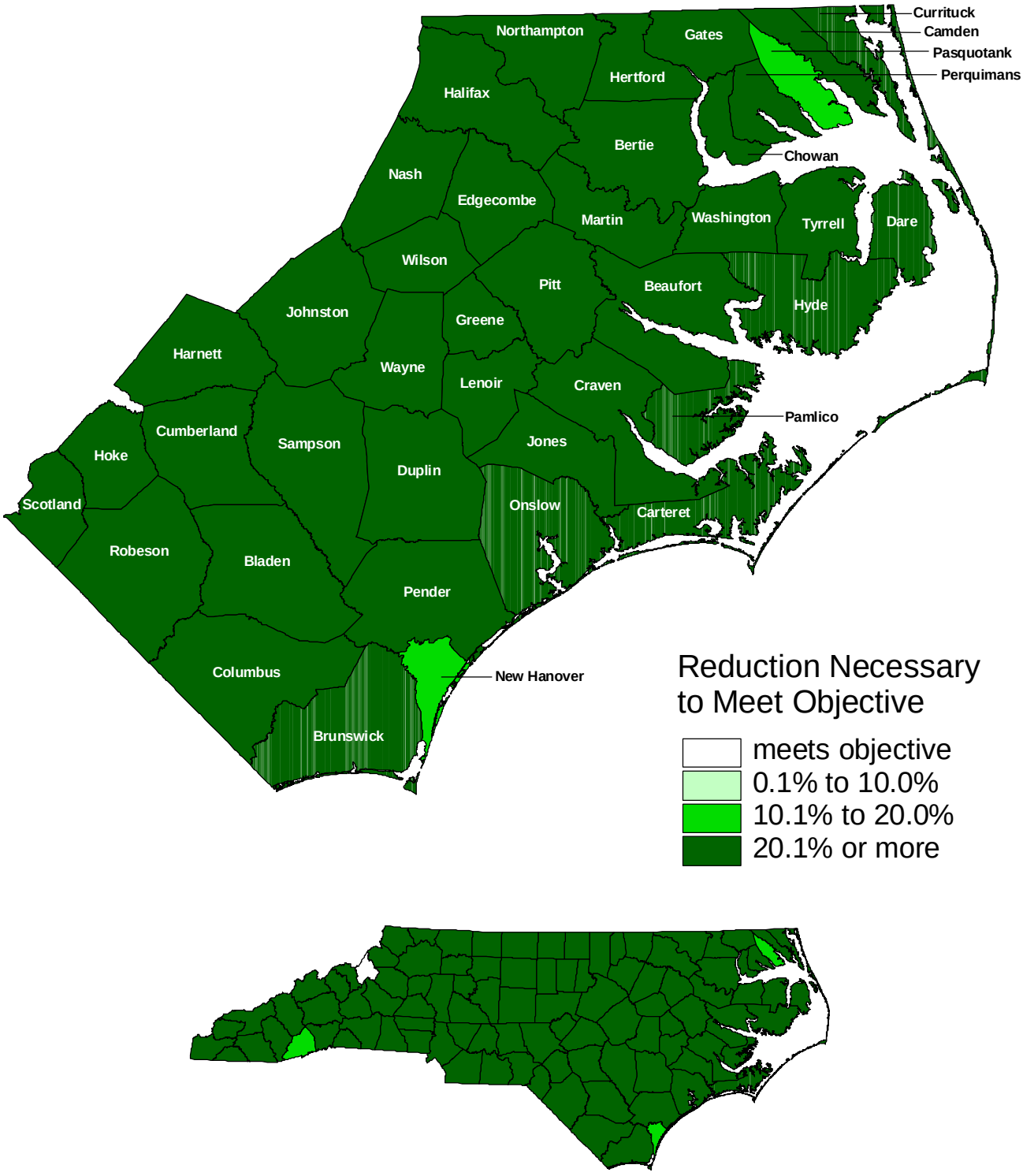
Motor Vehicle Traffic Injury

Map 11.1 Progress Towards Motor Vehicle Traffic Injury Mortality Objective



HP 2010 Objective for Motor Vehicle Traffic Injury Mortality:
Reduce motor vehicle traffic injury deaths to no more than
9.2 per 100,000 population

Motor Vehicle Traffic Injury ICD-9 Codes: E810-E819
Based on Five-Year Average, Age-Adjusted Rates Standardized to US 2000 SM

Data Source: NC State Center for Health Statistics

MOTOR VEHICLE TRAFFIC INJURY

Motor vehicle injuries (MVIs) account for approximately 50% of deaths due to unintentional injury in the United States (US). MVIs claimed more than 43,500 lives in 1998. As with other unintentional injuries, MVIs are a leading cause of permanent disability and premature mortality. The National Safety Council estimates that motor vehicles accidents cause one death every 13 minutes and a disabling injury every 14 seconds. The costs of lost wages and productivity, medical expenses, administrative expenses, damage to vehicles, and employer costs associated with MVIs were estimated to be more than $4.5 million dollars in 1998 alone.

