

The Costs and Adequacy of Safety Net Access for the Uninsured Buncombe County (Asheville), North Carolina

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I. Introduction

This report examines Asheville, North Carolina, as part of a series of case studies whose purpose is to explore whether well-structured safety net systems are able to provide low-income uninsured people adequate access to care at reasonable cost. Safety net providers include a variety of public and private hospitals, clinics and physicians who serve disadvantaged patients, with or without health insurance (Snow Jones and Sajid 2009). While the newly enacted Patient Protection and Affordable Care Act of 2010 will cover an additional 30 million people and offer other protections to many more, at least 20 million people will likely remain uninsured, leaving many to rely on safety net care for most of their health needs (Holahan and Garrett 2010).

At the same time, increased Medicaid enrollment could strain the existing capacity of safety net providers. As a result, the cost and adequacy of safety net care remain vitally important issues for health care public policy (Hall 2009).

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These sites were selected after a thorough national review to reflect a variety of program structures and demographic and delivery-system settings. Each case study examines a safety net system that arranges for low-income uninsured people to have access to a fairly complete range of medical services (hospital, specialist physicians, prescription drugs) in at least a somewhat coordinated fashion based in a primary care medical home.

Each case study collects, analyzes and evaluates available data regarding the structure, adequacy and costs of the safety net system. Necessarily, these measures and indicators vary from one case study to the other, but common elements include:

- 1) the system's history, purpose, setting and funding;
- 2) the system's size, scope and structure;
- 3) how various access measures for the covered population compare with local and national norms; and
- 4) how the system's costs compare with the costs of covering a comparable population with either private insurance or Medicaid.

This study was approved by the institutional review boards at Wake Forest University Health Sciences and at Mission Hospital in Asheville. A draft of this report was reviewed by project advisors and other informed sources. However, the analyses and conclusions are solely the authors'.



II. Demographics and Delivery System

North Carolina's socio-demographics broadly resemble national averages. Statewide, 16 percent of the population was uninsured and 15 percent lived below poverty in 2007-2008, compared with national rates of 15 percent uninsured and 13 percent below poverty. North Carolina's Medicaid program ranked in the broad middle of states in terms of various coverage and eligibility indices (that is, it is neither especially generous nor lean). It included non-disabled adults without dependent children, but only up to 33 percent of the federal poverty level (FPL).

North Carolina also has a fairly prototypical patchwork of safety net providers (NC IOM 2005). There are no statewide government programs or special legal obligations to serve low-income uninsured people and its major cities have no acute-care public hospitals. However, over 90 percent of hospital capacity in the state is tax-exempt (including four academic medical centers and a number of smaller county hospitals) and these hospitals provide substantial amounts of uncompensated care to the uninsured. Serving the primary care needs of low-income uninsured are 230 community, rural and free clinics statewide (NC IOM 2009).

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In addition, it is more common in North Carolina than in most other states for counties to provide basic primary care services to low-income uninsured people through municipally-owned and operated clinics. Three dozen of the state's 85 county health departments do so (NC IOM 2009). One is Buncombe (pop. 229,000 in 2008), whose county seat, Asheville, is the largest city (pop.

79,000) in the western part of the state. This community is regularly named on various national lists of best places to live, work and retire (Asheville Area Chamber of Commerce). Known for its environmental ethos, eclectic music scene and vegetarian restaurants, Asheville and neighboring areas have a reputation for mixing "new age" with traditional Appalachian cultures.

Table 1: Buncombe County Demographics, 2008

Overall		Uninsured (nonelderly)	
Population	229,000	% of population	19%
Minority	14%	Adults <200% FPL (2006)	16,171
Below 200% FPL	34%	Adults <175% FPL enrolled (at one time) with safety net providers	approx. 6,000

Sources: U.S. Census Bureau; data analyses below

averages. Buncombe County's median household income of \$44,000 and its 14 percent poverty rate in 2008 were close to North Carolina averages. In 2006, 19 percent of the nonelderly population lacked health insurance, the same as the state overall.

