What is the behavioral health status of children and youth in the Austin area?
Project Overview
Children’s Optimal Health (COH) is a collective leadership initiative to ensure that every child in Central Texas becomes a healthy, productive adult engaged in his or her community. COH works with partner organizations throughout the community to map disparate data sets to help illuminate issues impacting Central Texas children. This project seeks to highlight the geographic distribution of assets and issues of concern pertinent to child and youth behavioral health.

As part of the federal Safe Schools/Healthy Students grant, known locally as the Austin Community Collaboration to Enhance Student Success (ACCESS), and in keeping with the mission of Children’s Optimal Health, it is our hope that the enclosed maps and related analyses be used to raise community awareness and action around issues pertinent to child and youth behavioral health and mental health. We hope that they will encourage conversation, stimulate brainstorming of solutions and result in collaborative action to positively affect the social and emotional well-being of children and youth, reduce their engagement in risky behaviors, reduce health disparities and promote successful school completion.

COH’s completed mapping initiatives can be found online at www.childrensoptimalhealth.org.

Background
Parents, health, education and business leaders, and the general public increasingly recognize the importance of mental health as a component of healthy physical, emotional, social, and intellectual development of children and youth.

Using a public health approach, we understand the interplay between the child, their relationships with key persons and their environment in establishing and maintaining social, emotional and behavioral health. This is typically referred to as an ecological model.1

For young children, relationships with parents and caretakers predominate. As children mature, the impact of other environmental factors play stronger roles in their healthy development. For adolescents, while the family continues to play a vital role, the neighborhood, school, peer relationships, work, spirituality and media increasingly influence teen behavior.2

As a community working together, there are multiple partners, settings and interventions that we can use, in a coordinated fashion, to promote mental health, prevent risky behavior, and respond effectively to the needs of our children and youth.3 We can identify and promote protective factors, and reduce risk factors for children and youth at the individual, family, school and community levels. We can create and improve our systems of care. The ACCESS Safe Schools/Healthy Students federal grant, which has funded this project, is intended to focus on these systemic transformations.

It is our hope that these maps and associated comments can help the Austin community in identifying neighborhoods in which we can most effectively and efficiently target these efforts to improve outcomes for children and youth.

Adapted from Nemours: Framework for Examining Emotional and Behavioral Health in Children 1

Adapted from School Based Mental Health: An Empirical Guide for Decision Makers 4
**Why is this an issue in Central Texas?**

Community measures of youth outcomes reflect the circumstances, capacity and coping strategies for managing life circumstances that our youth experience. Our baseline knowledge informs us that:

- In Austin Independent School District (AISD) for school year 2008-09
  - Over 2,000 students in AISD are homeless.
  - Over 6,000 students change residence and 17,000 change campuses during the school year.
  - Over 4,700 students have at least one parent incarcerated.
  - Using Texas Education Agency (TEA) at-risk data, 45,626 students have at least one identified risk, and of those, 14,603 have two or more.
- Travis County Human Services Department of Family and Protective Services has seen an increase in average daily caseload from 21.0 (9/2008) to 36.1 (3/2010).
- Travis County Juvenile Probation Department (TCJPD) had over 5,000 referrals in 2009.
  - 2,500 youth are on probationary supervision, over 1,600 of them in AISD.
- Disproportionality by ethnic group is evident in our Child Protective System, in AISD disciplinary data, in juvenile probation data, and in the rates of successful high school completion.

The research literature abounds with assertions that barriers to learning impact our children and youth. No matter how advanced curriculum is, if students are not ready to learn because of internal or external factors, they won't learn. "Even the best schools find that too many youngsters are growing up in situations where significant barriers regularly interfere with their reaching full potential." 4

Child development is a result of the interplay between genetic gifts and environmental conditions. The first few years of life are an especially sensitive period for brain development affecting cognitive, social, emotional and physical health. A variety of factors can either promote or impede optimal development. Factors that promote development include access to adequate nutrition and health care; close, nurturing relationships with primary caregivers; and safe stimulating learning environments. Conversely, the lack of these factors can have profound and long-lasting effects. Other factors which are often associated with poverty, such as high neighborhood crime rates, food insecurity, and lack of high quality educational and support services, add to the stressors that compromise healthy development. Some children are resilient in the face of the most devastating circumstances, but most children are not so fortunate.

