Karen Tam

Toni Danisha Thomas, age 10 months, gets a checkup at the Wake County Health Department.

The Health of Minority Citizens in North Carolina

by Mike McLaughlin

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Summary

North Carolina minorities—particularly African Americans—are less healthy than the white majority. They are more likely to suffer disease and less likely to have health insurance to pay for care. Thus, they have less access to care and are more likely to wait until they are sicker to seek care. For these and other reasons, they die younger. Their mortality rates are higher for such diseases as diabetes and stroke, and the rates are higher for heart disease and cancer when adjusted to account for age differences in the population. These are among the Center's findings in a year-long study of minority health in North Carolina.

The state has only begun to make minorities a special focus for some local health programs. Most health programs still are aimed at the general population, and there is some resistance to targeting services to population subgroups such as African Americans, Native Americans, Hispanics, and Asian Americans. Yet these populations have special health needs that are reflected in their overall health status. What is the health gap between minorities and whites in North Carolina? What steps are being taken to help close the gap, and what chance do they have for success?

The Center took a four-pronged approach in seeking answers to these questions. This involved: (1) analyzing state-level and county-by-county data produced by the State Center for Health and Environmental Statistics on morbidity and mortality of whites compared to minorities; (2) conducting field audits of immunization efforts at local health departments as one measure of how well preventive health services are reaching their intended targets; (3) surveying all local health directors for further insights into what obstacles may exist in serving minorities at the local level; and (4) examining existing programs addressing minority health issues for clues to what works.

The Center's year-long study found access to health services to be a problem for minorities. Part of this may be attributed to socioeconomic factors, but there also may be other factors at work. It may be that minorities feel less welcome in a health-care system run predominantly by whites. It may be that those who can't pay their way choose to stay away until a medical emergency forces them to seek care for a crisis that could have been prevented.

The Center concludes that the state must be more aggressive in assuring that services are available and in convincing minorities that they should avail themselves of those services. To help narrow the gap in health status between whites and minorities, the Center makes six recommendations to deal with specific health problems and to increase the state's efforts in health promotion and disease prevention.

To find the faces behind the numbers that show a health gap between minorities and whites, one doesn't have to look beyond the front-line troops. Take, for example, Barbara Pullen-Smith, director of the Office of Minority Health. She attributes the early death of her father and her mother's chronic hypertension to a lack of access to health care.

"I've always believed that if my father had had access to better care, he probably would have lived longer," says Pullen-Smith, an African American who was raised in rural Warren County. "He had a blood clot on the brain. He died when I was six weeks old. . . . The nearest hospital was 16 miles, and in 1959, 16 miles was very far away. My mother has had hypertension for as long as I can remember. . . . She calls it 'high blood.'"

Other health care workers share similar stories. Vanessa Davis is a college-educated professional who formerly worked for the Governor's Commission on the Reduction of Infant Mortality. She testified at a public hearing on minority health issues about the loss of her two infants.[1] She wanted people to know it isn't just the poor and uneducated whose tragedies are recorded in infant mortality statistics that show African Americans are twice as likely to die in their first year of life as whites.

Quinton Baker, director of the Community Based Public Health Initiative in Chatham County, suffers from diabetes and partial blockage of the arteries. Baker tries to control these maladies through diet and exercise, and he's seeking ways to help other African-American males who suffer similar fates.

In some way, all of these warriors in the battle to narrow the health gap between minorities and whites are touched by the very conditions and illnesses they are fighting against. Indeed, it would be difficult to be a minority citizen in North Carolina and *not* be affected in some way by the statistics.

The problem is particularly acute for African Americans, who face a long list of illnesses from which they are more likely than whites to get sick or die.[2] Consider these stark statistics, which represent the average number of deaths per 100,000 residents attributed to a given disease each year from 1988 through 1992:[3]

Stroke. Average mortality rate 79.9 for African Americans. White mortality rate 67.3. African American rate 19 percent higher.

Mike McLaughlin is editor of North Carolina Insight. *Center interns Myron Dowell and Emily Coleman contributed to this report.*

"My mother has had hypertension for as long as I can remember. . . . She calls it 'high blood.'"

— BARBARA PULLEN-SMITH, DIRECTOR OF THE N.C. OFFICE OF MINORITY HEALTH

Chronic Liver Disease and Cirrhosis. Average African-American mortality rate 13.9. Average white mortality rate 9.9. African-American mortality rate 40 percent higher.

Diabetes. Average mortality rate 33.0 for African Americans. White mortality rate 17.3. African-American rate 91 percent higher.

Kidney Disease. Average African-American mortality rate 13.7. Average white mortality rate 6.8. African-American mortality rate 101 percent higher.

Acquired Immune Deficiency Syndrome. Average African-American mortality rate 16.8. Average white mortality rate 3.5. African-American rate 380 percent higher.

Unadjusted white death rates from 1988–1992 were higher than those of African Americans for the leading causes of death in North Carolina, heart disease and cancer. But this is explained by the fact that African Americans are a younger population than whites, and cancer and heart disease predominantly strike older people. Approximately half of African-American deaths are attributed to heart disease and cancer. And when death rates are adjusted for age differences in the population, African Americans are more likely than whites to die of these diseases as well.

The 1991 age-adjusted heart disease mortality rate for North Carolina minority males, for example, was 275.1 deaths per 100,000 population. That's 34.3 percent higher than the white rate of 204.8 per 100,000. For minority females, the gap after age adjusting was even greater, at 54.0 percent. For cancer, the minority male age-adjusted death rate (241.0 per 100,000) was 51.2 percent higher than the white age-adjusted rate (159.4 per 100,000). The gap narrows when comparing minority females to white females, although it still exists. Age-adjusting also illustrates the impact of stroke on minorities. For males, the rate was more than twice

that of whites. (See Table 1 below for 1991 age-adjusted figures on heart disease, cancer, and stroke.)

Researchers attribute higher death rates for the three leading causes of death among African Americans—heart disease, stroke, and cancer—to smoking, hypertension, and obesity, as well as socioeconomic factors.[4] And in the case of cancer, the overall numbers hide relatively high death rates for particular *types* of cancer—such as breast cancer, for which early detection and treatment represents the best hope for a cure, and lung cancer, which is preventable.

Aside from *mortality* data, the state also keeps track of *morbidity*—or illness—for a broad range of communicable diseases and for cancer. For almost every type of communicable disease the state tracks, African-American infection rates far exceed those of whites.[5] Consider these examples:

- African Americans are more than five times more likely to be infected with **AIDS** than whites.
- African Americans are more than twice as likely as whites to be infected with **hepatitis B**.

Rates are also a much higher among African Americans for the food and water-borne illnesses salmonellosis and shigellosis, and for bacterial meningitis (caused by a bacteria called *H. influenza*).

Rates of **sexually transmitted diseases** among African Americans dwarf those of whites. For example, the gonorrhea rate for African Americans is 1,897.6 cases per 100,000 North Carolina residents, compared to 62.9 cases per 100,000 residents for whites. Syphilis infects African Americans at a rate of 208.4 times per 100,000 residents, compared to 7.1 per 100,000 residents for whites. Native Americans and Asians also have higher rates of sexually transmitted disease than whites, although not as high as African Americans.

These statistics underscore the magnitude of the problem of differences in health between whites and minorities. And they raise a number of questions for state policymakers. Why do disease and death strike African Americans disproportionately? What about other minority subgroups such as Hispanics and Native Americans? How does their health stack up against that of the white majority? Is it the role of the state to try to address the health gap between whites and minorities in North Carolina? If so, what can be done that is both effective and economical?

The N.C. Center for Public Policy Research took a four-step approach in addressing these questions. The approach involved: *(1)* analyzing state-level and county-by-county data produced by the State Center for Health and Environmental Statistics (CHES) on morbidity and mortality of whites

Table 1. U.S. and N.C. Age-Adjusted Mortality Rates for Heart Disease and Cancer, by Race, 1991*

Mortality Rates per 100,000	White Male		White Female		Minority Male		Minority Female	
	U.S.	N.C.	U.S.	N.C.	U.S.	N.C.	U.S.	N.C.
Heart Disease	196.1	204.8	100.7	99.5	234.0	275.1	143.1	153.2
Cancer	159.5	159.4	111.2	104.2	207.4	241.0	121.2	114.9
Stroke	26.9	32.7	22.8	26.8	48.2	65.9	36.9	47.3

* Deaths per 100,000 population using 10-year age groups and U.S. 1940 population as standard for direct age adjustment.

Source: "North Carolina Center for Health Statistics Pocket Guide—1993," State Center for Health and Environmental Statistics, N.C. Department of Environment, Health, and Natural Resources, December 1994, Table 5.

compared to minorities; *(2)* conducting field audits of immunization efforts at local health departments as one measure of how well preventive health services are reaching their intended targets; *(3)* surveying all local health directors for further insights into what obstacles may exist in serving minorities at the local level; and *(4)* examining existing programs addressing minority health issues for clues as to what works.

At the request of the N.C. Center for Public Policy Research, CHES produced reams of data on the health of North Carolina residents. The Center asked for statewide and county-level mortality data by race on 13 leading causes of death, plus data on illness for major communicable diseases and cancer. (See Table 2, pp. 8–9, for a breakdown of the leading causes of death in North Carolina, overall and by race.) By analyzing these data, the Center was able to paint a portrait of the state's health, by race. In many areas, the picture isn't pretty for minorities, particularly African Americans.

African-American Health Issues

A total of 62 percent of all African-American deaths are due to four leading causes: heart disease (28.8 percent), cancer (20.8 percent); stroke (8.5 percent), and diabetes mellitus (3.5 percent). African Americans were more likely than whites to suffer death from these diseases, which in some cases could be controlled or influenced by diet. (See Table 3, pp. 10–11, for a county-by-county look at mortality rates for stroke, by race, and Table 4, pp. 12–13, for a similar county-level look at diabetes mellitus mortality by race.) African Americans were slightly more likely to have an accident that

Patients check in for services at Reynolds Health Center, a county-subsidized facility in Winston-Salem.

Mike McLaughlin

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Now the sons
he never fathered learn
his lesson well:
You are black and male
in america
You are never
too young to die

—MICHELLE PARKERSON
"STATISTIC"

would lead to death, and about four-and-a-half times more likely to be murdered or die at the hands of a law officer. For minority youth ages 15–19, the discrepancy is even greater. They are more than 12 times more likely to be murdered or killed by authorities than white youths.[6] (See Table 2, pp. 8–9.) But the biggest discriminator in black-white death rates was Acquired Immune Deficiency Syndrome (AIDS): the death rate for African Americans was nearly five times the rate for whites.

Even areas for which the overall numbers look good, such as cancer mortality, are misleading. When African-American death rates are adjusted for the fact that the population is younger, cancer death rates exceed those of whites. "Cancer is largely a disease of older people," says Dale Herman, a statistician with the N.C. Cancer Registry, which tracks all deaths by cancer in the state. "Since there are more older whites than minorities, there will be more cases of cancer among whites. However, the rates for minorities are higher than for whites for each age group."

Some types of cancer, such as prostate and cervical cancer, are much more common among African Americans than whites, and the survival rate for African Americans generally is lower. After adjusting for age, African-American males are more than twice as likely to die of prostate cancer as white males, according to N.C. Cancer Registry data provided by Herman. These data show an age-adjusted mortality rate of 60.3 per 100,000 African-American males, compared to 24.5 annual prostate cancer deaths per 100,000 whites.[7] Indeed, the mortality rate of African-American males suffering prostate cancer in North Carolina is among the highest of any state in the nation.[8]

African-American males also have higher age-adjusted mortality rates for lung cancer than do white males. The disease kills 103 African-American males per 100,000 population, compared to 83.3 white males.[9]

A program called Project ASSIST in the Adult Health Promotion Division of the Department of Environment, Health, and Natural Resources is attempting to increase its focus on African Americans in order to prevent lung cancer, heart disease, and other smoking-related illnesses. Sandra Headen, a faculty member with the Tobacco Education and Training Center at the University of North Carolina School of Public Health, says differences in smoking habits may account for higher lung cancer mortality rates among African Americans.

African Americans, she says, are more likely to use mentholated brands that encourage them to inhale more deeply. They also are more likely to have a relapse if they quit, Headen says. She adds that tobacco is ingrained in the African-American culture. Tobacco companies advertise heavily in African-American oriented magazines, Headen says, and on billboards in African-American neighborhoods. They also underwrite cultural and athletic events important to African Americans, she says. Headen is helping Project ASSIST use culturally appropriate materials to combat these messages and to help African-American smokers quit.

Part of the national American Stop Smoking Intervention Study, Project ASSIST works in partnership with the American Cancer Society and statewide and local coalitions. The project's aim is to reduce the percentage of North Carolinians who smoke from the current 29 percent of the population to 15 percent by 2000. To achieve this, the program relies on community-level campaigns that provide encouragement and support for people who want to kick the habit, says Sally Malek, state-level project manager in the Division of Adult Health Promotion. More effective targeting of minorities is one of the keys to reaching this 15 percent goal, Malek says.

African-American females are three times more likely to die of cervical cancer than white females, with a rate of 7.2 deaths per 100,000 population compared to a death rate of 2.3 per 100,000 for whites.[10] African-American females also are somewhat more likely to die of breast cancer than white females,[11] even though the disease is more common among whites. (See "These Graduates Spread the Message of Breast Cancer Prevention," pp. 17–19, for more on an innovative program to encourage African-American women above age 50 to seek breast cancer screening.)