The term MVIs includes both traffic and non-traffic injuries. Motor vehicle traffic injuries (MVTIs) include a broad array of accidents such as: two automobiles colliding; an automobile colliding with pedestrians, animals, and objects on or off the road; and accidents while boarding automobiles. Non-traffic motor vehicle injuries include motor vehicle accidents that occur off the roadways and accidents involving vehicles used for recreational or sporting activities off the highway. In this section, we present data on MVTIs that correspond to the Healthy People 2010 objective for reducing MVTI mortality.

MVI morbidity and mortality vary as a function of age, gender, and ethnicity. MVIs are the leading cause of death for people between the ages of 1 and 34. The two groups at greatest risk for MVI are people aged 15 to 24 and those over 75. Teenagers and young adults are at a high risk for MVI because of their lack of driving experience and tendency to engage in risky driving behaviors. Older adults are at risk for MVI because the effects of aging limit their ability to respond quickly to hazardous situations. Native Americans die from MVIs at a rate that is twice as high as the rate for whites, and males have a MVI death rate that is double the rate for women. Another factor that contributes to MVI is drunk driving. In 1998, 38% of all US traffic fatalities were alcohol-related.

Like other types of unintentional injuries, MVIs are preventable. The prevention of MVI morbidity and mortality can be achieved through a variety of interventions including: higher driver education standards for adolescents; enforcement of laws pertaining to seat belt use, child-restraints, speed limits, and drunk driving; development of automobile safety devices such as air bags; and improving the safety of roadways through better engineering and maintenance.

The *Healthy People 2000* objective of 14.2 MVTI deaths per 100,000 population was nearly achieved in 1998 when the nation death rate fell to 15.0 per 100,0000. However, disparities in MVTI mortality have persisted. Further progress will be necessary in order to reach the *Healthy People 2010* objective for MVTI death rate reduction and the elimination of disparities in MVTI mortality. In order to meet the national objective for MVTI by 2010, 39 of the 41 counties in eastern North Carolina (ENC) will have to reduce their current mortality rate by more than 20% (see Map 11.1).

HP 2010 OBJECTIVE FOR MOTOR VEHICLE TRAFFIC INJURY MORTALITY

Objective: Reduce motor vehicle traffic injury deaths to no more than 9.2 per 100,000 population

Baseline: 15.6 motor vehicle traffic injury deaths per 100,000 population in 1998

Currently, none of the counties in the region meet the objective for motor vehicle traffic injury mortality.

Crude Mortality Rates for Motor Vehicle Traffic Injury Mortality, 1994-1998:

ENC has a five-year average, crude MVTI mortality rate (25.0 per 100,000) that is 37% higher than the rate (18.3) for all other counties of the state (ONC) and 56% higher than the rate (16.0) for the US (see Table 11.1). The crude mortality rates for MVTI in Duplin (44.7), Sampson (41.8), and Robeson (40.4) counties are each more than twice as high as the rate for the state as a whole. Clusters of high crude MVTI mortality rates are in the northern and southern areas of the region (see Map 11.2).

Age-Adjusted Mortality Rates for Motor Vehicle Traffic Injury Mortality, 1994-1998:

ENC also has a high five-year average, age-adjusted MVTI mortality rate (24.9) as compared to ONC (18.1) and the US (16.0). In addition to having crude rates that are more than twice as high as the rate for the state, Duplin (45.4), Robeson (41.3), and Sampson (41.1) counties also have age-adjusted death rates that are more than double the rate for the state. As Map 11.2 shows, age-adjusted rates are high in most ENC counties.

Trends in Motor Vehicle Traffic Injury Mortality, 1979-1998:

As Figure 11.1 shows, age-adjusted MVTI mortality rates in ENC follow the national trend. The figure also shows that MVTI mortality rates are much higher for men than women. However, mortality rates have declined among men, while rates for women have increased. MVTI mortality rates for men in ENC will have to decline substantially in order to meet the national objective for MVTI mortality. For women, the trend towards increasing mortality will have to be reversed in order to meet the objective. Finally, 39 of the 41 counties in ENC will have to reduce their current mortality rate by more than 20% in order to meet the *Healthy People 2010* objective for MVTI mortality (see Map 11.1).