We know that minority children are disproportionately poor, and poverty is associated with higher rates of exposure to harmful toxins, including lead, alcohol, and tobacco in early stages of development. Poor children are also more likely to be born with low birth weight, to have poorer nutrition, and to have home and child care environments that are less supportive of early cognitive and emotional development than their counterparts. When poverty is deep and persistent, the number of risk factors rises, seriously jeopardizing healthy development.

Regardless of ethnicity or economic status, children tend to repeat the behaviors they observe in adults. Risk taking behavior escalates in adolescence as young people make choices that will affect their future health and well-being.

Texas school systems are just beginning to see the impact of the dramatic increase in child births that has occurred over the last several years. Texas leads the country in child population growth, and Central Texas growth is twice that of the state rate. In Travis County, 1 in 3 births in 2008 were to women with less than a 12th grade education, and the Central Texas English language learner population is growing at 3 times the general population. Children with this background enter school with a readiness gap that persists. We need effective strategies across the community to ensure the healthy development of all children.
Student Substance Use and Safety Survey

Many of the maps in this series are based on the results of the 2010 Student Substance Use and Safety Survey. The federal Title IV Safe and Drug Free Schools and Communities grant requires annual needs assessment and evaluation of substance use and safety issues. Consequently, each year an anonymous self-report student survey of substance use and school safety is administered to a random, representative sample of AISD students. The survey provides the best available local information on youth risk behavior, and is used to track student knowledge, attitudes, and self-reported behavior over time. In the Spring of 2010 a sample of 11,593 surveys were sent out. Of those surveyed, 8,521 students in grades 6-12 submitted responses to the district’s annual Student Substance Use and Safety Survey. Of these, 359 surveys were removed from analysis due to invalid responses, yielding an effective response rate of 70%. Although the resources from the federal grant were discontinued beginning in the 2010-2011 school year, it is hoped that AISD will continue to survey students so that the community can monitor results and adjust interventions to better meet their needs.

When it is not feasible to survey an entire population, samples are used instead. However, when a sample is used to make inferences about a population the results must be interpreted with caution. For example, although 87% of a sample may select a particular survey response, this does not necessarily mean 87% of the entire population feels the same way. To interpret the sample data cautiously, we have used the following information to construct an interval that describes the range within which the result for a campus population is likely to fall:

- Population size: In this case, the number of students at a campus.
- Sample size: In this case, the number of survey respondents from a campus.
- Desired level of confidence: In this case, 95%.

The 95% confidence interval is not the only interval, but it is commonly used, indicating that you can be 95% confident that the true population result will fall within the constructed interval. To make inferences about a campus population using the sample data, the results should be interpreted with the computed confidence interval for each campus (see Appendix B). For example, in 2010 if 33% of respondents from a campus indicated that their friends belonged to gangs, applying the confidence interval (i.e., adding and subtracting 5 percentage points) to the 33% yields a range of 28% - 38%. Therefore, you can be 95% confident that somewhere between 28% - 38% of all students at a campus would indicate that their friends belong to a gang.

Maps from the Substance Use and Safety Survey are derived from the 2010 Report. In interpreting the maps, it is important to note that other than the campus name at which the survey was completed, there was no geographic reference to help define the neighborhood or community. Some questions in the survey ask specifically about student behavior/perceptions on campus. Other questions, particularly those addressing youth risk behavior, are not specific to the campus, and reflect behaviors occurring off campus, in the community. They are associated with the campus only because that is where the student completed the survey. Unless the question specifically asks about an issue on campus, the resulting map reflects the experiences of the students enrolled at that campus, but does not necessarily reflect experiences/activity occurring on the campus.

