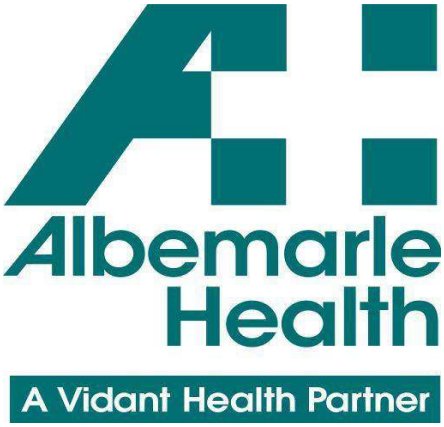
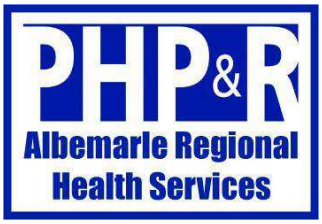
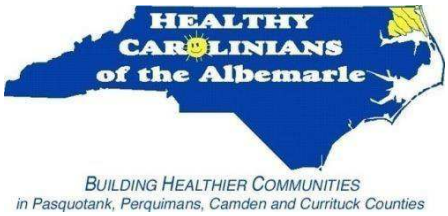
Vidant Bertie Hospital's 2013 Community Health Needs Assessment







Community Health Assessment funding provided by:

Albemarle Regional Health Services

Albemarle Health

The Outer Banks Hospital

Vidant Bertie Hospital

Vidant Chowan Hospital

May 2013

Dear Community Member,

Thank you for taking the time to review the 2013 Community Health Assessment for our area. Albemarle Regional Health Services and Vidant Bertie Hospital are proud to partner and provide this comprehensive report which illustrates the health status, health needs and improvements, as well as health resources in our community. This document represents months of diligent work by health department staff, hospital staff, and community members like you.

We have continued to work together throughout the past several years to develop and implement strategies to target needs identified in the **2010** CHA process. These efforts have resulted in more positive health outcomes in our communities and we are pleased to include areas of improvement in this report.

Moving forward, we will use this report to guide us in developing and implementing strategies and engaging partners to address the current needs identified in the 2013 process.

We would like to thank each person, organization, and agency that has helped with this process. The health of a community starts with you.

Best of health,

Jerry L. Parks, MPH
Health Director
Albemarle Regional Health Services

Jeffrey N. Sackrison
President
Vidant Bertie Hospital

ACKNOWLEDGMENTS

The Community Health Assessment (CHA) process requires much work and dedication from those who are committed to identifying and solving health problems within our communities to improve the quality of life for our residents. The first phase of this process is forming a CHA Leadership Team. It is essential that the CHA Team involve people who have significant influence in the county, as well as the people who are most affected by health problems. People from throughout the county must be mobilized during this process, therefore a broad representation of county residents, agencies, and organizations were invited to be a part of this team.

Orientation Meeting, June 22, 2012
Pasquotank County Health Department, Elizabeth City

Attendance:

1. Lisa Spry, Albemarle Regional Health Services, Health Educator
2. Ashley Mercer, Albemarle Regional Health Services, Health Educator
3. Amanda Betts, Albemarle Regional Health Services, Healthy Carolinians of the Albemarle Coordinator
4. Robin Harris, College of the Albemarle, Division Chair - Health Sciences and Wellness Programs
5. Megan Booth-Mills, Vidant Bertie Hospital and Vidant Chowan Hospital, Director of Planning & Marketing
6. Toby Chappell, Gates County Manger
7. Frank Heath, Perquimans County Manager
8. Jill Jordan, Albemarle Regional Health Services, Health Education Director and Public Information Officer
9. Christine Ransdell, Albemarle Regional Health Services, Regional Coordinator for NC Heart Disease & Stroke Prevention Program
10. Wesley Nixon, Albemarle Regional Health Services, Environmental Health Specialist
11. Juanita Johnson, Albemarle Health, Case Manager for Community Care Clinic
12. Leah Mayo, Albemarle Regional Health Services, Community Transformation Grant Project
13. Kim Ruiz, Albemarle Regional Health Services, Community Transformation Grant Project
14. Yvonne Mullen, Pasquotank Cooperative Extension Agent, Family and Consumer Sciences
15. Amy Underhill, Albemarle Regional Health Services, Health Promotion Coordinator and Healthy Carolinians of the Albemarle Chair
16. Fannie Parker, Bertie County EMPOWER! Diabetes Program
17. Joanna Rascoe
18. Dana Hamill, Albemarle Regional Health Services, Lead Regional CHA Coordinator and Health Educator
19. Arina Boldt, Albemarle Health, Manager of Healthy Communities
20. Pam Etheridge, Albemarle Health, Community Health Nurse
21. Bonnie Brown, Albemarle Health, Health Promotion Coordinator

Primary Data Collection Plan Meeting, August 31, 2012
Pasquotank County Health Department, Elizabeth City

Attendance:

