



# The ASTHMA EPIDEMIOLOGY *Update*

Spring/Summer 2008

## Asthma in Selected North Carolina Counties and Regions

### Introduction

In 2007, about 12.1% of adults (829,526) in North Carolina had been diagnosed with asthma at some point in their lives (lifetime asthma prevalence) and about 7.8% (534,735) still had this chronic condition (current asthma prevalence). The U.S. lifetime and current prevalence rates are 11.6% (34,131,580) and 7.8% (22,875,985), respectively, for 2006 (latest data available).<sup>1</sup> In 2006, asthma was responsible for 10,532 hospitalizations in North Carolina, resulting in a rate of 118.9 per 100,000 population, compared to the 2005 national rate of 166 per 100,000 (most recent data available).<sup>1</sup>

This issue of *The Asthma Epidemiology Update* provides data on North Carolina asthma prevalence (adults 18+ years) for selected counties, geographic and Area Health Education Center (AHEC) regions, and hospitalizations (adults and children).

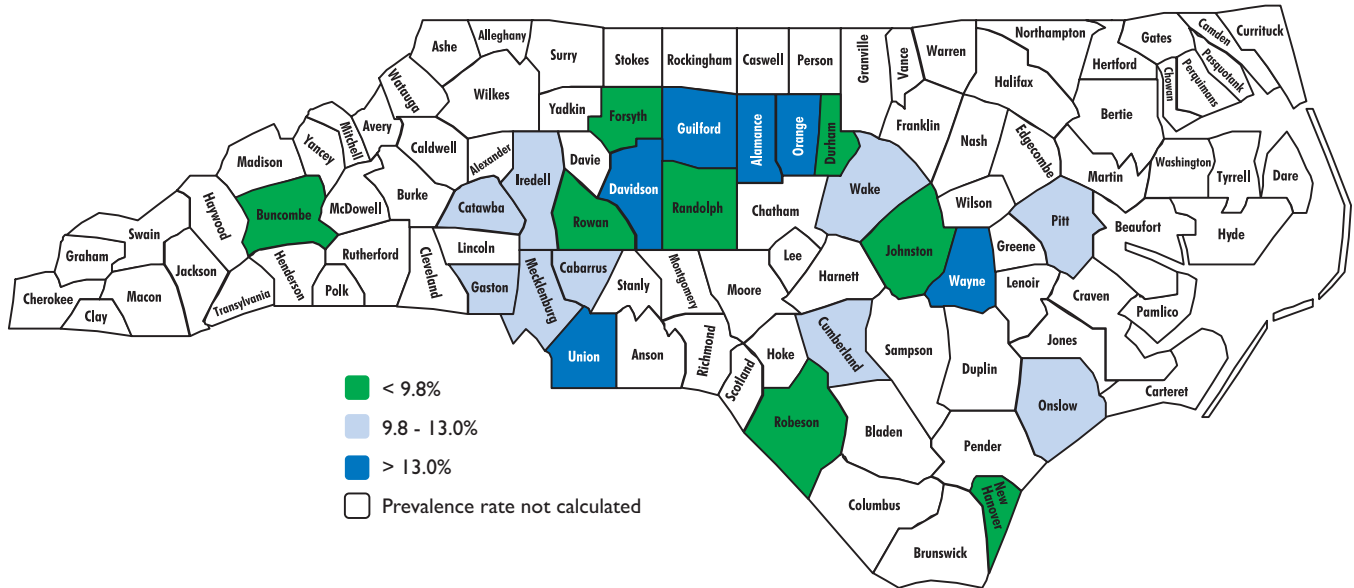
### Asthma Prevalence

The sampling scheme for the 2007 North Carolina Behavioral Risk Factor Surveillance System Survey (BRFSS) allows for county-level estimates for 23 of the state's largest counties. The results for these counties are shown on pages 2 and 3.