School and Community Safety

The AISD Department of Program Evaluation annually conducts and publishes the survey data reflected in this document. However, this Child and Youth Behavioral Health publication and summit are significant steps forward in promoting the community use of the data collected by AISD. The survey and disciplinary incident maps contained in this series of publications together represent the voice of Austin's students. This document presents our opportunity to listen to this voice and respond, as our community does when children’s needs are identified.

The maps in this collection on School and Community Safety graphically illustrate where the issues exist and what the students are saying about them. Compelling information can nudge communities to authentically engage in preventive measures as Austin did in 2006, after an Austin High School student was shot and killed in a gang related incident, after he stepped off the school bus in his neighborhood. Following that incident, the City of Austin, Travis County and AISD along with community partners formed a Blue Ribbon panel which led to the development of the Joint Juvenile Gang Intervention Unit. The work of this unit continues in our community, focusing on awareness raising for adults and youth; prevention via the Gang Resistance Education and Training (GREAT) program targeting grades 4-8; development of a regional gang database shared by agencies throughout Central Texas, and the use of an AISD Gang Resource Detective, funded initially by ACCESS, who responds to campus requests for prevention and intervention.

The maps point to significant safety pressures that our students tell us they struggle with regularly, as well as strengths in our community’s ability to assure their sense of safety. They provide a baseline of accountability for our community’s role in addressing the safety issues that compromise the mental health of our children and youth, and which can impede their school progress and life success. If community interest and support persist, using time series maps, we can monitor our progress against this baseline over time.
### Table of Maps and Figures

<table>
<thead>
<tr>
<th>Page</th>
<th>Map/Figure</th>
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<tbody>
<tr>
<td><strong>MS: Middle School</strong></td>
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<tr>
<td><strong>HS: High School</strong></td>
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<td>HS: Are there areas where many AISD Students live? With subsets, by ethnicity.</td>
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<td>Are there areas where many safety related crimes are reported?</td>
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<td>10</td>
<td>MS, HS: Demographic grade range of student respondents</td>
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<td>MS, HS: How good is your ability to cope with stress and negative emotions?</td>
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<td>12</td>
<td>MS, HS: How often were you absent because you did not feel safe on the way to/from school?</td>
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<tr>
<td>13</td>
<td>MS, HS: How safe do you feel when you are at school?</td>
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<tr>
<td>14</td>
<td>During the last month did you miss one or more school days due to any of the following reasons?</td>
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<td>14</td>
<td>During this school year have you experienced any of the following types of bullying at school?</td>
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<tr>
<td>15</td>
<td>MS, HS: During this school year, how often have you or your close friends been physically harmed or threatened with physical harm by another student at your school?</td>
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<tr>
<td>16</td>
<td>MS, HS: How often does racial tension occur at your school?</td>
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<td>17</td>
<td>MS, HS: How often do gang activities occur at your school?</td>
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<td>MS, HS: Do any of your friends belong to a gang?</td>
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<td>19</td>
<td>MS, HS: Are school rules about verbal or physical assaults or fighting enforced by school staff?</td>
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<td>20</td>
<td>MS, HS: How often do acts of disrespect for teachers occur at your school?</td>
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<td>MS, HS: How often does your teacher have to interrupt class to deal with student misbehavior?</td>
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<td>MS, HS: Do teachers or staff give you praise or rewards for good behavior?</td>
</tr>
</tbody>
</table>

### References


Observations
- This density map shows neighborhoods in which MS students are concentrated.
- Neighborhoods with high concentrations of multi-family housing will reflect higher concentrations of people.

Observations
- This series of density maps reflect the neighborhood concentrations of Hispanic MS students, African American MS students, White MS students, and Economically Disadvantaged MS students, and the distribution of economically disadvantaged students.
Observations

- This density map shows neighborhoods in which HS students are concentrated.
- Neighborhoods with high concentrations of multi-family housing will reflect higher concentrations of people.

