

USING GEOSPATIAL TECHNIQUES TO CONDUCT PROGRAM EVALUATION AND INFORM SERVICE DELIVERY

Symposium Chair: Rose Greene

Discussant: Lynn Warner

Presenters: Matt Vogel, LuAnn McCormick

Presented at the 23rd Annual Children's Mental Health Research & Policy Conference :: Tampa, FL :: March 8, 2010

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BEYOND THE PUSHPIN: DESCRIBING THE SPATIAL DISTRIBUTION OF FAMILIES RECEIVING SERVICES IN A SYSTEM OF CARE COMMUNITY

Matt Vogel, MA
Research Associate

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Overview

- Mapping in the Social Sciences
- Mapping and Children's Mental Health
- Spatial Description of Families Presenting in the Albany County System of Care
 - ▣ Descriptive Statistics
 - ▣ Clustering of Families
 - ▣ Spatial Dependence

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Mapping in the Social Sciences

- Maps are the oldest means of evaluating social space



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Mapping in the Social Sciences

- Maps provide a powerful means to visualize data



Minard's map of French wine exports for 1894. (Source: Tufte, *The Visual Display of Quantitative Information*, p. 23)

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Mapping in the Social Sciences

- The use of spatial techniques predates statistics in the social sciences



John Snow's 1854 event map of London cholera deaths around the Broad Street water pump. (Source: Warner, *Visual Revelations*, p. 61)

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Mapping and Children's Mental Health

- How can mapping contribute to our understanding of children's mental health?
 - ▣ Identify target areas for at-risk populations
 - ▣ Inform service locations
 - ▣ Gain insight on service utilization
 - ▣ Provide more comprehensive description of populations served
 - ▣ Examine spatial patterns

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Families Together in Albany County

- The papers in this symposium all use information from families presenting in the Albany County System of Care between January 1, 2006 and December 31, 2008.
 - ▣ Demographic information was taken from the EDIF
 - N = 1328
 - ▣ Family home addresses at intake were collected as part of our MIS tracking system
 - ▣ These addresses were geo-coded to latitude and longitude (N = 1195 matches)

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Describing the Area

- Albany County, New York (2008)
 - ▣ Part of the Albany-Schenectady-Troy Metropolitan area
 - ▣ Population of roughly 300,000
 - ▣ 20 percent of the population is younger than 18
 - ▣ Median Household Income – \$57,000
 - ▣ 12 percent of families are below the poverty line
 - ▣ 10 percent of the population lives in rural areas

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Research Question # 1

- How are families presenting for SOC services distributed across Albany County?
 - ▣ We have data on the home addresses of all individuals who come in contact with the SOC
 - ▣ By overlaying home addresses over a map of Albany County, we can begin to form an idea of how families are distributed

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Home Addresses of Families Presenting for Services in Albany County January 1, 2006 – December 31, 2008



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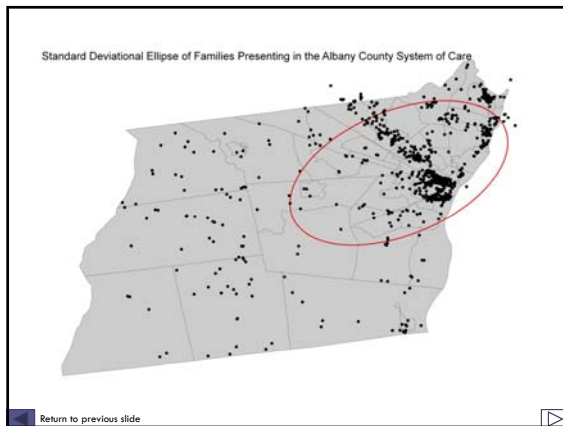


Spatial Description

- We now have a rough idea of where families are coming from...
- As with ordinary data, we can apply descriptive statistics to spatial data to provide a more concise assessment of patterns
 - ▣ Mean
 - ▣ Standard Deviation

