Rural Health Care in North Carolina: Unmet Needs, Unanswered Questions

by Jeanne M. Lambrew and Jack Betts

The use of North Carolina's rural hospitals has declined in the past decade, leading to questions about the future of health care delivery in rural areas. To examine these issues, the staff of Insight *and graduate students from the Department of Health Policy and Administration at the University of North Carolina at Chapel Hill explored several different facets of the state's rural health care system. The article focuses on utilization and services of the state's rural hospitals and identifies 16 North Carolina hospitals that are at risk of failing to meet their service objectives.*

If you drove through the heartland of North Carolina along the superhighways of the most populous areas, and if you were to have an accident requiring medical care and hospitalization, you couldn't be in a better place. In Raleigh, there's the vast Wake Medical Center and at least two other fine hospitals; in Durham, the world-renowned Duke Medical Center and Durham Regional; in Chapel Hill, the huge University Hospitals system. Further to the west, the major medical centers of Greensboro, Charlotte, and Winston-Salem are well stocked with physicians, nurses, CT Scanners, Magnetic Resonance Imagers, and all sorts of Buck Rogers equipment—sprawling facilities offering cutting-edge technology and the most sophisticated expertise in the world.

But if you were to travel the backroads of the Piedmont, or spend time in the western and particularly the less-populous eastern reaches of North Carolina, it's a different story entirely. The problem is not a lack of hospitals, or insufficiently skilled doctors and nurses. There are a lot of hospitals in North Carolina, even in rural areas. Of the state's 100 counties, 82 have at least one hospital and several of them have more than two. But in the state's 75 rural counties, some hospitals are in severe financial trouble and eight of them are showing some signs of vital distress in serving

Jeanne M. Lambrew is a research associate for the North Carolina Rural Health Research Program within the Cecil G. Sheps Center for Health Services Research at UNC–Chapel Hill. Jack Betts is editor of North Carolina Insight. *Assisting in the research for this article were Lori Bastian, Gibbie Harris, and John Pauk of the Department of Health Policy and Administration at UNC–Chapel Hill, with the support of the U.S. Office of Rural Health Policy.*

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their communities successfully on at least three of five key measures. Another 14 hospitals show at least one symptom of distress. These hospitals range in size from tiny Sea Level Hospital (16 beds) in Carteret County to Davis Community Hospital (149 beds) in Iredell County. Rural hospitals, pillars of local health and economic systems alike, are failing.

This increasingly grim picture is hardly unique to North Carolina. "Throughout rural America, small hospitals are closing their doors," says Arthur Caplan, director of the Center for Biomedical Ethics at the University of Minnesota. "They cannot compete with their regional, suburban, and big-city rivals. Doctors, especially new ones, go where the jobs are. There is simply more money to be made in the city than in the country."[1]

The problems in rural health go far beyond hospital closings. "Many rural residents face difficulty in obtaining health care," notes the Center on Budget and Policy Priorities in Washington, D.C. "Access to health care for these residents may be limited by economic as well as geographic barriers and by a shortage of medical providers in rural areas."[2] The report also notes that rural residents usually are not as healthy as their urban counterparts, and they use medical facilities and seek medical care far less often.

With the dramatic urban growth of North Carolina in recent years, it's easy to forget that much of the state remains rural. More than four out of every 10 N.C. residents live in a rural area, some of them in isolated geographic pockets. Others are isolated by poverty or lack of transportation. Though most rural residents live close to one of the many small towns that dot the state's landscape, the barriers to access traditionally associated with the remote rural areas are appearing in these communities as well.

Jim Bernstein, director of the state's Office of Rural Health and Resource Development in the Department of Human Resources, says the rural health care problem extends to many of these small towns. "Because we are a densely populated rural state, with a significant portion of its population in small towns, there already are a number of problems in towns of around 2,500. And it won't be long before we see these problems in towns of up to 10,000."

These problems include:

- a lack of medical personnel (particularly family practice physicians, nurse practitioners, and physicians' assistants);
- a lack of resources and supporting institutions for rural hospitals, including fund-raising and medical support organizations;

■ low rates of health insurance coverage for rural residents and an insufficient number of employers with health insurance plans and other third-party payers to pay for care for rural citizens;

■ the growing disparity between large urban counties that are better able to afford care for their indigent citizenry, and the rural counties that are disproportionately poor and far less able to provide an adequate level of care;

■ and a disproportionately large number of the working poor in rural areas—which means that many rural residents, who work full time at regular jobs but don't qualify for government health programs, don't earn enough to buy private insurance.

"We've got hospitals in trouble, we don't have enough doctors, especially primary care doctors, and we have a payment system that is out of whack," says Bernstein.

In the face of huge financial pressures, competition, and the changing nature of health care, the traditional small rural hospitals may disappear. What's going to happen to North Carolina's rural hospitals? If a rural hospital goes out of business, what steps could the local county take to provide essential, minimum services? And will there be enough health professionals to deliver these services?

In the following pages, *Insight* examines the health of the health-care system in rural areas. Much of the research was undertaken by participants in a Practicum in Health Policy Analysis conducted by the Department of Health Policy and Administration and the N.C. Rural Health Research Program at the University of North Carolina at Chapel Hill, at the request of the N.C. Center for Public Policy Research.

Overview: North Carolina Hospitals

Currently, North Carolina's complement of 118 general acute-care hospitals is fairly widely dispersed, with no hospital more than 35 miles from another.[3] Though some metropolitan areas have more than two or three hospitals, 18 counties, all of them rural, do not have a hospital (see Table 1 for a list of rural counties and their hospitals).

Seventy-five general acute-care hospitals are located in non-metropolitan counties, meaning

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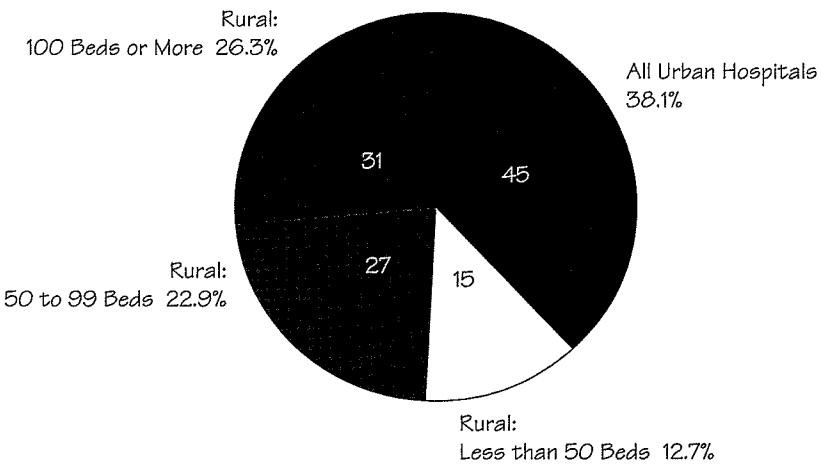
Figure 1. Urban-Rural Distribution of North Carolina Hospitals, 1989



Note: Hospitals that are members of systems often are reported in aggregate rather than as individual hospitals; thus, this is a conservative count.