Observations

- This series of density maps reflect the neighborhood concentrations of HS students by ethnicity, and the distribution of economically disadvantaged students.
Observations

- Understanding child and adolescent behavior can be influenced by understanding exposure to safety-related crime. This map represents the neighborhood concentration of safety-related incidents reported by the Austin Police Department for 2010.
- This does not correct for the influence of housing type on how incidents are concentrated.
- AISD MS locations are included as a reference to neighborhoods.

Observations

- Understanding child and adolescent behavior can be influenced by understanding exposure to domestic violence. This map represents the neighborhood concentration of domestic assault incidents with injury recorded by the Austin Police Department for 2010.
- This does not correct for the influence of housing type on how incidents are concentrated.
Observations

This map reflects one year’s worth of AISD attendance data. Three categories of absenteeism are reflected: low (< 5% days missed), moderate (5-10 % days missed), and high (> 10 % days missed).

Absenteeism was calculated as a percent based on student days enrolled. This adjusts for students enrolled less than the full year.

A 5% absence rate approximates 10 days absence. If a student has 10 unexcused absences, this constitutes truancy and could involve court.

Observations

Research indicates that students who miss 10% or more days of school are at the highest risk of not completing high school.

Excessive absenteeism, evident at MS and HS levels, puts students at risk for not completing high school.

Absenteeism is higher at the HS level than at the MS level.

A 1% improvement in attendance across AISD, would result in additional revenue from the state of $5.6 million. (Source: AISD)
Observations

- A representative random sample of students were invited to complete the survey. The map reflects the grade range of those completing it.
- Webb and Pearce MS had a preponderance of 6th grade respondents.
- O. Henry MS had a preponderance of 7th grade respondents.

Observations

- Ann Richards is a special campus serving girls only. For this school year, the high school served only 9th graders.
- Garza is a special alternative campus. The majority of students at the school are 11th and 12th graders, as were survey respondents.
Observations

- 62% MS students report ability to manage stress is very good or good.
- 15% MS students report ability to manage stress is poor or very poor.
- Research reflects improving resilience/stress management skills can reduce risky behavior for teens.

Observations

- 74% HS students report ability to manage stress is very good or good.
- 15% HS students report ability to manage stress is poor or very poor.
- Research reflects improving resilience/stress management skills can reduce risky behavior for teens.
Observations

- 89% of MS students report that they do not miss school due to concerns about safety traveling to/from school.
- On some campuses there are small percentages of students who indicate they were absent because they do not feel safe traveling to/from school.

Observations

- 89% of HS students report that they do not miss school due to concerns about safety traveling to/from school.
- On some campuses there are small percentages of students who indicate they do not feel safe traveling to/from school.
Observations

- The majority of MS students feel very safe (32%) or somewhat safe (44%) at school. It is unclear whether ‘somewhat safe’ reflects anxiety about safety.
- Across campuses, 10% of MS students do not feel safe.
- A high percentage of Webb students reported not feeling safe. More 6th grade students completed the survey at Webb.

Observations

- The majority of HS students feel very safe (36%) or somewhat safe (46%) at school. It is unclear whether ‘somewhat safe’ reflects anxiety about safety.
- Across campuses, 8% of HS students do not feel safe.
- Garza and Ann Richards students report high rates of feeling safe on campus.
### Observations

- 28% of MS students and 19% of HS students reported that they did not miss school in the past month.
- Of those who did miss school in the past month, 57% of MS and 59% of HS students reported they missed due to illness.
- Beyond illness, the most common reasons MS students missed school were to a reason not specified (30%), a family commitment (25%), and because they were too tired (20%).
- Beyond illness, the most common reasons HS students missed school were to a reason not specified (38%), a family commitment (37%), and because they were too tired (35%).
- 21% of HS students report they missed school to hang out with friends, twice the rate of MS students.
- Safety concerns were identified by about 5% of respondents.
- The 2011 version of the survey will include asking students if they missed school in order to work, or if they ‘felt too sad or depressed’ to attend.

