

ProvPlan InfoTools 2012

Telling Stories and Democratizing Data

Information Group: What We Do

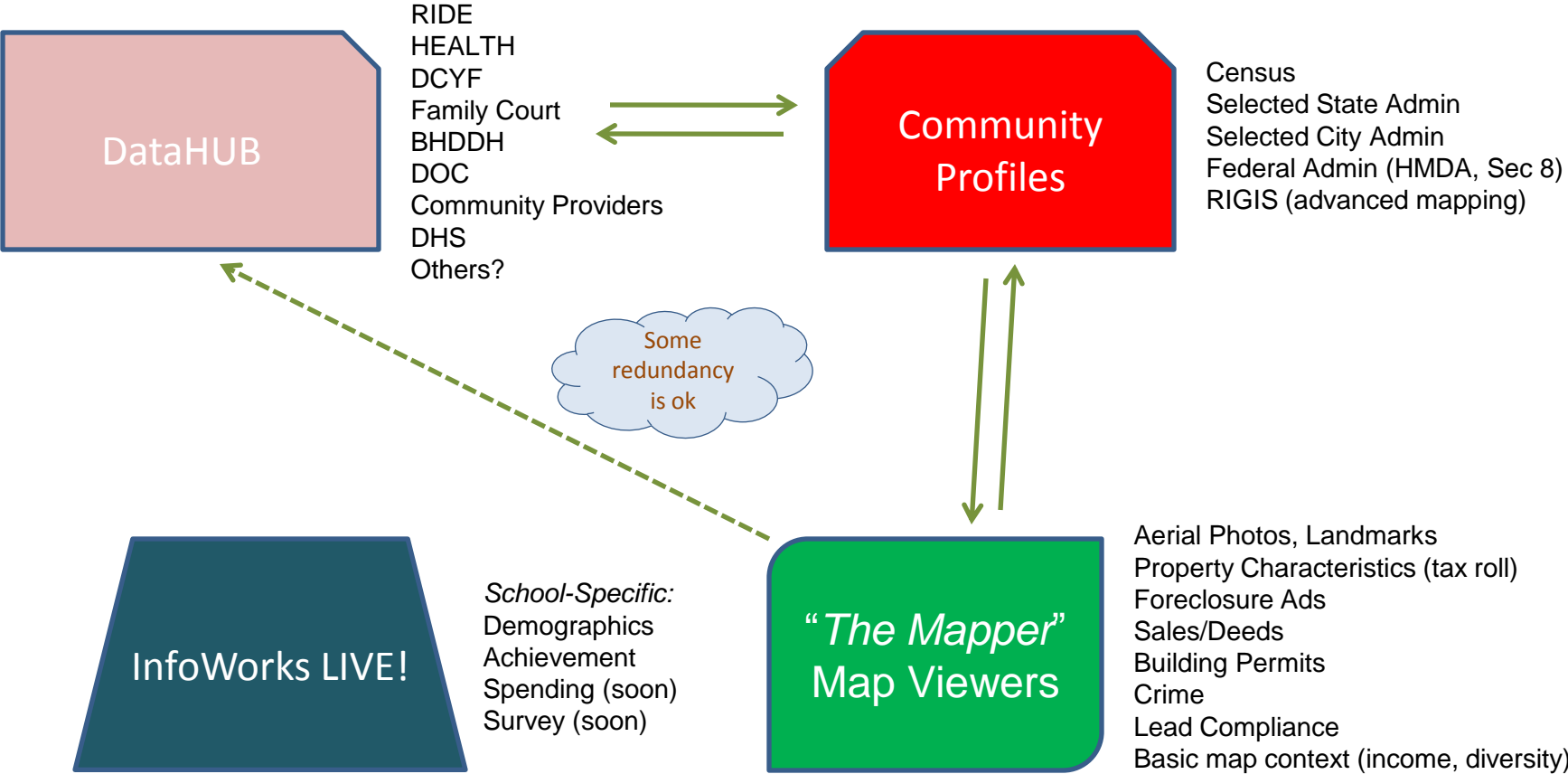


- Link across data silos
- Visualize data using maps and graphics
- Help solve problems
- Tell Data Stories!

ProvPlan InfoTools 2011

- DataHUB- Crossing data silos around people
 - Integrated data system across multiple state agencies
- Community Profiles- A host of data across many geographies (*under development*)
 - Our primary Census Data platform augmented with administrative and other data sources
- “*The Mapper*” Map Viewers (ESRI Flex technology)
 - Rich property data from multiple sources + context
- InfoWorks Live! A user-friendly education data platform for multiple audiences
 - School demographics, test scores, and financial data