Disparities in Motor Vehicle Traffic Injury Mortality, 1979-1998:

Figure 11.2 and Map 11.3 show disparities in MVTI mortality by race and gender. As mentioned earlier, MVTI morality rates among men are significantly higher than rates for women. In ENC, the MVTI death rate for men exceeds the rate for women by 124%. Non-whites in ENC currently have an MVTI mortality rate that is 28% greater than the rate for whites. Figure 11.2 shows that racial disparities in MVTI mortality among men in ENC have remained stable in recent years, with the rate for non-white males exceeding the rate for white males by 46%. Among females in ENC, the racial disparity in mortality is increasing. Prior to the mid-1990s, white women in ENC had a higher MVTI mortality rate than non-white women. Beginning in the early 1990's, rates for non-white women in the east increased at a faster rate than the rate for whites. Currently, non-white women in ENC have MVTI mortality rate that is 10% greater than the rate for white women. This trend among women in ENC is similar to the trend for US women. The goal of eliminating disparities in MVTI mortality in ENC poses a significant public health challenge for ENC.

Table 11.1 Motor Vehicle Traffic Injury Mortality in Eastern North Carolina, 1994-1998

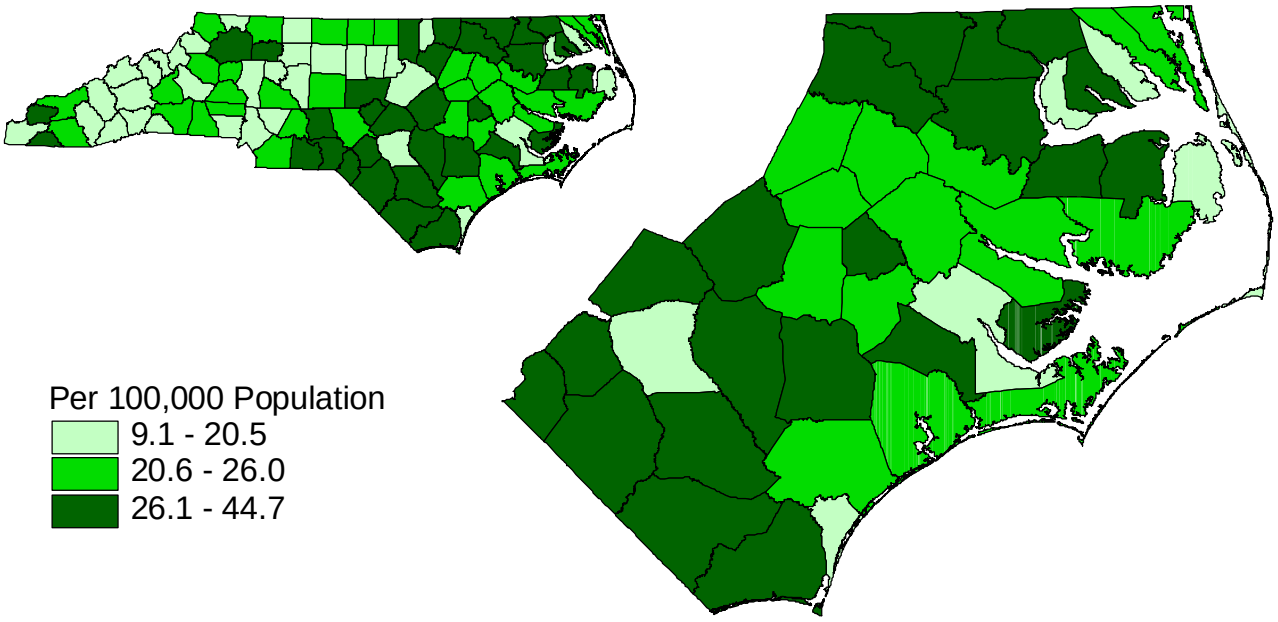
	Totals			Race-Gender Specific Age-Adjusted Death Rates							
		Rates		Non-White Males		Non-White Females		White Males		White Females	
County	Deaths	Crude	Adjusted	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate
Beaufort	56	25.9	26.4	12	42.2	14	37.7	23	32.8	7	8.0
Bertie	37	36.3	35.8	17	65.0	7	18.8	8	42.1	5	24.3
Bladen	50	33.3	33.1	13	48.2	11	32.5	14	32.6	12	22.6
Brunswick	91	28.9	29.3	15	65.6	4	13.9	44	36.8	28	22.1
Camden	8	25.4	25.4	4	111.9	0	0.0	3	21.8	1	10.0
Carteret	60	20.6	20.7	5	47.7	0	0.0	34	26.3	21	15.8
Chowan	12	17.0	16.4	2	17.4	2	13.4	4	18.8	4	15.5
Columbus	103	39.9	39.3	21	59.0	7	13.8	49	61.5	26	27.8
Craven	81	18.6	18.3	19	34.1	3	5.4	37	21.6	22	14.1