1. Dana Hamill, Albemarle Regional Health Services, Lead Regional CHA Coordinator and Health Educator
2. Donna Godfrey, Perquimans County, Planning and Zoning
3. Lisa Spry, Albemarle Regional Health Services, Health Educator
4. Brigit Schultz, College of the Albemarle, Nursing Student
5. Fannie Parker, Bertie County EMPOWER! Diabetes Program
6. Robin Harris, College of the Albemarle, Division Chair - Health Sciences and Wellness Programs
7. Kim Ruiz, Albemarle Regional Health Services, Community Transformation Grant Project
8. Shirley Taylor, Bertie County EMPOWER! Diabetes Program
9. Wes Gray, Albemarle Regional Health Services, Community Transformation Grant Project
10. Megan Booth-Mills, Vidant Bertie Hospital & Vidant Chowan Hospital, Director of Planning & Marketing
11. Beverly Venters, Vidant Chowan Hospital, Nurse
12. Amanda Betts, Albemarle Regional Health Services, Healthy Carolinians of the Albemarle Coordinator
13. Yvonne Mullen, Pasquotank Cooperative Extension Agent, Family and Consumer Sciences
14. Tanya Miller, Albemarle Health, Stroke Program Coordinator
15. Amy Underhill, Albemarle Regional Health Services, Health Promotions Coordinator and Healthy Carolinians of the Albemarle Chair
16. Dana Boslau, Albemarle Regional Health Services, Director of Nursing
17. Nancy Morgan, Albemarle Regional Health Services, Three Rivers Healthy Carolinians Coordinator
18. Jill Jordan, Albemarle Regional Health Services, Health Education Director and Public Information Officer
19. Ashley Stoop, Albemarle Regional Health Services, Preparedness Coordinator
20. Sylvia Boone, Albemarle Health, Case Manager for Community Care Clinic
21. Juanita Johnson, Albemarle Health, Case Manager for Community Care Clinic
22. Bonnie Brown, Albemarle Health, Health Promotion Coordinator
23. Arina Boldt, Albemarle Health, Manager of Healthy Communities
24. Pam Etheridge, Albemarle Health, Community Health Nurse
25. Christine Ransdell, Albemarle Regional Health Services, Regional Coordinator for NC Heart Disease & Stroke Prevention Program
26. Amy Montgomery, The Outer Banks Hospital, Director, Community Outreach (via conference call)
27. Wesley Nixon, Albemarle Regional Health Services, Environmental Health Specialist

Primary Data Collection Plan Meeting, October 5, 2012
Pasquotank County Health Department, Elizabeth City

Attendance:

1. Yvonne Mullen, Pasquotank Cooperative Extension Agent, Family and Consumer Sciences
2. Esther Lassiter, Albemarle Regional Health Services, Gates Partners for Health Coordinator
3. Dana Hamill, Albemarle Regional Health Services, Lead Regional CHA Coordinator and Health Educator
4. Arina Boldt, Albemarle Health, Manager of Healthy Communities

5. Crystal Terry, Elizabeth City State University, Adjunct Professor in the Department of Health and Physical Education
6. Brent Jones, Bertie Recreation Department, Recreation Program Coordinator
7. Megan Booth-Mills, Vidant Bertie Hospital and Vidant Chowan Hospital, Director of Planning & Marketing
8. Nancy Morgan, Albemarle Regional Health Services, Three Rivers Healthy Carolinians Coordinator
9. Ashley Stoop, Albemarle Regional Health Services, Preparedness Coordinator
10. Tanya Miller, Albemarle Health, Stroke Program Coordinator
11. Wesley Nixon, Albemarle Regional Health Services, Environmental Health Specialist

Pasquotank County Community Health Opinion Survey Training, October 16, 2012
Owens Center, College of the Albemarle, Elizabeth City
Matt Simon

In Attendance:

1. Wendy Ward, College of the Albemarle, Student
2. Oksana Karitskaya, College of the Albemarle, Student
3. Amanda Easley, College of the Albemarle, Student
4. Patricia Mountjay, College of the Albemarle, Student
5. Yvonne Mullen, Pasquotank Cooperative Extension Agent, Family and Consumer Sciences
6. Lindy Cartwright, College of the Albemarle, Student
7. Heather Lawrence, East Carolina University, Graduate Student
8. Gayle Olson, Albemarle Regional Health Services, Asthma Nurse
9. Wes Gray, Albemarle Regional Health Services, Community Transformation Grant Project
10. Amy Underhill, Albemarle Regional Health Services, Health Promotion Coordinator and Healthy Carolinians of the Albemarle Chair
11. Ashley Mercer, Albemarle Regional Health Services, Health Educator
12. LaDonna Maddy, East Carolina University, Graduate Student
13. Jeremy Whitaker, Albemarle Health, Administrative Resident
14. Ashley Stoop, Albemarle Regional Health Services, Preparedness Coordinator
15. Juanita Johnson, Albemarle Health, Case Manager for Community Care Clinic
16. Timothy Brown, Albemarle Regional Health Services, Teen Tobacco
17. Robin Harris, College of the Albemarle, Division Chair - Health Sciences and Wellness Programs
18. Amanda Betts, Albemarle Regional Health Services, Healthy Carolinians of the Albemarle Coordinator
19. Meredith Umphlett, Albemarle Regional Health Services, AgriSafe Nurse
20. Leslie Walters, College of the Albemarle
21. Monica Hassell, College of the Albemarle, Nursing Student
22. Alexis Edwards, College of the Albemarle, Nursing Student
23. Julie White, College of the Albemarle, Nursing Student
24. Amanda Jenkins, College of the Albemarle, Nursing Student
25. Sharon Brookins, College of the Albemarle, Nursing Student
26. Liz Watson, University of North Carolina, Graduate Student
27. Shenika Outlaw
28. Holly Cook-Ward, Elizabeth City YMCA
29. Ginger Badgley, College of the Albemarle
30. Taylor Collins, College of the Albemarle
31. Pablo Trevino, College of the Albemarle