Source: N.C. Center for Health and Environmental Statistics; Health Facilities Data Book: Hospital Summary Report, 1989

Prepared by N.C. Rural Health Research Program, Cecil G. Sheps Center for Health Services Research, UNC–CH

Table 1. Rural Hospitals in North Carolina

1	2	3	4	5	6	7	8	9
County	County Population	Hospital	Type of Ownership	Staffed Beds in Use	Staffed Beds % Occupied		% Discharges From County	
	1990		1989	1989	1980	1989	1980	1989
Alleghany	9,590	Alleghany County Memorial Hospital	NPA	46	46.0	50.1	67.2	64.0
Anson	23,474	Anson County Hospital	CNTY	52	81.0	43.3	57.0	49.0
Ashe	22,209	Ashe Memorial Hospital	NPA	57	63.8	41.5	64.3	50.9
Avery	14,867	Charles A. Cannon Jr. Memorial Hospital	NPA	79	54.1	45.1	41.2	32.1
		Sloop Memorial Hospital	NPA	38	64.1	57.7	37.9	42.4
Beaufort	42,283	Beaufort County Hospital	CNTY	117	69.3	48.2	58.4	51.7
		Pungo District Hospital	NPA	47	56.2	72.4	19.7	14.6
Bertie	20,388	Bertie Memorial Hospital	CNTY	49	61.5	25.1	32.6	18.1
Bladen	28,663	Bladen County Hospital	CNTY	42	91.6	65.0	46.7	49.3
Brunswick	50,985	Brunswick Hospital	PROP	60	39.4	38.8	24.5	24.3
		J. Arthur Dosher Memorial Hospital	TWNSHP	40	55.9	35.8	16.4	17.8
Caldwell	70,709	Caldwell Memorial Hospital	NPA	97	74.4	73.7	40.5	51.9
Camden	5,904							
Carteret	52,556	Sea Level Hospital & Extended Care	NPA	16	72.3	36.2	14.5	5.7
		Carteret County General Hospital*	CNTY	117	75.5	67.6	65.5	69.6
Caswell	20,693							
Chatham	38,759	Chatham Hospital	NPA	46	71.6	67.0	40.7	33.3
Cherokee	20,170	District Memorial Hospital of SW N.C.	DIST	52	40.5	66.3	39.4	27.3
		Murphy Medical Center	AUTH	50	52.6	41.0	41.4	45.8
Chowan	13,506	Chowan Hospital	CNTY	70	91.6	47.0	74.5	74.3
Clay	7,155							
Cleveland	84,714	Crawley Memorial Hospital	NPA	51	52.5	66.0	7.7	1.6
		Kings Mountain Hospital	NPA	92	78.2	40.5	14.0	11.3
		Cleveland Memorial Hospital*	CNTY	239	74.8	65.6	65.0	62.4
Columbus	49,587	Columbus County Hospital*	CNTY	136	87.5	80.0	69.0	70.5
Craven	81,613	Craven County Hospital *	NPA	276	92.0	78.7	82.5	83.0
Currituck	13,736							
Dare	22,746							
Duplin	39,995	Duplin General Hospital	CNTY	60	60.2	64.7	35.2	41.4
Edgecombe	56,558	Heritage Hospital	PROP	127	59.9	49.1	37.8	39.5
Gates	9,305							
Graham	7,196							
Granville	38,345	Granville Medical Center	CNTY	66	59.0	48.6	38.5	41.6
Greene	15,384							
Halifax	55,516	Halifax Memorial Hospital	DIST	171	84.8	87.3	64.5	62.7
		Our Community Hospital	NPA	20	37.7	33.2	3.6	1.4
Harnett	67,822	Betsy Johnson Memorial Hospital**	CITY	77	69.4	68.3	33.3	31.0
		Good Hope Hospital**	NPA	72	93.7	67.8	17.5	16.0
Haywood	46,942	Haywood County Hospital	CNTY	152	61.2	61.8	78.0	70.1
Henderson	69,285	Margaret R. Pardee Memorial Hospital	CNTY	155	71.8	65.2	68.7	58.1
		Park Ridge Hospital	NPA	103	65.6	63.0	16.9	17.3
Hertford	22,523	Roanoke-Chowan Hospital	NPA	100	81.7	75.6	86.1	82.0
Hoke	22,856							
Hyde	5,411							
Iredell	92,931	Davis Community Hospital	PROP	149	70.5	44.1	24.1	16.6
		Iredell Memorial Hospital	CNTY	183	84.1	80.5	39.4	49.3
		Lake Norman Regional Medical Center	PROP	113	76.6	34.8	18.9	17.4
Jackson	26,846	C.J. Harris Community Hospital	NPA	86	71.4	61.9	75.3	70.6
Johnston	81,306	Johnston Memorial Hospital*	CNTY	114	66.9	70.6	45.9	40.1

Source: N.C. Center for Health & Environmental Statistics; Health Facilities Data Book: Hospital Summary Report & Patient Origin Reports, 1980; 1989;

1	2	3	4	5	6	7	8	9
County	County Population	Hospital	Type of Ownership	Staffed Beds in Use	Staffed Beds % Occupied		% Discharges From County	
	1990		1989	1989	1980	1989	1980	1989
Jones	9,414							
Lee	41,374	Central Carolina Hospital	PROP	137	59.9	55.0	63.6	59.2
Lenoir	57,274	Lenoir Memorial Hospital*	CNTY	226	85.2	76.0	80.9	78.1
Macon	23,499	Angel Community Hospital	NPA	81	66.7	57.2	65.0	62.9
		Highlands-Cashiers Hospital	NPA	27	19.8	14.0	7.3	5.2
Madison	16,953							
Martin	25,078	Martin General Hospital	CNTY	49	70.4	46.0	42.9	37.7
McDowell	35,681	McDowell Hospital	NPA	65	71.0	74.5	53.1	63.8
Mitchell	14,433	Blue Ridge Hospital System	NPA	70	56.8	54.9	68.5	62.5
Montgomery	23,346	Montgomery Memorial Hospital	NPA	50	64.7	46.3	64.5	46.6
Moore	59,013	Moore Regional Hospital*	NPA	312	85.0	85.6	86.6	81.3
Nash	76,677	Community Hospital of Rocky Mount	PROP	50	54.4	54.9	7.5	6.8
		Nash General Hospital*	CNTY	282	88.4	76.5	61.0	60.2
Northampton	20,798							
Pamlico	11,372							
Pasquotank	31,298	Albemarle Hospital*	CNTY	137	68.9	80.1	93.5	93.5
Pender	28,855	Pender Memorial Hospital	CNTY	43	78.1	56.6	37.7	31.4
Perquimans	10,447							
Person	30,180	Person County Memorial Hospital	NPA	54	77.9	36.4	46.4	27.2
Pitt	107,924	Pitt County Memorial Hospital*	CNTY	501	84.1	94.7	86.7	94.2
Polk	14,416	St. Luke's Hospital	NPA	52	56.1	81.0	69.1	69.2
Richmond	44,518	Hamlet Hospital	PROP	64	38.9	43.8	9.9	17.7
		Richmond Memorial Hospital	CNTY	88	58.1	61.0	55.3	42.4
Robeson	105,179	Southeastern General Hospital*	NPA	281	77.5	70.1	65.3	64.6
Rockingham	86,064	Annie Penn Memorial Hospital	NPA	90	75.7	81.1	38.7	29.9
		Morehead Memorial Hospital	NPA	85	63.0	76.8	31.7	34.3
Rutherford	56,918	Rutherford Hospital*	NPA	145	72.3	52.4	64.9	68.1
Sampson	47,297	Sampson County Memorial Hospital	CNTY	116	76.5	60.3	62.5	60.1
Scotland	33,754	Scotland Memorial Hospital	NPA	124	50.7	53.9	71.7	66.2
Stanly	51,765	Stanly Memorial Hospital	NPA	124	67.2	56.8	56.0	59.8
Surry	61,704	Hugh Chatham Memorial Hospital	NPA	58	55.5	66.3	15.4	14.3
		Northern Hospital of Surry County	DIST	116	96.0	61.0	42.9	47.4
Swain	11,268	Swain County Hospital	NPA	46	64.7	40.8	56.2	41.0
Transylvania	25,520	Transylvania Community Hospital	NPA	94	54.7	55.0	63.6	59.9
Tyrrell	3,856							
Vance	38,892	Maria Parham Hospital	NPA	78	66.0	74.0	66.9	58.1
Warren	17,265							
Washington	13,997	Washington County Hospital	CNTY	49	60.5	32.9	56.7	52.5
Watauga	36,952	Blowing Rock Hospital	NPA	28	50.0	50.1	10.6	6.0
		Watauga County Hospital	CNTY	141	52.5	51.3	71.8	68.8
Wayne	104,666	Wayne Memorial Hospital*	NPA	261	73.1	76.9	82.0	79.8
Wilkes	59,393	Wilkes General Hospital	CITY	111	72.1	77.8	59.6	64.0
Wilson	66,061	Wilson Memorial Hospital*	NPA	277	84.6	74.3	91.6	81.8
Yancey	15,419							