Cumberland	294	20.0	20.0	80	32.2	39	13.3	128	27.0	47	11.0
Currituck	19	23.4	22.7	1	20.3	1	23.3	12	33.4	5	12.9
Dare	22	16.6	18.0	2	64.2	0	0.0	16	30.7	4	6.6
Duplin	97	44.7	45.4	18	56.8	12	32.1	47	65.7	20	26.8
Edgecombe	61	21.8	22.3	20	32.3	11	11.5	13	24.4	17	29.2
Gates	19	38.6	37.5	6	66.7	3	28.9	9	61.6	1	4.9
Greene	30	34.9	35.4	9	48.8	2	11.1	13	50.8	6	23.4
Halifax	80	28.4	29.0	38	54.7	13	17.4	20	31.5	9	13.3
Harnett	111	28.0	28.3	25	72.8	6	12.2	53	37.2	27	17.0
Hertford	32	28.9	28.7	17	56.5	8	22.5	6	28.8	1	5.2
Hoke	46	32.7	32.4	17	40.2	9	22.7	8	27.5	12	45.1
Hyde	6	22.8	22.4	2	52.0	0	0.0	1	11.9	3	34.5
Johnston	142	28.6	28.7	12	34.0	11	24.3	79	39.6	40	18.6
Jones	15	32.6	31.1	4	56.3	2	19.4	6	44.6	3	18.5
Lenoir	64	21.7	21.3	19	34.9	7	9.9	23	27.8	15	13.5
Martin	27	21.0	20.7	10	43.0	7	22.0	8	24.0	2	3.6
Nash	106	24.7	24.8	35	53.2	11	14.9	42	30.2	18	11.6
New Hanover	75	10.5	10.2	11	16.9	5	6.4	37	13.3	22	6.8
Northampton	33	31.8	31.2	15	58.1	10	30.4	8	32.6	0	0.0
Onslow	161	21.7	22.2	25	23.7	15	18.9	79	24.5	42	20.0
Pamlico	18	30.2	31.4	5	86.8	2	23.7	6	23.9	5	25.6
Pasquotank	19	11.2	11.2	4	13.1	6	17.5	5	10.4	4	7.6
Pender	46	25.6	26.2	14	68.6	1	4.2	21	31.9	10	14.7
Perquimans	21	39.0	38.6	8	120.2	1	9.2	8	41.5	4	24.6
Pitt	127	21.2	21.7	29	33.7	13	12.6	57	30.2	28	13.8
Robeson	226	40.4	41.3	108	71.3	50	26.2	50	52.9	18	18.1
Sampson	108	41.8	41.1	31	81.1	11	21.7	44	54.5	22	24.3
Scotland	57	32.7	32.9	13	38.4	6	12.4	27	59.9	11	21.8
Tyrrell	6	32.4	35.1	1	25.4	2	58.5	1	16.6	2	40.8
Washington	21	31.1	31.7	11	69.0	4	23.5	3	18.9	3	14.9
Wayne	120	21.4	21.3	32	38.6	9	9.1	54	27.6	25	13.9
Wilson	82	24.0	23.8	21	38.2	10	13.0	38	38.0	13	11.9
ENC 29	1,440	23.9	23.6	391	42.1	175	15.9	584	28.9	290	14.4
ENC 41	2,789	25.0	24.9	751	45.0	335	16.6	1,138	30.8	565	15.0
ONC	4,647	18.3	18.1	680	30.9	320	12.0	2,333	23.8	1,314	12.1
PNC	3,468	17.7	17.6	610	30.8	293	12.1	1,641	22.8	924	11.7
WNC	1,179	20.2	19.8	70	31.3	27	11.1	692	26.5	390	13.4
NC	7,436	20.3	20.1	1,431	37.0	655	14.0	3,471	25.6	1,879	12.9
US, 1996	42,522	16.0	16.0	4,820	23.4	2,240	9.7	23,460	22.0	12,002	10.5