32. Wendy Pierce, Albemarle Health, Director of Grants Management and Special Projects
33. Kelli Scott, Albemarle Health, Nurse Manager – 2South
34. Tamara Pace, College of the Albemarle, Nursing Student
35. Brigit Schultz, College of the Albemarle, Nursing Student
36. Sara Van Horn, College of the Albemarle, Medical Assisting Student
37. Alex Bundy, College of the Albemarle, Nursing Student
38. Vanessa Nixon, College of the Albemarle, Nursing Student
39. Andrea Fulcher, College of the Albemarle, Nursing Student
40. Rebecca Trueblood, College of the Albemarle, Nursing Student
41. Tammy Wood, College of the Albemarle, Nursing Student
42. Shelly Williams, College of the Albemarle, Nursing Student
43. Lisa Bunch, College of the Albemarle, Nursing Student
44. Lynn Mathis, North Carolina Department of Environment and Natural Resources, Division of Coastal Management Environmental Specialist (CAMA)
45. Nancy Stevens, College of the Albemarle, Nursing Student
46. Melissa Rawlins, College of the Albemarle, Nursing Student
47. Kimberly Ruiz, Albemarle Regional Health Services, Community Transformation Grant Project
48. Chris Odom, Albemarle Health, Clinical Engineer Supervisor
49. Tanya Miller, Albemarle Health, Stroke Program Coordinator
50. Lisa Spry, Albemarle Regional Health Services, Health Educator
51. Steve Fecker, College of the Albemarle
52. Brenda Tevepaugh, College of the Albemarle, Nursing Student
53. Dana Hamill, Albemarle Regional Health Services, Lead Regional CHA Coordinator and Health Educator
54. Jill Jordan, Albemarle Regional Health Services, Health Education Director and Public Information Officer

Special thank you to Robin Harris, College of the Albemarle, Division Chair - Health Sciences and Wellness Programs for securing the meeting location, videoing the initial training, and recruiting students to volunteer to conduct surveys. A big thank you to the College of the Albemarle student volunteers that helped with this process!

October 16, 2012 - Pasquotank Survey Volunteers:

-Vanessa Nixon/Andrea Fulcher
-Wes Gray/Meredith Umphlett
-Jill Jordan/Liz Watson
-Tim Brown/Kimberly Ruiz
-Ashley Mercer/Amanda Easley
-Sharon Brookins/Brigit Schultz
-Amy Underhill/Lindy Cartwright
-Julie White/Amanda Jenkins
-Tamara Pace/Sara Van Horn
-Lisa Spry
-Holly Cook-Ward/Alex Bundy
-Yvonne Mullen/Nancy Stevens
-Patricia Mountjoy/Alexis Edwards
Base Coverage - Dana Hamill, Wesley Nixon, Ashley Stoop

October 17, 2012 - Pasquotank Survey Volunteers:
-Liz Watson/Yvonne Mullen
-Wendy Pierce/Kelli Scott
-Gayle Olson/Meredith Umphlett
-Santina Proctor/Juanita Johnson
-Wes Gray
Base Coverage - Amy Underhill, Dana Hamill

October 18, 2012 - Pasquotank Survey Volunteers:
-Yvonne Mullen/Liz Watson
-Ashley Mercer/Tanya Miller
-Amy Underhill/Wes Gray
Base Coverage - Dana Hamill, Amy Under hill, Wesley Nixon

October 19, 2012 - Perquimans Survey Volunteers:
-Wendy Pierce/Kelli Scott
-Ashley Mercer/Amy Underhill
-Lisa Spry/Tim Brown
-Lisa Spry/Dana Hamill
Base Coverage - Dana Hamill, Ashley Stoop

October 20, 2012 - Perquimans Survey Volunteers:
-Robin Harris/Lynn Mathis
Base Coverage - Jill Jordan, Ashley Stoop, Dana Hamill

October 22, 2012 - Camden Survey Volunteers:
-Ashley Mercer/Tim Brown
-Wes Gray/Meredith Umphlett
-Ashley Mercer/Yvonne Mullen
Base Coverage – Dana Hamill

October 23, 2012 - Camden Survey Volunteers:
-Meredith Umphlett/Heather Lawrence
Base Coverage – Amy Underhill, Lisa Spry

October 24, 2012 - Camden Survey Volunteers:
-Taylor Collins/Rebecca Trueblood
-Ashley Mercer/Tim Brown
-Tanya Miller/Heather Lawrence
-Wes Gray/Meredith Umphlett
-Yvonne Mullen/Tim Brown
Base Coverage – Dana Hamill, Wesley Nixon, Ashley Stoop

October 26, 2012 - Pasquotank Survey Volunteers (Catch-up Day):
-Amy Underhill/Ashley Stoop

November 3, 2012 - Perquimans Survey Volunteers (Catch-up Day):
-Dana Hamill/Lisa Spry

November 6, 2012 - Camden Survey Volunteers (Catch-up Day):
-Amy Underhill/Lisa Spry

November 8, 2012 - Camden Survey Volunteers (Catch-up Day):
-Amy Underhill/Gayle Olson

December 5, 2012 - Camden Survey Volunteers (Catch-up Day):
-Amy Underhill/Amanda Betts
Yvonne Mullen/Cierra
-Yvonne Mullen/Danielle Barco

December 6, 2012 - Camden Survey Volunteers (Catch-up Day):
-Yvonne Mullen/Danielle Barco
-Amy Underhill/Ashley Stoop

December 6, 2012 - Perquimans Survey Volunteers (Catch-up Day):
-Ashley Mercer/ Wes Gray

December 7, 2012 - Camden Survey Volunteers (Catch-up Day):
-Wes Gray/Leah Mayo

December 7, 2012 - Perquimans Survey Volunteers (Catch-up Day):
-Lisa Spry/Meredith Umphlett

Currituck County Community Health Opinion Survey Training, November 1, 2012
Currituck County Health Department
Video of Initial Training conducted by Matt Simon