### Observations

- Campus variations were identified and are available in the full report at [http://archive.austinisd.org/inside/accountability/evaluation/survey_reports.phtml](http://archive.austinisd.org/inside/accountability/evaluation/survey_reports.phtml).
- 40% of MS and 56% of HS students reported they did not experience any bullying at school.
- Of those who reported bullying, MS students reported more bullying at school than did HS students, and more of each type of bullying.
- Of those MS students who reported bullying at school, verbal (39%), social (33%) and physical (25%) bullying were most frequently identified.
- Among HS students who reported bullying at school, racial/ethnic harassment (17%) exceeded reports of physical bullying (12%).
- It is unclear whether students reported instances of bullying to campus adults for intervention.
- Of those students who reported bullying, more than 10% reported sexual harassment in the survey.
Observations

- Across campuses, 10% of MS students report they or a friend were threatened or harmed by another student at least monthly.
- Across campuses, 8% of MS students report daily/weekly threats of harm.

Observations

- Across campuses 6% of HS students report they or a friend were threatened or harmed by another student at least monthly.
- Across campuses, 4% of HS students report daily/weekly threats of harm.
Observations
- There is variability in the identification of racial tension across MS campuses. This may vary with the ethnic distribution on the campus.
- Across campuses 29% of MS students report racial tension is experienced daily or weekly.

Observations
- There is variability in the identification of racial tension across HS campuses. This may vary with the ethnic distribution on the campus.
- Across campuses 26% of HS students report racial tension is experienced daily or weekly.
Observations
- MS students report variability across campuses in the frequency of gang activities occurring at school. 70% report it happens never or on occasion.
- Across campuses, 23% of MS students report gang activity occurring at least weekly.

Observations
- HS students report variability across campuses in the frequency of gang activities occurring at school. 71% report it happens never or on occasion.
- Across campuses, 21% of HS students report gang activity occurring at least weekly.
Observations

- Across MS campuses, over 75% of students identify that they do not have friends who belong in a gang.
- There is variability across campuses in the percent of students who identify having a friend in a gang.

Observations

- Across HS campuses, over 75% of students identify that they do not have friends who belong in a gang.
- There is variability across campuses in the percent of students who identify having a friend in a gang.
Observations

- Across MS campuses, 62% of students report that rules about physical assault or fighting are enforced. 22% of students report they don't know whether these rules are enforced.
- Some students across campuses do not believe the rules are enforced.

Observations

- Across HS campuses, 66% of students report that rules about physical assault or fighting are enforced. 17% of students report they don't know whether these rules are enforced.
- Some students across campuses do not believe the rules are enforced.
Observations

- Across MS campuses, 55% of students report that acts of disrespect towards teachers occur at least weekly.
- Students at Ann Richards and Gorzycki identify less frequent acts of disrespect.

Observations

- Across HS campuses, 51% of students report acts of disrespect toward teachers occur at least weekly.
- Acts of disrespect are reported to be less frequent at Garza, a special alternative campus.
Observations

- Across MS campuses, 67% of students report that class interruptions due to student misbehavior occur daily.
- Ann Richards students report far fewer class interruptions.

Observations

- Across HS campuses, 34% of students report that class interruptions due to student misbehavior occur daily.
- Garza, LASA, International and Ann Richards students report less frequent class interruptions.
Observations
- Across MS campuses, 62% of students report that teachers never or only occasionally give them praise or rewards for good behavior.
- Across campuses, 28% of MS students say teachers acknowledge good behavior at least weekly.