Motor Vehicle Traffic Injury ICD-9 Codes: E810-E819
Age-Adjusted Rates Standardized to US 2000 SM
Total Number of Deaths and Rates for Five-Year Period, except US

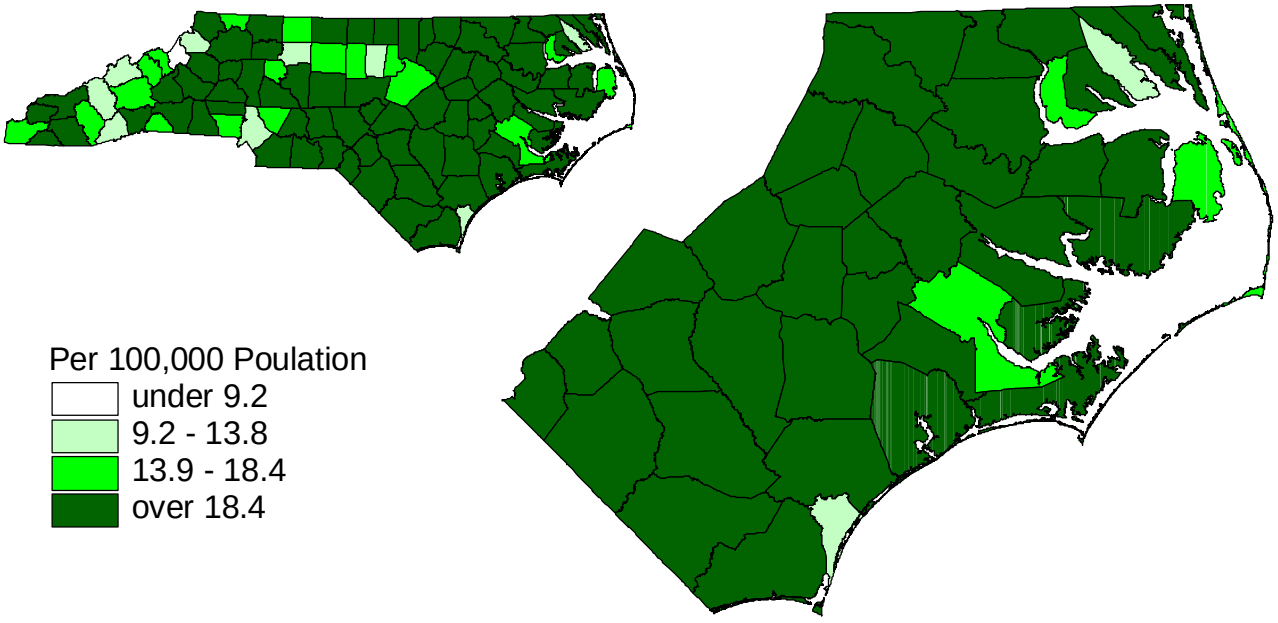
NC Data Source: NC State Center for Health Statistics
US Data Source: National Center for Health Statistics

Map 11.2 Crude and Age-Adjusted Motor Vehicle Traffic Injury Mortality Rates: North Carolina and Eastern North Carolina, 1994-1998