Buncombe County's unemployment rate typically is lower than the state's (approximately 8% in 2009, vs. 11% statewide). In other respects, the area is consistent with statewide economic



As a medical community, Asheville was recently picked (by Donald Berwick and colleagues) as one of a national group of “success model” communities that manage to deliver higher quality health care for lower costs than U.S. norms (Gawande et al. 2009). It has also been held out as a national model for providing safety net services to low-income uninsured. Until 2010, the Buncombe County Health Department operated primary care clinics serving over 10,000 people a year, many of whom have Medicaid or are above the poverty level. Starting in 2010, the county decided to contract out the majority of adult services to a local community health center.

In 2008, the county’s primary care services, including prescription drugs, were available regardless of ability to pay, under a sliding scale that ranged from \$3 per visit to 80 percent of charges, for people under 200 percent of the federal poverty level. (Full charges for the most common visit types were \$60 and \$84.) Several private clinics also provided primary care to low-income uninsured, either for free or under a sliding fee schedule. For instance the federally-qualified community health center, which saw about 1,500 uninsured adult patients in 2008, waived any charges for uninsured patients under 250% FPL. A state-supported clinic staffed by teaching physicians and residents saw over 2,000 uninsured patients on a sliding scale basis.¹ The community is also served by a nonprofit hospital system formed by the merger of Mission and St. Joseph’s hospitals in 1995, which waives charges for uninsured patients below 150% FPL (or who are enrolled with Project Access) and reduces charges on a sliding scale up to 300% FPL.

III. Project Access

Buncombe County has received particular notice for “Project Access,” which provides specialist and other services to uninsured patients through a large network of volunteer physicians. Formed by the Buncombe County Medical Society in 1996, Project Access has received repeated praise (Isaacs and Jellinek 2006, Andrulis and Gusmano 2000, National Association of Counties 2000) and is the model for similar efforts nationwide that have produced over 50 other programs like it (Cofer 2008, Isaacs and Jellinek 2007, Scott 2000).² In Buncombe County, Project Access has recruited over 600 physicians, about 85 percent of all local medical society members, to pledge a defined amount of service for enrolled patients.³ In 2008 enrollment was available to any uninsured Buncombe County resident (regardless of citizenship) up to 175 percent of the federal poverty level⁴ who was referred by a physician.

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¹ Four other clinics provided urgent or episodic care entirely for free using volunteer staff, accounting for roughly another 2,000-3,000 people a year. This summary is derived primarily from NC IOM 2005 and Buncombe County 2008 and it is not entirely consistent with other sources.

² For various listings and descriptions, see: <http://www.physiciansinnovation.org>; <http://www.cjaonline.net/Communities.htm>; <http://www.texmed.org/Template.aspx?id=6697>

³ Usually, primary care providers agree to see 10 patients and specialists 20 patients per year. About 15 percent of participating physicians volunteer only to help in a free clinic rather than taking uninsured referrals in their office.

⁴ Project Access now accepts patients up to 200% FPL. Some physicians decline to accept patients who lack documented legal status.

Project Access is the model for similar efforts nationwide that have produced over 50 other programs like it.

Project Access is targeted to specialist services, in order to complement the primary care provided by area clinics, but about 15 percent of patients receive mainly primary care services. All major medical specialties are included, although there are shortages in orthopedic surgery and urology (Isaacs and Jellinek 2006).⁵ Project Access patients receive prescription drugs for small copayments,⁶ and a local provider donates durable medical equipment. The local hospital system donates outpatient laboratory and radiology services and it waives most charges for hospital care of Project Access patients.

Each year, Project Access serves roughly 3,000 people in some fashion, and it averages roughly 1,000 patients at any one time. Focusing on its core population, in 2008 Project Access enrolled 2,437 nonelderly adults who received specialist care. To enroll, patients are referred by a local clinic or physician⁷ and screened for eligibility by staff at either Project Access or the county clinic. An enrollment card identifies their eligibility for three months (or six months for primary care), and can be renewed as long as the need for services remains. However, few patients remain on the program beyond six months, and very few remain beyond a year, since the main focus is specialty referrals for acute or episodic illness. The local medical society provides administrative staff, supported mainly by funds from the county, but also by several limited-term grants.

Project Access owes its achievements to several factors. In addition to the altruism and commitment of local physician and community leaders, the program has developed a workable, community-wide approach to organizing and facilitating volunteer physician services. Physicians' concerns about evenhandedness or arbitrariness are met by knowing that most peers volunteer the same amount and that the county medical society screens for eligibility and assigns patients on a rotating basis. Also, the county provides funding for administrative support, and the state's liability shield law protects physicians who volunteer through an organized charity care program.