In Attendance:
None

Currituck County Survey Volunteers:
Nov 1 - Wes Gray and Amy Underhill
Nov 2 - Amanda Betts and Yvonne Mullen
-Olivia Jones and Barbara Courtney
-Lisa Spry and Amy Underhill
Nov 13 - Amy Underhill & Olivia Jones
Dec 5 - Olivia Jones and Juanita Johnson
Dec 6 - Amanda Betts and Barbara Courtney

December 12, 2012 - Perquimans Survey Volunteers (Catch-up Day):
-Wes Gray/Leah Mayo

December 13, 2012 - Camden Survey Volunteers (Catch-Up Day):
-Wes Gray/Leah Mayo

December 18, 2012 - Camden Survey Volunteers (Catch-up Day):
-Amy Underhill/Danielle Barco

The Outer Banks Hospital Survey Volunteers for Currituck County:
-Amy Montgomery, Community Outreach Director
-Marie Neilson, Hands of Hope Volunteer Coordinator
-Debra Johnson, Director of Imaging, Rehabilitation, Laboratory, Cardiopulmonary
-Bob Bersack, OBH Volunteer

Albemarle Health Survey Volunteers for Currituck County:
-Josh Hammond, Manager of Cardiopulmonary Services
- Anna Meads, Quality Manager
-Richard Munden, Director of Security
-Jamie Pierce, Technical Manager
-Sharon McCarty, Director of Materials Management

Perquimans County Community Health Opinion Survey Training, November 7, 2012
211 Market St House, Hertford
Matt Simon

In Attendance:
-Kristy Worrell, Vidant Bertie Hospital & Vidant Chowan Hospital, Manager - Rehab Services
-Tonya Williams, Vidant Bertie Hospital & Vidant Chowan Hospital, Manager - Radiology
-Hunter Baltzglier, Vidant Bertie Hospital & Vidant Chowan Hospital, Wellness Coordinator
-Brian White, Vidant Bertie Hospital & Vidant Chowan Hospital, Director of Support Services
-Mona Hughes, Vidant Bertie Hospital, Manager - Quality Resources
-Josh Hammond, Albemarle Health, Manager of Cardiopulmonary Services

November 7, 2012 - Perquimans Survey Volunteers:
-Kristy Worrell/Tonya Williams
-Hunter Baltzglier/ Brian White
-Mona Hughes/Josh Hammond
Base Coverage - Dana Hamill, Matt Simon, Wesley Nixon

Chowan County Community Health Opinion Survey Training, November 8, 2012
Vidant Chowan Hospital, Edenton
Matt Simon

In Attendance:
1. Brent Jones, Bertie Recreation Department, Recreation Program Coordinator
2. Stephanie Nugen, Vidant Bertie Hospital & Vidant Chowan Hospital, Clinical Dietician
3. Julie Keeter, Vidant Chowan Hospital, Manager – Nutrition Services
4. Randall Walston, Vidant Health, Chief of Police
5. Liz White, Vidant Bertie Hospital & Vidant Chowan Hospital, Manager – Environmental Services
6. Chip Lanier, Vidant Chowan Hospital, Police Lieutenant
7. Elizabeth Lawrence, Vidant Chowan Hospital, Manager – Operating Room
8. Benita Webb, Vidant Chowan Hospital, Manager – Medical/Surgical Department
9. Kelly Cross, Vidant Chowan Hospital, Manager – Gift Shop/Volunteer Services
10. Beverly Venters, Vidant Chowan Hospital, Manager – Quality Resources
11. Megan Booth-Mills, Vidant Bertie Hospital & Vidant Chowan Hospital, Director of Planning & Marketing

12. Kathy Copeland, Bertie Cooperative Extension, Nutrition Program Assistant, EFNEP
13. . Ginny Waff, Vidant Chowan Hospital, Executive Director of Vidant Chowan Hospital Foundation
14. Lynn S. Dale, Vidant Chowan Hospital, Manager – Case Management Services
15. Melissa Chappell, Vidant Bertie Hospital & Vidant Chowan Hospital, Manager – Health Information Services
16. Kaili Nixon, Vidant Chowan Hospital, Manager – Emergency Department
17. Debbie Swicegood, Vidant Bertie Hospital & Vidant Chowan Hospital, Director – Human Resources
18. Cheryl Bembry, Vidant Bertie Hospital & Vidant Chowan Hospital, Controller
19. Alisa Perry, Vidant Chowan Hospital, Manager –Labor & Delivery/Nursery Department
20. Ella Coates, Vidant Chowan Hospital, Intensive Care Unit
21. Dana Byrum, Vidant Chowan Hospital, Ambulatory Surgery Units/Clinics/Transitional Care
22. Mary Morris, Bertie Cooperative Extension Agent, Family and Consumer Sciences
23. Nancy Morgan, Albemarle Regional Health Services, Three Rivers Healthy Carolinians Coordinator

November 8, 2012 - Chowan Survey Volunteers:
-Beverly Venters/Melissa Chappell
-Megan Booth-Mills/Lynn S. Dale
-Debbie Swicegood/Julie Keeter
-Liz White/Nancy Morgan
-Dana Byrum/Kaili Nixon
-Alisa Perry/Ella Coates
-Stephanie Nugen/Randy Watson
-Ginny Waff/Cheryl Bembry
-Chip Lanier/Kelly Cross
-Elizabeth Lawrence/Benita Webb
Base Coverage – Matt Simon, Dana Hamill

November 9, 2012 - Chowan Survey Volunteers:
-Debbie Swicegood/Julie Keeter
-Liz White/Nancy Morgan
-Kelly Cross/Brian White
-LaDonna Maddy/Wes Gray
-Megan Booth-Mills/Kaili Nixon
Base Coverage – Wesley Nixon, Dana Hamill

Bertie County Community Health Opinion Survey Training, November 12, 2012
Vidant Bertie Hospital, Windsor
Ashley Stoop

