

Using Health Data to Focus Philanthropy on Critical Needs

David E. Murday, PhD; Elizabeth A. Corley, MA

In early 2003 The Duke Endowment began planning for a special grant program for early childhood health issues with an emphasis on preventive care and services. During the first phase of the proposed program, grant projects in North and South Carolina were expected to target critical primary health care access issues that affect specific child health outcomes in those states.

The Duke Endowment was concerned that a competitive request for proposals would place communities with high needs but fewer resources at a disadvantage. To avoid this, the Cecil G. Sheps Center for Health Services Research at the University of North Carolina Chapel Hill and the Center for Health Services and Policy Research at the University of South Carolina were asked to assist the Endowment in determining the specific areas in their respective states with access-related health problems for children. The centers were asked to provide data-based answers to the following questions:

- Where are the documented areas of unmet need for children's primary care services?
- What do key people in those areas see as the most important barriers to accessing services and the most important activities needed to improve access to child health care services?
- What improvements in the health status of children can be expected if access to child health care services improves?

This article describes the efforts in South Carolina to answer these questions and support the Endowment's efforts to target the program in communities with the highest needs.

Background

Access to health care is not equal for all children who need it. Prior research in South Carolina examined hospitalization for ambulatory care sensitive conditions as an indicator for access to primary care and found regional disparities.¹ Ambulatory care sensitive conditions are medical conditions for which children who receive appropriate and timely primary care are less likely to need emergency or inpatient care.² Examining 1995 data from the statewide inpatient hospital discharge database maintained by the Office of Research and Statistics of the South Carolina Budget and Control Board, the 10 highest ambulatory care sensitive conditions for pediatric

“...health data can be used to help a foundation identify communities whose needs are aligned with the philanthropy's priorities.”

admissions were bacterial pneumonia; asthma; dehydration; gastroenteritis; severe ear, nose, and throat infections; convulsions; kidney/urinary infections; cellulitis; diabetes; and immunization-preventable conditions. Access to primary care was the strongest factor affecting these admissions—children without a primary care physician were 9.5 times more likely to be hospitalized for a preventable problem than children with a primary care physician. Other demographic factors such as race, income, and insurance coverage were also significantly associated with ambulatory care sensitive conditions hospitalizations.¹ These results were consistent with findings from other research on the topic.

David E. Murday, PhD, is director of the Center for Health Services & Policy Research at the University of South Carolina. He can be reached at murday@sc.edu or 730 Devine Street, Suite 112, USC School of Public Health, Columbia, SC 29208.

Elizabeth A. Corley, MA, is consultant for Health and Demographics at the Office of Research and Statistics of the South Carolina Budget and Control Board.

There are 3 types of barriers to access of primary care services:

- Structural barriers are related to the number, type, concentration, location, or organizational configuration of primary care providers.
- Financial barriers restrict access. After reviewing evidence about financial and nonfinancial barriers to health care access, the Institute of Medicine of the National Academies determined that health insurance coverage is the major determinant of whether children have access to health care.
- Personal and cultural barriers such as language, attitudes and beliefs, social support, and education may inhibit people who need medical attention from seeking it, or once they obtain care, from following recommended treatment guidelines.

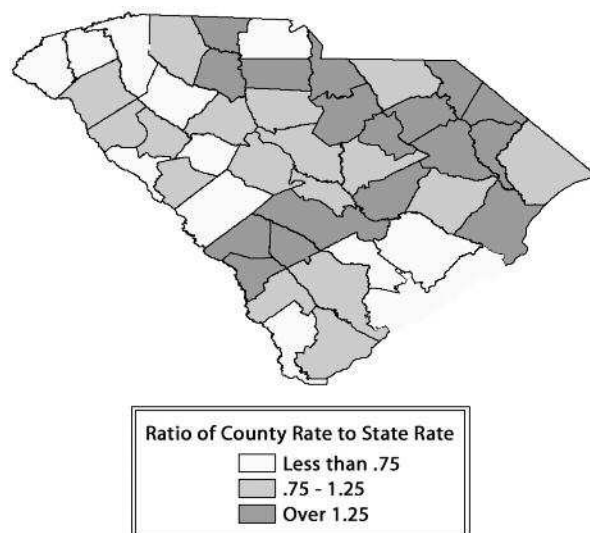
Geographic Information System Maps

Building on the prior work in South Carolina, researchers at the South Carolina Center for Health Services and Policy Research collaborated with the SC Office of Research and Statistics staff to examine several factors that could be used to identify specific areas of the state with access-related health problems for children. Within 2 months, geographic information system maps were generated (counties were grouped into those within 25% greater than or less than the statewide average and those lower or higher than this range) and counties were compared on a number of characteristics:

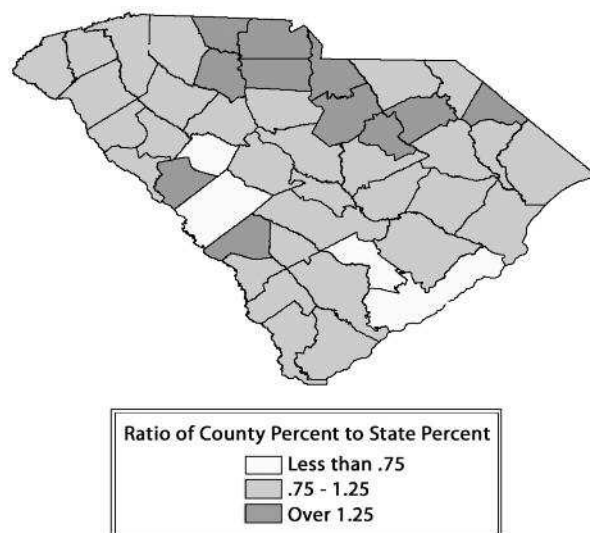
- All ambulatory care sensitive conditions and most common ambulatory care sensitive condition hospitalizations for persons under age 18 by
 - o Rate of ambulatory care sensitive condition hospitalizations per population.
 - o Percentage of ambulatory care sensitive condition hospitalizations as a percentage of all hospitalizations (This adjusts for differences in overall utilization among counties.)
 - o Differences by payer.
- All ambulatory care sensitive conditions and most common ambulatory care sensitive condition emergency room visits for persons under age 18. (The same comparisons were used as above.)
- Rate of pediatric primary care health professionals per population under age 18 for each primary care service area.
- Percent of population with less than a high school education. (Used as a proxy for socioeconomic status.)

Maps for ambulatory care sensitive condition hospitalizations and emergency department visits used FY 2002 data; the darker counties were more than 25% above the statewide average and the lighter counties were more than 25% below the statewide average. The map for primary care physicians used 2001 data; the darker counties were more than 25% below the statewide average and the lighter counties were more than 25% above the average. So darker counties were likely to be areas with access-related problems for children. (See Maps 1-6.)

Map 1.
Rate of Ambulatory Care Sensitive Condition Inpatient Discharges



Map 2.
Ambulatory Care Sensitive Conditions as a Percentage of Inpatient Discharges

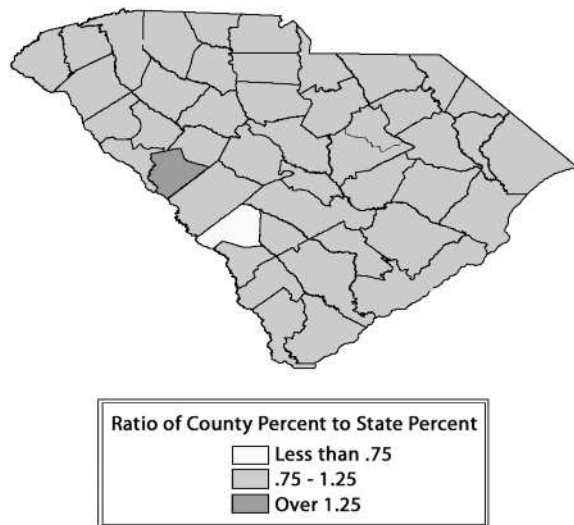


Potential Intervention Sites

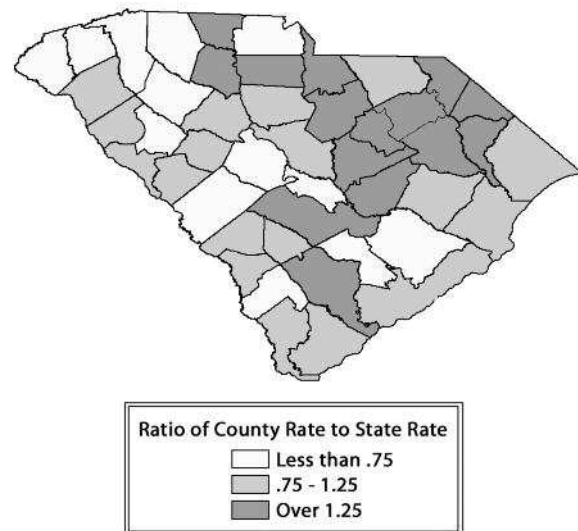
Using the geographic information system maps, 9 potential target counties were identified. Based on past involvement by The Duke Endowment and the availability of hospitals eligible for Endowment grants, 4 potential intervention sites were chosen. Table 1 presents some comparative data for these sites and for a county with similar demographics but a much lower ambulatory care sensitive conditions hospitalization rate.