How the InfoTools Work Together



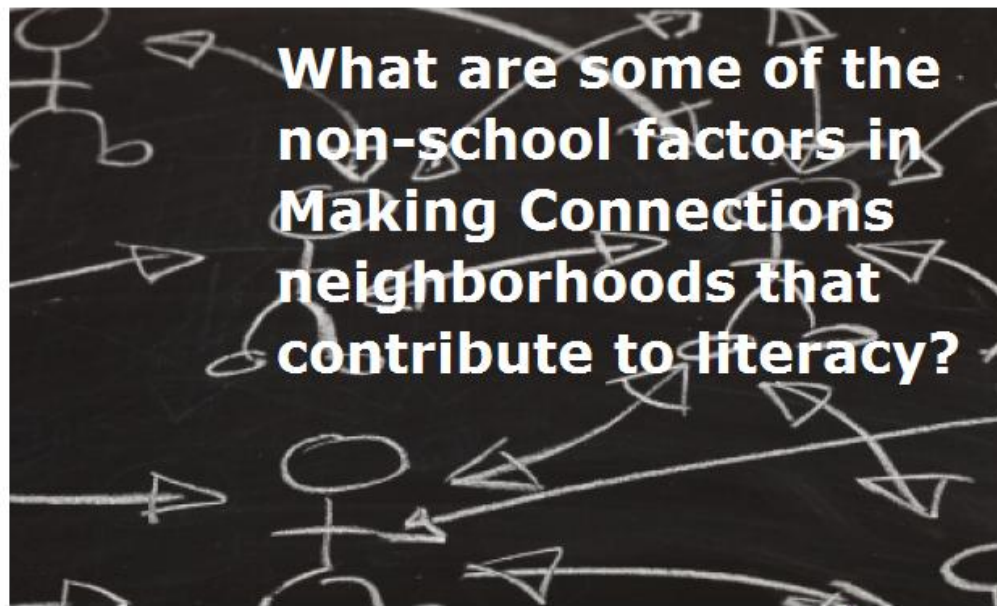
Welcome to the Rhode Island DataHUB

Here you have access to hundreds of unique indicators relating to child and adolescent well-being in Rhode Island. The power of the RI DataHub is that you can access indicators from individual sources and indicators spanning multiple sources.

Topics include:

- Demographics
- Education
- Health
- Adolescent Risk Factors
- Adolescent Protective Factors

Begin by exploring a ["Data Story"](#) or browsing [Reports](#) that interest you.



The Rhode Island DataHUB

Bridging Data Silos to Inform Policy

Rhode Island Department of Education and The Providence Plan

Background

- Initial scope funded by US Department of Education Office of Safe and Drug Free Schools, RIDE, Making Connections Providence
- Systematic individual record-level linking, aggregate reporting
- Five State agencies: RIDE, HEALTH, DCYF, BHDDH, Family Court

ProvPlan's Role

- Private non-profit
- Established data sharing agreements
 - HEALTH
 - RIDE, PPSD
 - DCYF
 - Etc.
- Database programming, data analysis & presentation, web design, spatial analysis

Data Sources

Data Sharing Agreements Executed:

- RIDE, Providence Schools
- HEALTH
- Dept. Children Youth, Families (DCYF)
- Higher Education (RIOHE)
- Dept. of Corrections
- Providence City Agencies (Police, Assessor, etc.)
- Dorcas Place/Full Service Community Schools
- Providence After School Alliance (PASA)

In the works:

- Family Court
- Dept. of Labor and Training
- Family Service RI

Technical Details

- All Open Source
- **Postgres** Database
- **Django** Web Framework
- **Weave** Visualization tools from Open Indicators Consortium (OIC)



Sample Data Feeds

**R
I
D
E**

Statewide Student ID
District Student ID
First Name
Last Name
Date of Birth
Gender
Grade
School
Days enrolled
Days attended
Suspensions
Etc.

**D
C
Y
F**

DCYF ID
First Name
Last Name
Date of Birth
Date of first entry
Currently in foster care (y/n)
Etc.

**H
E
A
L
T
H**

KIDSNET ID
First Name
Last Name
Child - Date of Birth
Mom - Date of Birth
Lead test result
Lead test date
Etc.



Database & Administrative Application

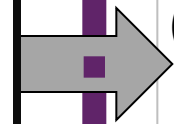
*Maintained by
The Providence Plan*

- Automated data feed & cleaning
- Linkage
 - Deterministic Pass
 - Probabilistic (fuzzy) Pass
 - Twin/special case reports
- Agency-specific unique IDs maintained
- Flexible
- Data adapter
 - Indicator calculations
 - Aggregation



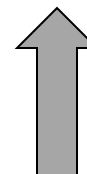
HIGHLY SECURE

FIREWALL



Website/User Interface

- User Accounts
- Multiple User Levels
- Public Version



**AGGREGATED DATA
(NO INDIVIDUAL-LEVEL
DATA ACCESSIBLE BY
WEB PORTAL)**

Challenges

- Different cultures around data sharing, use
- Hard to illustrate benefits at early stage
- Some data get very complicated very quickly
- Interface design for different user levels

Two Stories

- Children and Youth Cabinet (Bailey School)
 - Focus on data, linking
 - You're looking at the wrong data!
 - Common sense confirmed and challenged
- An Early Warning Story: Youth at Risk of DCYF-Schools Involvement
 - Use of surrogate data
 - Power of having many data sources in one place

Demo

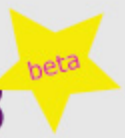
Bailey:

<http://www.ridatahub.org/datastories/children-and-youth-cabinet-es/1/>

DCYF:

<http://www.ridatahub.org/datastories/an-early-warning-story-abbr/1/>

Bailey



CYC: An Attendance Story

Essential Question:
What are the key factors contributing to attendance in elementary school?