Observations
- Across HS campuses, 70% of students report that teachers never or only occasionally give them praise or rewards for good behavior.
- Across HS campuses, 20% of students report teachers acknowledge good behavior at least weekly.
Appendix A

Documented Risk and Protective Factors Associated with Mental Health Issues in Children and Adolescents

<table>
<thead>
<tr>
<th>Risk Factors</th>
<th>Protective Factors</th>
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<tbody>
<tr>
<td>Community</td>
<td></td>
</tr>
<tr>
<td>Poverty</td>
<td>Supportive adults</td>
</tr>
<tr>
<td>Limited Access to Health/Mental Health care</td>
<td>Access to effective services</td>
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<tr>
<td>Poor community resources</td>
<td>Strong resources/religious institutions</td>
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<tr>
<td>Neighborhood crime and violence</td>
<td>Neighborhood safety/closeness</td>
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<td>Few recreational outlets</td>
<td>Supervised recreational facilities/outlets</td>
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<td>Social discrimination</td>
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<td>Overcrowding</td>
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<tr>
<td>Exposure to crime/violence</td>
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<tr>
<td>Family</td>
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<tr>
<td>Family history of mental illness</td>
<td>Familial support/nurturance</td>
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<tr>
<td>Parental crime/incarceration</td>
<td>Familial restraint/focus on wellness</td>
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<tr>
<td>Familial abuse/neglect</td>
<td>Family life with clear rules, consistent use</td>
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<tr>
<td>Familial substance abuse</td>
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<tr>
<td>Lack of parental support</td>
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<tr>
<td>Family isolation</td>
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<tr>
<td>Large family size</td>
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<tr>
<td>Death of a caregiver</td>
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<td>Physical/mental illness of a loved one</td>
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<tr>
<td>School</td>
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<td>Underachieving schools</td>
<td>Strong school involvement</td>
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<tr>
<td>Peer rejection/isolation</td>
<td>Quality schools</td>
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<td></td>
<td>Strong home-school relationship</td>
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<td>Individual/Peer</td>
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<tr>
<td>Impulsivity</td>
<td>Self control/restraint</td>
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<td>Aggressive behavior/violence</td>
<td>Planning/decision making skills</td>
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<td>Disregard for others</td>
<td>Popularity</td>
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<td>Sensation seeking</td>
<td>Good social skills/empathy</td>
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<td>Language problems</td>
<td>Spirituality/religiosity</td>
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<tr>
<td>Poor interpersonal boundaries</td>
<td>Cares for others</td>
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<tr>
<td>Affiliates with anti-social youth</td>
<td>Healthy eating/exercise</td>
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<tr>
<td>Disconnected from school</td>
<td>Tolerates boredom</td>
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<td>Hopelessness</td>
<td>Good communication skills</td>
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<td>Negative self concept/low self esteem</td>
<td>Ability to set boundaries</td>
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<tr>
<td>Prenatal exposure to drugs/alcohol</td>
<td>Affiliates with pro-social youth</td>
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<tr>
<td>Low birth weight</td>
<td>Motivated to achieve</td>
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<tr>
<td>Stressful life events/trauma</td>
<td>Hopeful/optimistic</td>
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<td>Poor/irregular attachments</td>
<td>Positive self-concept</td>
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<tr>
<td>Unsatisfactory relationships</td>
<td>Positive temperment</td>
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<tr>
<td>Biological risks (infection, injury, nutrition, toxins)</td>
<td>Social-cognitive skills</td>
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<tr>
<td>Acute health condition</td>
<td>Strong social skills</td>
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<td>Limited intellectual capacity</td>
<td>Secure attachments to parents</td>
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<td>Attentional deficits</td>
<td>Attachment to peers/adults who promote health</td>
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<tr>
<td>Apathy or emotional blunting</td>
<td>Ability to regulate emotion</td>
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<td>Emotional immaturity</td>
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<tr>
<td>Poor scholastic work skills</td>
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<tr>
<td>Delinquency</td>
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<td>Substance abuse</td>
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</table>

Appendix B

The table below presents the confidence intervals for the 2010 Student Substance Use and Safety at each middle school and high school campus.