Crude Rate



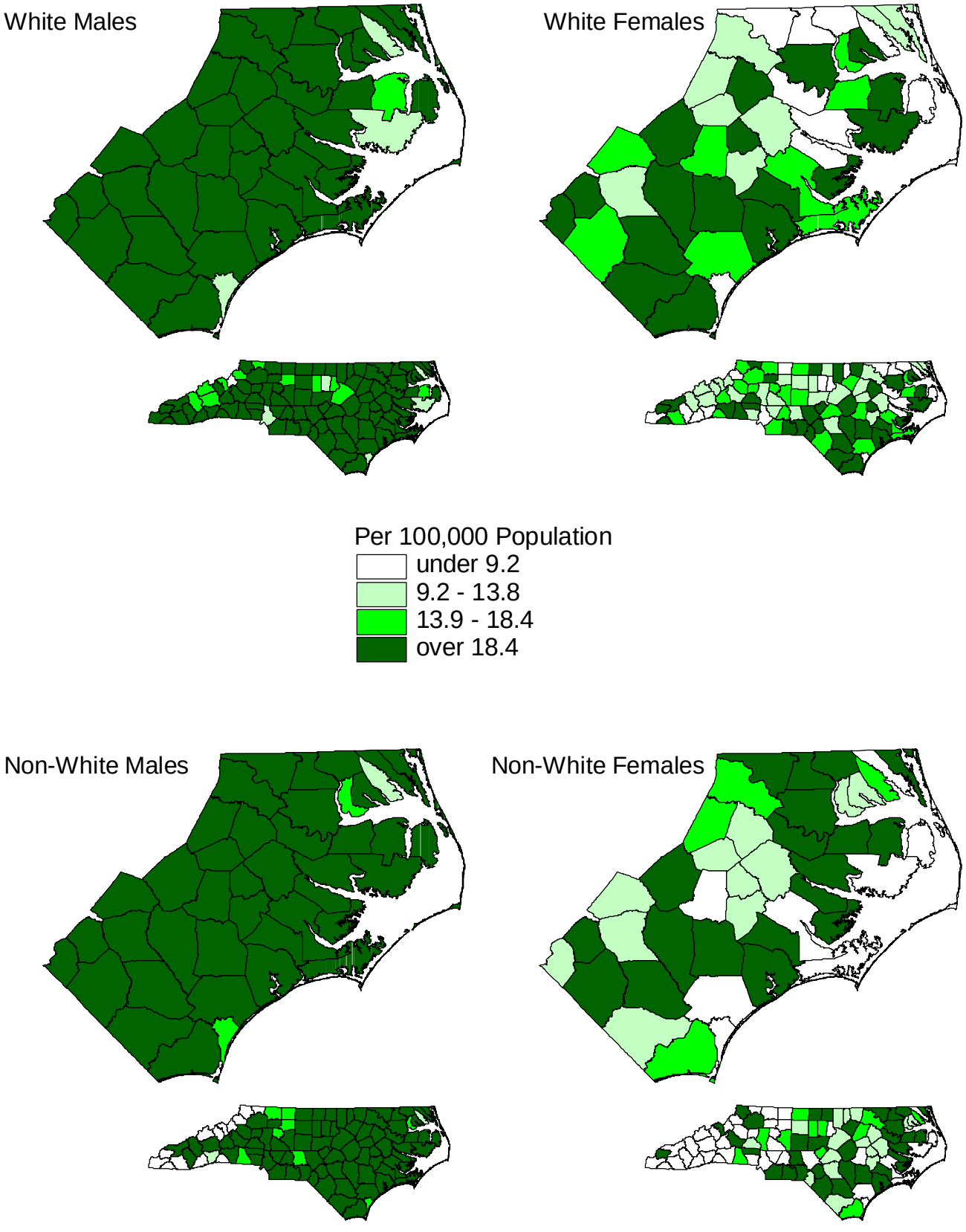
Age-Adjusted Rate



Motor Vehicle Traffic Injury ICD-9 Codes: E810-E819
Five-Year Average, Age-Adjusted Rates Standardized to US 2000 SM