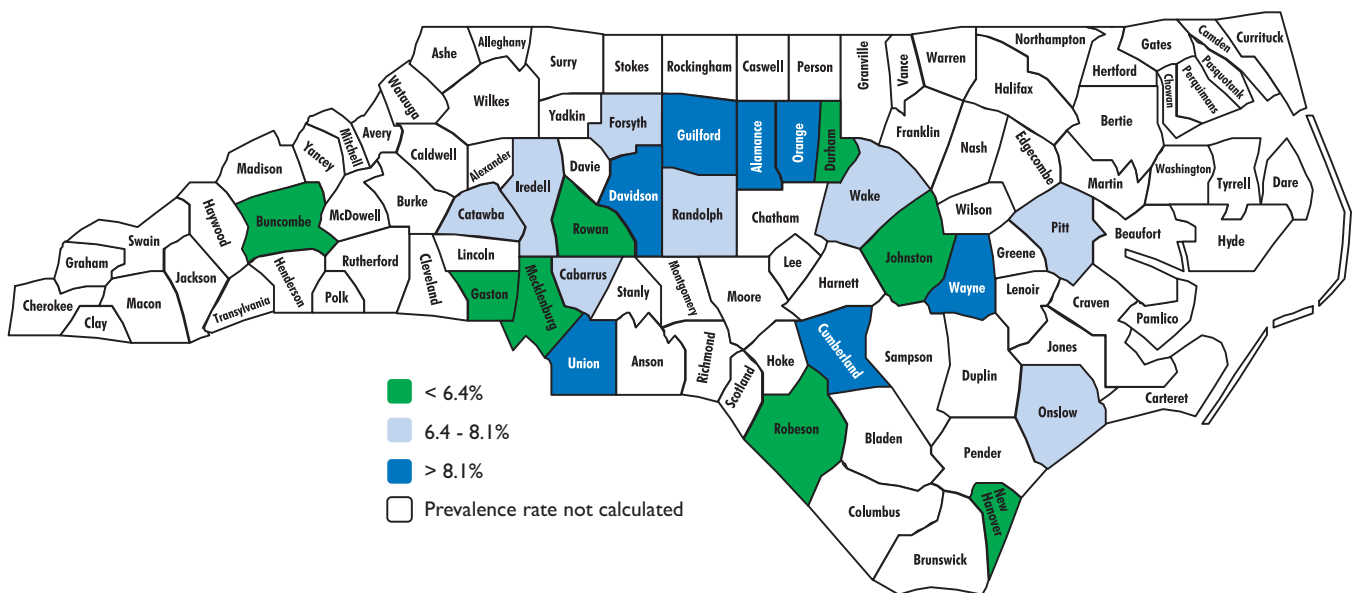
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<sup>1</sup>Source: American Lung Association. Trends in Asthma Morbidity and Mortality, November 2007.

## Lifetime Asthma among Adults, Selected NC Counties, 2007



## Current Asthma among Adults, Selected NC Counties, 2007



## Lifetime and Current Asthma among Adults Ages 18+ Years, by County and Region, North Carolina, 2007

	Percent	95% CI*	Estimated Number of People with Lifetime Asthma	Percent	95% CI*	Estimated Number of People with Current Asthma
<b>North Carolina</b>	12.1	11.2 - 13.0	829,526	7.8	7.2 - 8.6	534,736
<b>COUNTIES</b>						
Alamance	14.2	9.9 - 19.9	15,222	10.5	7.0 - 15.5	112,256
Buncombe	8.6	5.8 - 12.6	15,343	5.8	3.6 - 9.4	10,348
Cabarrus	11.7	8.0 - 16.7	14,074	7.9	5.1 - 12.2	9,503
Catawba	10.8	7.8 - 14.7	12,530	7.1	4.8 - 10.3	8,237
Cumberland	12.7	9.0 - 17.7	28,673	9.4	6.1 - 14.2	21,223
Davidson	14.2	9.0 - 21.6	16,937	8.3	5.1 - 13.0	9,900
Durham	7.1	4.5 - 11.0	13,563	3.9	2.2 - 6.9	7,450
Forsyth	9.5	6.3 - 14.0	24,212	6.4	4.0 - 9.9	16,311
Gaston	11.6	7.5 - 17.3	17,758	6.3	3.8 - 10.2	9,644
Guilford	15.1	10.9 - 20.6	52,438	8.3	5.6 - 12.2	28,823
Iredell	11.1	7.0 - 17.1	12,464	6.5	3.6 - 11.6	7,299
Johnston	9.0	5.6 - 14.2	10,331	5.1	3.0 - 8.5	5,854
Mecklenburg	10.4	7.9 - 13.5	66,185	5.9	4.3 - 8.1	37,547
New Hanover	8.8	5.6 - 13.6	13,168	5.6	3.1 - 9.7	8,380
Onslow	12.7	9.0 - 17.7	15,670	7.1	4.6 - 10.8	8,760
Orange	16.3	10.4 - 24.7	16,273	10.6	5.6 - 19.3	10,583
Pitt	11.8	8.7 - 15.9	13,466	7.9	5.3 - 11.6	9,015
Randolph	9.0	6.3 - 12.7	9,521	6.6	4.3 - 9.9	6,982
Robeson	9.4	6.5-13.4	8,809	5.8	3.6 - 9.3	5,435
Rowan	7.6	4.8 - 11.7	7,835	5.1	3.1 - 8.3	5,258
Union	13.3	8.5 - 20.1	17,337	10.4	6.0 - 17.2	13,557
Wake	10.2	7.1 - 14.4	62,158	6.4	4.0 - 10.1	39,001
Wayne	14.1	9.8 - 19.9	12,066	10.3	6.5 - 15.8	8,814
<b>NC REGIONS**</b>						
Eastern NC	11.8	10.4 - 13.4		7.7	6.5 - 9.1	
Piedmont	12.0	10.8 - 13.3		7.6	6.7 - 8.6	
Western NC	12.9	11.3 - 14.7		9.1	7.7 - 10.7	
<b>AREA HEALTH EDUCATION CTRS. (AHEC)</b>						
Mountain AHEC	12.8	10.8 - 15.0		8.8	7.2 - 10.8	
Northwest	11.9	10.1 - 14.0		8	6.5 - 9.8	
Charlotte	11.4	9.5 - 13.7		7	5.7 - 8.7	
Greensboro	14.6	12.2 - 17.5		9.4	7.5 - 11.6	
Southern Regional	11.9	9.7 - 14.6		8	6.1 - 10.4	
Coastal	11.1	7.1 - 17.0		8.3	1.6 - 14.4	
Wake	11.3	8.8 - 14.3		6.9	5.0 - 9.4	
Area L	13.2	9.3 - 18.4		9.1	5.8 - 13.9	
Eastern	11.6	9.7 - 13.8		7.2	5.8 - 8.8	