The 95% confidence interval is not the only interval, but it is commonly used, indicating that you can be 95% confident that the true population result will fall within the constructed interval. To make inferences about a campus population using the sample data, the results should be interpreted with the computed confidence interval of 5 percentage points on each side of the sample statistics. For example, in 2010 if 33% of respondents from a campus indicated that their friends belonged to gangs, applying the confidence interval (i.e., adding and subtracting 5 percentage points) to the 33% yields a range of 28% - 38%. Therefore, you can be 95% confident that somewhere between 28% - 38% of all students at a campus would indicate that their friends belong to a gang.

<table>
<thead>
<tr>
<th>Name</th>
<th>Confidence Interval (+/- x%)</th>
<th>Name</th>
<th>Confidence Interval (+/- x%)</th>
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<tbody>
<tr>
<td>Ann Richards</td>
<td>4</td>
<td>Akins</td>
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<td>Bailey</td>
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<td>Anderson</td>
<td>5</td>
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<tr>
<td>Bedichek</td>
<td>4.5</td>
<td>Ann Richards</td>
<td>13</td>
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<td>Burnet</td>
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<td>Austin</td>
<td>5</td>
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<td>Covington</td>
<td>4.5</td>
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<td>Crockett</td>
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<td>6</td>
<td>Eastside Green</td>
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<td>Garza</td>
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<td>Lamar</td>
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<td>International</td>
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<td>Martin</td>
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<tr>
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<td>McCallum</td>
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</table>
Project Data Sources

AISD Student Population and Demographics, School Year 2009-10:
Student demographic data was based upon the Public Education Information Management System (PEIMS) 3 Submission of 2010. This data pull is used by AISD to report annual enrollment statistics to the Texas Education Agency.

AISD Student Substance Use and Safety Survey 2010:
The federal Title IV Safe and Drug Free Schools and Communities grant requires annual needs assessment and evaluation of substance use and safety issues. Consequently, each year an anonymous self-report student survey of substance use and school safety is administered to a random, representative sample of AISD students. The survey is used to track student knowledge, attitudes, and self-reported behavior over time.

Seton Family of Hospitals Behavioral Health data, 2006-2010:
The Seton Family of Hospitals provided Encounter and Patient data across all their facilities. The Encounter and Patient data were provided for patients who received a behavioral health related diagnosis for encounters between January 1, 2006 and December 31, 2010.

CommUnityCare Behavioral Health data, 2006-2010:
CommUnityCare provided Encounter and Patient data for patients who received a behavioral health related diagnosis for encounters between January 1, 2006 and December 31, 2010.

Austin Police Department Incident Data, 2010:
The dataset encompasses all crime incidents in which a citation was written by APD. Out of this dataset, family and date assault incidents that resulted in injury is analyzed. The mapped location is based upon the address recorded for the incident. This data was collected for calendar year 2010.

Austin Travis County Integral Care (ATCIC) Case Management Services data, 2010:
ATCIC provided Case Management Services data for persons served during the 2009-2010 school year by zip code.

Any Baby Can, 2010:
Any Baby Can provided data for persons served in 2010 by zip code.

LifeWorks, 2010:
LifeWorks provided data for persons served during the 2009-2010 school year by zip code.

Communities in Schools (CIS), school year 2009—2010:
CIS provided Case Management Services data for persons served during the 2009-2010 school year by zip code.

Travis County HHS-VS Children Services Department, Fiscal Year 2010:
Travis County HHS-VS Children Services Department provided data for persons served in 2010 by zip code.

Project Limitations
This is the first attempt to map issues pertinent to the behavioral and mental health of Austin’s children and youth. It marks a beginning, and if community interest and support persists, will develop over time. The limitations of each dataset may affect the way an individual map can be interpreted, as well as the story the map appears to tell. For additional questions regarding specific datasets and limitations, please contact COH or the ACCESS project.
**COH Methodology**

Many Children’s Optimal Health (COH) maps display *density* distribution of some particular population of interest. Density maps show where high concentrations of the mapped population live. All COH density maps are rendered from raster datasets. Our GIS tool, ESRI’s ArcMap 10.0, supports a variety of ways to calculate and display density maps. We chose a methodology that we believe strikes a proper balance between accuracy and ease of interpretation while at the same time being HIPAA and FERPA compliant (i.e., without compromising individual privacy).