—continues on page 14

Table 2. Leading Causes of Death in North Carolina, 1988–1992, Overall and by Race, with Rankings by Race

Cause	Total Deaths	Rate per 100,000	Overall Rank	Native American Deaths	Rate per 100,000	Rank	Asian/ Other Deaths	Rate per 100,000	Rank
DISEASES OF THE HEART	94,793	284.8	1	666	164.0	1	73	27.4	2
CANCER	66,147	198.8	2	396	97.5	2	112	42.0	1
CEREBRO-VASCULAR DISEASES (STROKE)	23,005	69.1	3	121	29.8	4	26	9.7	4
CHRONIC OBSTRUCTIVE PULMONARY DISEASES (LUNG DISEASE)	10,737	32.3	4	66	16.2	8	4	—	11
PNEUMONIA AND INFLUENZA	9,596	28.8	5	59	14.5	9	6	—	9*
OTHER ACCIDENTS AND ADVERSE EFFECTS	7,425	22.3	6	88	21.7	6	20	7.5	6
MOTOR VEHICLE ACCIDENTS	7,343	22.1	7	164	40.4	3	29	10.9	3
DIABETES MELLITUS	6,901	20.7	8	101	24.9	5	11	—	7
SUICIDE	4,275	12.8	9	38	9.4	10	9	—	8
HOMICIDE/LEGAL INTERVENTION	3,748	11.3	10	74	18.2	7	22	8.2	5
CHRONIC LIVER DISEASE AND CIRRHOSIS	3,570	10.7	11	36	8.9	11	6	—	9*
NEPHRITIS NEPHROSIS (KIDNEY DISEASE)	2,740	8.2	12	25	6.2	12	1	—	13
ACQUIRED IMMUNE DEFICIENCY SYNDROME (AIDS)	2,134	6.4	13	14	—	13	2	—	12
ALL CAUSES	290,582	873.2		2,230	549.0		402	150.7	

* Indicates tie in rankings

Source: Data produced by the State Center for Health and Environmental Statistics, Department of Environment, Health, and Natural Resources. Rates are average number of annual deaths per 100,000 persons, based on a five-year period, 1988–92. Rates based on fewer than 20 deaths may be misleading and were not computed.

Table 2, *continued*

Cause	African-American Deaths	Rate per 100,000	Rank	White Deaths	Rate per 100,000	Rank
Diseases of the Heart	19,728	268.8	1	74,326	294.2	1
Cancer	14,265	194.4	2	51,374	203.3	2
Cerebrovascular Diseases (Stroke)	5,846	79.7	3	17,012	67.3	3
Chronic Obstructive Pulmonary Diseases (Lung Disease)	1,253	17.1	9	9,414	37.3	4
Pneumonia and Influenza	1,863	25.4	7	7,668	30.3	5
Other Accidents and Adverse Effects	2,159	29.4	5	5,158	20.4	7
Motor Vehicle Accidents	1,763	24.0	8	5,387	21.3	6
Diabetes Mellitus	2,419	33.0	4	4,370	17.3	8
Suicide	485	6.6	13	3,743	14.8	9
Homicide/Legal Intervention	2,067	28.2	6	1,585	6.3	12
Chronic Liver Disease and Cirrhosis	1,019	13.9	11	2,509	9.9	10
Nephritis/Nephrosis (Kidney Disease)	1,007	13.7	12	1,707	6.8	11
Aquired Immune Deficiency Syndrome (AIDS)	1,236	16.8	10	882	3.5	13
All Causes	68,542	933.9		219,408	868.4	

Source: Data produced by the State Center for Health and Environmental Statistics, Department of Environment, Health, and Natural Resources. Rates are average number of annual deaths per 100,000 persons, based on a five-year period, 1988–92. Rates based on fewer than 20 deaths may be misleading and were not computed.

Table 3. Rates of Death by Stroke in North Carolina, 1988–1992, by Race and by County*

County	White Deaths	Rate per 100,000	African-American Deaths	Rate per 100,000
ALAMANCE	323	74.6	84	80.5
ALEXANDER	67	51.7	5	—
ALLEGHANY	42	88.7	1	—
ANSON	65	105.6	67	119.8
ASHE	97	87.6	2	—
AVERY	29	39.5	1	—
BEAUFORT	110	75.7	64	96.6
BERTIE	46	118.0	69	109.9
BLADEN	65	76.1	66	116.8
BRUNSWICK	123	58.6	32	68.5
BUNCOMBE	644	80.7	78	108.2
BURKE	161	46.0	15	—
CABARRUS	261	60.8	39	60.3
CALDWELL	207	61.9	13	—
CAMDEN	19	—	9	—
CARTERET	157	65.6	26	117.4
CASWELL	50	81.1	46	107.9
CATAWBA	293	54.8	37	68.7
CHATHAM	108	72.4	36	80.8
CHEROKEE	69	70.5	—	—
CHOWAN	59	139.6	21	81.5
CLAY	23	64.7	—	—
CLEVELAND	239	71.9	77	86.4
COLUMBUS	157	94.6	98	127.7
CRAVEN	154	51.7	97	91.0
CUMBERLAND	303	34.6	172	38.6
CURRITUCK	34	55.9	10	—
DARE	52	48.3	4	—
DAVIDSON	345	60.3	47	75.3
DAVIE	59	46.5	12	—
DUPLIN	148	110.8	94	139.6
DURHAM	343	62.0	201	59.2
EDGECOMBE	156	124.7	140	87.0
FORSYTH	774	78.3	271	81.5
FRANKLIN	103	86.7	61	93.7
GASTON	490	64.7	84	73.6
GATES	21	81.5	18	—
GRAHAM	26	77.2	—	—
GRANVILLE	97	82.6	82	108.9
GREENE	31	69.5	13	—
GUILFORD	1,050	83.9	265	57.7
HALIFAX	155	118.7	156	112.2
HARNETT	141	54.3	52	67.1
HAYWOOD	179	76.9	8	—
HENDERSON	337	100.7	15	—
HERTFORD	52	112.7	72	110.7
HOKE	38	78.2	38	76.5
HYDE	18	—	16	—
IREDELL	294	75.2	61	81.2
JACKSON	75	63.0	3	—
JOHNSTON	241	71.8	58	78.9
JONES	17	—	21	114.3

—continues

Table 3, *continued*

County	White Deaths	Rate per 100,000	African-American Deaths	Rate per 100,000
LEE	81	51.2	32	67.3
LENOIR	150	86.6	124	109.1
LINCOLN	178	77.7	20	97.5
MACON	92	79.5	1	—
MADISON	108	128.4	1	—
MARTIN	48	68.8	47	82.8
MCDOWELL	131	77.1	11	—
MECKLENBURG	878	47.9	410	60.7
MITCHELL	57	79.5	1	—
MONTGOMERY	69	81.0	25	82.7
MOORE	241	100.7	75	137.1
NASH	224	86.4	101	83.8
NEW HANOVER	365	76.1	120	98.4
NORTHAMPTON	44	104.3	81	130.7
ONSLOW	104	18.3	39	25.9
ORANGE	143	37.1	43	57.5
PAMLICO	37	88.5	19	—
PASQUOTANK	91	93.8	40	69.0
PENDER	63	62.7	44	99.7
PERQUIMANS	40	114.9	22	128.9
PERSON	94	89.8	26	56.8
PITT	191	53.6	182	100.7
POLK	68	101.3	9	—
RANDOLPH	297	59.8	30	93.8
RICHMOND	119	76.6	64	98.5
ROBESON	190	99.5	135	102.3
ROCKINGHAM	323	94.9	78	88.7
ROWAN	402	87.3	97	108.7
RUTHERFORD	213	84.8	20	61.2
SAMPSON	174	112.7	85	106.8
SCOTLAND	55	57.5	62	101.1
STANLY	214	94.0	25	82.7
STOKES	124	70.6	13	—
SURRY	231	78.4	14	—
SWAIN	48	121.9	1	—
TRANSYLVANIA	88	72.1	1	—
TYRRELL	10	—	8	—
UNION	179	50.7	39	57.7
VANCE	67	63.2	80	91.2
WAKE	713	43.2	260	58.1
WARREN	37	111.4	73	148.0
WASHINGTON	30	79.1	14	—
WATAUGA	73	40.6	1	—
WAYNE	189	54.1	136	80.1
WILKES	217	76.3	17	—
WILSON	182	89.1	160	127.6
YADKIN	109	74.2	3	—
YANCEY	84	109.4	—	—
NORTH CAROLINA	**17,012**	**67.3**	**5,846**	**79.7**

* *Source:* State Center for Health and Environmental Statistics, Department of Environment, Health, and Natural Resources. Rates are average annual number of deaths per 100,000 persons, based on a five-year period, 1988–92. The Native-American and Asians/Others categories are omitted from this table because the number of deaths at the county level is too small to produce meaningful statistics. Rates based on fewer than 20 deaths may be misleading and are not computed.

Table 4. Rates of Death from Diabetes in North Carolina, 1988–1992, by Race and by County*

County	White Deaths	Rate per 100,000	African-American Deaths	Rate per 100,000
ALAMANCE	139	32.1	49	46.9
ALEXANDER	12	—	3	—
ALLEGHANY	5	—	—	—
ANSON	10	—	17	—
ASHE	19	—	2	—
AVERY	10	—	—	—
BEAUFORT	43	29.6	47	70.9
BERTIE	16	—	23	36.6
BLADEN	15	—	33	58.4
BRUNSWICK	30	14.3	16	—
BUNCOMBE	134	16.8	33	45.8
BURKE	83	23.7	9	—
CABARRUS	69	16.1	16	—
CALDWELL	87	26.0	12	—
CAMDEN	6	—	1	—
CARTERET	44	18.4	11	—
CASWELL	14	—	18	—
CATAWBA	94	17.6	20	37.1
CHATHAM	42	28.1	13	—
CHEROKEE	20	20.4	—	—
CHOWAN	3	—	11	—
CLAY	3	—	—	—
CLEVELAND	78	23.4	31	34.8
COLUMBUS	33	19.9	33	43.0
CRAVEN	20	6.7	31	29.1
CUMBERLAND	110	12.5	84	18.9
CURRITUCK	12	—	4	—
DARE	15	—	—	—
DAVIDSON	87	15.2	19	—
DAVIE	23	18.1	4	—
DUPLIN	22	16.5	36	53.4
DURHAM	80	14.5	101	29.8
EDGECOMBE	32	25.6	40	24.8
FORSYTH	180	18.2	147	44.2
FRANKLIN	23	19.4	29	44.6
GASTON	129	17.0	33	28.9
GATES	2	—	5	—
GRAHAM	6	—	—	—
GRANVILLE	12	—	32	42.5
GREENE	9	—	6	—
GUILFORD	214	17.1	108	23.5
HALIFAX	38	29.1	42	30.2
HARNETT	52	20.0	26	33.6
HAYWOOD	57	24.5	3	—
HENDERSON	36	10.8	5	—
HERTFORD	13	—	15	—
HOKE	5	—	15	—
HYDE	3	—	7	—
IREDELL	51	13.0	26	34.6
JACKSON	22	18.5	—	—
JOHNSTON	63	18.8	23	31.3
JONES	3	—	10	—

—continues

Table 4, *continued*

County	White Deaths	Rate per 100,000	African-American Deaths	Rate per 100,000
LEE	32	20.2	23	48.4
LENOIR	40	23.1	41	36.1
LINCOLN	30	13.1	6	—
MACON	34	29.4	—	—
MADISON	24	28.5	—	—
MARTIN	23	32.9	29	51.1
MCDOWELL	36	21.2	3	—
MECKLENBURG	273	14.9	189	28.0
MITCHELL	18	—	—	—
MONTGOMERY	19	—	8	—
MOORE	27	11.3	17	—
NASH	51	19.7	39	32.4
NEW HANOVER	84	17.5	50	41.0
NORTHAMPTON	7	—	27	43.6
ONSLOW	30	5.3	15	—
ORANGE	45	11.7	23	30.8
PAMLICO	5	—	5	—
PASQUOTANK	25	25.8	11	—
PENDER	14	—	16	—
PERQUIMANS	6	—	4	—
PERSON	15	—	10	—
PITT	59	16.5	86	47.6
POLK	22	32.8	5	—
RANDOLPH	79	15.9	16	—
RICHMOND	45	29.0	28	43.1
ROBESON	67	35.1	37	28.1
ROCKINGHAM	74	21.7	34	38.7
ROWAN	85	18.5	31	34.7
RUTHERFORD	52	20.7	14	—
SAMPSON	34	22.0	30	37.7
SCOTLAND	16	—	25	40.8
STANLY	71	31.2	12	—
STOKES	24	13.7	2	—
SURRY	56	19.0	6	—
SWAIN	8	—	—	—
TRANSYLVANIA	20	16.4	3	—
TYRRELL	3	—	4	—
UNION	59	16.7	22	32.5
VANCE	33	31.1	20	22.8
WAKE	167	10.1	142	31.7
WARREN	4	—	11	—
WASHINGTON	5	—	5	—
WATAUGA	15	—	—	—
WAYNE	63	18.0	53	31.2
WILKES	48	16.9	4	—
WILSON	49	24.0	63	50.3
YADKIN	21	14.3	1	—
YANCEY	25	32.6	—	—
NORTH CAROLINA	**4,370**	**17.3**	**2,419**	**33.0**

* *Source:* State Center for Health and Environmental Statistics, Department of Environment, Health, and Natural Resources. Rates are average annual number of deaths per 100,000 persons, based on a five-year period, 1988–92. The Native-American and Asians/Others categories are omitted from this table because the number of deaths at the county level is too small to produce meaningful statistics. Rates based on fewer than 20 deaths may be misleading and were not computed.