**Source:** North Carolina State Center for Health Statistics, North Carolina Behavioral Risk Factor Surveillance System, 2007. Percentages are weighted.

\* **CI** - Confidence Interval (is a range of values within which there is a 95% chance that the true prevalence estimate lies)

\*\* **Eastern North Carolina:** Beaufort, Bertie, Bladen, Brunswick, Camden, Carteret, Chowan, Columbus, Craven, Cumberland, Currituck, Dare, Duplin, Edgecombe, Gates, Greene, Halifax, Harnett, Hertford, Hoke, Hyde, Johnston, Jones, Lenoir, Martin, Nash, New Hanover, Northampton, Onslow, Pamlico, Pasquotank, Pender, Perquimans, Pitt, Robeson, Sampson, Scotland, Tyrrell, Washington, Wayne, and Wilson counties.

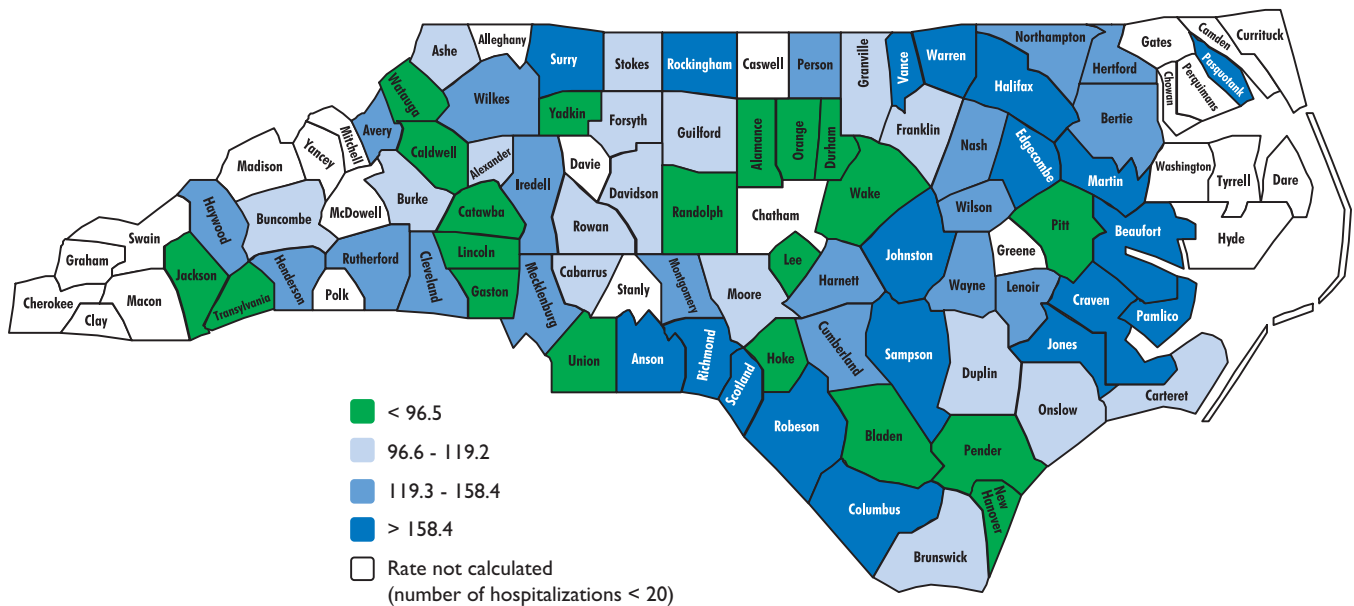
**Piedmont North Carolina:** Alamance, Alexander, Anson, Cabarrus, Caswell, Catawba, Chatham, Cleveland, Davidson, Davie, Durham, Forsyth, Franklin, Gaston, Granville, Guilford, Iredell, Lee, Lincoln, Mecklenburg, Montgomery, Moore, Orange, Person, Randolph, Richmond, Rockingham, Rowan, Stanly, Stokes, Union, Vance, Wake, Warren, and Yadkin counties.