In Attendance:
1. Pat Taylor, Vidant Bertie Hospital, Director of Patient Care Services
2. Valerie Howell, Vidant Bertie Hospital, Supervisor – Patient Access Services
3. Judy Duke, Vidant Bertie Hospital, Manager – Operating Room
4. Renee White, Vidant Bertie Hospital, Manager – Emergency Department
5. Gaye Branch, Vidant Bertie Hospital, Manager – Respiratory Therapy
6. Renee Bryson, Vidant Bertie Hospital & Vidant Chowan Hospital, Manager – Laboratory
7. Amy Bartley, Vidant Bertie Hospital, Supervisor – Health Information Services

8. Scott McDougal, Vidant Bertie Hospital, Police Lieutenant
9. LuAnn Joyner, Vidant Bertie Hospital, Marketing Specialist
10. Jeff Dial, Vidant Bertie Hospital & Vidant Chowan Hospital, VP of Operations
11. Mary Davis, Vidant Family Medicine - Windsor, Manager
12. Kenneth L. Stone, Vidant Bertie Hospital & Vidant Chowan Hospital, Manager – Plant Operations

November 12, 2012 - Bertie Survey Volunteers:
-Valerie Howell/Amy Bartley
-Scott McDougal/LuAnn Joyner
-Renee White/Gaye Branch
-Pat Taylor/Mary Davis
-Lisa Spry/LaDonna Maddy
-Kenny Stone/Megan Booth-Mills
-Wes Gray/Jeff Dial
Base Coverage – Ashley Stoop, Dana Hamill

November 13, 2012 - Bertie Survey Volunteers:
-Kapuaola Gellert/Mona Cai, University of North Carolina Graduate Students (viewed taped training)
-Brent Jones/Nancy Morgan
-Pat Taylor/Renee Bryson
-Judy Duke/Gaye Branch
-Kathy Copeland/Mary Morris
Base Coverage – Dana Hamill, Wesley Nixon

November 14, 2012 - Bertie Survey Volunteers:
-Kapuaola Gellert/Mona Cai/Wes Gray
-Brent Jones/Nancy Morgan
-Pat Taylor/Renee Bryson
-Judy Duke/Gaye Branch
-Kathy Copeland/Mary Morris
Base Coverage – Dana Hamill, Wesley Nixon

Gates County Community Health Opinion Survey Training, October 31, 2012
New Hope Missionary Baptist Church, Gates
Wesley Nixon

In Attendance:
1. Nancy Figgs, Community Volunteer
2. Ashley Taylor, Community Volunteer
3. Claude Odom, New Middle Swamp Missionary Baptist Church, Pastor
4. Fannie Langston, Gates Partners for Health, Eat Smart Move More Coalition Vice Chair
5. Susan H. Ward, T.S. Cooper Elementary School, Retired Principal
6. Katie Speight, Albemarle Regional Health Services, Social Worker II
7. Krystal Sanderson, Community Volunteer
8. Virginia P. Eure, Gates Partners for Health, Chronic Disease Committee Secretary
9. Margaret E. Smith, Community Volunteer
10. Shirley Smith, Community Volunteer
11. Dorothy Riddick, Community Volunteer

12. Della Freeman, Gates Partners for Health, Chronic Disease Committee Member
13. Melissa Harrison, Community Volunteer
14. Jacqueline B. Sears, Gates Partners for Health, Eat Smart Move More Coalition Member
15. . T.D. Lassiter, Community Volunteer
16. . Glendale P. Boone, Gates County Public Schools, Board Member
17. Bettie Mozell, Community Volunteer
18. Mary H. Boone, Community Volunteer
19. Shirley Johnson, Gates Partners for Health, Eat Smart Move More Coalition Member
20. Pamela Harvey, Down East Health & Rehabilitation Facility, Director
21. Fannie M. Spivey, Department of Social Services, Board Member
22. Maggie Beamon, Community Volunteer
23. Thelma Maxine Raysor, Gates Partners for Health, Chronic Disease Committee Member
24. Carolyn V. Wiggins, Retired School Teacher
25. Esther W. Lassiter, Albemarle Regional Health Services, Gates Partners for Health Coordinator
26. Patricia Boone, Community Volunteer

October 31, 2012 - Gates County Survey Volunteers:

-Susan Ward/Katie Speight
-Bettie Mozell/Fannie Spivey
-Meredith Umphlett/Maggie Beamon/ Thelma Maxine Raysor
-Virginia P. Eure/Margaret E. Smith
-Nancy Figgs/Della Freeman
-Dorothy Riddick/Shirley Smith
-Carolyn Wiggins/Glendale Boone
-Mary Boone/Shirley Johnson
-Esther Lassiter/Fannie Langston/Jacqueline Sears
-Pam Harvey/Melissa Harrison
-Claude Odom/Ashley Taylor
Base Coverage - Wesley Nixon, Dana Hamill

November 15, 2012 - Gates County Survey Volunteers:

-Mary Boone/Shirley Johnson
-Nancy Figgs/Della Freeman
-Katie Speight/Patricia Boone
-Lisa Spry/Nancy Morgan
-Dorothy Riddick/Bettie Mozell
-Esther Lassiter/Jaqueline Sears
-Nancy Figgs/Della Freeman
-Thelma Raysor/Thomas Lassiter
Base Coverage - Dana Hamill