A data story for and with the Providence Mayor's Children and Youth Cabinet. The primary goal of the story is to understand factors affecting attendance in elementary school. Our focus school is Bailey Elementary.

Introduction

The Providence Mayor's Children and Youth Cabinet was formed to improve outcomes for children and youth in Providence. An early focus of the Cabinet is on data and data-sharing. One piece of the data work is to determine areas where data-sharing and collaboration can improve the delivery of services to children and families in Providence.

There are two goals for data sharing and collaboration:

- Availability and use of aggregate data to inform policy
- Provision of relevant, timely data for practitioners on the front line delivering programming.

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Introduction

The goals of the data story include:

- 1) understand how data can help our understanding of what strategies we need to focus on to improve outcomes;
- 2) understand the issues we will need to focus on to create an integrated data system at the individual level, including data gaps, confidentiality issues, and technical issues;
- 3) understand factors affecting attendance at three grade levels and use data story to inform work on attendance.

Our first focus school is Bailey Elementary.

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Why Attendance?

Based on a review of research that the Annenberg Institute for School Reform conducted, we know that student engagement and attendance are critical predictors of student success in completing school on time and prepared to pursue their post-secondary goals.

Specifically, the research shows that students who are chronically absent are more likely to:

- have low grade-level promotion (be "held back"),
- have lower reading and math achievement scores, and
- be off-track for graduation.

We also know that the presence of chronically absent students affects their regularly-attending classmates, as teachers may adjust pacing and curriculum.



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The Social Ecology Model



As we examine the attendance and absenteeism of students at Bailey, we'll be using a framework that considers the "nested arrangement of family, school, neighborhood, and community contexts in which children grow up."

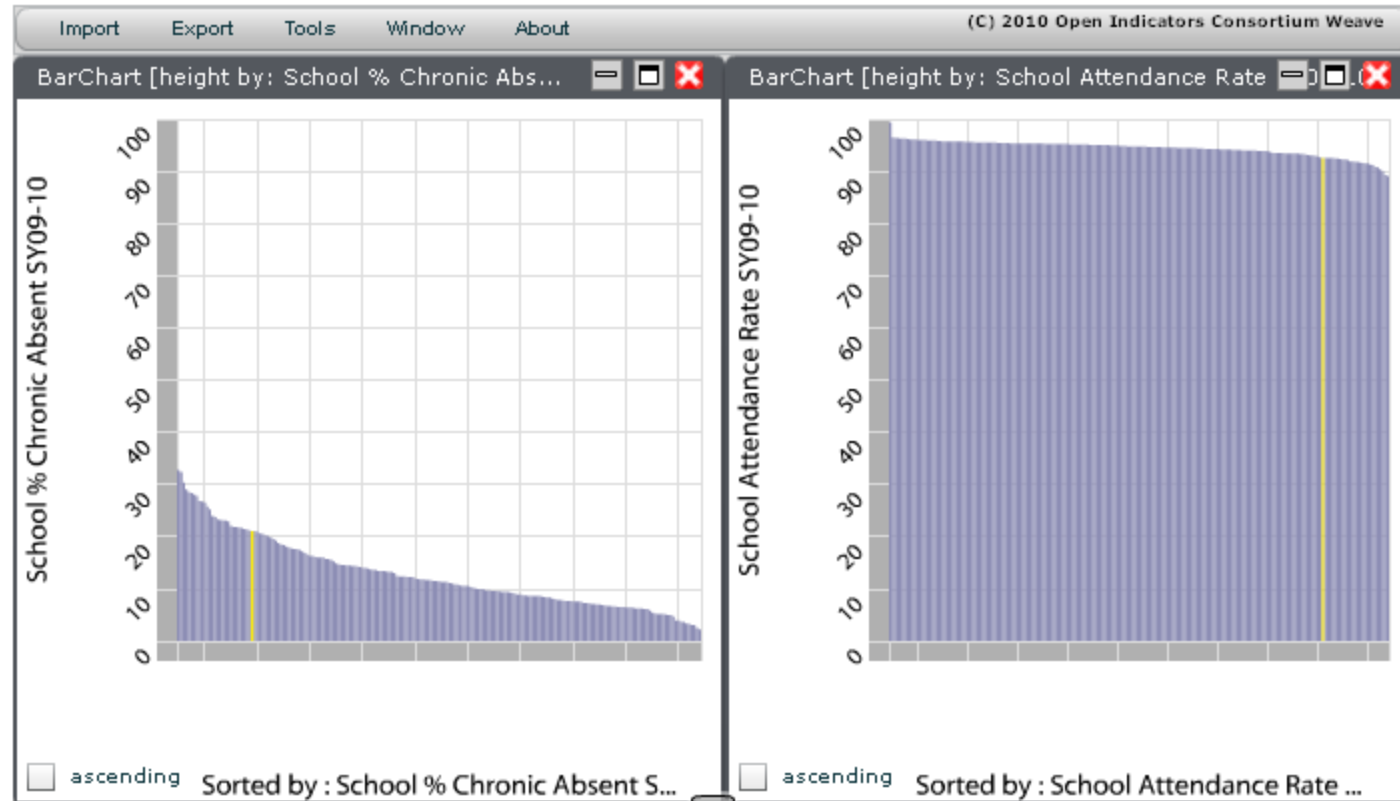
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Bailey in context