A unique set of people and institutions have created, led and sustained Project Access and its referring primary care clinics. Although some version of this model has been implemented in several dozen communities elsewhere, other communities lack the level and scope of development in Buncombe County. Therefore, we cannot expect it to be fully replicated on a wide-scale basis. Nevertheless, Buncombe County merits close study as a medium-sized community that has constructed from various pieces a safety net covering a broad range of services for a significant portion of its low-income uninsured. If this structural model could be coupled with financing

⁵ Also, there are few psychiatrists, although mental health services are partially provided by the state (Buncombe County Medical Society 2000). Dental services are not provided, but they are available to a limited extent from some local clinics.

⁶ Project Access contracts with local pharmacies, through a pharmacy benefit manager, to provide prescription drugs at the "ingredients" cost (no dispensing or management fee), under a limited formulary. Patients make a \$5 copayment, and are limited to \$1000 of drugs a year. Other prescription drugs are provided by patients' primary care clinics, which also assist patients with enrolling in pharmaceutical companies' medication access programs.

⁷ About two-thirds are referred by the county's clinic, about a quarter by other safety net clinics, and the rest by community physicians.

sources to pay for a greater portion of care, then potentially it could be replicated in any location with adequate provider capacity and community commitment.

IV. Adequacy of Access

Buncombe County's safety net system is a model compared to others, but how does the level of health care access compare to full insurance? Several indicators will be considered to evaluate the overall adequacy of access available to Buncombe County's low-income uninsured. There is no established gold standard for adequate access (Ricketts and Goldsmith 2005, Davidson et al. 2004), but the general approach employed here is to compare uninsured with similar insured populations in their ability to get necessary care of reasonable quality. We will consider two levels of assessment: program-specific and countywide.

Key informants interviewed for this study reported that Project Access's capacity for most specialty physician services appeared adequate to the medical demand from eligible patients, with the exception of a few isolated specialties noted above (urology and orthopedic surgery). One person thought that the screening process for Project Access is intrusive because of the detailed questions and documentation required. In other states, however, patients surveyed in similar Project Access programs report very high levels of satisfaction (90% or greater) with the program.⁸

The county reports that, since 1995, its primary care clinic has more than doubled the number of patients served, in part because Project Access has provided a ready source of referral for uninsured patients who need specialist services.⁹ Also, various estimates over the past decade suggest that 90 percent of low-income uninsured residents in the county received at least some primary care service each year (NC IOM 2005, Baker et al. 2005, Landis 2002, West 1999). However, many of these patients still do not have a usual source of primary care, and the county reported that demand for primary care services exceeded its capacity in 2008, to the extent that it was turning away 200 patients per month. Also, our analysis of Project Access data suggests that the primary care clinics that referred patients to its specialist physician program served less than half of the county's uninsured adults below 200% FPL in 2006 (Table 1).¹⁰ It is not known how many of the remaining uninsured needed no care, or received care elsewhere, or failed to receive needed care.

To measure actual utilization of safety net services in Buncombe County, we obtained data from the county clinic, Mission Hospital and Project Access (through the Buncombe County Medical Society) about uninsured adults with incomes below 175% FPL who were enrolled with the county clinic during 2008. Their utilization was compared with Medicaid adults in Buncombe County, adjusted for their risk characteristics using the methods described below, and also compared with national rates for adults generally (Table 2). These various measures are not precisely comparable due to differences in data sources and population characteristics, but they are useful as general indicators of level of access.

⁸ Project Access Patient Satisfaction Survey 2005, Health Policy Research Northwest 2009, Ormond and Gerrish 2006, Dallas Project Access 2007.

⁹ For instance, after Project Access was implemented, the average number of physician visits at the health department's clinic decreased from 5.0 to 2.5 per patient per year from 1995 to 2003 and the average length of each visit declined from 45 to 20 minutes, in part because of the reduced need to manage more serious conditions in a primary care setting (NC IOM 2005, Andrulis and Gusmano 2000).

¹⁰ This rough extrapolation is based on the ratios of primary care to specialist, for patients and visits based in the county clinic, and applying those ratios to the total number of specialist services reported by Project Access. It is also consistent with the information in note 1 above.