Karen Tam

Darrell Geoffroy, 11, waits to be seen by a doctor at the Open Door Clinic, which offers free care in Raleigh.

—continued from page 7

Herman says one reason for these higher death rates is that African Americans are not having their cancers detected early enough through preventive screenings. "People should not be dying of cervical cancer," says Herman. "If [cervical] cancer is detected early enough, it's treatable."

Diabetes is another disease for which early detection is important. The disease to a large degree can be controlled by some combination of medicine, diet, and physical activity—yet many African Americans with diabetes have not even been diagnosed. The result: diabetes is nearly twice as likely to kill African Americans as whites. African Americans also suffer disproportionately from diabetes-related illnesses such as kidney disease and blindness.

Through a five-year grant from the federal Centers for Disease Control in Atlanta, Ga., the state is coordinating a major initiative targeting African Americans in Wake County. Peter Andersen, chief of the Chronic Disease Section in DEHNR's Division of Adult Health Promotion, says the initiative grew out of a pilot study in Wake County in which 900 persons were interviewed and 250 people were selected for comprehensive physical exams to provide baseline data. "That study found diabetes to be high in prevalence, plus there was a high prevalence of undiagnosed diabetes," says Andersen.

Project DIRECT (Diabetes Interventions Reaching and Educating Communities Together) was proposed to deal with this finding, and in October 1994, CDC funded it to the tune of $650,000—a major grant for this type of program. "It's the only such program in the country," says Andersen. "It's a community demonstration project with a high research focus to it."

The program, to be operated largely through the Wake County Health Department, has a three-part focus. It will: *(1)* work with health providers to develop and implement new and innovative approaches to diabetes care; *(2)* provide increased community outreach to identify and serve people who have not been diagnosed and those previously diagnosed who are dropouts from care programs; and *(3)* conduct a health promotion campaign that encourages proper diet and exercise to contain diabetes and possibly prevent its onset.

Wake County residents will play key roles in the community-based project as members of the Project DIRECT advisory board and work groups. At the end of the study period, the intervention will be evaluated to see if community changes have fostered improvements in health. Andersen says the results may provide a model for better serving minorities with diabetes in other North Carolina counties. "Oftentimes, the lessons learned could be and should be replicated elsewhere," Andersen says,

"perhaps not at this level, but the concept is valuable and can be applied."

The large gap in sexually transmitted disease rates between whites and African Americans may be explained in part by the fact that more African Americans than whites use local health departments for diagnosis and treatment. Local health departments are thought to be more likely than private providers to report such cases to the state. (See Table 5, p. 16, for a breakdown of communicable disease rates for North Carolina by race.)

"Most of the disease reports we get come from the public clinics, and African Americans are more likely to go to the public clinics," says Rebecca Meriwether, deputy chief of the Communicable Disease Control Section in the N.C. Department of Environment, Health, and Natural Resources. "That doesn't explain the entire difference, however."

Meriwether says newborn screening for AIDS and congenital syphilis reveals that African-American mothers are much more likely to pass these diseases to their infants. For AIDS, she says, the rate of infection is 10 times greater for African Americans than for whites. "Some of it is reporting bias, but it's also true that sexually transmitted diseases are more common in African-American communities," says Meriwether. "A lot of it is probably due to socioeconomic factors."

Jane Leserman, author of an N.C. Equity report on the status of women's health in North Carolina, also cites the reporting bias in her report. But she too concludes that most of the racial gap can be attributed to socioeconomic factors. "Socioeconomic factors that are likely to increase the risk of getting an STD [sexually transmitted disease] are lack of access to health services resulting in delayed treatment and wider spread of disease, exchanging sex for drugs or money, and cultural or sexual norms," Leserman writes.[12]

Of all of the sexually transmitted diseases, AIDS is the most deadly. The blood-borne virus that causes AIDS is passed most frequently through anal intercourse and by sharing dirty needles. Thus, male homosexuals and intravenous drug users are the most likely to be infected. Increasingly, however, the ailment is being spread to women through unprotected intercourse with an infected male.

At a Charlotte conference sponsored by the Office of Minority Health, former Mayor and U.S. Senate candidate Harvey Gantt gave a fiery speech on the impact of AIDS in the African-American community. "Why is AIDS growing exponentially in our community? I think there's something there we need to examine," said Gantt.

Gantt said African Americans are more likely to keep homosexuality in the closet than whites and have generally dealt with AIDS by trying to ignore the problem and hoping it would go away. "I want us to create a crisis atmosphere among young people early on to inform them of the dangers that await them," Gantt said. "We're not talking to our young people about casual sexual behavior. They go on thinking it can't possibly happen to them. It's a victim mentality. There's no transmission of values."

The fact that AIDS takes such a heavy toll on African Americans and prompts so little action from society as a whole speaks volumes, Gantt said. "We need to start talking about the impact of race in North Carolina and quit sweeping that under the rug as well," he said.

To fight AIDS, the Minority Health Advisory Council has pressed for increased funding to *(1)* support prevention and education programs and *(2)* provide additional support services for people already living with AIDS. The General Assembly increased AIDS funding by $500,000 in the 1994 short session, far less than the $6 million the council had sought. DEHNR included $2 million in increased funding for AIDS prevention and services in its 1995 budget request to Governor Hunt, but Hunt left it out of his final budget proposal.

Tuberculosis is another disease striking harder at African Americans, and again, socioeconomic factors may be to blame. "TB has for a long time been more prevalent in the African-American community than for whites, and that's pretty much true

▼

No sooner had I told him
Than I awoke.
The doctor said, Madam,
Your fever's broke—

Nurse, put her on a diet,
And buy her some chicken.
I said, Better buy two—
Cause I'm still here kickin'!

—FROM "MADAM AND THE WRONG VISITOR"
SELECTED POEMS OF LANGSTON HUGHES

all over the nation," says Meriwether. "It's more prevalent among people who live in poverty. It's more prevalent among people who live in crowded conditions." (See Table 5 below for a breakdown of AIDS and Tuberculosis disease rates, by race.)

Meriwether says improvements in living standards have contributed to a long-term decline in the prevalence of tuberculosis, but the rate of decrease has slowed. One reason for this, she says, is the rise in the number of people infected with HIV. TB is relatively difficult to catch, Meriwether says, and people with compromised immune systems are more susceptible. Between 1988 and 1992, 2,013 tuberculosis cases were reported among N.C. African Americans compared to 1,034 cases among whites.

—continues on page 20

Table 5. Communicable Disease Cases and Rates in N.C., By Race, 1988–92*

White Cases	Rate per 100,000	African-American Cases	Rate per 100,000	Native-American Cases	Rate per 100,000	Asian/Other	Rate per 100,000	Total in N.C.	Rate per 100,000
ACQUIRED IMMUNE DEFICIENCY SYNDROME (AIDS)									
988	3.9	1488	20.3	1	—	6	—	2483	7.5
HEPATITIS A									
1377	5.4	390	5.3	12	—	15	—	1794	5.4
ACUTE HEPATITIS B									
2200	8.7	1540	21.0	121	29.8	112	42.0	3973	11.9
SALMONELLOSIS									
3746	14.8	1587	21.6	66	16.2	32	12.0	5431	16.3
SHIGELLOSIS									
1690	6.7	1170	15.9	62	15.3	16	—	2938	8.8
BACTERIAL MENINGITIS AND H FLU									
1019	4.0	489	6.7	31	7.6	6	—	1545	4.6
SYPHILIS									
1790	7.1	15295	208.4	95	23.4	47	17.6	17227	51.8
GONORRHEA									
15893	62.9	139275	1897.6	1070	263.4	458	171.7	156696	470.9
CHLAMYDIA AND NON-GONOCOCCAL URETHRITIS									
33808	133.8	76717	1045.3	791	194.7	703	263.5	112019	336.6
TUBERCULOSIS									
1034	4.1	2013	27.4	35	8.6	97	36.4	3179	9.6

* *Source:* Data produced by the State Center for Health and Environmental Statistics, Department of Environment, Health, and Natural Resources. Rates are average number of annual cases per 100,000 persons, based on a five-year period, 1988–92. Rates based on fewer than 20 cases may be misleading and were not computed.

—*continued from page 16*
(See Table 5, p. 16.) By population, African Americans were nearly seven times more likely to suffer from the disease than whites.

Native-American Health Issues

For Native Americans in North Carolina, motor vehicle accidents are a major killer, claiming lives at nearly twice the rate of whites. (See Table 2, pp. 8–9.) Homicide rates also were double the rate of whites, and deaths by diabetes mellitus were somewhat higher.

Russell Childers is district health director for Swain and Graham counties in the mountainous far west. Swain's population is approximately 20 percent Cherokee Indian, and Childers says these Cherokee are in relatively good health. "For some things, such as diabetes and cholesterol, because of their diet, they do have a little higher problem," says Childers. "But chronic and communicable disease rates are no higher. Comparatively speaking, they are a well-blessed tribe."

The Swain County Health Department sits on a hilltop just outside Bryson City in the Smoky Mountains. It is a spartan, but tidy facility, and Childers apparently runs a tidy operation. His county's on-time immunization rate for children under age 2, at 79.1 percent, was the best of any of the nine counties the Center examined. (See pp. 32–43.) For Native Americans, the rate was somewhat lower, at 68.4 percent. But Childers says most Swain County Indians get their shots at Indian Health Services on the Cherokee reservation, where services are free for anyone listed on the Cherokee tribal roles.

On one wall of Childers' office is a plaque that reads, "As you go through life, two rules will never bend. Never whittle toward yourself or pee against the wind." But Childers' department violates these rules through its efforts to change the way people eat. Fried and high-fat foods are the primary culprits in the Indians' diet, Childers says, adding that Swain County whites also indulge in high-fat diets. The health department continues to try and change dietary habits among the Indians and other Swain County citizens by providing nutrition education and participating in a control program aimed at diabetes. "It's almost an impossible challenge," Childers says.

One reason, he says, is that the Native American foods taste good. "Fry bread, bean bread—made out of baked pinto beans, pigs' feet, souse meat,"[13] says Childers, ticking off a menu of high-fat foods. These are some of the Cherokees' dietary staples that make controlling diabetes difficult. Alcoholism, Childers says, is a problem for Indians. This may be reflected in high rates of deaths in car crashes in Swain County.

▼

I always like summer
best
you can eat fresh corn
from daddy's garden
and okra
and greens
and cabbage
and lots of
barbecue
and buttermilk
and homemade ice-cream
at the church picnic . . .

—NIKKI GIOVANNI
"KNOXVILLE, TENNESSEE"

Another major concentration of Native Americans resides at the opposite end of the state, in Scotland, Robeson, and Hoke counties. The largest component of Robeson County's population is, in fact, Native American, according to health director William Smith. More than 40,000 Lumbee Indians call Robeson home, the largest concentration of Native Americans east of the Mississippi.

The Lumbee are not a federally recognized tribe, says Smith, but they do have recognized health problems. "The Indian population here has the same characteristic high diabetes and heart disease rates, which don't differ a great deal from the African-American population," Smith says. They also have the same characteristic high rate of deaths in automobile accidents suffered by the Cherokees.

Smith adds, though, that white death rates from diabetes and heart disease aren't much different than those of Native Americans and African Americans in Robeson County. "If it's truly diet, that would make sense," says Smith. He says Robesonians, regardless of race or ethnic origin, love their high-fat foods. "It's more your everyday fatback in the green beans, sliced fatback for breakfast," Smith says.

To attack the problem, the health department is participating in a Diabetes Today project to train lay

people about the high level of diabetes and the impact it is having on the community. These volunteers will be expected to spread the word to their peers. Smith says he has had success in the past with beauticians in a program aimed at spreading the message about the need for breast cancer screenings. For diabetes, he is adding barbers to the list.

"We're going to try that route, rather than a doctor or nurse preaching to people," says Smith. Smith adds that too many minorities get their primary care from emergency rooms, where they get no advice at all about preventive health. "You don't get any education in the emergency room. You wait around forever for a service, and then you're gone." The diabetes control program was started by a $10,000 state grant.

The health department also belongs to a consortium of local agencies called Partnership for Community Health. The consortium includes representatives from Pembroke State University, the public schools, social services, and private industry. A committee of this group is focusing on diabetes and heart disease and plans to work on prevention for all age groups. One vehicle will be the schools, but the group hopes to reach parents as well. "If you can't get the parents to change a little bit, it doesn't do any good to tell the children what they ought to be eating," says Smith. "When they go home, they don't have any choice."

Native Americans also have higher rates of sexually transmitted diseases and tuberculosis than whites, although not as high as African Americans. (See Table 5, p. 16.) For example, Native Americans are about three times as likely to be infected with syphilis as whites. And Native Americans, with 35 cases of tuberculosis over the five-year period, were about twice as likely to suffer the disease as whites.