[WEAVE*](#)

[Related Indicators](#)

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Above are all of the public elementary schools in the state of RI. Robert Bailey, IV elementary school is represented by the yellow bar. On the left are chronic absenteeism rates. On the right are attendance rates. Attendance rates often mask high rates of absenteeism for groups of students. Going forward, this story will focus on different levels of absenteeism.

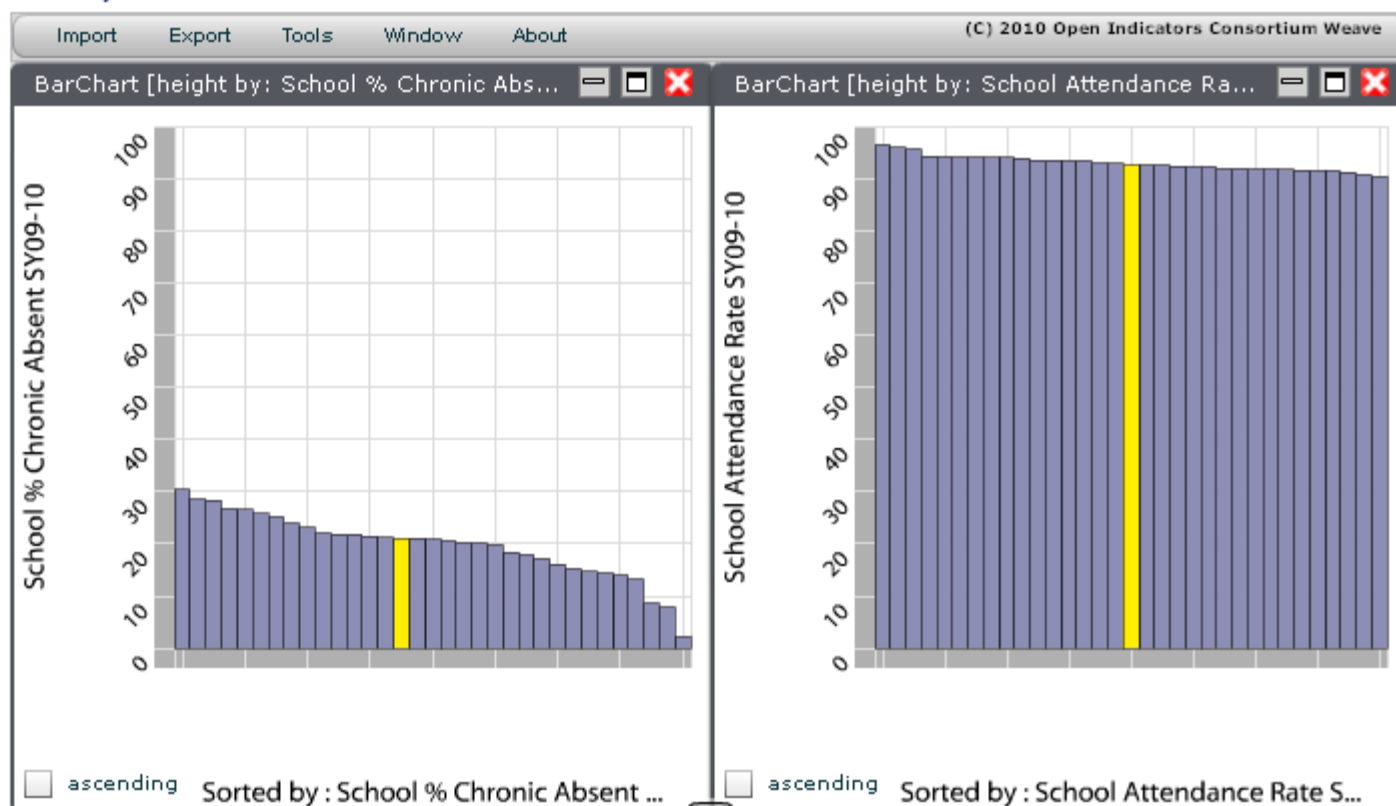
Our definition of chronic absenteeism is **students who are absent between 10% and 20% of the days they are enrolled in school**. Note that low (0-5%), moderate (5-10%) and excessive absenteeism (20%+) are separate categories for the purposes of this story.