Table 2: Annual Visits Per Nonelderly Adult

	Buncombe County, 2008		US, 2006/2007
	Low-income uninsured	Medicaid, risk adjusted	
Primary care	3.9	4.6	1.8
Specialist	1.5		1.3
ER	0.5	1.44	0.39
Hospitalization	0.05	0.10	0.10

Sources: Authors' analysis of data (described below) from Buncombe County clinic, Project Access, Mission Hospital, and Medicaid; National Health Interview Survey (2007 data for all measures except hospitalization, which is from 2006).

Notes: National and local rates are not directly comparable due to differences in data sources, survey methods and population characteristics.

Medicaid rates are adjusted to match the risk characteristics of the county uninsured, using methods described below.

Medicaid adults, and similar to the national rate for adults generally (Table 2). These county patients were hospitalized in 2008 at a rate of five admissions per 100 people, which is only half the local risk-adjusted Medicaid rate and the national rate for adults generally. These indicators are reinforced by reports from similar “project access” programs elsewhere (which also coordinate specialist volunteers). Those studies also find reduced emergency room use and increased access to outpatient care at levels comparable with people who have insurance (Kullgren et al. 2005, Health Policy Research Northwest 2009).

In addition to these program-specific measures, we consider countywide population measures using two reputable surveys of nonelderly adults: 1) the government’s Behavioral Risk Factors Surveillance Survey (BRFSS), conducted statewide (and nationally) each year; and 2) a countywide survey of 800 adults in 2000 (repeated from 1995) by the Professional Research Consultants (PRC), a private firm that conducts similar surveys across the country.

Uninsured adults at the county clinic below 175% FPL averaged four primary care visits in 2008. This is similar to the risk-adjusted rate for local Medicaid adults and substantially greater than the rate reported by adults nationally (Table 2). As for specialist care, the county clinic patients averaged 1.5 specialist visits to Project Access physicians in 2008, which is similar to national rates reported by the general population (Table 2).

Also telling is that low-income uninsured adults seen by the county clinic used the local emergency room in 2008 at a rate of five visits per 10 people, which is substantially less than the risk-adjusted rate for local

Low-income uninsured adults seen by the county clinic used the local emergency room substantially less than the risk-adjusted rate for local Medicaid adults, and similar to the national rate for adults generally.

BRFSS data from 2006-2008 combined (Table 3) show that low-income people in Buncombe County are no more likely to report being unable to see a doctor due to costs than are Medicaid enrollees statewide.

Table 3: Unable to See Doctor Last Year Due to Costs: Nonelderly Adults, 2006-2008

	Uninsured	Low-income*	Insured	Medicaid
Buncombe County	46.2%	25.0%	10.5%	
North Carolina	45.5%	27.1%	10.2%	28.3%
U.S.**	40.7%	26.0%	13.2%	

Source: Behavioral Risk Factor Surveillance Survey, NC State Center for Health Statistics. Differences observed horizontally (within each geographic unit) are statistically significant, except for the Medicaid figure, which is not significantly different than the low-income figure.

* Low income is <250% FPL, except for US data, which is <200% FPL.

**US data show the median among all states in 2006 and 2007 combined (McCarthy et al. 2009).

However, uninsured or low-income people in Buncombe face substantially more cost barriers than those with insurance generally, and they are statistically just as likely to report cost barriers as are uninsured or low-income groups statewide or nationally. Similarly, 25 percent of people in households with less than \$50,000 income reported having no checkup in the past year, compared with 28 percent of people on Medicaid statewide. But neither rate is appreciably different than the national median of 26 percent for low-income people (McCarthy et al. 2009).

The Professional Research Consultants (2000) survey confirmed that low-income or uninsured adults in Buncombe County have more difficulties getting needed care than people with insurance (Table 4). It also reported that emergency room visits by the uninsured are somewhat more likely to be for non-urgent conditions (56%) than for those with insurance (44%). However, this survey also found that low-income or uninsured adults in Buncombe County had a usual source of care in 2000 at levels comparable to those with insurance, or to people nationally.¹¹ Notably, between 1995 and 2000, adults with a usual source of care increased from 79 percent to 93 percent countywide. That is the same timeframe the county expanded its primary care clinic and several other safety net clinics opened or expanded (Buncombe County 2000).