TABLE OF CONTENTS

LIST OF TABLES AND FIGURES

INTRODUCTION

Local public health agencies in North Carolina (NC) are required to conduct a comprehensive Community Health Assessment (CHA) at least once every four years. The CHA is required of public health departments in the consolidated agreement between the NC Division of Public Health (NC DPH) and the local public health agency. Furthermore, a CHA is required for local public health department accreditation through the NC Local Health Department Accreditation Board (G.S. § 130A-34.1). As part of the US Affordable Care Act of 2011, non-profit hospitals are also now required to conduct a community health (needs) assessment at least every three years. Recognizing that duplicate assessment efforts are a poor use of community resources, local health departments (LHDs) and non-profit hospitals across the state are developing models for collaboratively conducting the community health assessment process. For the Albemarle region, a partnership between Albemarle Regional Health Services and local hospitals has been a long-standing tradition, and the hospitals have helped fund and participate in previous community health assessments. This document is the culmination of the most recent partnership between Albemarle Regional Health Services (ARHS), Vidant Bertie Hospital (VBER), Vidant Chowan Hospital (VCHO), Albemarle Hospital (AH), and The Outer Banks Hospital (OBH) for the 2013 Community Health Assessment.

In communities where there is an active Healthy Carolinians partnership, the CHA activity also usually includes that entity. Healthy Carolinians is "a network of public-private partnerships across North Carolina that shares the common goal of helping all North Carolinians to be healthy." The members of local partnerships are representatives of the agencies and organizations that serve the health and human service needs of the local population, as well as representatives from businesses, communities of faith, schools and civic groups. In Bertie County, the local Healthy Carolinians coalition is Three Rivers Healthy Carolinians, which also includes Chowan County.

The community health assessment, which is both a process and a document, investigates and describes the current health status of the community, what has changed since the last assessment, and what still needs to change to improve the health of the community. The *process* involves the collection and analysis of a large range of data, including demographic, socioeconomic and health statistics, environmental data, and professional and public opinion. The *document* is a summary of all the available evidence and serves as a resource until the next assessment. The completed CHA serves as the basis for prioritizing the community's health needs, and culminates in planning to meet those needs.

Albemarle Regional Health Services contracted with Sheila S. Pfaender, Public Health Consultant, to assist in conducting the 2013 Community Health Needs Assessment for the seven counties of the ARHS region, following the guidance provided by the *Community Assessment Guidebook: North Carolina Community Health Assessment Process*, published by the NC Office of Healthy Carolinians/Health Education and the NC State Center for Health Statistics (December 2011). The assessment also adheres to the 2012 standards for community assessment stipulated by the NC Local Health Department Accreditation (NCLHDA) Program.

Dana Hamill, ARHS, Lead Regional CHA Coordinator worked with the consultant to develop a multi-phase plan for conducting the assessment. The phases included: (1) a research phase to identify, collect and review demographic, socioeconomic, health and environmental data; (2) a data synthesis and analysis phase; (3) a period of data reporting and discussion among the

project partners; (4) a community input phase to elicit opinion and ideas regarding the assessment outcomes among community stakeholders; and (5) a prioritization and decision-making phase. Upon completion of this work the CHA partners and the community will have the tools they need to develop plans and activities that will improve the health and well-being of the people living in Bertie County. The consultant provided direct technical assistance for phases 1, 2, and 3.

ASSESSMENT METHODOLOGY

In order to learn about the specific factors affecting the health and quality of life of Bertie County residents, the consultant tapped numerous readily available secondary data sources. For data on Bertie County demographic, economic and social characteristics sources included: the US Census Bureau; Log Into North Carolina (LINC); NC Office of State Budget and Management; NC Department of Commerce; Employment Security Commission of NC; NC Division of Aging and Adult Services; NC Child Advocacy Institute; NC Department of Public Instruction; NC Department of Justice; NC Department of Juvenile Justice and Delinquency Prevention; NC Department of Administration; NC Division of Medical Assistance; NC Division of Child Development; NC State Board of Elections; NC Division of Health Services Regulation; the Cecil B. Sheps Center for Health Services Research; and the Annie E. Casey Foundation *Kids Count Data Center*. Local sources for socioeconomic data included: the Bertie County Department of Social Services; Bertie County Schools; and other Bertie County agencies and organizations. The author has made every effort to obtain the most current data available at the time the report was prepared.

The primary source of health data for this report was the NC State Center for Health Statistics, including its County Health Data Books, Behavioral Risk Factor Surveillance System, Vital Statistics, and Cancer Registry. Other health data sources included: US Centers for Disease Control and Prevention; NC DPH Epidemiology Section; NC Division of Mental Health, Developmental Disabilities and Substance Abuse Services; National Center for Health Statistics; Healthy People 2020; NC DPH Nutrition Services Branch; UNC Highway Safety Research Center; NC Department of Transportation; and the NC DPH Oral Health Section. Through the current CHA partnership with the region's four hospitals, the consultant accessed de-identified hospital utilization data (e.g., emergency department visits, in-patient hospitalizations, and surgeries) that contributed greatly to the understanding of health issues in Bertie County. Other important local health data sources included ARHS, and Bertie County Emergency Medical Services.

Because in any community health assessment it is instructive to relate local data to similar data in other jurisdictions, Bertie County data is compared to like data describing the state of NC as a whole, as well as to data from Hertford County, a state-recommended "peer county". Also used for comparison is data for the average measure of each parameter in the seven counties in the ARHS jurisdiction: Bertie County, Camden County, Chowan County, Currituck County, Gates County, Pasquotank County and Perquimans County. In some cases Bertie County data is compared to US-level data, or to Healthy People 2020 goals or other standardized measures. Where appropriate, trend data has been used to show changes in indicators over time, at least since the 2010 Bertie County CHA, but sometimes further back than that.

Environmental data were gathered from sources including: US Environmental Protection Agency; NC Department of Environment and Natural Resources Divisions of Air Quality, Waste Management, and Environmental Health; and NC State Laboratory of Public Health.