Karen Tam

Tiffany Montalvo, age 9 months, pictured here with her mother Elsanava, gets a well-child checkup at the Wake County Health Department.

Hispanic Health Issues

The Center for Health and Environmental Statistics did not produce death rates for Hispanics because their numbers were too small to produce meaningful statistics at the county level. They also are defined by the U.S. Census Bureau as an ethnic, rather than a racial group. Most Hispanics categorize themselves as either white or African American. They are thought to have been undercounted in the 1990 Census and are underreported on death certificates, according to the State Center for Health and Environmental

Karen Tam

In some counties, health departments offer van service for patients like this Chatham County mom, Irma Pacheco. In many other counties, transportation remains a major access barrier.

Statistics.[14] Many health reporting systems and surveys do not collect information on Hispanic origin, so data on the state of Hispanic health are hard to come by.

CHES, however, used birth certificates to identify Hispanics and examine maternal and child health indicators from 1988 through 1992. These indicators are largely positive for Hispanics, despite some complicating factors. For instance, Hispanic mothers of Mexican origin are less likely to receive prenatal care in the first trimester of pregnancy than virtually any subgroup of the population. Hispanics of Puerto Rican origin are particularly prone to anemia and diabetes during pregnancy. Yet Hispanic mothers are no more likely than non-Hispanic whites to have a low birthweight baby, thought to be the leading direct cause of infant mortality. Hispanic infant death rates are about the same as non-Hispanic whites.[15]

Hispanics represent only 1.2 percent of the state's population according to the 1990 Census. Yet they place a heavy burden on some local health departments. Migrant workers and their families may as much as double the state's Hispanic population during harvest season,[16] and many communities have experienced significant growth in their Hispanic populations since the 1990 Census.

At a Chatham County Health Department clinic in Siler City, for example, Hispanics represent 35 percent of the clientele. That compares to a county-wide Hispanic population of 1.5 percent, according to the 1990 Census. Yet Hispanics are flocking to the Siler City area of the county, drawn by low-wage jobs in area chicken-processing plants.

In 1991, when Siler City lost its only obstetrician and the local hospital shut down its birthing center, the health department expanded its role to provide prenatal care. Among the services the department added was a transportation network to get patients to its maternal and child health clinic. It also coordinates support groups for both African-American and Hispanic mothers, some of whom speak no English. These groups provide training in both prenatal care and parenting skills. Hispanics also get lessons in English as a second language.

The county has seen a drop in its infant mortality rate since instituting these new services, although some of it may be random fluctuation in rates. In 1990, for example, the rate was 8.4 infant deaths per 1,000 live births, according to Robert Meyer, head of perinatal epidemiology at the State Center for Health and Environmental Statistics. The rate increased to 11.2 per 1,000 births in 1991, plummeted to 1.8 in 1992, then

rose again to 7.7 in 1993.

But Meyer says citing infant mortality rates for a single year can be misleading, particularly in a small county. Because the number of live births is so small, one infant death can have a relatively large impact on the rates. For instance, in Chatham County there were five infant deaths in 1990. This produced an infant mortality rate of 8.4 per 1,000 live births. In 1991, six infant deaths produced the 11.2 rate, and in 1992, two deaths out of 571 births produced the 1.8 rate. The better statistic to use, Meyer says, is the average number of deaths over a five-year period. For the years 1988–92, Meyer says, Chatham's rate was 7.7.

Nationally, studies have found Hispanics to be the racial or ethnic group *least* likely to have health insurance. They see a doctor less than whites or African Americans, and are more likely to report fair or poor health status than whites. They suffer higher rates of accidents or injuries than whites and are three times more likely to have AIDS. Diabetes mellitus is also a problem among Hispanics, although hypertension, serum cholesterol levels, and rates of heart disease are lower than those of the population as a whole.[17]

Asian-American Health Issues

Asians and any other racial groups were lumped together in the CHES data produced for the North Carolina Center for Public Policy Research, but the number of deaths was too low to provide reliable death rates for most categories of illness. (See Table 2, p. 8–9.)

For categories for which death rates could be calculated, the rates often were far lower than those of the general population. Deaths from heart disease, for example, totaled 27.4 per 100,000 population, compared to an overall death rate of 284.8. Cancer death rates also were much lower than those of the population as a whole, at 42 per 100,000 compared to an overall death rate of 198.8.[18]

Paul Buescher, chief of CHES health statistics section, surmises that Asian death rates are lower for two primary reasons: *(1)* they are a fast growing immigrant population and thus younger; and *(2)* Asians in the United States, while a diverse population, generally are healthy, with fewer risk factors that affect longevity.

As for disease data, Asians and others did suffer disproportionately in some areas, such as sexually transmitted diseases and tuberculosis. (See Table 5, p. 16) Asians and others, with 97 tuberculosis cases over a five-year period, were about nine times more likely to be infected than whites.[19] Their rate was the highest of any racial group or ethnic group for which data were available.

Meriwether says tuberculosis is relatively difficult to catch and tends to circulate in minority communities where there is more exposure to the germs that spread the disease. The fact that minorities are more likely to contract tuberculosis may also present an access barrier. Once infected, treatments are available that will decrease markedly the likelihood of developing TB, but first one must seek treatment.

Access to Care

Indeed, access to care is cited repeatedly by service providers and others as a major barrier to improved health for minorities. Access can be broken down into at least two components—availability and affordability. In North Carolina, many minorities have a hard time getting to health services due to rural isolation. Once they get to the doctor, they often can't afford to pay for the service. The counties with the highest percentage of African-American population, for example, are among the poorest, most rural, and most isolated. These include: Warren County, the state's poorest, 57 percent African American; Bertie, third poorest, 61 percent African American; Halifax, fourth poorest, 50 percent African American; and Hertford, tied for fifth poorest with Tyrrell, 58 percent African American.[20]

These counties are also among the most unlikely to be able to attract and retain doctors and other highly paid health care providers. "One county I represent has no general practitioner whatsoever," says Rep. Howard Hunter (D-Northampton), who represents Gates, Northampton, and parts of Bertie and Hertford in the rural northeast. "Two counties have no hospital. The older people [health care providers] are getting old, and no new physicians

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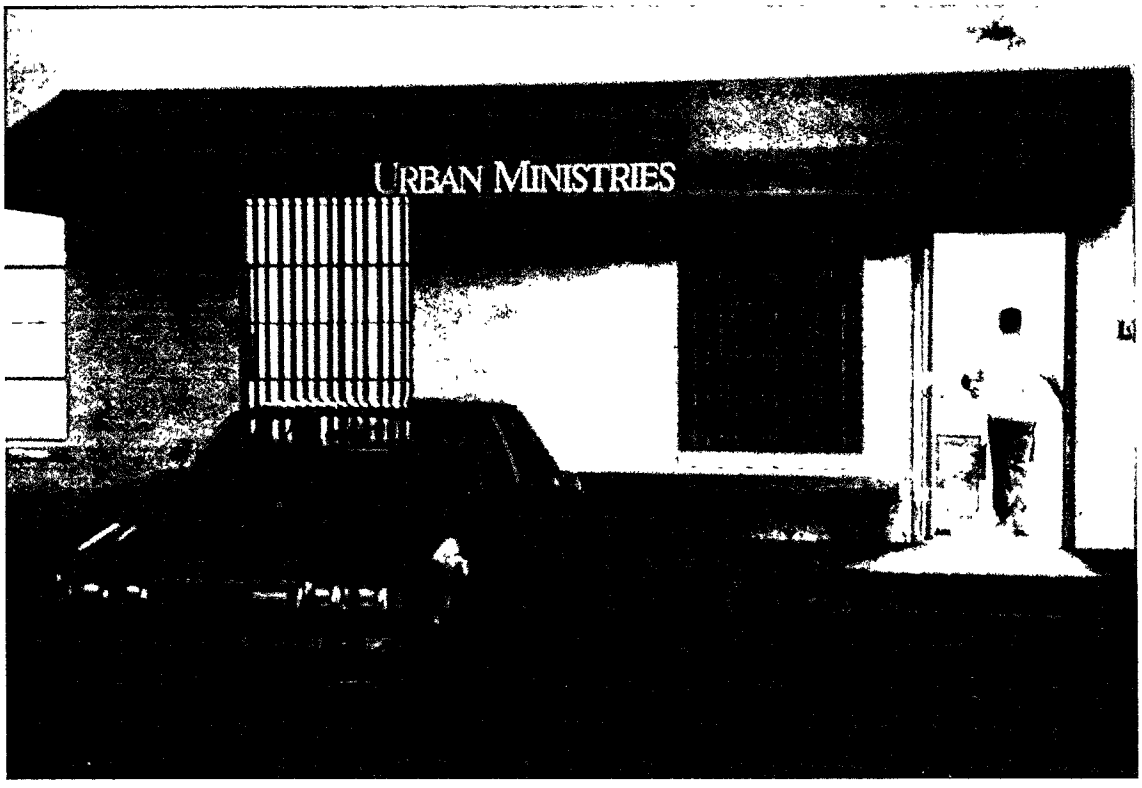
The left side of her world is gone—
the rest sustained by memory
and a realization: There are still the
children.

—WILLIAM STAFFORD
"STROKES"



Karen Tam

Free clinics such as the Open Door Clinic in Raleigh offer one source of health care for minorities.

are moving back in. . . . We need more physician assistants to deliver services."

But Hunter says even with more health care facilities and services, citizens would have trouble gaining access to them, both because they don't have a way to pay for services and because they don't have a way to get there. "Transportation is a problem in my district. They ain't got a house, much less a car."

African Americans also are about twice as likely not to have health care coverage as whites. One in five African Americans are without health care coverage in North Carolina, compared to only one out of every nine whites. That's despite the fact that African Americans are four times more likely than whites to qualify for Medicaid, the government health care program for the categorically eligible poor.[21]

Yet another possible indicator of an access barrier is the infant mortality rate for African Americans. North Carolina almost hit bottom in 1988, when its overall rate was 12.6 per 1,000 live births—49th in the nation, above only Georgia.[22] Since then, the state's overall standing has improved.

In 1992, North Carolina's infant mortality rate stood at 9.9 per 1,000 live births—the lowest in the state's history. Yet the state still trailed much of the nation, primarily because its infant mortality rate for African Americans, at 15.7, was more than twice the white rate of 7.2. The rate crept up to 10.6 in 1993, with increases in rates for whites, at 7.9, and African Americans, at 16.4.

The racial gap has confounded the experts because socioeconomic factors such as age and education do not seem to have a big effect. Meyer, the perinatal epidemiologist in the State Center for Health and Environmental Statistics, says much of the recent improvement is due to "better survival of low-birthweight infants. It's usually ascribed to high-tech medical care."[23]

Adds Tom Vitaglione, chief of the Children and Youth Section in the Division of Maternal and Child Health, "The most intractable problem to us in terms of minorities is infant mortality."

The state has attacked the infant mortality problem through a broad category of services under the Medicaid-funded Baby Love program. Through this program, Medicaid eligibility and services have been expanded greatly for pregnant women, with maternity care coordinators assigned to assure that

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Doctors Care

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next level stands Reynolds Health Center, which dispenses $10 million worth of primary care out of a building originally intended to be a hospital for African Americans in Winston-Salem. These services produce about $5 million a year in revenue. The county also contributes some $5 million annually to the Center's operating budget.

"It's like a large, multi-specialty group practice," says Dennis MacGovern, Reynolds Health Center executive director. "We do diagnosis, treatment, and referral. We can see anyone. You don't have to be indigent. You don't have to reside in the county. Some of our patients are fairly affluent. They choose to come here. They don't get a discount."

At Reynolds Health Center, 60 percent of the patients are African American. The center also is seeing increasing numbers of Hispanic patients—drawn by low-cost, no-questions service and the fact that the center has several bilingual staff members.

A Free Pharmacy and a Strong Volunteer Spirit

Forsyth's network of free and sliding scale clinics, plus its innovative managed care program for the working poor, is bolstered by a spirited annual fund-raiser that features a celebrity basketball game. The event pumps about $250,000 a year into the free pharmacy at Crisis Control.

But as Hinson has learned, making a program available and even publicizing it heavily and seeking referrals does not mean the service will be used. Doctors Care can serve up to 676 participants. Hinson figures more than 20,000 people in the Winston-Salem/Forsyth County area are eligible. Yet as of Dec. 31, 1994, only 376 had signed up.

"We're glad it's moving along slowly and cautiously," says Hinson. "It's proceeding at a pace that is comfortable and appropriate for us. But it is surprising.... Apparently, health care is not a priority to the poor unless they get sick. They have too many other things to worry about."

—Mike McLaughlin

—continued from page 24

pregnant women get the services they need to improve the chances they will have a healthy child. One study found that for each dollar spent on maternity care coordination, there was a savings of $2.02 in medical care costs for newborns during the first two months of life.[24]

A recently added service under the Baby Love program is special home visits using culturally paired workers. Called maternal outreach workers, these workers take a personal role in supporting low-income pregnant women deemed at high-risk of having poor pregnancy and parenting outcomes, says Marcia Roth, policy and program development assistant in the Division of Maternal and Child Health.

Through home visits and peer counseling, maternal outreach workers encourage at-risk expectant mothers to get appropriate prenatal care and to get care for themselves and the child for a full year after the birth. "We see maternal outreach workers as being ambassadors acting as cultural translators between health agencies and communities," says Roth.