In evaluating these surveys, it is important to note two points. First, these measures vary considerably among different surveys and locales and there is no clear threshold or metric for adequate access (Cunningham and Kemper 1998, Whitmore 1997). Second, none of these measures precisely assesses the target group of people who are both low-income and uninsured. Some uninsured are above the income levels that qualify for safety net programs and some low-income people have insurance. Because no measures are available for low-income uninsured (combined)

¹¹ The PRC's findings for usual source of care are more favorable than those reported from BRFSS because the PRC asked about having any place to go for care, including a clinic, whereas BRFSS asked only whether people have "one person you think of as your personal doctor or health care provider?" The wording difference is important in a community like Buncombe County where many people receive primary care from a clinic rather than a physician's office. This is revealed by the PRC survey, which reported that 13.5 percent of those with a usual source of care use clinics. Also, the percentage whose usual source of care is a physician's office dropped from 84.5 percent in 1995 to 79.4 percent in 2000, over the same period that the total percentage of people reporting a usual source of care increased. This apparent discrepancy is explained by noting that several primary care clinics opened or expanded over this time span, which accounts for both the increase in overall access and the shift from physician offices to clinics.

in Buncombe County, we have only limited insight into the precise access levels for those whom these programs actually cover.

Table 4: Access Measures from Professional Research Consultants Survey

	Buncombe County, 2000				National		
	<200% FPL	Uninsured	Insured	All, in 1995	2000	2008	2008*
Usual source of care	92.6%	80.4%	95.1%	78.7%	85.5%	79.7%	70.0%
Used ER in past year	35.8%	22.6%	23.1%				
Failed to get needed care last year	20.8%	30.0%	9.6%				

* As reported in Professional Research Consultants 2009.

Notes: Differences of 10 percentage points in the Buncombe County survey are statistically significant. The national survey results are shown for descriptive purposes only; no statistical testing was reported comparing the two surveys.

Considering all available quantitative and qualitative indicators, however, it appears that the safety net system in Buncombe County meets the needs of low-income uninsured residents at a level somewhere between those with insurance and those who are uninsured elsewhere in North Carolina or the U.S. Another indicator of overall safety net adequacy is the concern expressed by some observers that smaller employers may be taking advantage of the local safety net by avoiding the cost of purchasing insurance, knowing that lower-paid workers will be able to obtain care when needed (Isaacs and Jellinek 2006). Thus, success may be a two-edged sword.

Buncombe County’s safety net suffers from the shortcoming that many uninsured people still lack a usual source of care and so have access only to urgent, episodic or short-term care. Also, inpatient hospital services are below the levels for insured populations, perhaps due to barriers (real or perceived) to seeking charity care. Nevertheless, this location merits attention as a model safety net system because it demonstrates that it is possible to coordinate all major components of health care delivery in a smaller community that lacks a public hospital or academic medical center. Repeating or improving this success on a widespread basis would be difficult without more funds targeted to safety net providers, but learning from this volunteer program the value of services required might provide the basis for developing more sustainable funding sources in smaller communities elsewhere.

The safety net system in Buncombe County meets the needs of low-income uninsured residents at a level somewhere between those with insurance and those who are uninsured elsewhere.

V. Costs

To evaluate the costs of Buncombe County's safety net, we compared the per-person costs of caring for the low-income uninsured adults served by the county clinic with the per-person costs for a similar population under Medicaid. It is not conventional to measure uncompensated care on a "per member per month" (pmpm) basis since, by definition, the uninsured are not enrolled in an insurance plan. However, an adequate safety net can be thought of as providing a form of coverage for a defined population when the safety net system is structured like Buncombe County's, in a manner that enrolls eligible patients and provides them a primary care medical home (Hall 2009).

As noted above, several area clinics serve low-income uninsured. We focus here on the county's primary care clinic, which was the largest. The county clinic reviewed each uninsured patient's income to determine eligibility for its sliding scale discounts. This determination expired every six months unless renewed. We consider the income-determination period to be each patient's period of "enrollment," plus any additional enrollment period reported by Project Access or any subsequent date of service reported by Mission Hospital.¹² In 2008, the county clinic served 4,704 adult patients who were uninsured and below 175% FPL (Table 5). These were also the county patients who qualified for specialist referral to Project Access and for charity care at Mission Hospital. With an average enrollment of about eight months, there were 3,079 patients per month.