ARHS and its partners conducted a community health survey among members of the public and a stakeholder survey among community leaders as part of the CHA process. The methodologies and results of these surveys are presented in a separate section of this report.

CHAPTER ONE: DEMOGRAPHIC DATA

GEOGRAPHY

Bertie County is located in eastern NC, in the Coastal Plain region and features low, flat plains with slight ridges and shallow stream valleys. The county is 75 miles from the Outer Banks of NC, 100 miles east of Raleigh, NC, and 90 miles southwest of Norfolk, VA. Bertie County encompasses 741 square miles, 699 of which are land and the remaining 42 square miles of which are water. The county's major waterways are the Chowan River, the Roanoke River, the Cashie River and the Albemarle Sound. The county's soil is fertile and productive (1,2).

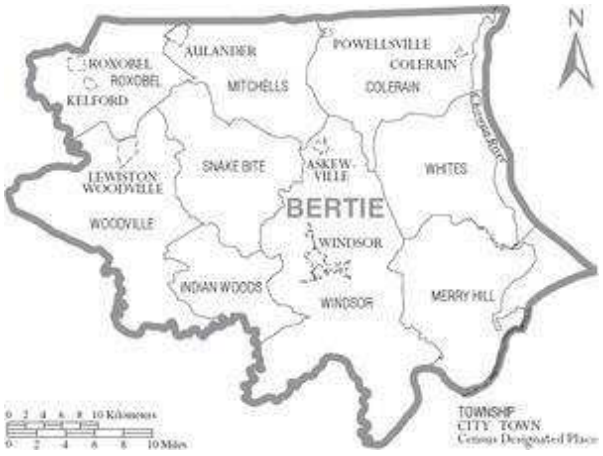
The major town in the county is Windsor, the county seat. The county is adjacent to Hertford County on the north, Chowan County on the east, Washington County on the southeast, Martin County on the southwest, Halifax County on the west, and Northampton County on the northwest (1).

Highways in the county include US 13, US 17, and NC Highways 11, 42, 45, 305, and 308. US 13 and 17 run through the center of the county and provide a direct connection with US 64, which leads east to the Outer Banks and west to Raleigh. US 17 connects the county to Wilmington, NC in the south; NC 11 connects the county to southern VA to the north and Greenville, NC to the south. The nearest interstate highway is I-95, 50 miles to the west (1,3).

The closest major airport, 56 miles from the county center, is Pitt-Greenville Airport in Greenville, NC. Other airports within a 100 mile radius are the Coastal Carolina Regional Airport in New Bern, NC (80 miles), the Norfolk International Airport in Norfolk, VA (88 miles), and the Newport News/Williamsburg International Airport in Newport News, VA (99 miles). Amtrak stations are located in Rocky Mount, NC (48 miles), Wilson, NC (57 miles) and Norfolk, VA (69 miles). Greyhound bus stations are located in Williamston, NC (13 miles) and Edenton, NC (20 miles) (4,5,6).

Bertie County has a relatively mild climate, averaging 45 degrees F. in January and 79 degrees F. in July. Elevation ranges from sea level at the eastern boundary to 97 feet above sea level at Roxobel (2).

Figure 1. Map of Bertie County



HISTORY

Bertie County, then known as Bertie Precinct, was originally part of Albemarle County. Along with Chowan County, Bertie Precinct was cut from Albemarle County in 1670 and given county status in 1722. The initial residents of the land to become Bertie County were the Tuscarora, a tribal branch of the northern Iroquois. English explorers and hunters began traversing the land in the middle of the seventeenth century in search of opportunities and land. The influx of white traders and trappers eventually provoked the Tuscarora War, which spanned the years of 1711 to 1713. One of the oldest and largest counties in the state of NC, spanning 741 square miles, Bertie County once consisted of the present Bertie County, Tyrell County, Edgecombe County, Northampton County and Hertford County. It was divided to its current size and shape by 1780 (7,8).

James and Henry Bertie purchased the land from the original Lord Proprietors and it is for them that the county was named. The rich soil sustained by the rivers flowing along and within the borders of the county gave Bertie an advantage over other regions. The fertile uplands and lowlands, including several large swamps referred to as pocosins, made Bertie County ideal for agriculture. Among the primary crops to come from the county were cotton, tobacco, peanuts, corn and soybeans. Textile, furniture, and clothing manufacturing plants added to the area's income. The livestock and poultry growing industries were also major contributors to the agricultural base. In addition, the timber industry has been vital to the area, especially so in the Windsor region (7,8).

The town of Windsor was established in 1766 and named after Windsor Castle, a seasonal house utilized by the British Monarchy. Windsor was made the county seat in 1774, and contains much of the county's history. A large portion of land in southwestern Bertie, Indian Woods, was at one time a reservation for the tribe that provided the English settlers with assistance during the Tuscarora War. Led by Chief Blount, the Northern Tuscarora inhabited Indian Woods in 1717. Those who remained left the area in 1828, moving to Virginia and South Carolina. Known as Gray's Landing in the early 1700s, Windsor is listed on the National Register of Historical Places and over 250 years of history can be found in the town's historic district (7,8).

In the 1990's there was a reduction in government subsidies to farmers, making it difficult for some to make their living raising tobacco and peanuts as well as other crops. The county also experienced change when textile and clothing manufacturers began moving their operations overseas. However, Lewiston is still home to a large chicken processing plant, one of the county's top manufacturers and employers, and there are numerous other manufacturers in the county. In addition, Windsor is home to Bertie Memorial Hospital [now Vidant Bertie Hospital], and to Bertie Correctional Institution, which opened in 2006. The county has multiple public schools, and several private schools; Martin Community College has a campus in Windsor as well (9,10).