Funded by Medicaid and the Kate B. Reynolds Charitable Trust, the maternal outreach program already is available in 24 local health agencies and should be available statewide by January 1996. DEHNR has proposed expanding the program so that maternal outreach workers stay with at-risk mothers until their children reach age 3. The cost would be $550,000 for the 1995–96 fiscal year.

Roth says part of the justification for this is that the maternal outreach worker may be able to encourage longer intervals between subsequent pregnancies and thus prevent low birthweights. A second reason is that these workers may be able to promote a safer atmosphere for children (accidents and injury are a leading cause of death in this age group) and encourage better use of preventive health services for both mother and child.

A study by Family Health International pinpointed low birthweight due to prematurity as the primary contributor to the infant mortality rate in North Carolina. The study eliminated such potential causes as a higher rate of teenage pregnancy among African Americans. In fact, the study found that for African Americans, older mothers had worse birth outcomes than teens.[25]

"It's not strictly an issue of poverty," says Hugh Young, executive director of the Governor's Commission on Infant Mortality. "There's something else that's there. The problem is low birthweight. It's twice that of whites, and this accounts predominantly for the difference in the infant mortality rate." To attack the racial gap in the state's infant mortality rate, the legislature in 1994 awarded funding for 15 pilot projects at $50,000 each, to be administered through the Division of Maternal and Child Health. "The idea is to see if the communities themselves can come up with something that researchers and professionals had missed," says Young. "The challenge is to see if anything can be done through some type of community support so that these women can have higher birthweights."

Immunization Rates: An Indicator of Preventive Care

Rep. Howard Hunter's concerns about health care in his home district are underscored by immunization field audits conducted by the N.C. Center for Public Policy Research in the spring and summer of 1994. The audits took a detailed look at nine local health departments and their ability to deliver required shots on time to children ages 2 and under. (For more on this study, see "Center Study Finds Minorities Lagging in On-Time Immunizations," pp. 32–43.) In Hertford County, part of which lies in Hunter's district, the Center found only 42 percent of children who got their shots at the local health department were up to date on their immunizations. That compares to an average for the nine counties of 60.6 percent and a statewide average of 58.8 percent.[26]

Hertford was among the poorest and most isolated of the nine counties studied. With a population that is 58 percent African American, Hertford also was among the counties with the highest proportion of minorities.

Overall, the Center found that minorities using health departments in the nine counties were less likely to be up to date on their immunization shots than their white counterparts, but this was not the case in Hertford County. African Americans in Hertford were slightly *more* likely to be up-to-date than whites.

District Health Director Jim Boehm says part of the problem with children being behind on their immunizations is the county's low socioeconomic standing.[27] Poor people, he says, are more interested in short-term survival than long-term preventive health. Neighboring Gates County, also in Boehm's district, offers a sharp contrast. The per capita income is much higher, and so is the propensity of health department users to follow through on things like getting their immunization shots on time. Boehm doesn't think this is a coincidence.

Ann Meyers, nursing supervisor in the Hertford County Health Department, sees apathy on the part of parents in general. "People say, 'Well, I'll get it when they start to school.' They don't care if they get whooping cough or influenza in the meantime." Meyers is old enough to remember polio epidemics and iron lungs. Such memories can be a strong motivator to seek immunizations, and contemporary parents haven't had these experiences. "They're not scared into thinking, 'My child will get crippled or die,' like I have seen in my lifetime," says Meyers.

To improve performance in delivering immunization shots on time, the staff of the Hertford County Health Department has tried everything from extended hours to special shot days. They have prescreened the records of children with scheduled

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4 1/2 Months: Halfway Song

(Hey, Baby! What you know good?)

Cuddled in the dark,
we place our hands
on the sturdy brown bulb
to feel
the life thumps
of what we've made
with our love.
I tell her
it's a message;
my African son
drumming on the wall.
She tells me
it's my African daughter
dancing to the rhythm
of her own fetal heartbeat.
We agree that
love is a black baby
growing in our hearts.

—GEORGE BARLOW

"It's absolutely defensible to spend our energies and resources on addressing the health gap. You do that not by bringing the health status of others down, but by bringing the status of minorities up."

— RON LEVINE,
STATE HEALTH DIRECTOR

clinic appointments to make sure they don't miss an opportunity to get shots to a child who is behind. They've even tried dividing up the names and telephone numbers of parents with children who are not up to date and handing them over to local Kiwanis Club members for follow-up. Boehm is troubled that these efforts have produced no better results. "If we can't give shots [on time], we might as well close it up," he says.

Why is the ability to deliver immunizations on a timely basis of such importance? Because immunization shots represent basic preventive care that is required by law. "These diseases are much more dangerous when children are infants, not when they are 4–5 years old," says Norma Allred, immunization epidemiologist in the N.C. Department of Environment, Health, and Natural Resources. "It's not just immunizations. It's also looking at well-child care." If parents won't get their child immunized, what *will* they do in the way of well-child care? And if they won't provide preventive care for their children, will they secure it for themselves?

The Center's study examined the immunization records of 4,194 children in nine county health departments—Buncombe, Halifax, Hertford, Johnston, Mecklenburg, New Hanover, Pender, Robeson, and Swain. Of these, 2,543, or 60.6 percent, were up to date on their immunizations. In selecting local health departments to examine, the Center sought a cross-section of rural and urban counties with a significant minority population. The Center also wanted some geographic balance.

Among white health department users included in the study, 66.4 percent (1,478 of 2,227 children) were up-to-date. Hispanics had an on-time immunization rate of 58.8 percent (47 of 80 children). Native American children, at 54.5 percent (159 of 292), were less likely to be up to date on their immunizations than Hispanics. Among African-American children, 53.9 percent (only 801 of 1,485 children) had received their shots on time, the lowest percentage among racial and ethnic groups examined by the Center.

That minorities are less likely to obtain free immunization shots suggests a problem that goes deeper than just cost or availability of a health service. Service providers and minority recipients may fail to connect for any number of reasons, including lack of transportation, inconvenient hours, lack of information about the need for and importance of immunizations, and lack of motivation on the part of parents.

The problem of minorities getting too little preventive health care is by no means confined to immunizations. The long list of illnesses and causes of death from which minorities suffer disproportionate to their numbers in the population suggests that minorities are not receiving a broad range of services they need to lead a long and healthy life.

Delton Atkinson, director of the State Center for Health and Environmental Statistics, notes that many of the health outcome disparities between whites and minorities flow out of behavioral and lifestyle differences. A major campaign targeting preventive health and lifestyle changes, he notes, could have an impact on these numbers. "If you look at what's driving some of those rates, it seems to be more lifestyle factors," says Atkinson. "If you could significantly change some of those things, you might see a difference in health outcomes."

But should the state mount a special effort to close the health gap between whites and minorities? Ron Levine, the state health director, believes the answer clearly is yes. "I believe the state has a role in trying to close the gap and address the disparities in health status and outcomes," says Levine, who labels the health gap "morally unacceptable."

The gap prevents some citizens from reaching their full potential, Levine says, and thus retards the progress of the entire state. "It's absolutely defensible to spend our energies and resources on addressing the health gap. You do that not by bringing the health status of others down, but by bringing the status of minorities up."

Levine says the prime movers in calling attention to the gap in North Carolina have been the Office of Minority Health and the Minority Health Advisory Council, both created in 1992.[28] Yet despite all the statistics, not everyone agrees that focusing exclusively on the health problems of minorities is appropriate.

A case in point is a call-in television show on minority health aired in November 1994 by the N.C. Agency for Public Telecommunications. Laureen Lopez of the Office of Minority Health was asked to respond to a question from a caller that really was more of a lecture on the wrongheadedness of efforts to single out minorities for special focus.

"I'm wondering, why do you have an issue called minority health issues?" mused the vitriolic caller from Carrboro. "If I understand the human body as I do, I don't really see that much difference in our anatomy and physiology. I wouldn't like to have to separate and exclude groups from attention and public services because of race. It's not working, I don't like it, it's not fair, and it's biased."

Lopez, a consultant to the office who has produced a number of reports on the health status of minorities and services available to them, offered this response: "The reason we focused on minority health and created this office is really the tremendous difference in health status of the minority and non-minority populations. Minority people get sicker more often, they die sooner, and they generally have less access to health care. There needs to be a special effort to reach these people in order to bring them up to the level of the rest of the population."

Her reply prompted an angry retort from the Carrboro caller. "My family has Indian blood. Does that mean I get half a service? It's not an issue of race. It's an issue of economics . . . what people can afford. When it's couched as an issue of race, it really turns people like me off and makes me mad. I wish you people could just get it straight."

But under the leadership of Barbara Pullen-Smith, the office has spent countless hours over the last two years trying to convince people like the caller from Carrboro that the issue of minority health needs special attention. The office has spun out reports outlining the health status of minorities and barriers to receiving services at the local level. Its staff has trooped across North Carolina conducting public hearings with the Minority Health Advisory Council, which advises the governor and the secretary of the Department of Environment, Health, and Natural Resources on minority health matters.

The regional hearings were conducted in Asheville to the west, Durham in the Piedmont, Winton in the northeast, and Pembroke in the southeast. Staff members published transcripts of the hearings and a summary of major issues raised at the hearings. While the testimony varied from region to region, office staff found consistent themes in the comments.

"I wouldn't like to have to separate and exclude groups from attention and public services because of race. It's not working, I don't like it, it's not fair, and it's biased."

—ANONYMOUS CALLER TO TALK SHOW ON MINORITY HEALTH

They divided the issues that surfaced at the hearings into two broad categories: *(1) access issues* such as ability to pay, a lack of providers, and cultural differences between service providers and recipients; and *(2) health issues* such as drug dependency, teen pregnancy, infant mortality, and AIDS and other sexually transmitted diseases. Heart disease and cancer also frequently were mentioned as health issues.[29]

Among the recommendations for change offered by people who testified at the hearings were: health insurance reform aimed at expanding coverage to the uninsured, more health education programs, more community-based health programs and services, increased recruiting and retention of minorities in health careers, more school health programs, and more money for local services.

Levine says the council decided AIDS was the public health issue having the most devastating impact on minority communities and made attacking the disease its top priority. "They made a quick move on AIDS," says Levine. "For a long time, African Americans did not realize the strength of the penetration of AIDS into the African-American community and the suffering it was engendering," he says . As a result of the council's focus, says Levine, the 1994 General Assembly "made the first sizable appropriation to combat the AIDS epidemic." That appropriation totaled $500,000 for the 1993–94 fiscal year.

Still, the work of these two groups only has begun to bring resources to bear on the broad range of health issues affecting minority communities. "It's a process accomplishment," says Levine of the light the two groups have begun to shine on minority health issues. "It's got to be backed up by improved programs and services and eventually by changes in the numbers [for minority health status]." *—continues on page 44*

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Local Health Directors: Thoughts from the Front Line

Local health directors are required to diagnose the health of their community and either provide certain services or certify that they are available in the community.[30] Thus, they are in a good position to know both the health needs of their communities and the services available to meet those needs. (For more on local health departments, see "Health Services at North Carolina's Local Health Departments, pp. 46–48.) With this in mind, the Center decided to survey all 86 local health directors on several key questions. These questions ranged from the racial breakdown of local health department clientele to whether health directors thought access to health care was a problem for minorities in their communities.

Of 86 local health directors, 72 responded—an overall response rate of 84 percent.[31] The results represent the opinions and information offered by 72 local health directors or their designees, spread across North Carolina.[32]

Among the survey's highlights:

- Minorities use local health services more than whites. While whites make up 75.6 percent of the North Carolina population, they comprise only 57.9 percent of health department clientele. African Americans, on the other hand, are heavy users of health department services. They represent 35.9 percent of health department clientele, but only 22 percent of the state's population. Hispanics also use health departments in numbers disproportionate to their share of the population, representing 4.6 percent of health department users and only 1.2 percent of the population as a whole.
- Asked to select from 13 possible health issues, health directors labeled access to health care the most pressing health issue facing minorities in their communities. Adolescent pregnancy ranked second, and heart disease ranked third. (For more on the adolescent pregnancy problem, see "Cycle Busters Aims to Put Teen Moms Back on Track," pp. 57–59.)
- Lack of transportation is by far the biggest barrier to obtaining health services at local health departments, according to local health directors. Transportation also is an issue in the private sector, they say, but the larger issue is lack of health insurance or other means to pay for services.
- A number of health departments have employed translators to ease the language barrier between health department staff and burgeoning Hispanic clientele. A total of 51 health directors said they use translators. Of these, 29 said the translator was on staff rather than a volunteer or contract employee, although these translators also typically had other duties. As for the transportation barrier, 40 health directors said their departments offer home visits, and eight indicated that they offer some type of transportation service.[33]
- A solid majority of local health directors—44 of the 71 who responded to this question—believe it *is* the role of local health departments to make minorities a special focus to assure that they have access to a full range of health services in their communities.
- Fully 70 percent of respondents did not think that public and private health services are adequate to meet the needs of minorities in their communities, yet 77.9 percent thought services for minorities were about the same as those for whites.
- Asked to choose from among four options, local health directors most often picked lifestyle or behavioral changes as the most important key to improving minority health. Increased access to existing health services was the second most popular choice, followed by improvement in the local economy to provide jobs and alleviate poverty. Only 10 respondents thought simply adding more services was most important.
- Despite heavy use of health departments by minorities, 37.5 percent of the local health directors said their departments did not include minorities or minority groups in their community diagnosis planning processes. Local health departments are required to conduct this diagnosis biennially to identify health needs and plan a strategy for meeting those needs. Community involvement in developing the plan is recommended but not required.
- Respondents overwhelmingly agreed that access to health care is a problem for minorities (90 percent said yes), yet they were less inclined to define the problem as inadequate services. And in a separate question, they indicated that services available were about the same as those available to whites. They did, however, identify a clear problem with barriers minorities face in using services.