* indicates a Rural Referral Hospital

indicates no hospital in the county

** Harnett County hospitals have been designated as urban for Medicare reimbursement and thus are not included in the analyses of rural hospitals

Key to Ownership: NPA: non-profit association; CNTY: county; PROP: for-profit proprietary; TWNSHP: township; AUTH: hospital authority; DIST: district

and U.S. Census, 1990. *Prepared by Jeanne Lambrew, N.C. Rural Health Research Program, Cecil G. Sheps Center for Health Services Research.*

counties that are not part of a Metropolitan Statistical Area, or MSA. An MSA is defined as an integrated area with a central city of 50,000 population or greater within an urbanized area of 100,000 or greater. Two of North Carolina's non-metropolitan hospitals are not classified as *rural* by the U.S. Health Care Financing Administration (HCFA)—Betsy Johnson Memorial and Good Hope Hospital, both in Harnett County—because they are adjacent to a metropolitan area (Wake County); only the 73 hospitals reimbursed by the HCFA are considered in this analysis.

Of the 118 hospitals, 45 are in metropolitan areas; of the remaining 73 rural hospitals, 15 hospitals have fewer than 50 beds; 27 have 50–99 beds; and 31 have 100 or more beds (see Figure 1). So the term *rural hospital* does not necessarily mean *small* and rural. It can also mean fairly large and not-so-rural—as in the case of 501-bed Pitt Memorial Hospital in Greenville or 261-bed Wayne Memorial in Goldsboro.

The Average Rural Hospital

The average rural hospital in North Carolina had 109 staffed beds in 1989, compared to a nationwide non-metropolitan average of 83 beds. Thirteen percent of all North Carolina's non-metro hospitals had fewer than 50 beds in 1989 compared to 17.8 percent in the United States in the same year. By comparison, urban hospitals are nearly three times larger than rural hospitals—averaging 280 staffed beds in North Carolina and 245 beds nationally in 1989.[4] Staff complements for several categories of health professionals are listed in Table 2.

Fewer than 10 percent of rural hospitals in North Carolina are proprietary or operated on a for-profit basis, with 49.3 percent owned by not-for-profit organizations, and 41 percent owned by some unit of local government (county, township, district, or hospital authority). This pattern of ownership is comparable to that of non-metropolitan community hospitals nationwide, of which 10 percent were for-profit in 1987, 48 percent were nonprofit, and 41.3 percent were under government ownership.[5]

Rural Hospital Trends

One of the most alarming national trends of the last decade has been the closure of rural hospitals, including three in North Carolina since the mid-1980s—Warren County General in 1985, Robersonville Community in Martin County in 1989, and Blackwelder Hospital in Caldwell County in 1988.[6] These closures usually can be anticipated by financial difficulties, but financial troubles may be symptoms and not the root causes of hospital failure. *Utilization—declining hospital utilization—is a major cause of hospital failure.*

The stability and success of a hospital depend on the number and characteristics of the people who use it. In the past decade, a nationwide decline in inpatient hospitalization occurred. The American Hospital Association reports that between 1979 and 1989, the number of inpatient hospital days declined by 11.3 percent nationally.[7] This is only partly attributable to the recession of the early 1980s and the increase in outpatient surgery.

In particular, the federal government's Prospective Payment System for Medicare, introduced in 1983,[8] was instrumental in changing the nature of hospital stays. The Prospective Payment System made it unprofitable to extend a patient's stay beyond the length of time designated for a particular diagnosis. It also provided strong disincentives for unneeded admissions to hospitals. As a result, hospitals experienced the *quicker and sicker* phenomenon, where only those more critically ill were admitted to hospitals, and once there, they stayed a shorter period because there was no additional payment for additional days. That has had a strong influence on hospital viability.

The typical patient using the rural hospital also changed during the 1980s. Increasingly, younger and more affluent county residents have stopped patronizing their local hospitals, leaving a patient population that is mostly elderly and indigent. In the same way that rural residents travel to more urban areas for their work or shopping, health care "outshopping" implies that, except for emergency care, rural residents uncouple their basic health needs from the local hospital and seek care in urban hospitals.

But there's more to it than a shopping analogy, says James R. Queen, administrator of Our Community Hospital in Scotland Neck. "Most residents leave rural area hospitals because they need care that their local facility does not and cannot deliver," says Queen. "For example, Our Community Hospital has not performed surgery or delivered babies in seven years, so residents with these needs must go elsewhere. It is not a matter of choice."

Rural hospital administrators are proud of the job they do with the services they have. "You can

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get good health care with the physicians here and with the specialties represented here," says Duplin General Hospital Chief Executive Officer Richard E. Harrell. But for some serious illnesses, he adds, "We will send patients to a hospital in another county."

Rural hospitals, like urban hospitals, are treating more patients who cannot pay for their care. The amount of uncompensated care in all U.S. hospitals has increased, with non-metropolitan hospitals treating 26 percent more medically indigent in 1987 than in 1984.[9] However, the bad-debt patient at an urban hospital represents a small percentage of gross revenues; at a rural hospital, bad debt may be high enough to lead to insolvency.

Critical to the understanding of the rural hospital problem is the financial condition faced by most rural hospitals. All hospitals, regardless of location, faced problems such as higher debt burden, higher cost per patient discharged, and a shortage of cash in the period following the 1983 change in Medicare reimbursement polices. The North Carolina Hospital Association reported that the average hospital wrote off more than one-fourth of its Medicare charges in 1988; the rural hospitals wrote off approximately 36 percent of their Medicare charges.[10]

Hospital Utilization in Rural North Carolina

To assess the trends in rural hospital utilization in North Carolina, five measures were examined: occupancy, days of care, total patient discharges, percent of discharges of patients 65 or older, and percent of a county's total discharges from the county's hospital, a measure of market share.[11] The data were taken from reports filed by the hospitals themselves with the state Division of Facility Services and the N.C. Center for Health and Environmental Statistics.

■ **Occupancy Rate.** A hospital's occupancy rate is calculated by dividing the total days of care in a year by the number of staffed beds, multiplied by 365 days. This estimates the annual percent occupancy of all staffed beds. As such, it describes the extent to which the capacities of the hospital are fully utilized.