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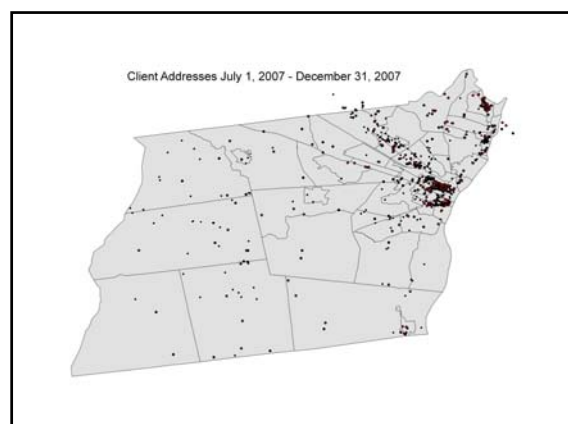
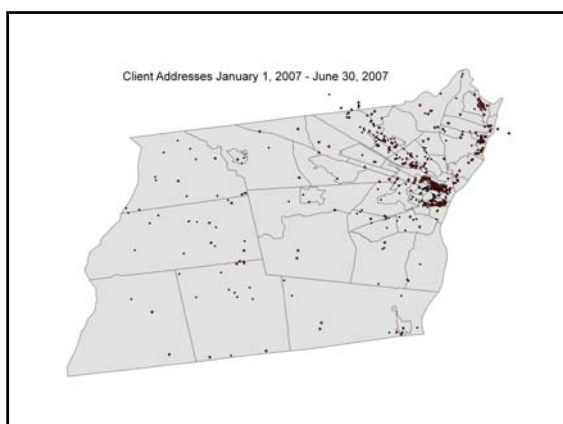
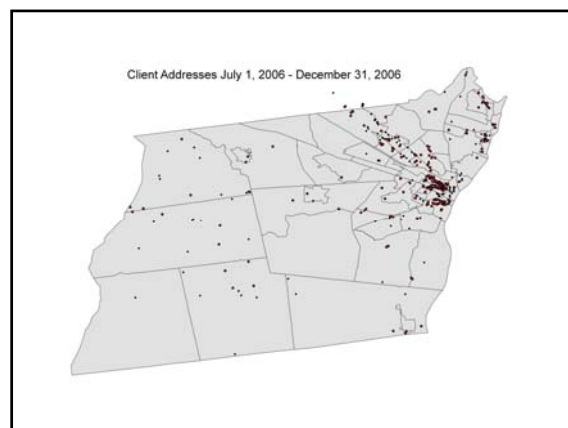
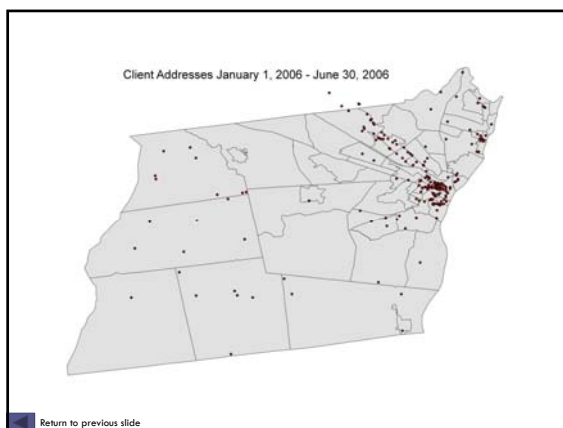


