Park, J. (2005). Mediator effects in the social development model: An examination of constituent theories. *Criminal Behaviour & Mental Health*, 15(4), 221-235.
- Crozier, J. C., & Barth, R. (2005). Cognitive and Academic Functioning in Maltreated Children. *Children & Schools*, 27(4), 197-206.
- Hawkins, J. D., Guo, J., Karl G., Hill, K. G., Sara Battin-Pearson, S., & Abbott, R. D. (2001). Long-term effects of the Seattle Social Development Intervention on school bonding trajectories. *Applied Developmental Science*, 5(4), 225–236.
- Ellen, I., & Turner, M. (1997). "Does neighborhood matter? Assessing recent evidence." *Housing Policy Debate* 8:833-866.
- Flaspohler, P., Porter, L., & Longhi, D. (2012). *Cultivating Capacity: A Developmental Model of Community Empowerment*. Unpublished paper delivered June 22, 2012 at the 4<sup>th</sup> International Conference of Community Psychology in Barcelona, Spain.

- Hanley, Negassa, Edwardes, and Forrester, 2003. Statistical Analysis of Correlated Data Using Generalized Estimating Equations: An Orientation. *American Journal of Epidemiology*, 157: 4, 364–375.
- Hall, J., Porter, L., Longhi, D., Becker-Green, J. & Dreyfus, S. (2012). Reducing Adverse Childhood Experiences (ACE) by Building Community Capacity: A Summary of Washington Family Policy Council Research Findings. *Journal of Prevention & Intervention in the Community*, 40:4, 325-334
- Jessor, R., & Jessor, S. L. (1977). *Problem behavior and psychosocial development: A longitudinal study of youth*. New York: Academic Press.
- Leiter, J. & Johnsen, M. C. (1997). Child maltreatment and school performance declines: an event-history analysis. *American Educational Research Journal*, 34(3), 563-589.
- Leventhal, Tama and Jeanne Brooks-Gunn. 2004. "Diversity in developmental Trajectories across Adolescence: Neighborhood Influences." Pp. 451-486 in, *Handbook of Adolescent Psychology (2nd ed.)*, edited by R. M. Lerner and L. Steinberg. New York: John Wiley and Sons.
- Longhi, D. (2010). *Fact Sheet: Preliminary Findings About the Relationship Between Two Kinds of Adverse Experiences (AEs) & Academic, Behavioral & Physical Health Among Youth in Washington State & the Promising Effects of Higher Community Capacity*. Olympia, WA; Family Policy Council.
- Longhi, D., Porter, L., & Family Policy Council Staff & Community Network Staff. (2008, September). *Community Networks – Building Community Capacity, Reducing Rates of Child and Family Problems: Trends among Washington State Counties from 1998 to 2006* (Washington State Family Policy Council publication). Olympia, WA: Published on the web at fpc.wa.gov. Retrieved from <http://digitalarchives.wa.gov/WA.Media/do/DC329ED59D9BC263B534C5A335AB2E0F.pdf>
- Kinniburgh, K. J., Blaustein, M., Spinazzola, J., & van der Kolk, B. A. (2005). Attachment, self-regulation, and competency. *Psychiatric Annals*, 35(5), 424-430.
- Kuklinski, M.R., Briney, J.S., Hawkins, J.D., and Catalano, R.F. (2012). Cost-benefit analysis of Communities That Care outcomes at eighth grade. *Prevention Science*, 13(2), 150-161.
- O’Connell, M. E., Boat, T., & Warner, K. E. (Eds). (2009) *Preventing Mental, Emotional and Behavioral Disorders in Young People: Progress and Possibilities*. Washington, D.C.: National Academies Press.
- Popkin, S. J., G. Acs, and R. E. Smith. 2009. *The Urban Institute’s Program on Neighborhoods and Youth Development: Understanding how place matters for kids*. Washington, DC:

Urban Institute.

Sampson, R., Raudenbush, S., & Earls, F. (1997). "Neighborhoods and Violent Crime: A Multilevel Study of Collective Efficacy." *Science Magazine*. August 1997 277(5328):

Shonkoff, J. P. (2010). Building a new biodevelopmental framework to guide the future of early childhood policy. *Child Development*, 81(1), 357-367.

Sampson, R., Morenoff, J., & Raudenbush, S. (2005). "Social Anatomy of Racial and Ethnic Disparities in Violence." *American Journal of Public Health* 95 (2): 224-232.

Stith, S., Green, N., Pruitt, I., Som, A., Dees, J., Fronce, M., & Linkh, D. (2006). Implementing Community-Based Prevention Programming: A Review of the Literature. *Journal of Primary Prevention*, 27(6), 599-617.

Sugai, G., Horner, R. H., Dunlap, G., Hieneman, M., Lewis, T. J., Nelson, C. M., Scott, T., Liaupsin, C., Sailor, W., Turnbull, A. P., Turnbull, H. R., III, Wickham, D. Reuf, M., & Wilcox, B. (2000). Applying positive behavioral support and functional behavioral assessment in schools. *Journal of Positive Behavioral Interventions*, 2, 131-143.

van der Kolk, B. A., Roth, S., Pelcovitz, D., Sunday, S., & Spinazzola, J. (2005). Disorders of Extreme Stress: The Empirical Foundation of a Complex Adaptation to Trauma. *Journal of Traumatic Stress*, 18(5), 389-399.

Wilson, D. B., Denise C. Gottfredson, D. C., & Najaka, S. S. (2001). School-based prevention of problem behaviors: A meta-analysis. *Journal of Quantitative Criminology*, 17(3), 247-272.