Since 1980, the average occupancy rate for all types of hospitals has declined, in North Carolina

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Table 2. Rural Hospitals in North Carolina: Number of Providers

		RNS	RNS	OB/GYNS		All MDs	
County	**Hospital**	**1980**	**1989**	**1980**	**1989**	**1980**	**1989**
Alleghany	Alleghany County Memorial Hospital	11	15	0	0	7	7
Anson	Anson County Hospital & Skilled Nurs.	32	53	0	1	14	11
Ashe	Ashe Memorial Hospital	18	26	0	0	8	13
Avery	Charles A. Cannon Jr. Memorial Hospital	33	24	0	0	13	21
	Sloop Memorial Hospital	10	20	0	0	10	11
Beaufort	Beaufort County Hospital Association	75	110	4	3	33	37
	Pungo District Hospital	13	13	2	0	5	4
Bertie	Bertie Memorial Hospital	12	12	0	0	7	6
Bladen	Bladen County Hospital	20	44	0	0	8	10
Brunswick	Brunswick Hospital	20	46	0	2	15	33
	J. Arthur Dosher Memorial Hospital	22	19	0	0	10	13
Caldwell	Caldwell Memorial Hospital	53	125	2	4	46	63
Camden							
Carteret	Sea Level Hospital & Extended Care	9	10	0	0	7	6
	Carteret County General Hospital*	76	143	3	4	47	43
Caswell							
Chatham	Chatham Hospital	27	46	1	1	17	11
Cherokee	District Memorial Hospital of SW N.C.	13	21	0	0	11	9
	Murphy Medical Center	25	29	1	2	14	17
Chowan	Chowan Hospital	29	53	1	2	36	22
Clay							
Cleveland	Crawley Memorial Hospital	14	9	0	0	4	3
	Kings Mountain Hospital	40	44	1	1	14	19
	Cleveland Memorial Hospital*	127	152	7	7	63	81
Columbus	Columbus County Hospital*	92	143	2	3	27	27
Craven	Craven County Hospital*	140	298	7	8	84	110
Currituck							
Dare							
Duplin	Duplin General Hospital	45	61	0	2	17	15
Edgecombe	Heritage Hospital	38	63	0	2	24	24
Gates							
Graham							
Granville	Granville Medical Center	24	78	1	2	10	17
Greene							
Halifax	Halifax Memorial Hospital	75	163	3	5	30	51
	Our Community Hospital	5	10	0	0	3	2
Harnett	Betsy Johnson Memorial Hospital**	51	69	1	2	21	36
	Good Hope Hospital**	22	39	1	0	16	16
Haywood	Haywood County Hospital	82	109	3	2	54	60
Henderson	Margaret R. Pardee Memorial Hospital	117	183	4	4	63	84
	Park Ridge Hospital	67	97	2	3	26	41
Hertford	Roanoke-Chowan Hospital	57	103	0	3	30	39
Hoke							
Hyde							
Iredell	Davis Community Hospital	120	115	6	9	38	56
	Iredell Memorial Hospital	109	357	5	7	46	69
	Lake Norman Regional Medical Center	82	96	2	3	13	44
Jackson	C.J. Harris Community Hospital	35	101	1	3	27	40
Johnston	Johnston Memorial Hospital*	73	103	3	1	37	50

County	Hospital	RNS 1980	RNS 1989	OB/GYNS 1980	OB/GYNS 1989	All MDs 1980	All MDs 1989
Jones							
Lee	Central Carolina Hospital	60	84	2	4	36	50
Lenoir	Lenoir Memorial Hospital*	125	209	7	7	73	57
Macon	Angel Community Hospital	35	54	2	0	19	27
	Highlands-Cashiers Hospital	9	7	0	0	8	4
Madison							
Martin	Martin General Hospital	25	48	1	1	13	11
McDowell	McDowell Hospital	31	58	0	2	17	24
Mitchell	Blue Ridge Hospital System	40	50	0	0	16	28
Montgomery	Montgomery Memorial Hospital	33	32	0	0	9	11
Moore	Moore Regional Hospital*	186	384	4	8	81	100
Nash	Community Hospital of Rocky Mount	36	66	0	3	41	63
	Nash General Hospital*	158	346	10	10	97	116
Northampton							
Pamlico							
Pasquotank	Albemarle Hospital*	93	150	4	5	41	44
Pender	Pender Memorial Hospital	19	32	3	0	10	9
Perquimans							
Person	Person County Memorial Hospital	27	31	1	0	19	10
Pitt	Pitt County Memorial Hospital*	353	928	13	21	156	319
Polk	St. Luke's Hospital	40	42	0	1	26	23
Richmond	Hamlet Hospital	19	33	0	0	13	16
	Richmond Memorial Hospital	61	97	1	3	29	21
Robeson	Southeastern General Hospital*	122	168	7	5	63	95
Rockingham	Annie Penn Memorial Hospital	85	111	1	2	30	33
	Morehead Memorial Hospital	63	106	3	4	28	34
Rutherford	Rutherford Hospital*	81	119	4	3	34	44
Sampson	Sampson County Memorial Hospital	85	106	2	2	44	36
Scotland	Scotland Memorial Hospital	69	118	3	4	27	35
Stanly	Stanly Memorial Hospital	64	86	3	3	34	41
Surry	Hugh Chatham Memorial Hospital	42	74	1	1	23	20
	Northern Hospital of Surry County	91	137	3	2	27	39
Swain	Swain County Hospital	12	12	0	0	6	13
Transylvania	Transylvania Community Hospital	24	45	2	2	26	28
Tyrrell							
Vance	Maria Parham Hospital	29	49	3	4	26	36
Warren							
Washington	Washington County Hospital	20	20	0	0	7	8
Watauga	Blowing Rock Hospital	10	13	0	0	3	4
	Watauga County Hospital	90	122	3	4	27	43
Wayne	Wayne Memorial Hospital*	157	270	5	6	84	77
Wilkes	Wilkes General Hospital	81	123	2	3	30	58
Wilson	Wilson Memorial Hospital*	182	307	5	6	84	75
Yancey							

* indicates a Rural Referral Hospital

** Harnett County hospitals have been designated as urban for Medicare reimbursement and thus are not included in the analyses of rural hospitals.

indicates no hospital in the county

Key: RNS = Registered Nurses; OB/GYNS = Obstetrics/Gynecologists; All MDs = total medical doctors.

Source: N.C. Center for Health & Environmental Statistics; Health Facilities Data Book: Hospital Summary Reports, 1980; 1989. *Prepared by Lori Bastian.*

and nationwide. Large rural hospitals saw their occupancy rates decrease by nearly 20 percent between 1980 and 1985; the average mid-size rural hospital's rate decreased by 27.3 percent; and the average rural hospital with fewer than 50 beds experienced a 33.4 percent drop in its occupancy rate. Nationally, between 1984 and 1988, rural hospital occupancy rates declined at nearly twice the rate of urban hospitals, to a low of 55 percent occupancy; small rural hospitals in North Carolina had an occupancy rate of around 45 percent in 1989, while large rural hospitals' occupancy rates averaged 70 percent. All North Carolina hospitals did experience a general improvement in occupancy rates during the latter part of the 1980s, but not enough to overcome the large declines earlier in the decade (see Table 1, columns 6 and 7).

These occupancy rates fail to meet state-set targets for hospitals. The Department of Human Resources' Division of Facility Services says small hospitals should have at least a 70 percent occupancy rate for *licensed* beds; mid-sized hospitals should have at least a 75 percent occupancy rate; and large hospitals should have at least an 80 percent occupancy rate.[12]

■ **Days of Care.** Days of care is a count of the total days of inpatient care provided by a hospital. It is comparable to discharges as a measure of utilization, but reflects the amount of care delivered in terms of time and not just people. One

A Dearth of Doctors in North Carolina—Urban and Rural

by Gibbie Harris

By nearly everyone's measure, there simply aren't enough doctors in North Carolina—and prospects for getting more are not all that great. In March 1991, the North Carolina Academy of Family Physicians reported a shortage of between 476 and 542 family physicians for North Carolina, including hundreds of general physicians in rural parts of the state.[1]

And in July 1991, researchers at UNC–Chapel Hill reported that the state's corps of medical doctors, primary care physicians, and dentists continued to be well below the national averages, particularly in rural areas, although the number of registered nurses was above the national average.[2] The report said one physician was available to provide care for every 623 N.C. residents in 1990—well below the U.S. average of one physician for every 545 residents in 1989, the most recent year for which statistics were available.