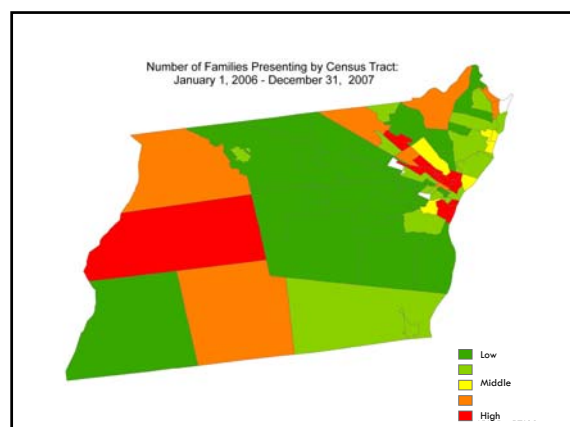
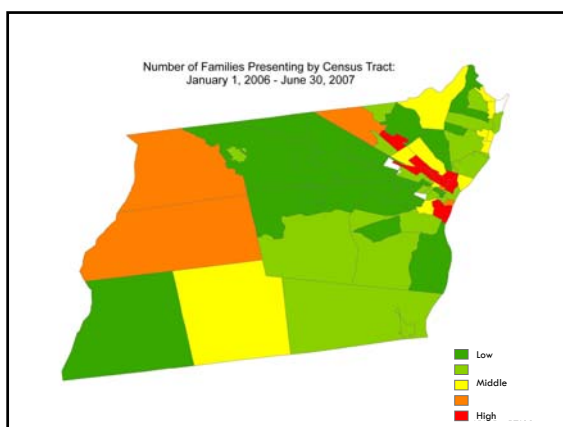
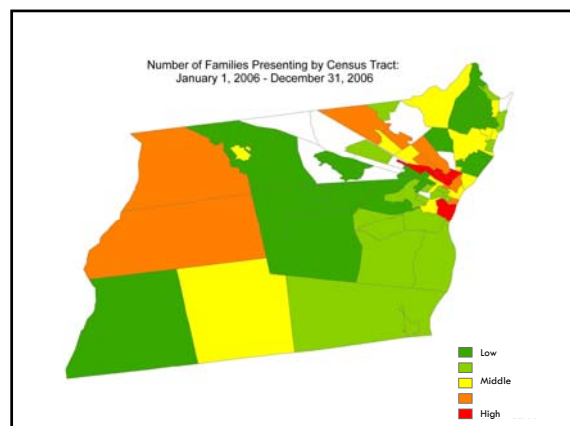
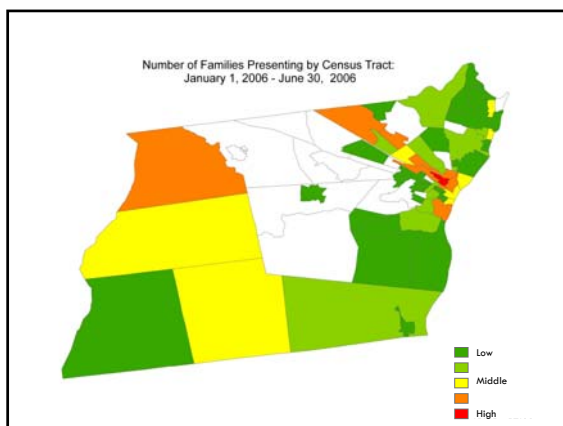
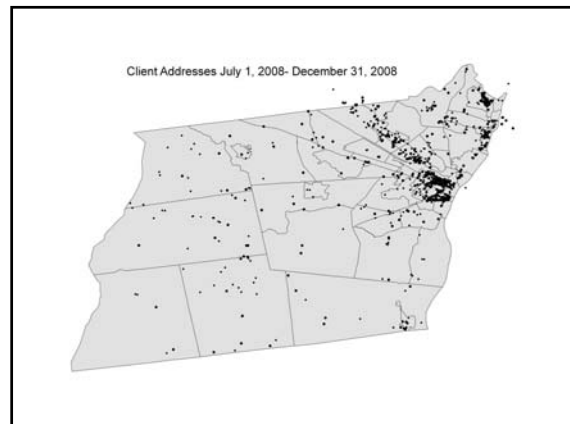
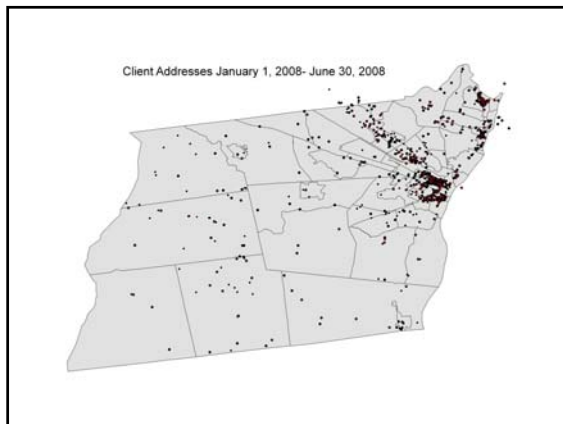
Research Question #2