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Bailey in context - Providence



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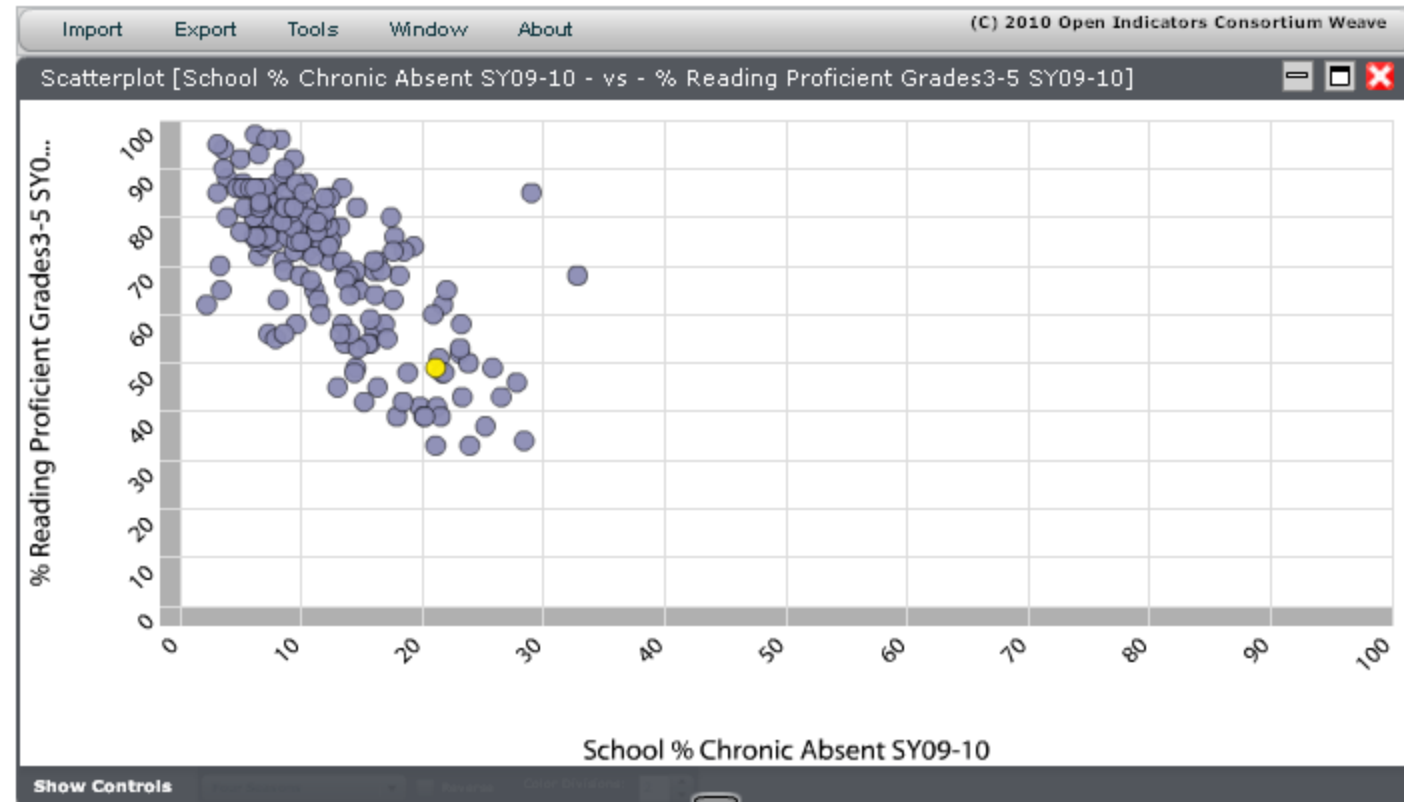
Above are all of the public elementary schools in the city of Providence. Again, Robert Bailey elementary school is represented by the yellow bar. Notice the large variation in rates of chronic absenteeism (2.2% to 30.4%) but the relatively small variation in attendance rates (90.35% to 96.45%).

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The Social Ecology Model: Individual Indicators



[Related Indicators](#)

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Above is a scatterplot displaying the **correlation** between reading proficiency (as measured by the 2009 NECAP test) and chronic absenteeism. Schools with high percentages of students in grades 3-5 proficient on the reading NECAP tend to have lower rates of chronic absenteeism.