Data Source: NC State Center for Health Statistics

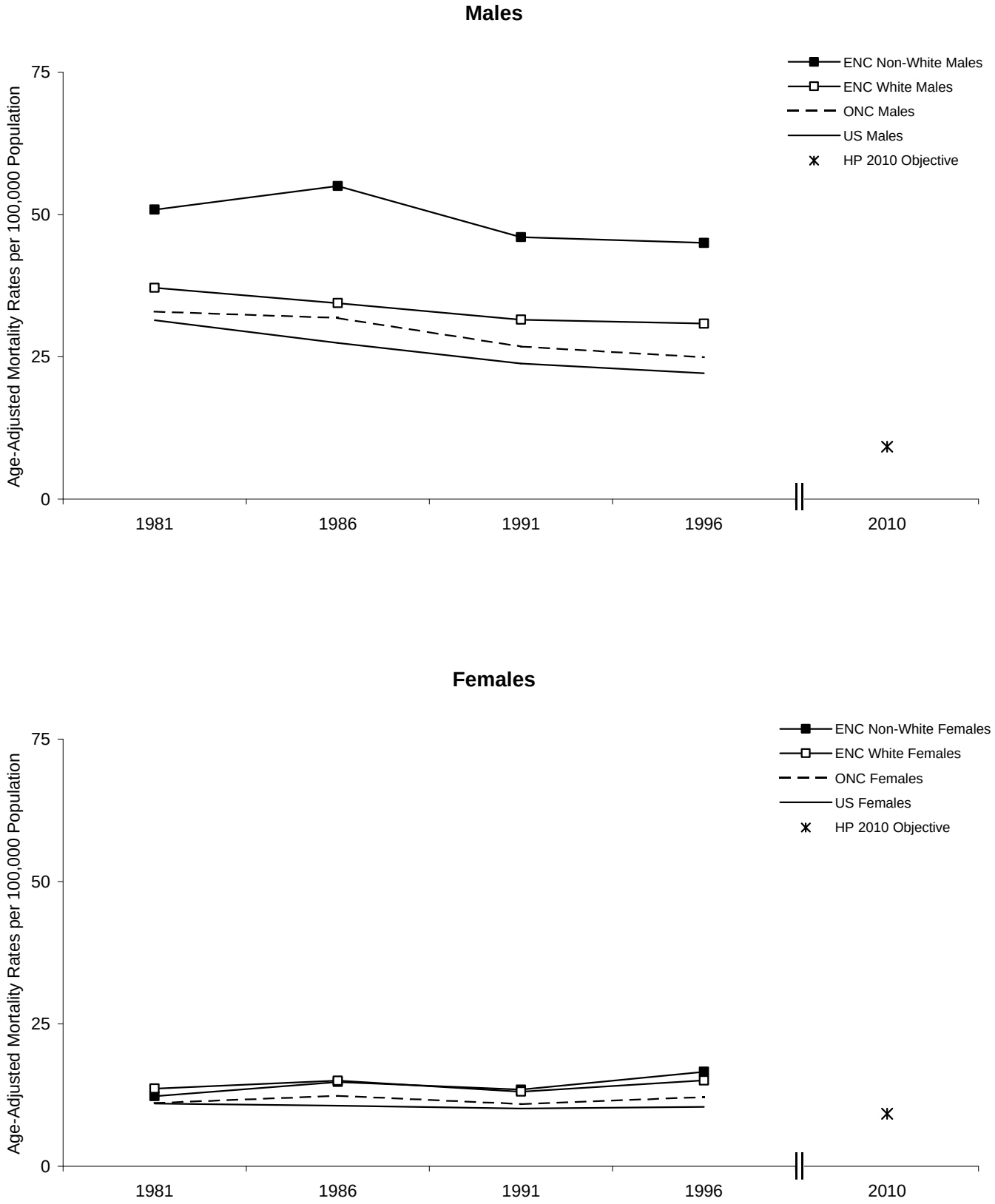
Map 11.3 Race-Gender Specific, Age-Adjusted Motor Vehicle Traffic Injury Mortality: North Carolina and Eastern North Carolina, 1994-1998



Motor Vehicle Traffic Injury ICD-9 Codes: E810-E819
Five-Year Average, Age-Adjusted Rates Standardized to US 2000 SM

Data Source: NC State Center for Health Statistics

Figure 11.1 Age-Adjusted Motor Vehicle Traffic Injury Mortality Rates by Gender: Regional and National Trends, 1979-1998



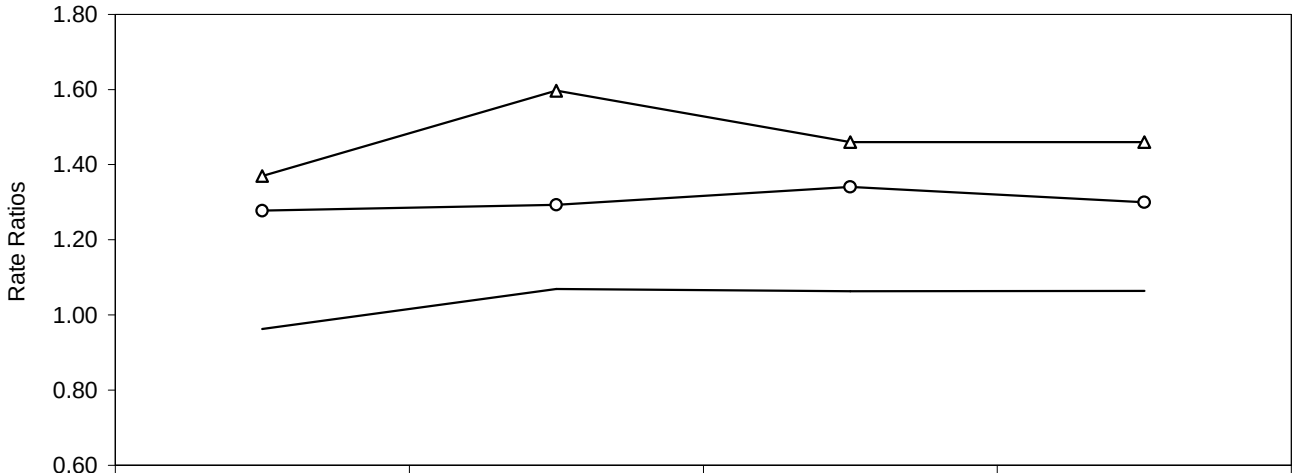
Motor Vehicle Traffic Injury ICD-9 Codes: E810-E819
Five-Year Average, Age-Adjusted Rates Standardized to US 2000 SM
US Rates for Middle Year of Five Year Periods