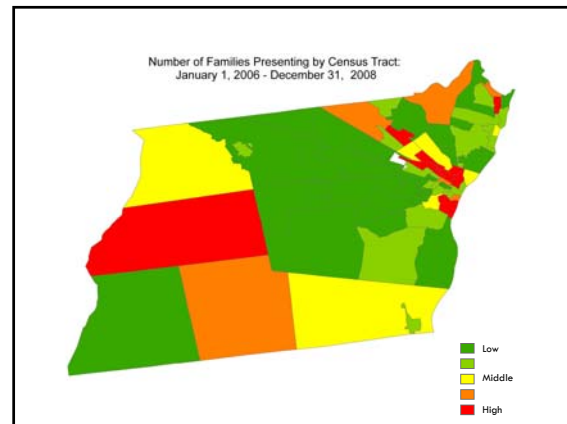
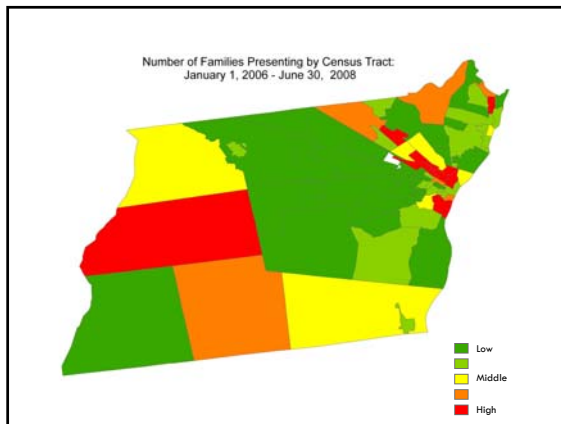
- We now have a visual and statistical description of how families were distributed over the entire length of the program
- In order to understand process it may be worthwhile to examine these trends over time
- Research Question:
 - How has the distribution of families presenting for services in the Albany County System of Care changed over time?

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Research Question # 3

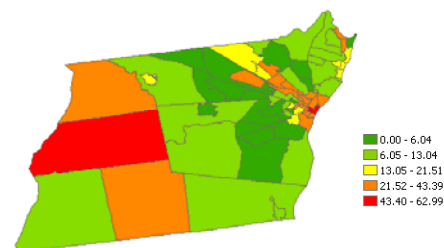
- Does the number of families presenting from urban areas reflect the larger population of youth in this area?
- Let's divide Albany County into census tracts and examine the RATE of youth presenting relative to the number of youth residing in the area
 - 2000 Census tract level information

$$\left(\frac{\# \text{ of youth presenting to Albany County SOC}}{\# \text{ of youth } \leq 21 \text{ years of age in 2000}} \right) * 1,000$$

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Rate of Youth Presenting in Albany County SOC January 1, 2006 – December 31, 2008



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Brief Conclusions

- Majority (66%) of families are presenting in the area of the Albany City Proper
- There are two primary clusters where a large number of families are entering relative to the population of eligible aged youth
 - Rural and Urban Settings
- There is something unique about where families are coming from in Albany County
 - Probably due to proximity to service center

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USING SPATIAL TECHNIQUES TO EXAMINE RURAL/URBAN DIFFERENCES IN SERVICE USE IN A SYSTEM OF CARE