Karen Tam

Health departments are seeing a more diverse clientele. Here Allyson Swelam, her son Haithim, and daughters Amira and Dania (in stroller) await services at the Wake County Health Department.

These barriers included: convenience factors such as lack of transportation and operating hours of local health department; communications problems such as lack of information about available resources; and cost problems such as lack of health insurance or other means to pay for services.

"Both white and minority populations have access to health care if they have insurance or other funding," commented one respondent from an urban coastal county. It is the indigent, she says, who are without care. Another commented, "The single greatest factor affecting healthy outcomes for minorities is economic stability. In spite of Medicaid and AFDC, many people are still unable to pay for health care, especially those who are in poverty."

Rep. Howard Hunter of Northampton County says would-be clientele cannot use health department services if the doors open at 8 a.m. and close at 5 p.m. "Most of them work. How can they afford to get off work to get a shot or a check-up? Health departments are not making the service available at a time they can access it."

The Center survey indicates health departments *are* making some effort to make their departments more user-friendly, although more could be done. State regulations require that health departments provide a night or weekend clinic to deliver immunization shots at least once a month.[34] About half the respondents indicated they go beyond this minimal requirement by conducting clinics more than one night a month. In addition, 12 respondents indicated they conduct more than one weekend clinic per month.

Health departments are addressing the transportation issue by providing home visits, opening remote sites closer to

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The mind may not mind death.
It means at last letting go, the inevitable
capitulation. After all, it's tired,
very tired. But the body fights
right to the end . . . .

—STEPHEN DOBYNS
"THE BODY'S STRENGTH"

minority communities, and, in some instances, actually giving clients a lift to the clinic. They also are bringing interpreters on staff to ease the language barrier, although Laureen Lopez of the Office of Minority Health cautions that local health departments are not meeting the current need.[35]

Lopez notes that though many local health departments have translators on staff, they usually have other job responsibilities and are not always available to translate. "They may not be fluent in both languages, skilled in the interpretation process, or have knowledge of health issues," says Lopez.

In a 1993 survey of 35 local health directors in counties with high-density Hispanic populations, Lopez found that only four departments "almost always" had a translator on duty for health care. An additional 27 of the 31 local health directors who responded to the question indicated that they had translators available at least occasionally.[36] In a separate question that drew 33 responses, only six departments indicated they were "doing all right" with translation for health care, while 26 said they still needed more help.[37]

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Health Services at North Carolina's Local Health Departments

The state requires every local health department to provide mandatory services for each county's population.[1] Any person who lives within the jurisdiction of the local health department can receive health care at the department, although certain populations are specifically targeted as "needy" because of economic status or lack of access to health care.

State regulations do not specify that any health department programs should be targeted explicitly to minority populations. Instead, certain programs are structured to assist segments of the population with limited resources, says Thornton B. Haynes, chief of the Office of Local Health Services in the Division of Health Services, Department of Environment, Health, and Natural Resources. These programs are costly, Haynes says, and health departments charge fees for some services. State statutes say that required immunizations must be provided free at local health departments.[2] Diagnosis and treatment for sexually transmitted diseases also is provided free at local health departments.

Medicaid covers some health care services, but not all. For services not covered by Medicaid, Haynes says county commissioners work with the local boards of health and health directors to create a fee schedule for the local health departments. The income from these fees is applied to the cost of providing services. With the help of the state, Haynes says, local health departments attempt to make health care affordable for all residents of North Carolina, regardless of income level or race.

Mandatory services are outlined under 13 categories in the North Carolina Administrative Code. These categories are: *(1)* adult health; *(2)* home health; *(3)* dental public health; *(4)* food, lodging, and institutional sanitation; *(5)* individual on-site water supply; *(6)* sanitary sewage collection, treatment, and disposal; *(7)* grade A milk sanitation, *(8)* communicable disease control; *(9)* vital records registration; *(10)* maternal health; *(11)* child health; *(12)* family planning; and *(13)* public health laboratory support.[3]

While local health departments must make sure the mandated services are available, health departments may or may not offer them in house. Offering extensive mandatory services is costly, Haynes says, often beyond what the local health departments can cover with their resources alone. If a health department does not have the staffing, funding, or space to support a necessary service, it can contract with the private sector to ensure that the county will have access to the required range of services. The county also can pool its resources with another county by forming a dis-

—continues

Emily Coleman, a recent Davidson College graduate, was a Center intern in the fall of 1994.

Karen Tam

Marie Watson gets her teeth examined by Dr. George Walker at the Open Door Clinic in Raleigh.

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Many local health departments also indicated they have developed special programs to reach minorities through African-American churches and other avenues. Person County offers a breast and cervical cancer program called "Project Sister to Sister" that targets low-income African-American women over 50 for breast and cervical cancer screening. Pitt County offers "street education" on AIDS prevention in a minority community. Wake County has its own minority programs manager to oversee programs in such areas as adolescent pregnancy prevention, AIDS prevention, and breast cancer awareness.

Five Eastern North Carolina counties—Bertie, Halifax, Hertford, Northampton, and Pasquotank—are participating in a program called "Five a Day Black Churches United for Better Health." The project uses African-American churches as the vehicle for encouraging rural African Americans to incorporate five servings of fruits and vegetables in their diets each day for cancer prevention. Churches are given a small cash incentive to participate, plus dollars for their campaigns to promote better diet.

Yet respondents almost universally agree that access is still a problem. At a training session for lay health advisers in a breast cancer screening program in Washington, N.C., Beaufort County Health Director Tamara Hower asked how many women had used health department services. One or two hands went up out of the dozen women in the room. Most said they didn't even know that adult services were available. "Maybe it's our responsibility at the Beaufort County Health Department to make the community more aware of what we do offer," Hower told the group.

Should Minorities Be a Special Focus of State Action?

Respondents to the Center's survey were divided on whether local health departments should make minorities a special focus for health programs. Most said there should be some targeting of services. "Their needs are unique, and their health problems are disproportionate to the rest of the population," said one local health director. Added another, "The minorities' negative [health] indicators are about double the white rates."

Nearly a third of the respondents, however, argued that there should be no special focus. "Health department services should focus on a broad spectrum of populations," commented one respondent. Another respondent said health departments should not have the responsibility of assuring access to services they do not provide. "Minorities' principal

—continues on page 54

Table 11. Summary of Responses to Survey of Local Health Directors on Minority Health Issues by the N.C. Center for Public Policy Research*

1. Please tell us the approximate percentage of persons using your health department who belong to each of the following population groups:

(out of 66 responses)

Population Groups	Average percentage	1990 Makeup of N.C. pop.
White	57.9%	75.6%
African American	35.9%	22.0%
Native American	1.0%	1.2%
Hispanic	4.6%	1.2%
Asian or Pacific Islander	0.3%	0.8%
Other	0.3%	NA

2. What are the three most significant health issues, in priority order, affecting minorities in your county? *(Score: top choice received 3 points, second received 2, and first received 1 point.)*

(out of 70 responses)

Response	Score	(Rank)
Access to health care	86	(1)
Adolescent pregnancy	60	(2)
Heart disease	56	(3)
Health insurance	45	(4)
Sexually transmitted diseases	30	(5)
Drug/alcohol abuse	26	(6)
Diabetes	25	(7)
Prenatal care	22	(8)
Cancer	20	(9)
Other	16	(10)
Violence	14	(11)
Nutrition	5	(12)
Stroke	4	(13)
Immunization	2	(14)tie
Vaccine-preventable diseases	2	(14)tie

Table 11, *continued*

3. Do you think access to health care is a problem for minorities in your community?

(out of 72 responses)

Response	Percent	Number
yes	90.3%	65
no	9.7%	7

If yes, please tell us in priority order which of the following are the biggest barriers to obtaining health care for minorities in your community. *(Score: top choice received 3 points, second received 2, and first received 1 point.)*

(out of 70 responses)

	Top Barriers at:			
Response	Health Department	(Rank)	Private Clinics	(Rank)
Lack of transportation	121	(1)	87	(2)
Health department has too few resources to meet community needs	75	(2)	3	(10)
Lack of information about services available	53	(3)	18	(7)
Lack of health insurance or other means to pay for services	28	(4)	157	(1)
Health department or private clinic is open too few hours	25	(5)	11	(8)
Language barrier between health services provider and minority community	24	(6)	29	(3)tie
Inadequate services	22	(7)	10	(9)
Stigma attached to receiving services at the public health department	18	(8)	0	(11)
Too great a distance between health services provider and minority community	17	(9)	21	(5)
Other	8	(10)	19	(6)
Past experiences at office of the provider	4	(11)	29	(3)tie

Table 11, *continued*

4. Do you think it is the role of the local health departments to make minorities a special focus to assure that they have access to a full range of health services in your community?

	(out of 72 responses)	
Response	**Percent**	**Number**
yes	61.1%	44
no	30.6%	22
no answer	8.3%	6

5. What steps has your local health department taken to reduce health-care access barriers for minorities? (could choose more than one answer)

	(out of 68 responses)
Response	**Number**
1) Use translator to ease language barrier.	51
If so, is translator:	
on staff?	29
volunteer?	12
contracted as needed?	10
2) Home visits for people without transportation	40
3) Open clinic on weeknights more than one night per month	36
4) Offer services at remote sites closer to minority community	35
5) Other, e.g., transportation services	22
6) Clinic open on weekends more than one night per month	12

6. Considering both the public and private sector, are services adequate to meet the health needs of minorities in the community?

	(out of 72 responses)	
Response	**Percent**	**Number**
yes	27.8%	20
no	69.4%	50
no answer	2.8%	2

Table 11, *continued*

7. In your opinion, how do health services for minorities in your community compare to those available to whites?

	(out of 70 responses)	
Response	**Percent**	**Number**
much better	0%	0
better	1.4%	1
about the same	77.1%	54
worse	21.4%	15
much worse	0%	0

8. In your opinion, which of the following is most important to improving health outcomes for minorities? (some people checked more than one choice)

	(out of 76 responses)	
Response	**Percent**	**Number**
1) Lifestyle or behavioral change	42.1%	32
2) Increased access to existing health services	23.7%	18
3) Improvement in local economy to provide jobs and alleviate poverty	21.0%	16
4) More health services	13.2%	10
5) Other	2.6%	2

9. Did your local health department involve minorities or minority groups in its 1993–1994 community diagnostic process?**

	(out of 72 responses)	
Response	**Percent**	**Score**
yes	55.6%	40
no	37.5%	27
no answer	6.9%	5

* While the Center addressed its survey to local health directors, some chose to delegate the task of responding to another staff member such as a nurse supervisor or health educator.

** The community diagnostic process is a biennial process the state requires local health departments to undertake to plan services.

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need is primary care, and most health departments do not provide primary care."

State regulations governing local health departments do not specify that minorities should be a focus of state programs, and there is widespread thinking that all health services should be for all people.

"It's understandable and, under different circumstances, it would be reasonable, but the reality is, health differences between whites and minorities are not getting any better," says Pullen-Smith. "That's why the Office of Minority Health and the Minority Health Advisory Council were formed—to look at changes that might be needed in the system to make it more responsive to the health needs of minorities."

Levine, the state health director, believes it is appropriate "to target and focus on the needs of minorities who demonstrate worse health status and outcomes." His reasoning? Programs must be tailored to meet the needs of the populations they serve. One size does not fit all in health services. In addition, by targeting services to minorities, it is easier to highlight these programs within minority communities and win the support that will help them achieve their objectives. In other words, they are less apt to be viewed as white people's programs.

Levine credits the Office of Minority Health and the Minority Health Advisory Council with fostering a mind set that increasingly looks to the community to deliver services. Examples are HIV prevention programs, the Five-A-Day program using African-American churches as partners to encourage better nutrition and prevent chronic disease, and new programs for the prevention of infant mortality.

"They have sensitized the public health officials and program managers and legislators and people responsible for policies and programs to look outside the bureaucracy, and I think it's penetrated throughout the agency," says Levine. "People are changing their mind set about how to fashion services to really be successful in the various subcultures we already have all over the state."

A Broad Proposal to Address Issues in Children's Health

Although not aimed at minorities, DEHNR, the Department of Human Resources, and the Department of Public Instruction individually have proposed to the governor mutually supportive programs that could have an impact on minority health. These children's health initiatives call for $64.25 million in new appropriations for the 1995–97 biennium.

Together the new programs would add 200 school nurses, expand Medicaid to reach more children above the poverty line, and fund an array of public health services such as pregnancy prevention, peer counseling for at-risk pregnant women, child health awareness, nutrition counseling, and a major campaign to improve overall community health. "While the programs do not specifically target minorities, minorities will benefit from them because of the disparity in incomes," says Janet Ramstack, a health policy adviser in the State Health Director's Office.