Spatial Analyst’s *Neighborhood Statistics* tool was used to create the population density maps. The density maps’ grid cells are squares representing an area equal to 100 yards by 100 yards. Neighborhood settings were set to a circle with a radius of 3 cells. The above parameters smoothed out the distribution of cell values to make the interpretation of hotspots easier to interpret visually, but retained enough locality to be meaningful at the neighborhood level. All density maps were categorized into deciles\(^1\) with the top 3 deciles symbolized as red, orange, and yellow (in descending order). The remaining deciles were symbolized in a grayscale with lighter shades representing lower deciles. The symbolization of deciles forms the consistent thread across all density maps. Thus, although density values may vary greatly from map to map, the red areas on a density map always represent the top decile’s density values. All pixels with values less than or equal to 5 were symbolized to "no color" to protect individual privacy.

To meet privacy-protection requirements of individuals’ data, residence location latitude and longitude values were randomly shifted anywhere from 100 to 300 feet. This shifting can introduce significant errors for density values at the cell level. But at the neighborhood level, for example for a one mile by one mile zone, a shift of up to 300 feet does not significantly alter the overall distribution of the population within the zone. However, it is important to remember that the density value of a specific cell can vary substantially from the cell’s true value due to the shifting algorithm used to protect privacy. Therefore, it is **not** appropriate to use density maps at a city block level.

For further information regarding the COH mapping methodology, contact Mohan Rao at mrao@childrensoptimalhealth.org.

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\(^1\) Decile: any one of nine numbers that divide a frequency distribution into 10 classes such that each contains the same number of individuals; **also: any one of these 10 classes** (source: Merriam-Webster).

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**How to Get Involved**

The Austin community has many individuals and organizations who work cooperatively to assure that young children have a healthy start to life, and enter kindergarten ready to learn. Still, our rapid demographic changes indicate that large numbers of children are vulnerable to having a poor start in life, and more effort is needed to assure their healthy early start. If you are interested in gaining more information about the partners working to address these issues, please visit [www.childrensoptimalhealth.org](http://www.childrensoptimalhealth.org) or you can contact COH at (512) 324 – 5980.
About COH

Children’s Optimal Health is a collective leadership initiative that unites the efforts of Central Texas organizations in promoting community change to help our children reach a brighter future.

COH strives to give agencies and communities access to formerly proprietary data by using GIS mapping to illuminate issues involving Central Texas children. By layering data from multiple sources, COH can help communities visualize the health of their neighborhoods, identify assets and needs, and unearth opportunities for collaborative change.

Through a commitment to shared data, collaboration, and ongoing communication, Children’s Optimal Health is a collective leadership initiative to ensure that every child in Central Texas becomes a healthy, productive adult engaged in his or her community.

The goal of COH is to use visual images to inform policy, improve operations, promote research, and mobilize the community to better the lives of our children and youth.

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Mohan Rao, Spatial Data Analyst
Lindsey Ripley, Project Manager

COH would like to extend special recognition and thanks to the Technical Advisory Committee for the time and effort they have dedicated to ensure the integrity of this project.

Co-Chairs:

Dr. Stephen Pont, Medical Director, Texas Center for the Prevention and Treatment of Childhood Obesity, Dell Children’s Medical Center, Medical Director Austin ISD Student Health Services, UT Southwestern, UT-Austin Department of Advertising

Dr. Steve Kelder, Professor, Division of Epidemiology, Co-Director, Michael & Susan Dell Center for Advancement of Healthy Living, UT School of Public Health Austin Campus

Participants: Dr. Bill Sage, Dr. Brenda Hummel, Dr. Cinda Christian, Dr. Andri Lyons, Jamie Clark, Dr. Simon Tidd, Rebecca Baumgartner, Jesse Simmons, Zachary Wilson, Joshua Bailey, Jim Van Overschelde

COH would also like to recognize ACCESS for their time and contributions to this project.