Matt Vogel, MA
Research Associate

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RESEARCH INTO ACTION: USING MAPS TO INFORM PRACTICE

LuAnn McCormick, PhD
Lead Evaluator
Albany County, NY and Orange County, NY
Systems of Care

Presented at the 23rd Annual Children's Mental Health Research & Policy Conference :: Tampa, FL :: March 8, 2010

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2 Examples of Informing Practice

- Identifying High Needs Areas for Outreach & Services**
 - As part of evaluation's continuous feedback loop
- Targeting Suicide Awareness to High-Risk Areas**
 - Response to local critical incident

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Example 1: Identifying High Needs Areas

- Multiple analyses and products
 - First, descriptive analysis of zip codes indicated increases in intakes from a specific community
 - Presented # and % increases in table and bar chart format

Not very compelling

Cohoes Children Presenting for Intake by Portal of Entry and Quarter

Quarter	EMHSP	FRCs
Q1 06	9	0
Q2 06	2	2
Q3 06	7	0
Q4 06	0	3
Q1 07	2	0
Q2 07	9	2
Q3 07	9	11
Q4 07	2	5
Total	68	16
% of total	6.9%	23.5%

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Client Addresses January 1, 2007 - June 30, 2007

Static Map – Point in Time
No depiction of change over time

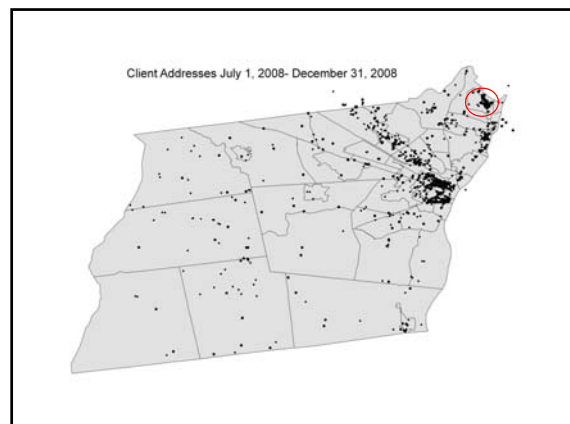
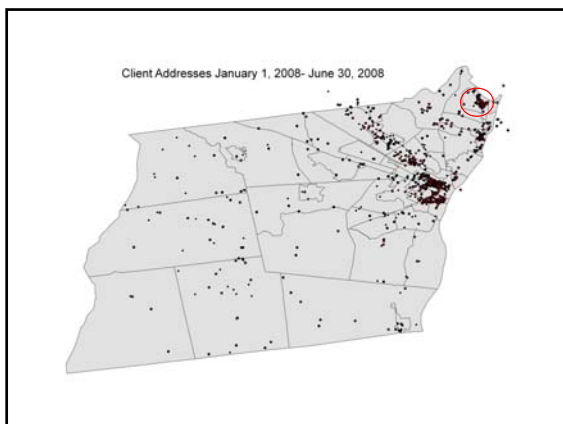
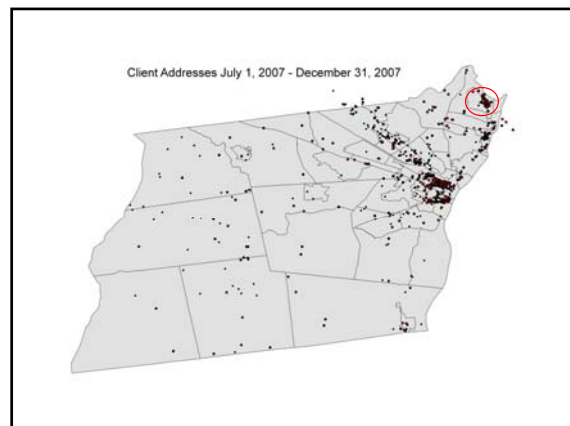