Among the more innovative of these proposals is DEHNR's community-based campaign to improve public health. Similar in scope and design to a five-year experimental program in North Karelia, Finland, the $1.2 million program would focus community resources on trying to raise the overall health status of a community—especially in children.

Dale Simmons, director of the Division of Adult

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Strangers Like Us: Pittsburgh, Raleigh, 1945–1985

The sound our parents heard echoing over
housetops while listening to evening radios
were the uninterrupted cries running and cycling
we sent through the streets and yards, where
spring summer
fall we were entrusted to the night, boys and
girls together, to send us home for bath and
bed after the dark had drifted down and eased
contests between pitcher and batter, hider and
seeker.

Our own children live imprisoned in light.
They are cycloned into our yards and hearts,
whose gates flutter shut on unfamiliar smiles.
At the rumor of a moon, we call them in
before the monsters who hunt, who hurt, who
haunt
us, rise up from our own dim streets.

—GERALD BARRAX

Health Promotion in the Department of Environment, Health, and Natural Resources, says the Finnish program achieved sustained reductions in hypertension and cholesterol levels over a 20-year period. He says the program has become a model for how an entire community's health behavior can be altered to provide for better health.

In North Carolina, the program would work through preschool, public schools, and work places to involve children, parents, teachers, and employers. Plus, there would be broader public messages delivered through local media. The result would be a community-wide campaign to promote fitness, nutrition, and healthy choices such as forgoing drugs and smoking. With only four pilot programs funded statewide, these campaigns would have considerable resources to focus on their mission.

"Looking at preventive programs promoting good health may be a wise course for us to take. I think it's cost effective."

— SEN. BETSY COCHRANE (R-DAVIE) AND SENATE MINORITY LEADER

Sukhmani Singh, 2, held by her mom, Claudine, at the Open Door Clinic in Raleigh.

Karen Tam

Ramstack says that while North Carolina community-based initiatives would be funded on a request-for-proposals basis, communities with larger minority populations could have an edge. "We'll probably look for diversity," Ramstack says.

Need vs. Political Reality

Most of the Children's Health Initiative got left out of Democratic Gov. Jim Hunt's proposed 1995–97 biennial budget. Hunt's proposal for $486 million in tax cuts precluded major expansion, even for children's health. Republican legislative candidates campaigned on a Tar Heel version of the Contract with America, calling for at least $200 million in tax cuts of their own. Republicans captured control of the House (68 of 120 seats) and 23 of 50 seats in the Senate. (The 15th District Senate race was left unresolved pending a March 28, 1995, special election.)

For the immediate future, the outlook is parsimonious. But the health problems of minorities are real. Democratic and Republican legislators alike realize that in the long run, prevention is cheaper than cure. "I hope that the health departments can be bigger players in preventive medicine," says Rep. Dub Dickson (R-Gaston). "We need to go back and fund them so they can really do the core public health things they are set up to do. If you can prevent horrible diseases like heart disease, cancer, and diabetes, it's cost effective. If you can prevent somebody from going to the emergency room for non-emergency care, it's cost effective."

Sen. Betsy Cochrane (R-Davie), the Senate minority leader, agrees that prevention is key, but says she isn't sure more dollars are needed. "Looking at preventive programs promoting good health may be a wise course for us to take," says Cochrane.

Table 12. The Cost of Prevention Versus the Cost of Cure

Each Dollar Spent for These Preventive Measures	Equals These Dollars Saved in Treatment Costs
For measles, mumps, rubella vaccine	$16.30
For diphtheria, tetanus, pertussis vaccine	6.20
For oral polio vaccine	3.40
For maternal care coordination to prevent low birthweight infants	2.02

Sources: Paul A. Buescher, *et al.*, "an Evaluation of Maternity Care Coordination on Medicaid Birth Outcomes in North Carolina," *American Journal of Public Health*, Vol. 81, No. 12, (December 1991), pp. 1626–1627; for immunizations, Centers for Disease Control, Atlanta, Ga.

"I think it's cost effective." Possible channels for public education include health departments, social services agencies, community groups such as churches and civic organizations, and health professionals in private practice, she says.

"There are a lot of things out there that give us the opportunity to disseminate some information" Cochrane says, adding, "We need to call on people in [the minority] community to help a little bit more. We need to expect a little more involvement in that community in helping us solve the problem. I don't see that more resources will help us solve the problem."

Senate Majority Whip Frank Ballance (D-Warren), a five-term African-American lawmaker from North Carolina's poorest county, offers a different perspective. "In 1982, the infant mortality rate and various poverty issues were endemic in African-American community and in rural North Carolina areas where I live and work," he says. "They still seem to be very strong and prevalent as indicators of the state of health in the African-American community. I'd propose that we move forward . . . to provide assistance, resources, and money. When you look at the big picture, I think the sin on my part would be not to address the issue."

Rep. Jim Black (D-Mecklenburg), House minority leader, adds that while a tax cut may be nice in theory, the amount of extra money remaining in each taxpayer's pocket may not be worth the cost to society as a whole. "We can cut a little bit and spend smarter, but there's not just a whole lot of fat out there," says Black. "I don't think it's going to amount to enough to excite me about taking it out of education and indigent health."

"When you look at the big picture, I think the sin on my part would be not to address the issue."

— SEN. FRANK BALLANCE (D-WARREN) AND SENATE MAJORITY WHIP

Conclusion and Recommendations

If any single theme stands out in the Center's research as key to improving minority health, it's access to care. And access to *preventive* care may be the most cost effective means of closing the health gap between whites and minorities. (See Table 12 above.) Without neglecting treatment for those who have nowhere else to turn, the state *must* step up its efforts in health promotion and prevention.

In virtually every category of disease for which the State Center for Health and Environmental Statistics provided data, proper preventive health can have a major impact. Take, for example, the top four killers of African Americans in North Carolina—heart disease, cancer, stroke, and diabetes. All are potentially devastating. Yet preventive

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How To Stay Young

Avoid fried foods, which angry up the blood.

If your stomach disputes you, lie down and pacify it with cool thoughts.

Keep the juices flowing by jangling around gently as you move.

Go very lightly on the vices such as carrying on in society.

Avoid running at all times.

Don't look back. Something might be gaining on you.

—SATCHEL PAIGE
HALL OF FAME BASEBALL PITCHER

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health measures such as proper diet, exercise, and giving up smoking can improve the chances of avoiding or controlling these diseases.

Local health directors point to the need to improve access to existing services such as disease-preventing immunization programs and well-child screenings. Speakers at public hearings across North Carolina told the Minority Health Advisory Council of the need for increased involvement of community-based agencies in spreading the message of public health. And Republican and Democratic legislators alike agree that preventive health strategies are cost-effective in the long-run.

Actions to improve access to preventive health services for minorities are justified by the tremendous health gap between whites and minorities. With an eye toward closing this gap, the Center proposes the following six-point plan:

1 The Legislature should appropriate $750,000 for the 1996–97 fiscal year for a new grant program to develop local community-based preventive health programs to attack the health gap that exists between whites and minorities in North Carolina. Minorities in North Carolina die younger and carry a greater burden of illness throughout their lives. This is a fact painted in black and white by the stark health statistics. The state continues to gather evidence on approaches that show promise in improving the overall health of minorities through strengthening preventive health programs.

These include: the National Institutes of Health Five-A-Day Program in the area of cancer prevention through better diet; the National Cancer Institute's Project ASSIST with its effort to urge people to quit smoking for the prevention of cancer and heart and lung disease; and Project DIRECT, the Wake County campaign to better contain and control diabetes among African Americans, which is funded by the federal Centers for Disease Control and Prevention.

The evidence is strong that effective health promotion campaigns can be mounted to address the health gap. The legislature should appropriate funds for five-year grants to local health departments to attack the health gap in such areas as heart disease, cancer, stroke, and diabetes.

The Division of Adult Health Promotion in the Department of Environment, Health, and Natural Resources, should administer these grants, with consideration of at least the following four criteria: *(1)* the size of the minority population; *(2)* the discrepancy in health between whites and minorities in the target area; *(3)* available local resources, including the strength of the local health department and the strength of the local economy; and *(4)* the likelihood of success of the proposed program. Each proposal should include a strong evaluation component and a long-range goal of improving minority health and narrowing the gap in health status between whites and minorities by a given percentage.

If successful, the community health promotion projects could provide a model for better preventive health across North Carolina. That would be an investment well worth the return. The gauge of success, however, should be a tough one: Did the campaign actually affect behaviors that would improve the health of minorities in the targeted community? Did minorities seek more preventive care? Did they eat fewer fatty foods? Did they exercise more? Did these behavioral changes ultimately lead to better health?

The legislature should require an interim report on the success of these programs by 1999, and a final report by the year 2002, with an eye toward expanding successful programs and terminating the failed ones.

2 To aid in the fight against infant mortality, the legislature should support the expansion of the maternal outreach workers program

to all 100 counties and appropriate $550,000 annually to allow maternal outreach workers to work with families until children reach age 3. Maternal outreach workers should make a special effort to target minority families. Of all of the health gaps the Center noted in its research on minority health, the difference in infant mortality rates is perhaps most tragic. The minority rate is more than double the death rate for white infants. The Division of Maternal and Child Health already plans the expansion of maternal outreach workers to all 100 counties, and, due to higher infant death rates and generally poorer economic standing, minorities will be the prime beneficiaries. These maternal outreach workers make home visits to at-risk expectant mothers to assure they get the care and services they need and work closely with these women until their children reach age 1.

Expansion is based on evidence that these workers can have an impact on the infant mortality rate. This is accomplished by encouraging low-income expectant mothers to get prenatal care and attend to their own health and that of their infant after the child's birth. The program as currently structured is fundable through Medicaid and existing resources, and taking the current program statewide will not require an additional appropriation.

The division also has recommended, through the Children's Health Initiative, further expansion to allow these workers to aid families until age 3, rather than the current age 1. This is desirable for several reasons. Inadequate birth spacing is one contributor to the higher infant death rate among minorities. Maternal outreach workers can provide counseling on this issue, and, if there is a subsequent pregnancy, they can help to assure that expectant mothers get adequate prenatal care.

In addition, abuse, neglect, and accidents are primary causes of death among low-income children. Maternal outreach workers could provide support to lower the death rate among children ages 1–3. And they could assure that children get the well-child services they need to get a healthy start in life, including on-time immunizations, proper nutrition, and checkups.

3 The legislature should appropriate $500,000 annually to fund immunization outreach workers in 20 high-minority, low-wealth counties across North Carolina. The legislature or the Health Services Commission should clarify that local health departments will be responsible for seeing that children ages 2 and under are age-appropriately immunized. The Center's research in nine North Carolina counties uncovered a clear problem with assuring that children ages 2 and under are up to date on their immunizations. This is particularly a problem with minorities. In a review of 4,194 immunization records, the Center found that only 54.1 percent of minorities who use local health departments for services were up to date on their immunizations, compared to 66.4 percent of whites.

The Center found promise in a New Hanover County program in which an outreach worker takes responsibility for assuring that *all* children are up to date. Yet many high-minority, low-wealth counties do not have the resources to implement such a program. The Center recommends that a pool of $500,000 be established to fund immunization outreach workers in 20 high-minority, low-wealth counties. In exchange, the legislature or the Health Services Commission should clarify that local health departments *will* be responsible for assuring that children who reside in their counties are up to date.

With the implementation of a statewide immunization registry and state-supplied vaccines, monitoring children should be easier, and the state's goal of having 90 percent of its 2-year-olds age-appropriately immunized by the year 2000 may be attainable. Besides preventing childhood diseases, this campaign should have the effect of boosting well-child care in general. This will benefit minorities and all North Carolina citizens.

4 The legislature should appropriate $500,000 annually for AIDS *prevention* and $500,000 annually for AIDS *treatment* for the benefit of

▼

To Satch

Sometimes I feel I will never stop
Just go on forever
Till one fine mornin
I'm gonna reach up and grab me a
handfulla stars
Swing out my long lean leg
And whip three hot strikes burnin
down the heavens
And look over at God and say
How about that!