**Western North Carolina:** Alleghany, Ashe, Avery, Buncombe, Burke, Caldwell, Cherokee, Clay, Graham, Haywood, Henderson, Jackson, McDowell, Macon, Madison, Mitchell, Polk, Rutherford, Surry, Swain, Transylvania, Watauga, Wilkes, and Yancey counties.

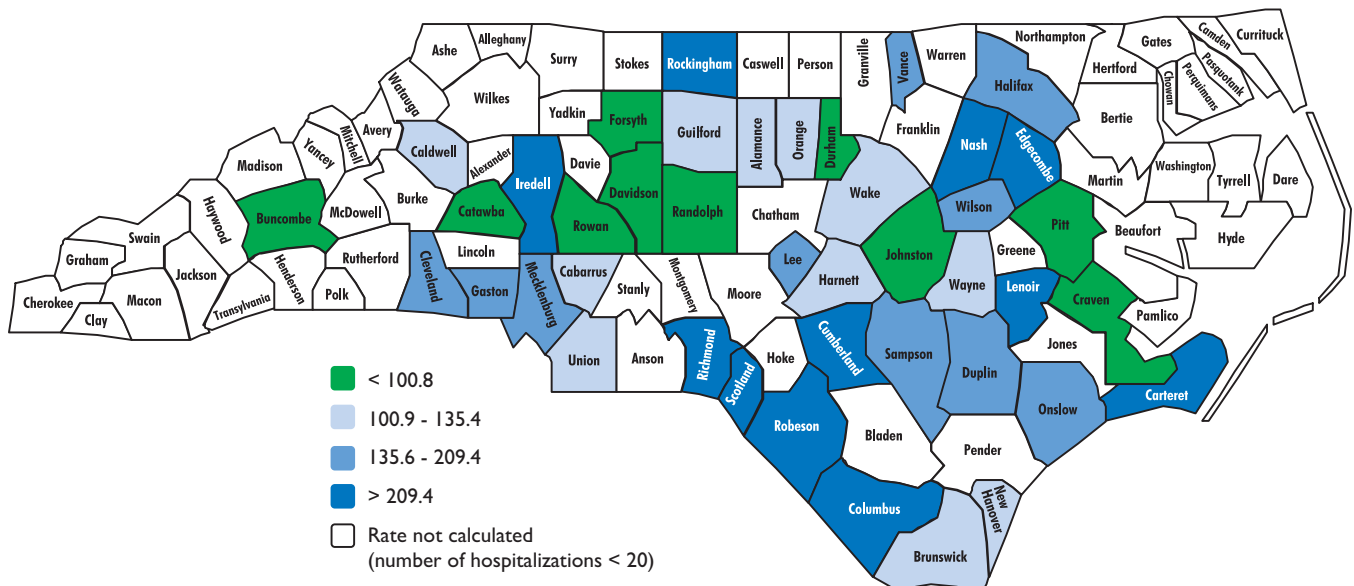
## Hospitalizations Due To Asthma

Hospitalization data are provided for all 100 N.C. counties, although age-specific crude rates are calculated only if there are 20 or more cases for a particular county. Maps include data for only those counties with 20 or more hospitalizations.