Over the next 2 months, Center for Health Services and Policy Research staff conducted a series of key informant interviews with 6 to 8 key people in each of those communities

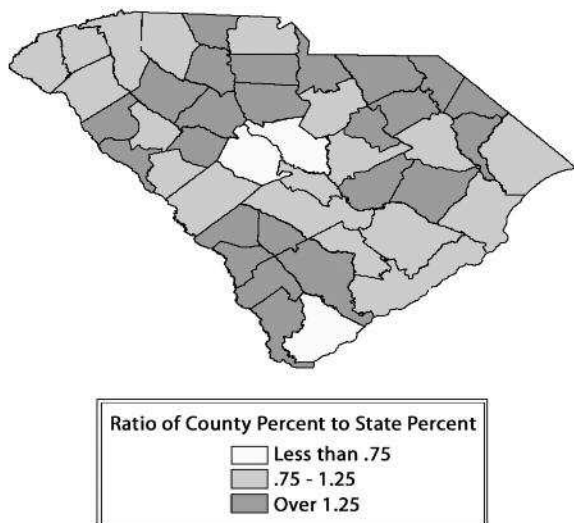
Map 3.
Ambulatory Care Sensitive Conditions as
Percentage of Emergency Department Visits



Map 4.
Rate of Asthma Inpatient Discharges



Map 5.
Percentage of the Population with Less than a
High School Education



Map 6.
Primary Care Physicians per 10 000

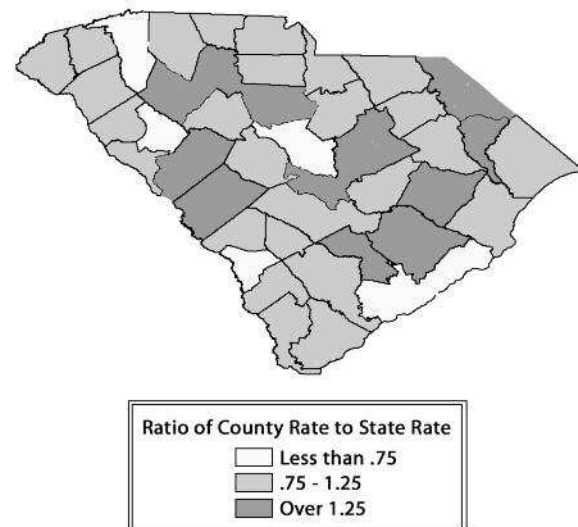


Table 1.
Actual Versus Expected Ambulatory Care Sensitive
Condition Discharges, FY 2002

County	Actual	Expected, if at rate of:	
		Statewide Average	Laurens County
Dillon	309	90	65
Kershaw	425	145	106
Lee	120	56	41
Union	174	77	56

to identify the probable reasons for the higher rates. Key informants included hospitals administrators, health department staff, school nurses, community health centers staff, pediatricians, and other stakeholders. Individual reports were created for each community. Tables 2-5 summarize the common findings.

Forum for Potential Grantees

Similar geographic information system analyses and qualitative research were occurring in North

Table 2.
Major Child Health Problems

Asthma, allergy, upper respiratory infections
Obesity, nutrition
Diabetes
Mental health problems
Developmental delay
Teen pregnancy
Children presenting much sicker
Dental problems
Child abuse/neglect
Urinary tract infections/sexually transmitted diseases
Otitis media
Premature births

Table 3.
Barriers to Primary Care for Children

Transportation
Parental perception of importance of care
Lack of providers (especially Medicaid)
Lack of coordination, long waits, lack of follow-up
Family constraints: finances, job, child care, health coverage
Illiteracy
Poverty/working poor
Lack of care, translators, advocates for Latinos
Lack of awareness, outreach, advocacy

Carolina. Staff from both states then assisted The Duke Endowment staff in developing a forum for potential grantees held in early summer 2003. Teams from each potential target county attended with the goal being for the attendees to consider the data for their areas, then consider interventions to improve access to primary care that The Duke Endowment would be willing to fund. The forum provided an opportunity for Endowment officials to explain in detail the concept of this funding initiative and for prospective target grantees to understand the proposal process. A key agenda item included data presentations by researchers from both state organizations that highlighted the specific data analyses and informant survey results for each of the target areas. Ample time was allotted for target area representatives to brainstorm with their respective research organizations regarding some of their ideas for improving access in response to the data presented and to suggest additional data that might enlighten their proposal processes.