To measure the costs of care, claims data were obtained for these patients from the county, and also from Project Access for all of its adult members¹³ and from Mission Hospital for all of its adult uninsured Buncombe County patients. Claims and demographic records from each source were matched based on patient identifiers and then de-identified for analysis, to produce as complete information as possible about any care received from all three sources by uninsured adults below 175% FPL seen at the county clinic in 2008.

We measured the value of service in three ways, depending on the source of care. Primary care at the county clinic was valued by actual charges, based on information that these charges approximate actual costs. Added to this was an administrative load of \$5 pmpm, based on the allocated amount the county paid to the Buncombe County Medical Society to administer Project Access for this population. Subtracting \$2 pmpm that clinic patients paid for their service resulted in a net pmpm of \$40 for services paid for by the county (mainly primary care and prescription drugs).

For donated care, specialist services were valued based on what Medicaid would have reimbursed plus five percent, in order to approximate Medicare rates.¹⁴ Hospital services were valued at actual charges discounted by the hospital's average cost-to-charge ratios for inpatient and outpatient services, and subtracting any out-of-pocket payments received from patients. Miscellaneous services, which included home health and medical interpreters, were given the value reported by Project Access. This resulted in a total value for donated services of \$109 pmpm (Table 5). Adding

¹² Enrollment was considered continuous from the earliest to the last date among these various indicators.

¹³ Most Project Access physicians file "shadow" claims forms with the Buncombe County Medical Society, in order to document the services they provide and their value.

¹⁴ While Medicare pays less than private insurance, its rates are generally regarded as sufficient to maintain adequate access. Five percent is the statewide average ratio of Medicare-to-Medicaid fees obtained from www.statehealthfacts.org. This estimate was also increased by 30 percent to correct for the level of underreported services estimated by Project Access administrators.

both county and donated services produces a total of \$149 pmpm as the estimated institutional costs of all services provided in 2008 to uninsured adult patients of the county clinic whose income was below 175 percent of the federal poverty level.

We compared this estimate with the costs of serving Medicaid adults in Buncombe County. To focus on the most comparable population, data were obtained for the Medicaid program that covers non-disabled and nonelderly adults. Relevant demographics are shown in Table 5. We disregarded reimbursement for services or types of providers not substantially included among the safety net system studied here. Amounting to \$23 pmpm, these included all dental care, long-term care and specialized mental health providers.¹⁵ The remaining Medicaid costs averaged \$409 pmpm in 2008. To account for differences in risk status between Buncombe County's Medicaid and uninsured populations, the Chronic Illness and Disability Payment System (CDPS) was used to generate risk scores based on age, gender and diagnoses. CDPS is well validated and widely used for these purposes (Kronick et al. 2000).

These risk scores predict that if the county clinic's low-income uninsured adults had been covered by Medicaid, they would have incurred 26 percent fewer costs than the actual adult Medicaid population in 2008, based on age, gender and disease incidence. Accordingly, it is estimated that if Medicaid were to have covered this uninsured population in 2008, it would have cost the state \$302 per person. This projection is twice the cost of treatment that Buncombe County providers actually incurred serving these uninsured adults.

Table 5: Services to Buncombe County Uninsured and Medicaid Adults, 2008

	Uninsured <175% FPL	Medicaid non-disabled
Patients	4,704	8,264
Total months	36,949	63,621
Patients per month	3,079	5,302
Average months of enrollment	7.9	7.7
Average age	38.7	30.6
% Male	24.6	20.1
Value of Services (pmpm)		
<i>Paid by County</i>		
Primary Care	\$36	
Administration	\$5	
Patient copays	(\$2)	
Subtotal county	\$40	
<i>Donated Services</i>		
Specialists	\$29	
Hospital	\$79	
Misc.	\$1	
Subtotal donated	\$109	
Total net pmpm	\$149	\$409
Relative risk	1.0	1.35
Adjusted pmpm		\$302 (\$409/1.35)

Source: Analysis of linked data from Buncombe County Clinic, Mission Hospital and Buncombe County Medical Society.

¹⁵ Safety net providers in the county do offer many of these services, but most were not captured in the data that were analyzed for this study. Although some of these safety net services were captured, the relevant proportion is not known, so to be conservative, all such costs were excluded from the Medicaid calculation.