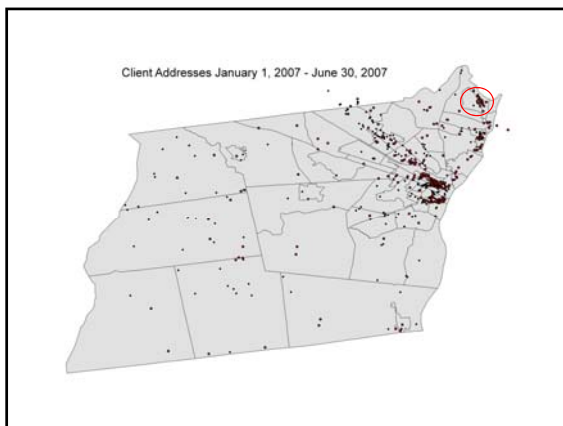
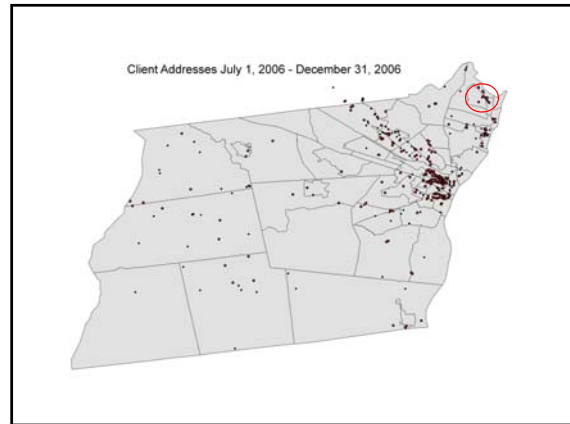
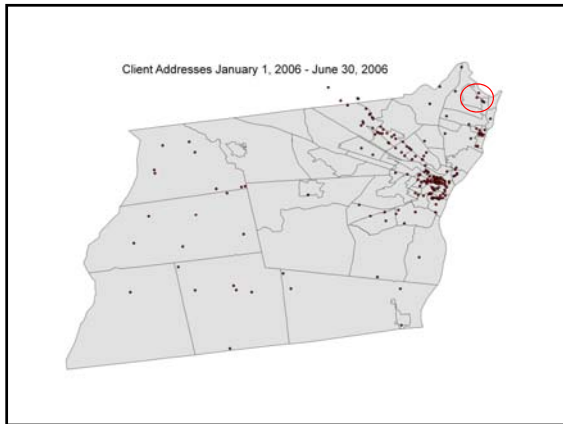
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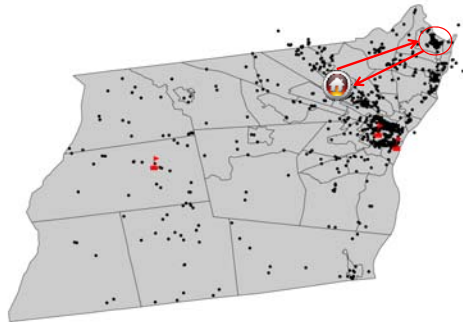
Example 1: Identifying High Needs Areas

- Multiple analyses and products
 - Later, geo-spatial analyses to map trends over time
 - Visually displayed increases over time on animated maps

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Connection with a Family Resource Center



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Actions

- Presented to Multiple Audiences
 - SOC project leadership
 - Parent Partners and supervisors
- Evaluation Team Recommendations
 - Target outreach to this area
- Program Actions
 - Hired Parent Partner from the area to target services
 - Acquired shared space for intakes and services
 - local doctor's office, library, in-kind space at school
 - Satellite clinic of local psychiatric hospital

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Example 2: Targeting Suicide Awareness to High-Risk Areas

- Background
 - Suicide Cluster in neighboring county
 - 4 teen suicides in 5 months, Winter '08
 - All Black females, same method
 - From same high school
 - Raised questions about where Albany County SOC stands in terms of suicide risk, community awareness efforts, and current strategies in place
 - Concern about contagion, how to educate the community, where to start?