The Duke Endowment Funded Projects

As a result of the forum and further technical assistance, 3 of the 4 target counties in South Carolina developed proposals that were subsequently funded by The Duke Endowment and

Table 4.
Common Needs

Transportation, including resources for non-Medicaid
Transportation, including resources for non-Medicaid
Early periodic screening, diagnosis, and treatment resources, perhaps provided by school nurses
Spanish interpreters, outreach coordinators, advocates
Fund for non-Medicaid clients for prescriptions
Outreach, screening, education, coordination, advocacy, public awareness
Primary care centers
Physicians, nurse practitioners, nurses
More family support services/school nurses
Psychiatrists, therapists

Table 5.
Common Strengths

Caring, committed, and creative individuals working with and on behalf of children
Organized networks, interagency groups
Belief in collaboration to meet the critical needs of children in their communities
Strong "finger-on-the-pulse" awareness of needs of children in the communities
History of successful grant partnerships

implemented in early 2004. The proposals varied widely in their approach to addressing access to primary care.

- The Union County proposal emphasized postnatal home visits by public health nurses to link new parents to a variety of services. Some services were directly related to access (eg, linking infants to medical homes, education about recognition of health problems, and appropriate use of ER) while others were not related to access (eg, family planning, education on caregiving and injury prevention).
- In Dillon County, the proposal focused exclusively on children with asthma with the goal of reducing the burden of asthma in the county. Improving access to primary care for these children was just one of several different strategies to address asthma related problems.
- The Lee County proposal's stated purpose was "to reduce identified barriers to health care access" with strategies directly related to improving access such as referral, case management, establishment of medical homes, education regarding appropriate and timely use of the health care system, and resource development.

Follow-Up Data

Since, with expected implementation delays, the projects did not begin until 2004, the earliest expected effects of the programs would be visible in state fiscal year 2004 - 2005.

Discussion

This case example illustrates how health data can be used to help a foundation identify communities whose needs are aligned with the philanthropy's priorities. The relationship between access to primary care and hospitalizations for ambulatory care sensitive conditions is clearly established, and qualitative data can be used to identify specific needs, barriers, and strengths. The combination of these data can help communities consider the comprehensive nature of a problem and suggest strategies that reflect the community's resources and priorities.

This case example also illustrates the limitations of health data. Health data is but one factor a community will consider in determining its most important needs and the strategies to address them. The postnatal nurse home visiting program in Union County had been reduced due to budget cuts; restoring the program was a community priority even if it was only indirectly

related to access to primary care. In Dillon County, data on high hospitalization rates for children with asthma (an ambulatory care sensitive condition) reinforced ongoing community concerns about children with asthma. As a result, strategies for improving access to primary care were focused on this limited population and other strategies were not related to access at all.

Tables 6-8 present data on pediatric admissions for ambulatory care sensitive conditions for each county during the 3 years before and 3 years after implementation. In terms of actual admissions, each county shows a substantial decrease from the 3-year average before implementation to the 3-year average after implementation—from 152 to 97 admissions per year in Union, from 264 to 156 in Dillon, and from 126 to 84 in Lee. However, since the statewide average was also decreasing over the same period, not all of those reductions can be attributed to the grant initiatives. **NCMJ**

Table 6.
Union County Ambulatory Care Sensitive Condition Discharges

	SFY02	SFY03	SFY04	SFY05	SFY06	SFY07*
Actual	174	144	138	112	103	75
Expected (at rate of state)	77	118	103	82	81	58
Ratio of Actual/Expected	2.26	1.22	1.34	1.37	1.27	1.29

*Quarters 3 and 4 of SFY 2007 are not finalized. The data is approximately 97% complete.

Table 7.
Dillon County Ambulatory Care Sensitive Condition Discharges

	SFY02	SFY03	SFY04	SFY05	SFY06	SFY07*
Actual	309	340	143	180	169	120
Expected (at rate of state)	90	203	136	128	111	112
Ratio of Actual/Expected	3.43	1.67	1.05	1.41	1.52	1.07

*Quarters 3 and 4 of SFY 2007 are not finalized. The data is approximately 97% complete.

Table 8.
Lee County Ambulatory Care Sensitive Condition Discharges

	SFY02	SFY03	SFY04	SFY05	SFY06	SFY07*
Actual	120	130	127	84	94	74
Expected (at rate of state)	56	90	85	67	65	54
Ratio of Actual/Expected	2.14	1.44	1.49	1.25	1.45	1.37

*Quarters 3 and 4 of SFY 2007 are not finalized. The data is approximately 97% complete.

REFERENCES

- 1 Shi L, Samuels ME, Pease M, Bailey WP, Corley EH. Patient characteristics associated with hospitalizations for ambulatory care sensitive conditions in South Carolina. *South Med J*. 1999;92(10):989-998.
- 2 Bindman AB, Grumbach O, Osmond M, et al. Preventable hospitalizations and access to health care. *JAMA* 1995;274(4):305-311.