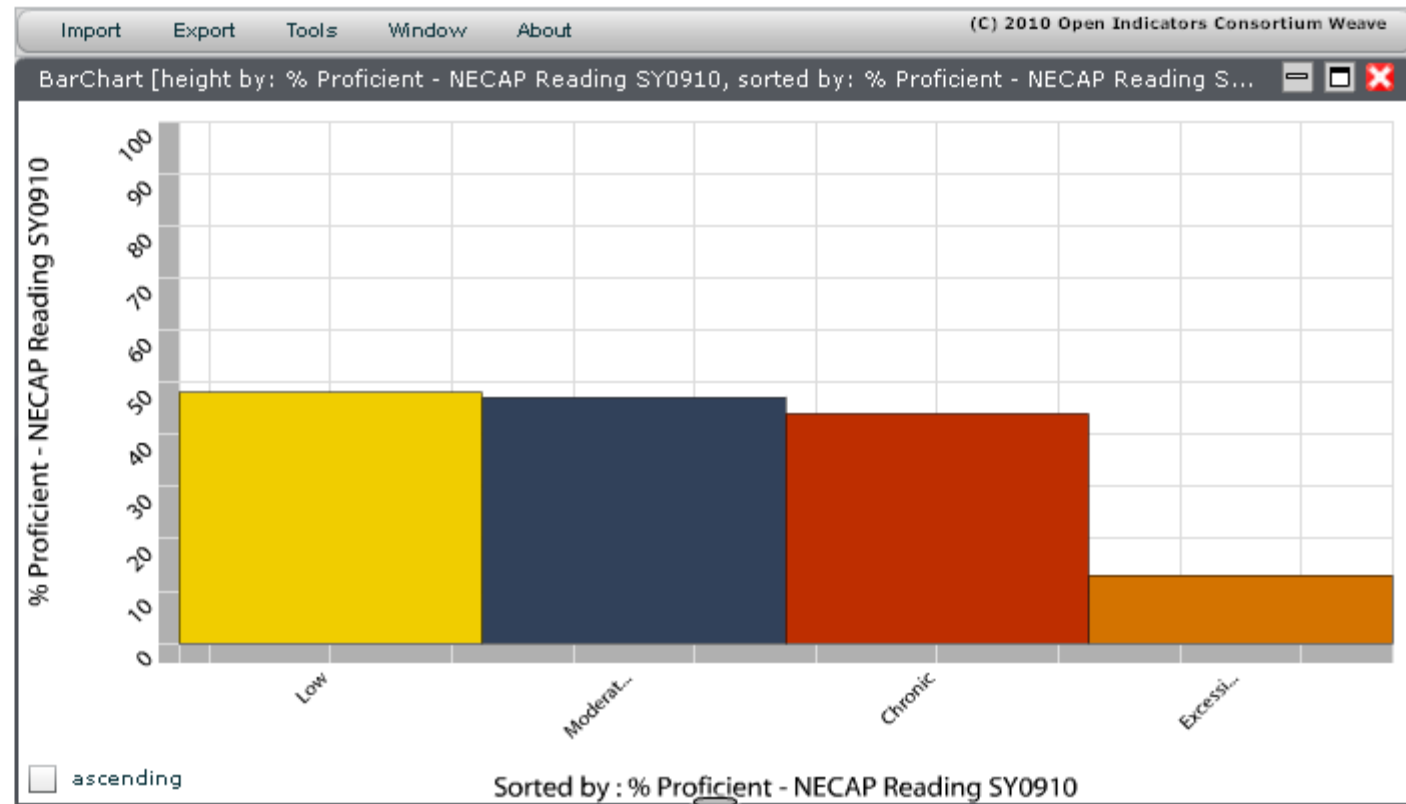
Each point represents an elementary school. Bailey is once again represented by the yellow point.

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The Social Ecology Model: Individual Indicators



[Related Indicators](#)

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Looking just at Bailey, you can see the % of students who achieved reading proficiency on the 2009 NECAP by each level of absenteeism.

Although there is a downward trend in the direction you would expect, the differences are not large. (We have not yet tested for statistical significance).

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Missing Key Factors

There are many factors that contribute to attendance in elementary school. Some of the **key** individual and interpersonal indicators that are missing from this story at this point include:

- Health status (lead poisoning, asthma, doctor's visits)
- Attendance at community programs
- Bullying
- Transportation
- Family Crisis/Stressors

In addition, we have yet to include some of the school and community factors that the data subcommittee prioritized. Many of these will be available later this year. They include:

- Teacher engagement
- Family involvement in school
- Neighborhood safety

DCYF

Youth at Risk of DCYF-Schools Involvement

Essential Question:

Which schools have high numbers of students at risk of involvement with the juvenile justice system, and how can data help these schools and others manage the risks?

A profile of at risk youth in schools can help us help them.

A thumbnail introduction to the DataHUB

The DataHUB allows policymakers and program planners to access data gathered from across state agencies in order to target scarce public resources. Data at the item level are linked behind firewalls, protecting confidentiality. Individual records are then aggregated according to various characteristics, such as poverty or academic achievement, to help users see the larger landscape of children's well-being and conditions.