—SAMUEL ALLEN

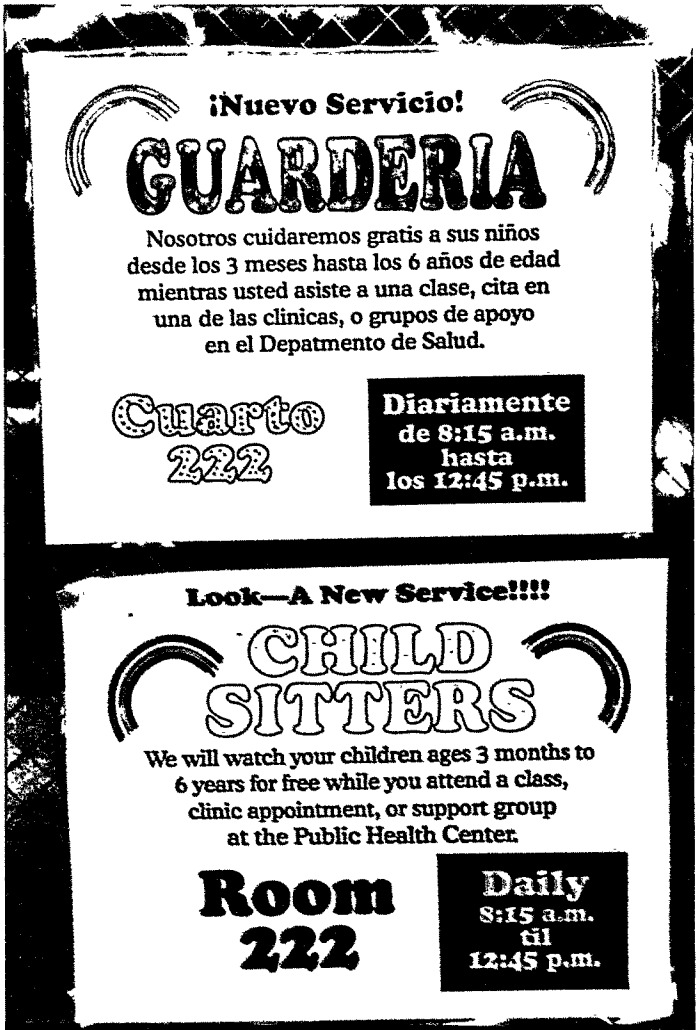
minority communities across North Carolina. The $500,000 the state has appropriated so far for the AIDS fight is only a start. AIDS is having a disproportionate impact on minorities. The mortality rate for AIDS among African Americans is 16.8 per 100,000 residents, nearly five times the white death rate of 3.5 per 100,000 residents. And African Americans are five times more likely to contract AIDS than whites. The state must respond aggressively to such discrepancies in health status. The $2 million biennial budget requested by DEHNR—$1 million for prevention and $1 million for treatment—would have given a much-needed boost to community-based programs addressing the AIDS epidemic. Governor Hunt left this out of his budget.

5 Local health departments should take further steps to include both minority staff and minority-community members in planning for health services. A major goal should be to make services more accessible to minority populations. The clientele of local health departments is heavily weighted toward minorities. Yet well over a third of the respondents to the Center's survey (37.5 percent) say they do not involve minorities or minority groups in their community diagnostic planning process used to identify health needs and plan a strategy for meeting those needs. Many others do not go outside the local health department for minority input and advice. This kind of insular planning neglects a local resource that could be applied to local problem-solving.

Some local health officials need to develop their listening skills. How can they tailor services and programs to the communities they serve when there is no dialogue? Those who listen likely will find that health department clientele need more convenient hours. Often, people who use health department services are the working poor who may not get paid time off to go to the doctor or take their child in for an immunization shot or other services.

Currently, the N.C. Administrative Code requires only that clinics offering immunization shots be offered at a time convenient to working parents at least once a month. At least 36 of the 86 local health departments already exceed this minimal requirement, according to the Center's survey of local health directors. All local health directors should examine whether they can offer a full range of health services at convenient hours.

6 Local health departments, in partnership with the state, should provide interpreter services in counties where the combined resident and migrant Hispanic population exceeds 2 percent of the total population or 5 percent of health department clientele. The legislature should appropriate $250,000 annually in matching funds for local health departments who meet these criteria and wish to hire additional bilingual staff. Health departments increasingly are serving Hispanic clientele with English language skills so limited they can't even tell health department personnel what sort of service they need. The problem has health directors scrambling for help with translation



Karen Tam

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Statistics, Department of Environment, Health, and Natural Resources, Raleigh, N.C., CHES Studies No. 89, January 1995, p. 4, table 6.

[7] N.C. Cancer Registry, 1988–1992 race and sex specific, age-adjusted mortality rates per 100,000 population. Standard = 1970 U.S. Census total.

[8] Cary Robertson, *et al.*, "Prostate Cancer in North Carolina," *North Carolina Medical Journal*, Vol. 53, No. 9 (September 1992), p. 447.

[9] N.C. Cancer Registry. See note 7 above.

[10] *Ibid.*

[11] *Ibid.*

[12] Jane Leserman, *In Sickness and In Health—The Status of Women's Health in North Carolina*, N.C. Equity, Raleigh, N.C., 1993, p. 84. Regarding cultural norms, in Eilene Z. Bizgrove, *et al.*, "Racial Differences in North Carolina Infant Mortality: An Analysis for the Identification of Prevention Strategies," Family Health International, Research Triangle Park, N.C., September 1994, the authors note that "while black women are usually sexually active earlier than white women, there is no evidence that black women have, on average, more sexual partners than white women." See p. 13 for this discussion.

[13] Souse is a pickled loaf made of pork trimmings.

[14] For more on this issue, see, "North Carolina Minority Health Facts: Hispanics/Latinos," State Center for Health and Environmental Statistics, N.C. Department of Environment, Health, and Natural Resources, November 1993, p. 1.

[15] *Ibid.*, pp. 2–3.

[16] For an estimate of the state's Hispanic migrant population and discussion of the need for interpreter services, see Laureen Lopez, "Interpreter Services for Hispanic/Latino Clients: Report and Recommendations," Office of Minority Health, Department of Environment, Health, and Natural Resources, Raleigh, N.C., September 1994, pp. 1 ff.

[17] National data on Hispanic health are taken from *The State of Hispanic Health*, National Coalition of Hispanic Health and Human Services Organizations, Washington, D.C., pp. 21–57.

[18] CHES data, 1988–1992.

[19] *Ibid.*

[20] Poverty rankings and population figures are based on the 1990 U.S. Census. Among the six counties with the highest poverty rates, only Swain in the far west and Tyrrell to the northeast were less than 50 percent black. Swain has a Native American population of 27 percent, and much of its land is owned by the federal government. Tyrrell has a black population of 40 percent.

[21] For a thorough discussion of the problem of the uninsured and underinsured, see Chris Conover and Mike McLaughlin, "Spreading the Risk and Beating the Spread: The Role of Insurance in Assuring Adequate Health Care," *North Carolina Insight*, Vol. 13, Nos. 3–4 (November 1991), pp. 21–47. See especially p. 30.

[22] Preliminary results placed North Carolina last in 1988, but the final tally had Georgia lower than North Carolina, says Robert Meyer, head of the Perinatal Epidemiology Branch, State Center for Health and Environmental Statistics, Department of Environment, Health, and Natural Resources.

[23] For more on this issue, see Robert E. Meyer, *et al.*, "Trends in Cause and Birthweight-Specific Infant Mortality in North Carolina, 1987–88 to 1991–92," State Center for Health and Environmental Statistics, N.C. Department of Environment, Health, and Natural Resources, Report No. 88, November 1994.

[24] Paul A. Buescher, *et al.*, "An Evaluation of the Impact of Maternity Care Coordination on Medicaid Birth Outcomes in North Carolina," *American Journal of Public Health*, Vol. 81, No. 12 (December 1991), pp. 1626–1627.

[25] For more on this topic, see Eilene Z. Bisgrove, *et al.*, "Racial Differences in North Carolina Infant Mortality: An Analysis for the Identification of Prevention Strategies," Family Health International, Research Triangle Park, N.C., Sept. 8, 1994, 44 pp. plus addenda.

[26] The statewide figure is based on a retrospective study of children who entered school in 1991. While the methodology was different, it is cited here for rough comparison purposes.

[27] By any of several measures, Hertford stands near the bottom among North Carolina counties. Its per capita income, at $9,016, ranked 90th among the state's 100 counties, according to the 1990 U.S. Census. The county's poverty rate, at 25 percent, was fifth highest in the state. For more on demographics and poverty, see Ken Otterbourg and Mike McLaughlin, "North Carolina's Demographic Destiny: The Policy Implications of the 1990 Census," *North Carolina Insight*, Vol. 14, No. 4 (August 1993), pp. 2–49. County-by-county rankings appear on pp. 17–20.

[28] Chapter 900 (H.B. 1340), sections 165 and 166 of the 1992 Session Laws.

[29] Office of Minority Health summary of comments offered at public hearings conducted in 1993 by the Minority Health Advisory Council.

[30] 15A N.C. Administrative Code 25.0201.

[31] While the survey was directed to local health directors, some delegated the responsibility of filling it out to nurse supervisors or health educators.

[32] For some questions, the response rate was lower because some local health directors left some questions blank.

[33] Transportation was not offered as an option. The eight health directors volunteered this information through the "other" category. Thus, the actual number of health departments offering transportation services may be higher.

[34] 15A NCAC 25.0214(3)(B)

[35] See Lopez, note 16 above, p. 4.

[36] Laureen M. Lopez, "An Assessment of Health Service Needs for the Hispanic/Latino Community in North Carolina," Office of Minority Health, N.C. Department of Environment, Health, and Natural Resources, Raleigh, N.C., October 1993, p. 10.

[37] *Ibid.*, p. 11.

CREDITS

Permission was granted by Stewart, Tabori & Chang, Publishers, New York, to reprint the following poems: "To Satch," by Samuel Allen; "4 1/2 Months: Halfway Song," by George Barlow; "Strangers Like Us: Pittsburgh, Raleigh, 1945–1985," by Gerald Barrax; and an excerpt from "Statistics" by Michelle Pakerson. These poems originally were published in In Search of Color Everywhere *copyright © 1994 E. Ethelbert Miller. The poem "Knoxville, Tennessee," by Nikki Giovanni, was reprinted from* Black Feeling, Black Talk, Black Judgement *copyright © 1968, 1970 by permission of William Morrow & Co. Inc.*

services. Hispanics represent only 4.6 percent of overall health department clientele, according to the Center's survey. Yet in areas where the language barrier looms, a small percentage of clientele are creating a major problem.

A plan has been developed within DEHNR that would provide $500,000 in the 1995 fiscal year to add interpreters in the 20 counties with the highest density of Hispanic population. In 1996–97, the plan would add the next 40 highest-density counties at a cost of $1 million.

The Center recommends a more modest approach. Local health departments should provide interpreter services in counties where the combined resident and migrant Hispanic population exceeds 2 percent of the total population or 5 percent of health department clientele. The legislature should appropriate $250,000 in renewable matching funds as a challenge grant for local health departments who meet the population density criteria and wish to hire additional bilingual staff.

The Center has two reasons for recommending this more modest approach: *(1)* fierce competition for health funding in the current political climate (health directors in the Center's survey rated translation services as only their sixth most pressing need in promoting health access); *(2)* many local health departments are addressing this issue and perhaps could do more with a little encouragement from the state. By appropriating matching funds for new personnel only, the legislature leverages limited funds and assures that it is getting increased effort, rather than merely substituting state dollars for local ones. The appropriation could be increased in future years if necessary to meet demand.

Of the 72 local health directors who responded to the Center's survey, 51 said they use a translator to ease the language barrier, and 29 said this individual was on staff. An additional 10 said they contract for translation services, and 12 said they use volunteers.

Still, there is evidence that the current efforts are not enough. Of the 18 health departments in counties with Hispanic populations exceeding 1 percent, three—Harnett, Henderson, and Onslow—indicated in the Center's survey that they do not provide translation services. Health directors in two other counties with significant Hispanic populations—Henderson and Orange—did not respond.

And the 1990 Census provides only a floor estimate of the state's Hispanic population. Migrant workers more than double the Hispanic population in some counties during harvest season and the number of Hispanics taking up permanent residence in the state increases every year. The language barrier clearly is a problem, and it is one that many local health departments are struggling to solve. Some departments clearly could work harder to address this problem. The state should encourage them to do so and provide the carrot of additional funding for counties that are willing to meet the state halfway.

* * *

These modest proposals alone will not cure the health gap. As Sen. Cochrane suggests, it's going to take the efforts of government and the private sector, churches and charities, and it's going to take a stronger North Carolina economy that lifts people out of poverty. The Center's recommendations represent only the first steps, and there are many steps to take to close the health gap between whites and minorities in North Carolina.

The trend toward addressing the health needs of minorities must continue and intensify. What is called for is greater inclusiveness that broadens health programming to reach out to minority communities that traditionally have faced access barriers to health care. The ultimate goal should be better health for all North Carolinians. But as the data make clear, minorities are a great deal further from that goal than the white majority.

FOOTNOTES

[1] Rachele Kanigel, "Racial disparity in infant deaths targeted," *The News & Observer*, Raleigh, N.C., Nov. 14, 1992, p. 1B.

[2] The health status of the North Carolina population is discussed in Ken Otterbourg, "How Healthy is North Carolina's Population?," *North Carolina Insight*, Vol. 14, No. 1 (May 1992), pp. 2–19. This was the second of two special theme issues of *North Carolina Insight* devoted to health care in North Carolina. The discrepancy in health outcomes between whites and minorities was a recurring theme in these two issues of *Insight*, leading the Center to launch a major research project on this topic alone.

[3] Mortality data were produced by the State Center for Health and Environmental Statistics in the Department of Environment, Health, and Natural Resources. With the exception of infant mortality, rates cited are averages per 100,000 citizens of a given race, based on five years of data collected between 1988 and 1992.

[4] *Chronic Disease in Minority Populations*, Centers for Disease Control and Prevention, Atlanta, Ga., 1992, pp. 2–16.

[5] Data on communicable disease rates were compiled by the State Center for Health and Environmental Statistics in the N.C. Department of Environment, Health, and Natural Resources. Rates were based on the average number of annual cases per 100,000 residents over a five-year period, 1988–92.

[6] Kathryn B. Surles, *Adolescent Health in North Carolina: The Last 15 Years*, State Center for Health and Environmental

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