If Medicaid had covered this uninsured population in 2008, it would have cost the state twice the cost of treatment that Buncombe County providers actually incurred serving these uninsured adults.

This cost analysis is limited by several imperfections in the data sources and analysis. First, we have measured only care provided by Buncombe County's three major safety net organizations and not by other safety net providers where this population also may have sought care. Second, the construct of enrollment used to calculate member-months may not accurately reflect the population actually covered by this safety net system. Because eligibility does not require payment and can be determined at any time services are needed, some people are recorded as "enrolled" for a time even after moving away from the area or ceasing to use Buncombe County's safety net providers, while

others continuously rely on this safety net for service but allow their enrollment to lapse in between periods of service need.¹⁶ Finally, the methods used to measure and adjust for health status are imprecise and so may either fail to account for some unobserved risk, or may overstate the degree of actual difference in risk.¹⁷

VI. Implications

During the next few years, until health insurance reforms take full effect nationally, states and communities will continue to struggle with substantial numbers of uninsured people. Even after implementing federal reforms, many millions will remain uncovered by expansions in Medicaid and private insurance. These uninsured will include people for whom insurance remains unaffordable, people who are temporarily uninsured while transitioning between public and private coverage, and low-income people who do not qualify for Medicaid or public subsidies due to citizenship status.

Buncombe County (Asheville), North Carolina is an instructive example of one approach to improving health care access for people who remain uninsured, both leading up to and following national reforms. By linking community clinics with volunteer specialists and charitable hospital services, several thousand low-income uninsured residents receive good access to a full range of medical services, regardless of citizenship. The value of services provided appears to be half the

¹⁶ It is notable that the county's practice of verifying income eligibility every six months was more demanding than that in most of the other four case studies done as part of this research project, where eligibility determinations typically were good for a year. Likewise, Buncombe County extended its eligibility determination to 12 months, starting in the middle of 2008. If this policy had been in effect earlier, the member months denominator would have been substantially larger, resulting in a considerably lower calculation of net pmpm cost. This change also would have lowered the service use rates reported in Table 2. Also, different assumptions from those explained in note 12 could have been made about how to use and connect eligibility information for each patient from the three different safety net organizations. Nevertheless, the average enrollment period reported here is consistent with that reported by the other safety net systems studied for this project, whose enrollment practices were somewhat more straightforward.

¹⁷ Although the CDPS risk adjustor is well validated and widely used for these purposes, it was developed for use with Medicaid populations. Some dimensions of risk among the uninsured may differ from the Medicaid populations from which CDPS's adjustment methods were validated. For instance, Buncombe County's uninsured include more noncitizens than does Medicaid, and noncitizens tend to use fewer resources relative to their medical needs (Stimpson et al. 2010, Ku 2009). CDPS does not account for race, citizenship or nationality factors (Kronick et al 2000). Also, because CDPS relies on diagnostic information obtained from claims or clinical encounter data, it may be somewhat less reliable for populations that have less complete records from which to draw such data. Project Access administrators estimate that approximately one-fourth of its specialist visits are not recorded, suggesting that information about more serious conditions was missing for the uninsured population. If so, that would tend to understate this population's risk profile.

estimated cost of covering this population by Medicaid. And, the county's actual cost for providing or arranging these services was considerably less than this, since three-fourths of the total value came through services donated by physicians and the hospital.

Despite this success, the Buncombe County safety net has several limitations. The area's needs outstrip capacity, such that Project Access and its referring clinics serve less than half of the area's low-income uninsured adults. As a result, any major influx of new beneficiaries would most certainly stretch existing capacity. Moreover, it is doubtful that all communities could provide even this extent of charity care. Finally, the access to care provided by Medicaid or by generous commercial insurance is superior to that provided by a coordinated safety net program such as Buncombe County's.

The value of services provided appears to be half the estimated cost of covering this population by Medicaid.

By linking community clinics with volunteer specialists and charitable hospital services, the county has succeeded in providing several thousand low-income uninsured residents, regardless of citizenship, good access to a full range of medical services based in primary care medical homes.

Nevertheless, this case study demonstrates that local providers in smaller communities could form effective referral networks for low-income uninsured, if adequate funding were available. Learning the value of the services required to meet this population's needs might help develop more sustainable funding sources for the uninsured in smaller communities elsewhere.

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