NC Data Source: NC State Center for Health Statistics
US Data Source: National Center for Health Statistics

Figure 11.2 Racial Disparities in Age-Adjusted Motor Vehicle Traffic Injury Mortality Rates by Gender: Regional and National Trends, 1979-1998

Males

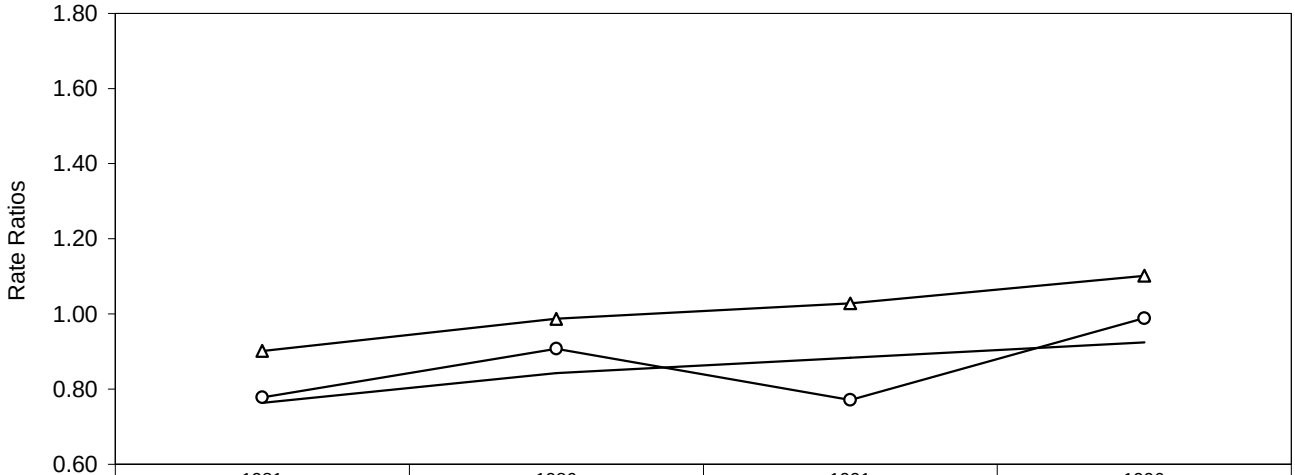
Non-White to White Rate Ratios



	1981	1986	1991	1996
ENC	1.37	1.60	1.46	1.46
ONC	1.28	1.29	1.34	1.30
US	0.96	1.07	1.06	1.06

Females

Non-White to White Rate Ratios



	1981	1986	1991	1996
ENC	0.90	0.99	1.03	1.10
ONC	0.78	0.91	0.77	0.99
US	0.76	0.84	0.88	0.92

Motor Vehicle Traffic Injury ICD-9 Codes: E810-E819
Based on Five-Year Average, Age-Adjusted Rates Standardized to US 2000 SM
US Rates for Middle Year of Five Year Periods

NC Data Source: NC State Center for Health Statistics
US Data Source: National Center for Health Statistics

SOURCES OF INFORMATION ABOUT MOTOR VEHICLE TRAFFIC INJURY

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Centers for Disease Control and Prevention
(http://www.cdc.gov)

Healthy People 2010
(http://web.health.gov/healthypeople)

National Center for Health Statistics
(http://www.cdc.gov/nchs)

National Center for Injury Prevention and Control
Centers of Disease Control and Prevention
(http://www.cdc.gov/ncipc)

National Safety Council
(http://www.nsc.org)

North Carolina Center for Health Statistics
(http://www.schs.state.nc.us/SCHS)

Appendix K

ICD-9 Codes for Motor Vehicle Traffic Injury

E810: Motor vehicle traffic accident involving collision with train
E811: Motor Vehicle Traffic Accident involving Re-entrant Collision with Another Motor Vehicle
E812: Other motor vehicle traffic accident involving collision with motor vehicle
E813: Motor vehicle traffic accident involving collision with other vehicle
E814: Motor vehicle traffic accident involving collision with pedestrian
E815: Other motor vehicle traffic accident involving collision on the highway
E816: Motor vehicle traffic accident due to loss of control, without collision on the highway
E817: Noncollision motor vehicle traffic accident while boarding or alighting
E818: Other noncollision motor vehicle traffic accident
E819: Motor vehicle traffic accident of unspecified nature