Lise Fondren, the UNC report's coordinator, said that while the number of health professionals is below the national average in almost every specialty, rural areas are particularly hard hit. "Rural areas of the state—particularly in the east—continue to experience health personnel distribution problems," she said. "In some parts of the state, for example, doctors must send patients two hours away to receive certain treatments while at least four counties didn't even have a full-time practicing dentist in 1990."[3]

The shortage of such care-givers has grown because fewer medical students are interested in going into general medical practices aimed at serving families. Physician-patient ratios deteriorated in 60 counties between 1983 and 1988, and 37 counties experienced a net loss of family-care physicians in the same time period. Only about 12 percent of medical school graduates are choosing to pursue family medicine.[4]

Rural communities are dependent on these primary care specialties and this shortage constitutes a significant barrier to health care for rural residents in our state. Elinor Ezzell, director of the federally funded Goshen Medical Clinic in Faison

Gibbie Harris is a family nurse practitioner and a graduate student in health policy and administration at UNC–Chapel Hill.

hospital may have high volume and low length of stay, another low volume and high length of stay; thus, both indicators are necessary to present an accurate picture of utilization.

All North Carolina hospitals have experienced decreases in the number of days of patient care provided. The days of care at rural hospitals in North Carolina decreased by 17.6 percent from 1980 to 1989—four times the decrease (3.7 percent) experienced by the state's urban hospitals. This decrease was especially pronounced for the small rural hospitals, which delivered one-third fewer days of care in 1989 than in 1980.

■ **Total Patient Discharges.** A hospital's total number of patient discharges is a more direct measure of volume than an occupancy rate. The number of discharges can give a sense of the hospital's productivity and viability. High volume will mean a greater base over which fixed costs can be spread.

Across all categories of hospitals, North Carolina hospital discharges declined from 1980 to 1989. The smallest rural hospitals had the greatest decline: there were 29.9 percent fewer discharges in 1989 than in 1980, from an average of 1,464 to 1,026 discharges per year. All other hospitals saw approximately 17.5 percent fewer discharges in 1989 compared to 1980. As with the occupancy rate trends, the number of discharges fell more

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in Duplin County, says the need for health professionals is constantly growing. "I need two more doctors," she says. "I need them today. We've just been overrun [with patients] this summer."

A number of factors encourage or discourage physicians from practicing in rural areas. Economic incentives are widely believed to be particularly influential. The patient market for physicians, especially specialists, is more lucrative in urban and suburban areas. And the health care reimbursement system encourages physicians to specialize and to locate in the more populated areas through higher payments for specialty services in urban settings. Concurrently, increased specialization within the medical profession demands a broad population base for those providing services other than primary care.

The high cost of medical education deters many rural youths from entering the profession. Those who can afford it frequently choose the higher-paying urban practices. Also, medical education focuses on the use of technology which promotes a dependency on the equipment and facilities more commonly found in large, urban health care institutions than in rural settings. These factors, when added to the increased specialization and the pull of the urban market, contribute to a critical manpower shortage in rural health care.

In considering where to locate, a physician may weigh mostly economic conditions such as projected income, amount of debt already incurred while in medical school, and projected practice costs. Once in a rural community, however, other circumstances which affect the day-to-day lives of these physicians become important considerations in physician retention. The rural physician often practices solo or with one or two colleagues. That dictates large workloads with few opportunities for relief and back-up and can lead to a sense of professional isolation. The relative lack of cultural, educational, and economic opportunities in rural communities also affects the members of the physician's family.[5]

Government recruiting programs and federally financed clinics have helped alleviate shortages of personnel, but sometimes the doctors recruited to fulfill a scholarship obligation don't stay in the rural community for very long. "Sometimes they are an asset and sometimes a liability," says Richard Harrell, president and CEO of Duplin General Hospital in Kenansville. "We really need physicians who come and put down roots in Duplin County and develop a caseload."

Most states and the federal government have taken various actions to alleviate this situation. Common strategies include: 1) selecting medical students from rural areas because they are most likely to return to a rural community to practice; 2) paying physicians to practice in rural, underserved areas either through direct subsidies or through differences in insurance reimbursement; 3) supporting rural physician practices through increased access to technology and continuing education;

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steeply between 1980 and 1985 than between 1985 and 1989.

The decline in discharges was paralleled by a national decline in hospital admissions, which between 1984 and 1988 was two and one-half times greater for rural hospitals than for urban hospitals. Since 1979, all U.S. hospitals have experienced a decline in admissions of 11.3 percent.

■ **Percent of Discharges of Patients Older than 65.** The percent of total discharges of people 65 years or older can mean several things. First, it may reflect a higher-than-average elderly population in the community. Second, it could indicate that the younger people in the county are no longer using the local hospital. In a third, more indirect way, it can give information about the financial condition and stability of the organization. The percent of elderly discharges can be viewed as a proxy for the Medicare income of the hospital. Commonly, heavy reliance on Medicare has been viewed as negative, particularly when rural hospitals received a cut in reimbursement under the Prospective Payment System immediately after the program's implementation in 1983. However, this theory is disputed by a recent report suggesting that Medicare-dependent hospitals are not at a greater risk of closure than hospitals with a smaller Medicare population.[13]

All North Carolina hospitals saw the older-than-65-years percentage of their discharges increase between 1980 and 1989. The large rural hospitals saw that percentage increase by slightly more than one-third, while the small and mid-sized rural hospitals had an increase of approximately 37 percent. In 1989, 52.9 percent of the smaller rural hospital's discharges were elderly, compared to 41 percent of the mid-sized rural hospitals discharges and 34.1 percent of the large rural hospital's discharges. Urban hospitals also cared for a greater percentage of elderly patients, with an increase in elderly discharges of 26.3 percent between 1980 and 1989; in 1989, the elderly represented 32 percent of all discharges.

■ **Percent of County's Total Discharges from the County's Hospital.** This statistic reflects the local residents' use of the local hospital. It is calculated by dividing the number of county residents discharged from a particular hospital by the total number of that county's residents discharged from all hospitals. This statistic is not as meaningful for urban counties or counties with several hospitals, since the local discharges are divided among several local hospitals. Though the county's boundaries often are different from a hospital's service area, this measure nonetheless identifies rural counties that have an out-migration

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for hospital care. Excessive out-migration is a major sign of trouble for a rural hospital; if a county's own residents don't seek care at their home county hospital, where will patients for that rural hospital come from in the future?

Rural North Carolinians often seek health care outside their home counties; 25 percent of the rural hospitals treated fewer than a third of their county residents, with seven of the 15 small rural hospitals treating fewer than 20 percent of the county residents who were hospitalized in 1989. Seventeen of the largest urban hospitals provided half of all the inpatient care for North Carolinians, rural and urban.

Will Rural Hospitals in North Carolina Close?