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At Risk Indicator

We know that school dropouts can become the responsibility of DCYF, eventually. Our goal is to design an engaging interface that helps agencies and programs interact with large amounts of linked data in order to identify and respond to various risk factors early on in a child's life to reduce the likelihood of DCYF involvement.

Robert Balfanz, Ph.D., a leading dropout-prevention researcher at Johns Hopkins University, has identified **4** school-related early risk factors for dropping out:

- Course Failure,
- Low attendance rates,
- Retention in grade (being held back), and
- Disengagement in the classroom.

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Introduction to the Youth at Risk data story

Using the data of students who have enrolled in DCYF schools, we created a profile of students who are not yet involved with DCYF schools but who we believe are at risk. Our factors include the Balfanz indicators as well as several others. They are:

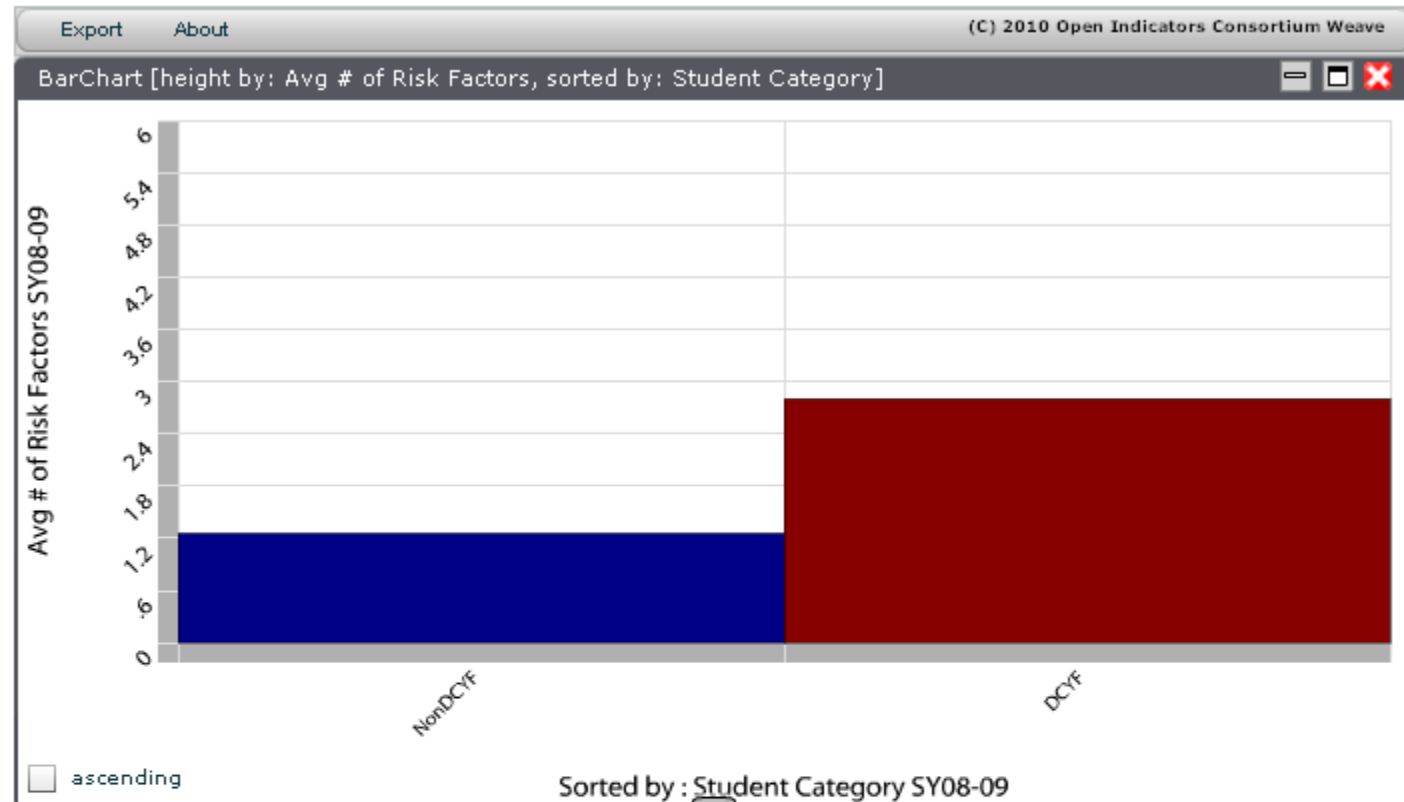
- **Chronic Absenteeism;**
- **Retention in Grade;**
- **Excessive Mobility;**
- **Free and Reduced Lunch** (Poverty Indicator)
Data Source: RIDE
- **Maternal Health Outcomes**
Data Source: Health Department
- **Schools with Low Anger Management** (High percentages of students who report being threatened with violence, feeling unsafe at school, and being robbed, among others)
Data Source: SALT Survey

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Comparison of Risk Factors by Group



WEAVE*

[Related Indicators](#)

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Using our risk factors, this chart compares the 737 students whom we know enrolled in DCYF schools in 2008-2009 (based on RIDE enrollment data), to those who did not.