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First Step: Describe the Problem

- Data Brief: "Teens Thinking About Suicide When Entering the Albany County System of Care"
 - 1 in 4 youth present with suicidal ideation
 - Black females most likely to present with SI
 - 1/3 younger than middle school
 - Caregiver characteristics
 - Youth of caregivers with SA are 2x more likely to present with SI
 - Youth living with depressed caregivers in past 6 months are 19% more likely to have attempted suicide
 - 25% with SI at intake attempt within 6 months
 - Neighborhood and social context
 - Youth who report witnessing a crime are 5% more likely to enter SOC with SI than those who have not
- Presentations and broad distribution of printed brief

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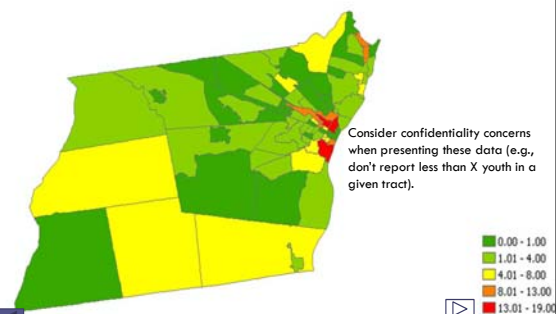
Second Step: Map the Incidence

- Question 1: Where are youth with SI living when they are referred for SOC services?
 - Geocoded home addresses to census tract level

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Incidence of Suicidal Ideation Among Youth Presenting for SOC Services in Albany County by Census Tract (Number of Youth)



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Mapping Resources

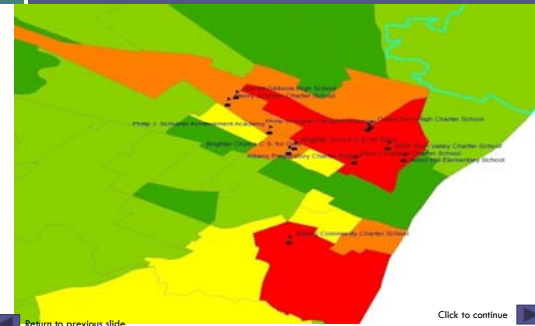
- Question 2: Where should we start?
 - ▣ Schools are a logical first step for getting information out to children and families
 - ▣ Schools are resource-rich
 - Trained professionals (social workers, teachers)
 - Informal contacts, confidantes (hall monitors, custodians)
 - ▣ Plotted schools in high-risk areas and overlaid on map

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Albany Schools in High-Risk Areas

Red areas represent the highest incidence of suicidal ideation among youth entering the SOC.



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Third Step: Get the Information Out

- Many presentations to various audiences
 - ▣ SOC project leadership and staff
 - ▣ Cross-systems county leaders
 - ▣ Community groups, educators, families and youth
- Recommendations
 - Target schools and surrounding communities in high-risk areas for outreach and community education
 - ▣ Enhance screening at intake, watch for risk factors at intake and beyond
 - ▣ Provide training for staff at all levels
 - ▣ Explore universal screening tool and evidence-based interventions for youth at risk for suicide

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Program Actions

- Coordinated with neighboring county on resources and strategies
- Established Suicide Prevention and Education Committee
 - ▣ Provider and community members
- Community Education Efforts
 - ▣ Education Forum in City of Albany planned
 - ▣ S.A.F.E. Talk Training
- Clinical trainings
 - ▣ "Recognizing and Responding to Suicide Risk" (AAS)
 - ▣ A.S.S.I.S.T.
- Collaborating with Safe Schools/Healthy Students
- Exploring screening tools, EBP, and additional community education programs

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In Sum

- +Combination of analyses
- +Simple yet powerful visual displays
- +Presented to various audiences
- +Specific recommendations
- ➔Action

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