The N.C. Hospital Association in 1989 released a survey of its members anticipating that by the year 2000, as many as 20 hospitals will close, representing a net loss of 530 beds.[14] Bernstein, the director of the state's Office of Rural Health and Resource Development, says, "A number of our smaller hospitals don't have any other option but to close over the next few years."[15]

And a U.S. Government Accounting Office report has predicted that hospitals with fewer than 50 beds were 12 times more likely to close than hospitals with 200 or more beds; hospitals with occupancy rates of less than 20 percent are nine times more likely to close than hospitals with a 61 percent occupancy rate.[16]

If current utilization trends continue, some small rural hospitals in North Carolina are likely to fail. While most people might define failure as the total shutdown of services, a hospital also may be considered a failure if it does not meet its mission. A for-profit hospital may be considered a failure if it has a negative net income. For a county-owned hospital, low use of the facility by county taxpayers may represent a failure. To the local citizen, the true measure of whether a hospital is successful depends upon whether it adequately serves the community, regardless of the institution's fiscal viability. The widespread number of local subsidies, bond referendums, tax districts, and general philanthropy toward local hospitals confirms that people do not consider the hospital as just another business.[17]

Which hospitals may be failing? Using the indicators described above, an analysis of each rural hospital was conducted to assess whether it is in jeopardy compared to hospitals of similar size. Failing hospitals can be identified by significantly lower utilization rates than the average of hospitals in its size group. These measures include:

- low occupancy rates, suggesting that services and facilities aren't being used to their fullest capacity;
- low number of days of care, indicating declining use;
- low discharges, also indicating declining use and growing difficulty in meeting fixed costs;
- high percentage of patient discharges who are 65 years or older, implying a high Medicare dependency and potentially greater risk of financial difficulties; and
- low percentage of its county's discharges, suggesting patient out-migration for hospital care and loss of market share, with long-term adverse consequences for a hospital's future.

The term *low* (or *high* for the fourth measure, patient discharges who are 65 or older) in this analysis refers to a hospital's performance in comparison to all others of similar size. Those hospitals which are abnormal on three or more of the five indicators are classified as *substantially at risk* of failing to meet their service missions. Those hospitals which have abnormally low statistics (or high on the category of discharges 65 years old or older) on two of these utilization measures indicates that the hospital is *moderately at risk.* Those hospitals abnormal on only one measure are not categorized as *at risk* hospitals, but they bear watching by hospital and state officials.

Using the 1989 utilization averages (see Tables 3 and 4), each rural hospital was compared to the average performance of all other hospitals in its group on the five indicators described above. The analysis used standard statistical techniques to determine the *standard deviation,* which measures the variation of each hospital's values from the group average. Those hospitals whose performance was at least one standard deviation from the average were categorized as *abnormal* on that indicator.

As Table 3 indicates, eight hospitals had abnormal scores on three or more measures and are classified as *substantially at-risk* hospitals. These hospitals include four small hospitals (fewer than 50 beds), three medium-sized hospitals (50–99 beds), and one large hospital (100 beds or more). The four small hospitals are Blowing Rock Hospital in Watauga County, Highlands-Cashiers Hospital in Macon County, Our Community Hospital in Halifax, and Sea Level Hospital in Carteret

Table 3. North Carolina Rural Hospitals at Substantial Risk

	1	2	3	4	5	6
	% Occupancy 1989	Discharges 1989	Days of Care 1989	% Disch. ≥ 65 yrs. 1989	% County Disch. 1989	Net Income 1989
Hospitals with Fewer than 50 Beds [1]	45.5	1026	6709	52.9	28.0	
(standard deviation)	(-17)	(-552)	(-3314)	(+13)	(-20)	
Blowing Rock Hospital	50.1	390	5116	66.2	6.0	$144,513
Highlands-Cashiers Hospital	14.0	339	1383	67.9	5.2	($529,405)
Our Community Hospital	33.2	123	2425	82.1	1.4	($130,855)
Sea Level Hospital & Extended Care	36.2	386	2111	61.4	5.7	($23,111)
Hospitals with 50 to 99 Beds [2]	56.7	2405	14586	40	43.7	
(standard deviation)	(-14)	(-1133)	(-5676)	(+9)	(-18)	
Ashe Memorial Hospital	41.5	1527	8632	54.8	50.9	$32,836
Crawley Memorial Hospital	66.0	262	12288	66.0	1.6	($111,766)
Person County Memorial Hospital	36.4	1010	7176	58.0	27.2	($902,524)
Hospitals with 100 or more Beds	66.9	6716	46254	34.1	61.9	
(standard deviation)	(-14)	(-3726)	(-32230)	(+7)	(-20)	
Lake Norman Regional Medical Center	34.8	2843	14346	42.6	17.4	$535,445

These eight hospitals were more than one standard deviation away from the average on three or more measures. Shaded areas indicate that the hospital is more than one standard deviation from the mean in the direction that may indicate distress. A standard deviation "(±)" shows the dispersion of the values around the average; it is the square root of the average of the squared deviations from the sample mean. For example, the average occupancy rate for large rural hospitals was 66.9%; its standard deviation was 14. Thus, hospitals with less than 52.9% occupancy are more than 1 standard deviation from the average, and labeled abnormal.

Parentheses in column 6 indicate negative net income; figures without parentheses show positive net income.

[1] The average occupancy rate for each group was calculated by averaging the individual occupancy rates; an alternative method to calculate the measure is:
(Group's Total Days of care)/(Group's Total Beds in Use X 365)

[2] Averages for this size group were calculated without Crawley Memorial Hospital because of its extreme values

Source: N.C. Center for Health & Environmental Statistics; Health Facilities Data Book: Hospital Summary Report, 1989. *Prepared by Jeanne Lambrew & Glenn Wilson, N.C. Rural Health Research Center, Cecil G. Sheps Center for Health Services Research, UNC-Chapel Hill.*

County. The three mid-sized hospitals are Ashe Memorial Hospital, Crawley Memorial Hospital in Cleveland County, and Person County Memorial Hospital. The large hospital is Lake Norman Regional Medical Center in Iredell County.

In the second tier of hospitals rated as only *moderately at risk* (see Table 4) are another eight hospitals, including one small hospital (Bertie Memorial Hospital); three mid-sized hospitals (District Memorial Hospital and Murphy Medical Center of Cherokee County and Kings Mountain Hospital of Cleveland County); and four large rural hospitals (Beaufort County Hospital, Davis Community Hospital of Iredell County, Heritage Hospital in Edgecombe County, and Park Ridge Hospital in Henderson County).

The designation of these *at-risk* hospitals does not predict or assume that any of the hospitals will close, or that they cannot thrive in the future. For instance, Sea Level Hospital already is changing from an acute-care hospital to an extended care facility (see page 85–86 for more). And even the sole hospital that is abnormal on all five measures, Highlands-Cashiers, is in no danger of closing. "Highlands-Cashiers, no matter what the numbers say, is not at risk of closure because the wealthy population it serves will most likely not allow that to happen," notes Bernstein of the state's Office of Rural Health and Resource Development. Adds Tim Size, a national expert on rural hospitals and director of the Rural Wisconsin Hospital Cooperative, "Most rural hospitals are not in danger of closing."

A third group of six hospitals measured abnormal on only one of the five measures, and thus are not at risk. They could join the at-risk list in the future if their performance deteriorated. These six include four mid-sized hospitals (Anson County Hospital, Hamlet Hospital, Hugh Chatham Memorial Hospital, and Montgomery Memorial Hospital) and two large rural hospitals (Rutherford Hospital and Watauga County Hospital). Some hospitals in this grouping may be nearly normal like Watauga and Rutherford, which barely were abnormal on the occupancy measure and which are in good financial condition with positive net patient revenue and net income. But other hospitals, like Anson County Hospital, bear watching. Anson was abnormal on the days of care category, and also had negative net income in 1989.

Several of the hospitals designated as abnormal on one or more measures objected to some of the figures used. Several hospitals said they had supplied the wrong data to the state, and that if the numbers they should have reported had been used, they would not have measured abnormal on some indicators. However, the data used in the study were taken from the figures the hospitals themselves reported to the state.