By changing the indicator on the bar chart, we can see that 73% of the DCYF enrollees were chronically absent in the year prior to their enrollment in a DCYF school, compared with 21% of the non-enrollees.

Similarly, 28% of the DCYF enrollees attended 3 or more schools within a single school year (excessively mobile), compared with just under 2% of the non-enrollees.

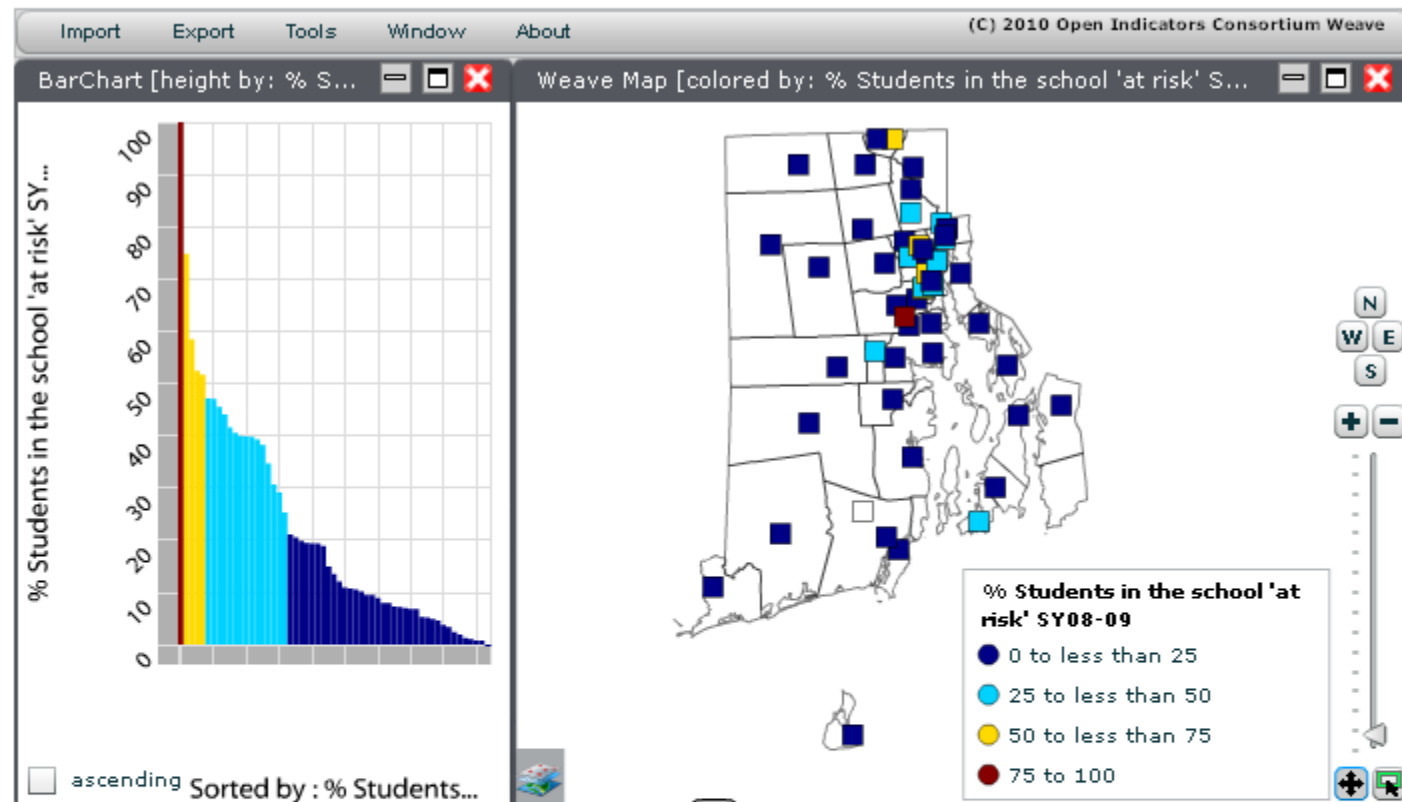
The two groups were found to be significantly different ($p < .01$) for each of the risk factors. Contact jcigna@provplan.org for specific t-statistics, dfs, std. errors and confidence intervals.

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Supporting At-Risk Youth: Identify Schools



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[Related Indicators](#)

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Now, we review risk-factor prevalence among students at individual high schools.

This chart is sorted by the percentage of students in each high school whom we have labeled "at risk."

Note that the map shows us that the schools with high levels of at-risk kids are concentrated in the urban districts.

If we change the vertical axis to consider prior-year chronic absenteeism, we find that some schools need to consider why such a high percentage of their students are not coming to school. Remember that chronic absenteeism puts a student at high risk for dropping out and DCYF-schools involvement.