### Hospitalizations Per 100,000 Population Due to Asthma, Adults 18+ Years, 2006



### Hospitalizations Per 100,000 Population Due to Asthma, Children <18 Years, 2006



## Hospitalizations Due to Asthma Per 100,000 Population, by County and Age Group, North Carolina, 2006

COUNTY	Number of Hospitalizations		Age-specific Crude Rate*		COUNTY	Number of Hospitalizations		Age-specific Crude Rate*	
	0-17	18+	0-17	18+		0-17	18+	0-17	18+
<b>North Carolina</b>	<b>2,867</b>	<b>7,655</b>	<b>133.4</b>	<b>114.2</b>					
Alamance	38	84	111.7	79.4	Johnston	29	180	71.5	162.1
Alexander	16	31	*	112.3	Jones	2	25	*	315.4
Alleghany	0	3	0	*	Lee	22	26	157	63
Anson	10	66	*	343	Lenoir	41	64	290.1	145.3
Ashe	11	23	*	110.7	Lincoln	8	49	*	90.5
Avery	2	23	*	154	McDowell	3	19	*	*
Beaufort	7	66	*	183.1	Macon	5	15	*	*
Bertie	4	21	*	142.2	Madison	1	16	*	*
Bladen	11	21	*	84.84	Martin	13	81	*	435.5
Brunswick	23	83	121.5	109.2	Mecklenburg	315	737	147.8	120.1
Buncombe	26	188	55.3	107.9	Mitchell	1	6	*	*
Burke	11	73	*	107.3	Montgomery	8	32	*	154.1
Cabarrus	53	137	127.5	118.5	Moore	7	73	*	112.3
Caldwell	24	58	132.5	94.8	Nash	52	107	227.8	154.2
Camden	2	9	*	*	New Hanover	41	98	108.2	67
Cartaret	25	51	215.3	98.2	Northampton	4	25	*	149.4
Caswell	2	10	*	*	Onslow	81	143	204.1	117.7
Catawba	22	75	59.4	65.7	Orange	28	62	111.3	62.9
Chatham	12	18	*	*	Pamlico	0	22	0	206.1
Cherokee	2	19	*	*	Pasquotank	19	59	*	192.3
Chowan	2	12	*	*	Pender	12	35	*	91.5
Clay	0	4	0	*	Perquimans	6	19	*	*
Cleveland	43	96	179.1	132	Person	14	40	*	139.2
Columbus	31	69	231.2	167.3	Pitt	24	72	69.2	64.4
Craven	21	123	93.5	168.3	Polk	0	5	0	*
Cumberland	178	282	214.8	126.1	Randolph	32	65	93.6	62.3
Currituck	2	16	*	*	Richmond	43	77	364.9	220.5
Dare	5	11	*	*	Robeson	165	266	451.2	287.6
Davidson	33	131	88.8	110.8	Rockingham	56	178	270.2	250.3
Davie	6	17	*	*	Rowan	20	119	61.1	116.9
Duplin	28	45	203.5	115.5	Rutherford	17	69	*	142
Durham	56	164	94.4	87.5	Sampson	34	76	203.2	160.6
Edgecombe	42	73	314	185.9	Scotland	23	87	233.5	320.5

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Forsyth	71	247	87	98.7	Stanly	18	18	*	*
Franklin	15	46	*	111.2	Stokes	6	35	*	98.8
Gaston	81	137	172.2	91.2	Surry	18	99	*	177.6
Gates	3	5	*	*	Swain	9	15	*	*
Graham	3	3	*	*	Transylvania	2	20	*	81.3
Granville	17	49	*	118.5	Tyrrell	2	1	*	*
Greene	6	13	*	*	Union	56	80	114.4	65
Guilford	116	347	107.3	101.8	Vance	21	83	176.1	259.4
Halifax	27	111	199.7	263.8	Wake	228	400	111.4	68.3
Harnett	33	93	120.5	121.8	Warren	3	40	*	255.5
Haywood	13	66	*	145.8	Washington	8	13	*	*
Henderson	18	104	*	131.1	Watauga	9	35	*	94.7
Hertford	9	23	*	124.5	Wayne	37	113	124.8	132.5
Hoke	15	23	*	78.3	Wilkes	19	81	*	156.1
Hyde	0	15	0	*	Wilson	27	78	138.2	134.7
Iredell	88	163	237.1	150.8	Yadkin	4	25	*	87
Jackson	10	28	*	94.5	Yancey	1	7	*	*

**Source:** North Carolina State Center for Health Statistics, 2006. Newborns were not included.

\* Rates are not calculated when number of hospitalizations is less than 20.

## Future Topics

Other data from the 2007 North Carolina Behavioral Factor Surveillance System (BRFSS) and the 2007 North Carolina Childhood Health Assessment and Monitoring Program (CHAMP) will be available later this year. This will allow us to provide additional information on adult behavioral risk factors, and asthma management and control, as well as on childhood asthma. We continue to explore other sources of surveillance data and will share asthma-related information of interest with you. As always, we welcome your comments and suggestions on this issue and for future topics (please contact the North Carolina Asthma Program at 919-707-5213).



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