In addition, administrators of small rural hospitals pointed out that their hospitals used "swing beds" that could be designated as either long-term beds or acute-care beds, depending on the needs of the hospital at the moment. This is a strategy designed both to meet local health care needs and to improve the viability of the institution. Had those beds been included when computing occupancy rates, these hospitals would not have been rated abnormal on that measure.

For instance, Blowing Rock Hospital in Watauga County had a 16.3 percent occupancy rate in 1990 based on acute care beds only. But if occupancy of the hospital's long-term care beds plus its swing beds had been counted, its occupancy rate would have swelled to 84.9 percent. A number of hospital administrators complained that by using only acute-care statistics, their facilities' actual use was understated. But until the data for swing bed use are consistently reported to the state, correctly assessing this utilization measure will be difficult.

Other administrators felt that the results were somewhat predictable because small rural hospitals always have faced a financial and service struggle. Shannon Elswick, president and CEO of Highlands-Cashiers Hospital, put it this way: "One would have to assume that Highlands-Cashiers Hospital has been considered 'at risk' since the hospital opened in 1952. As with many other small rural facilities constructed in the Hill-Burton era, it was built to provide primary care to the residents of the immediate area. Providing an adequate level of care to the residents has never been an easy task, but has been accomplished throughout the years."

Financial Condition

An additional indication of hospitals in distress is financial condition, and again the numbers are instructive. Most of the at-risk hospitals are losing money, judging by figures from the U.S. Health Care Financing Administration on net income. Net income is calculated by subtracting all expenses from total revenues from all sources—including government subsidies, private endowments, and income from investments.

Table 4. North Carolina Rural Hospitals at Moderate Risk

	1 % Occupancy 1989	2 Discharges 1989	3 Days of Care 1989	4 %Disch. ≥ 65 yrs. 1989	5 % County Disch. 1989	6 Net Income 1989
Hospitals with Fewer than 50 Beds [1]	45.5	1026	6709	52.9	28.0	
(standard deviation)	(-17)	(-552)	(-3314)	(+13)	(-20)	
Bertie Memorial Hospital	25.1	471	4481	50.1	18.1	($402,782)
Hospitals with 50 to 99 Beds [2]	56.7	2405	14586	40	43.7	
(standard deviation)	(-14)	(-1133)	(-5676)	(+9)	(-18)	
District Memorial Hospital of Cherokee	66.3	992	12586	49.8	27.3	($75,730)
Kings Mountain Hospital	40.5	1837	13601	41.4	11.3	($118,670)
Murphy Medical Center	41.0	1828	7477	44.2	45.8	$898,959
Hospitals with 100 or more Beds	66.9	6716	46254	34.1	61.9	
(standard deviation)	(-14)	(-3726)	(-32230)	(+7)	(-20)	
Beaufort County Hospital	48.2	3658	20576	44.2	51.7	$277,917
Davis Community Hospital	44.1	3702	23975	22.9	16.6	($292,227)
Heritage Hospital	49.1	3269	22754	28.9	39.5	($648,898)
Park Ridge Hospital	63.0	2303	23688	37.7	17.3	$412,649

These eight hospitals were more than one standard deviation away from the average on two measures. Shaded areas indicate that the hospital is more than one standard deviation from the mean in the direction that may indicate distress. A standard deviation "(±)" shows the dispersion of the values around the average; it is the square root of the average of the squared deviations from the sample mean. For example, the average occupancy rate for large rural hospitals was 66.9%; its standard deviation was 14. Thus, hospitals with less than 52.9% occupancy are more than 1 standard deviation from the average, and labeled abnormal.

Parentheses in column 6 indicate negative net income; figures without parentheses show positive net income.

[1] The average occupancy rate for each group was calculated by averaging the individual occupancy rates; an alternative method to calculate the measure is:
(Group's Total Days of care)/(Group's Total Beds in Use X 365)

[2] Averages for this size group were calculated without Crawley Memorial Hospital because of its extreme values

Source: N.C. Center for Health & Environmental Statistics; Health Facilities Data Book: Hospital Summary Report, 1989. *Prepared by Jeanne Lambrew & Glenn Wilson, N.C. Rural Health Research Center, Cecil G. Sheps Center for Health Services Research, UNC-Chapel Hill.*

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The HCFA figures show that of the eight N.C. hospitals designated as *substantially at risk,* five of them (62.5 percent) showed negative net income in 1989, the most recent year for which figures are available. The five were Crawley Memorial, Highlands-Cashiers, Our Community, Person County, and Sea Level.

Of the eight hospitals considered *moderately at risk,* five (again, 62.5 percent) also had negative net income in 1989. The five were Bertie Memorial Hospital, Davis Community Hospital, District Memorial Hospital, Heritage Hospital, and Kings Mountain Hospital. And finally, of the six hospitals abnormal on only one measure, only one hospital—Anson County—had negative net income for 1989.

Hospitals with net negative income for one year are not necessarily in danger of closing, but their status is another indicator of possible difficulty in survival. It is worth noting that of the 16 hospitals designated as either *substantially at risk* or *moderately at risk,* 10 of them, or 62.5 percent, lost money in 1989. Column 6 in Tables 3 and 4 provides a clearer picture of the sums involved for the *substantially at risk* and *moderately at risk.*

The need for rural hospitals, and the finances involved, transcend utilization and balance sheets, notes Elswick of Highlands-Cashiers. "From an economic standpoint, it may be sensible to eliminate half of the hospitals that are termed at-risk or inefficient hospitals," observes Elswick. "In terms of lives saved each year, however, what is the value of the hospital to the people of those communities? Do we arbitrarily close rural hospitals? Do we look for alternative ways to provide care? Or do we continue to provide primary medical care?"

Dan C. White, chief executive officer of District Memorial Hospital, predicts, "Small rural hospitals will continue to struggle as cost of care, managed care programs, and quality of care issues become of more importance to the customers. Those hospitals that plan well and respond to the needs of the community will add to their longevity. Those that do not will soon (one to three years) vacate the market place."

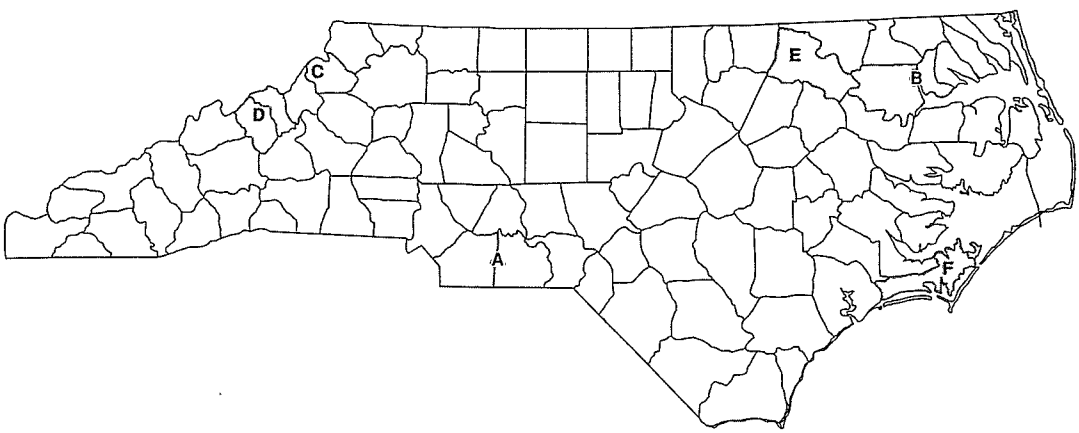
The state already has taken note of the fact that many of these hospitals are in serious difficulty. It has been approved for a new federal program designed to help them stay open and serve rural needs. North Carolina is one of seven states that will participate in the Essential Access Community Hospital Program. Under this program, six rural hospitals will become Rural Pri-

mary Care Hospitals offering limited services, but will develop formal relationships with larger rural hospitals. The primary care hospitals will shut down most of their beds, serving chiefly as outpatient and emergency care clinics, while their partner hospitals will provide care for more severe or complicated cases that require an inpatient stay of longer than 72 hours.

Six of the hospitals approved for this program show at least one sign of *at-risk* distress. Figure 2 shows the Rural Primary Care Hospitals (RPCH) on the left side and their partner Essential Access Community Hospitals (EACH) on the right. The number in parentheses following the hospital name indicates the number of measures on which the hospital is abnormal, according to the Center's analysis.

Administrators of small hospitals recognize that the program would help assure a level of care in communities that are threatened with the loss of

Figure 2. Hospitals Approved for the Federal Essential Access Community Hospital Program.



Network	Rural Primary Care Hospital	Essential Access Community Hospital
A	Anson County Hospital (1)	Richmond Memorial Hospital
B	Bertie County Memorial (2)	Chowan Hospital
C	Blowing Rock Hospital (3)	Watauga Hospital (1)
D	Burnsville Hospital	Spruce Pine Hospital
E	Our Community Hospital (4)	Halifax Memorial Hospital
F	Sea Level Hospital (3)	Carteret General Hospital

Numbers in ( ) indicate number of abnormal measures of hospital utilization.

Source: N.C. Office of Rural Health and Resource Development, N.C. Department of Human Resources.

facilities. Charles Y. Davis, administrator of Bertie Memorial Hospital, told *The News & Observer,* "The fact that these beds are no longer needed is evident. They're empty."[18] Asked about his hospital's financial condition, Davis had one word: "Critical."

James R. Queen, administrator of Our Community Hospital in Halifax County, notes that the new Rural Primary Care Hospitals would be able to provide care to stabilize injuries and provide initial treatment before transferring patients to the Essential Access Community Hospitals. "The patient truly gets an appropriate level of treatment, and that's what people really want," Queen told *The News & Observer.*[19] "They don't expect that we're going to have surgeons waiting."

Tom Ricketts, director of the N.C. Rural Health Research Program at UNC–Chapel Hill, says more and more rural hospitals will shift their focus from the old way—attempting to offer the full complement of services—to new arrangements that will more accurately satisfy the needs of the community. "Medicine has changed so drastically just in recent years alone," notes Ricketts. "It was logical 30 years ago to have a 30-to-60 bed hospital" in many rural communities, but financial pressures and service patterns make it hard for those hospitals to survive today. To do so, rural hospitals must offer what the community needs, not try to compete with the huge mega-medicine centers in Chapel Hill and Durham and Charlotte. "I'm a big advocate of regrouping services," Ricketts adds.

At Heritage Hospital in Edgecombe County, officials are working to provide new programs and specialists to cope with the problems of viability. Randy Beaman, Heritage's assistant administrator, says an aggressive physician recruitment program with a focus on specialists may help stem patient out-migration. "We are also developing new services such as MRI, cardiac catheterization, cardiac rehab, [an] inpatient rehabilitation unit, and also have a skilled nursing unit in place and have expanded our Level II nursery, which is the only one in our area."

Jim Bernstein of the state's Office of Rural Health points out that despite distances and costs, many rural patients prefer a big-city hospital. "We just can't have so many rural hospitals with their patient population going to urban areas. What they [rural hospitals] need to do is to find their niches of care."

Bernstein suggests that such niches include care for the elderly—"Nursing homes will not be sufficient in the future, and children are going to want better for their parents," he says—and better primary care and maternal and child health care. "Raleigh can't do that for Warren County," Bernstein adds. "Warren County will have to do that for Warren County" and leave high-tech medicine to large hospitals.

In June 1991, one hospital which had closed made a reappearance as an outpatient clinic. Robersonville Community Hospital, which closed in 1989, reopened after two doctors agreed to move to the Martin County town. Similarly, a clinic is operating at the old Warren County General, where the county health department and a community health center offer services. Other small hospitals should begin preparing for such a future, Bernstein says. "Some counties will position themselves to provide care and thrive," predicts Bernstein, "but others won't, they won't have care, and they're just going to dry up. They won't have health care."

As the economic climate worsens, medical sophistication increases, and rural health problems persist, the rural hospital as we know it may disappear, evolving into new types of organizations like primary care hospitals, rural health networks, and extended care clinics that can weather the problems and maintain essential services in rural North Carolina.

FOOTNOTES

[1] Arthur Caplan, "Simple changes could help ease rural health-care crisis," *The News & Observer* of Raleigh, May 9, 1990, 12A.

[2] Laura Summer, "Limited Access—Health Care for the Rural Poor," Center on Budget and Policy Priorities, Washington, D.C., March 1991, p. xi.

[3] This count of 118 hospitals reflects the number of hospitals reporting to the state for licensing; several of these are systems whose members report their statistics in aggregate, so this count of 118 is conservative. In 1990, the N.C. Department of Human Resources reported there were 127 acute-care hospitals in North Carolina.

[4] *AHA Hospital Statistics: 1990–91,* American Hospital Association, Chicago, 1990.

[5] U.S. Congress, Office of Technology Assessment, *Health Care in Rural America,* 1990, pp. 111–113. See also Marianne M. Kersey, et al., *Comparing the Performance of For-Profit and Not-For-Profit Hospitals in North Carolina,* N.C. Center for Public Policy Research, 1989.

[6] For more, see Jack Betts, "North Carolina Hospitals Succumb to Ills of Health Care Industry," *The Investor-Owned Hospital Movement in North Carolina,* N.C. Center for Public Policy Research, 1986, pp. 50–51.

[7] *AHA Hospital Statistics: 1990–91.*

[8] P.L. 89–97. For a list of Diagnostic Related Groups, see the *Federal Register,* Vol. 49, No. 171, Aug. 31, 1984, p. 34777.

[9] For more on uncompensated care, see Marianne M. Kersey, et al., *Comparing the Performance of For-Profit and Not-For-Profit Hospitals in North Carolina,* N.C. Center for Public Policy Research, 1989. The Center's research showed that for-profit hospitals performed 27 percent less health care for the indigent than did not-for-profit hospitals.

[10] N.C. Hospital Association, "Report on Rural Hospitals and Medicare," October 1989, p. 9.

[11] For more detail on the computations and analysis, see Jeanne M. Lambrew, "North Carolina Hospitals: Utilization Trends by Urban-Rural Location and Size," N.C. Rural Health Research Program Working Paper, UNC–Chapel Hill, September 1991.

[12] *N.C. State Health Planning, 1990–91, State Medical Facilities Plan,* Division of Facility Services, Department of Human Resources, 1990, p. 44.

[13] *Rural Hospitals: Federal Efforts Should Target Areas Where Closures Would Threaten Access to Care,* U.S. Government Accounting Office, Washington, D.C., 1991, p. 43.

[14] Report of the N.C. Hospital Association Summer Meeting, July 1990, pp. 3–4.

[15] Tinker Ready, "Program may help hospitals," *The News & Observer* of Raleigh, Sept. 11, 1991, p. 1B.

[16] *Rural Hospitals: Factors That Affect Risk of Closure,* U.S. Government Accounting Office, Washington D.C., 1990, p. 7.

[17] For more on foundation giving to hospitals and on the success rate of local hospital bond referenda, see Marianne M. Kersey, et al., *Comparing the Performance of For-Profit and Not-For-Profit Hospitals in North Carolina,* N.C. Center for Public Policy Research, 1989, pp. 163–65 and pp. 182–194.

[18] Ready, p. 1B.

[19] *Ibid.*

Wake Medical Center