Numerous historic buildings and houses continue to exist in Bertie County, many in Windsor. Mentionable, and each dating back to the years between 1790 and 1887, are the Bertie County Courthouse, St. Thomas Episcopal Church, The Gray-Gillam and J.B Gillam House, Windsor Castle, and the Freeman Hotel, which is now home to the Windsor-Bertie County Chamber of Commerce. The Hope Plantation, which was built by David Stone in the early 1800s and restored in the 1960s, is an example of Jeffersonian architecture. Stone, a Bertie county native, was also a U.S. Congressman and a governor of North Carolina. Windsor is also listed in the

Civil War Discovery Trail and a marker can be found in the park at Gray's Landing commemorating The Skirmish at Windsor, when Union gunboats sent from Plymouth entered the town early in the morning on January 30, 1864 and were faced by a small regiment from the 42nd Georgia Calvary (1,8,11).

There are multiple activities, attractions and cultural events available in the county. With twenty miles of shoreline, the Chowan River provides fishing, boating, sailing and water skiing. The Cashie River, which winds through the county for more than twenty miles, is the home of the San Souci Ferry, one of North Carolina's last operational two-car ferries. The Cashie Wetlands Walk is still offered, consisting of a boardwalk in a natural wetlands area filled with cypress trees and other wetlands flora. An observation deck allows views of endangered waterfowl among other swampland animals. Other area attractions include Livermon Park and Mini-Zoo and the Windsor Historic District Walking Tour. Some of the festivals held in Bertie include Chicken on the Cashie, the Sea and Tee Festival, and Fun Day in the Park at Windsor. In 2008, Innsbrook Golf Course, a public 18-hole course designed by Arnold Palmer, opened in Merry Hill (7,8,11,12).

Among the noteworthy figures who have called Bertie County home is William Blount. Born in 1749 in Bertie, Blount was a well-known political figure during the Revolution period and served on the Continental Congress, governed the Southwest Territory, and was a U.S. Senator. In the 1800s George H. Throop, a citizen of New York, penned two novels while residing in Bertie County. The novels, one entitled *Bertie*, provide a glimpse into the plantation life of the North Carolina elite. Another Bertie county citizen, Locke Craig, served as governor of North Carolina from 1913 to 1917 and was known as the "Good Roads" governor as a result of creating the state's first highway commission and bringing better roads to the entire state as well as Bertie County itself (9).

POPULATION CHARACTERISTICS

General Population Characteristics

The following general population characteristics of Bertie County and its peer county were based on 2010 US Census data presented in Table 1.

- As of the 2010 US Census, the population of Bertie County was 21,282.
- The population of Bertie County was nearly evenly divided between males and females, which is the typical pattern.
- The overall median age in Bertie County was 42.9, 0.9 years older than the median age for the seven-county ARHS region and 1.9 years older than Hertford County, an assigned peer county. The median age in Bertie County was 5.5 years older than the median age for NC as a whole.

Table 1. General Demographic Characteristics (2010 US Census)

Location	Total Population	Number Males	% Population Male	Median Age Males	Number Females	% Population Female	Median Age Females	Overall Median Age
Bertie County	21,282	10,534	49.5	39.5	10,748	50.5	45.7	42.9
Regional Average	19,416	9,517	49.0	40.7	9,900	51.0	43.2	42.0
Hertford County	24,669	12,062	48.9	39.0	12,607	51.1	43.3	41.0
State of NC	9,535,483	4,645,492	48.7	36.0	4,889,991	51.3	38.7	37.4

Note: percentages by gender are calculated.
Source: US Census Bureau, American Fact Finder, 2010 Census, Summary File DP-1, 2010 Demographic Profile Data, Profile of General Population and Housing Characteristics: 2010; http://factfinder2.census.gov.

Population by Township

Bertie County is divided into nine townships: Colerain Township, Indian Woods Township, Merry Hill Township, Mitchells Township, Roxobel Township, Snake Bite Township, Whites Township, Windsor Township, and Woodville Township. The following population information was derived from 2010 US Census data presented in Table 2.

- Windsor Township was the largest township by population in Bertie County, accounting for almost 38% of the county's population.
- Colerain Township was the second-largest township in Bertie County, with 15% of the county's population.
- Indian Woods Township was the smallest township in Bertie County, and was home to only 2% of the overall county population.
- Snake Bite Township was the youngest township in the county in terms of median age: 39.2 years.
- Merry Hill Township was the oldest township in the county, with a median age of 51.0 years.

Table 2. Population by Township, Bertie County (2010 US Census)

Township	No. of Persons	% of County Population	Median Age
Colerain Township	3,176	14.9	44.8
Indian Woods Township	471	2.2	49.5
Merry Hill Township	992	4.7	51.0
Mitchells Township	2,628	12.3	41.5
Roxobel Township	1,671	7.9	44.1
Snake Bite Township	1,410	6.6	39.2
Whites Township	1,554	7.3	47.2
Windsor Township	7,971	37.5	40.8
Woodville Township	1,409	6.6	39.4
Bertie County Total	**21,282**	**100.0**	**42.9**

Source: US Census Bureau, American Fact Finder, 2010 Census, Summary File DP-1, 2010 Demographic Profile Data, Profile of General Population and Housing Characteristics: 2010; http://factfinder2.census.gov.

Population Growth

Table 3 presents historical population county and population projections from 1980 through 2030. From this data, it appears that the Bertie County population has been growing since 2000, and that a modest rate of growth is expected to continue through 2030. Although the rate of growth for Bertie County is projected to be lower than the comparable rate for the state as a whole, it is projected to be higher than the regional average for the period 2010 through 2030.

Table 3. Decadal Population Growth (1980-2030)

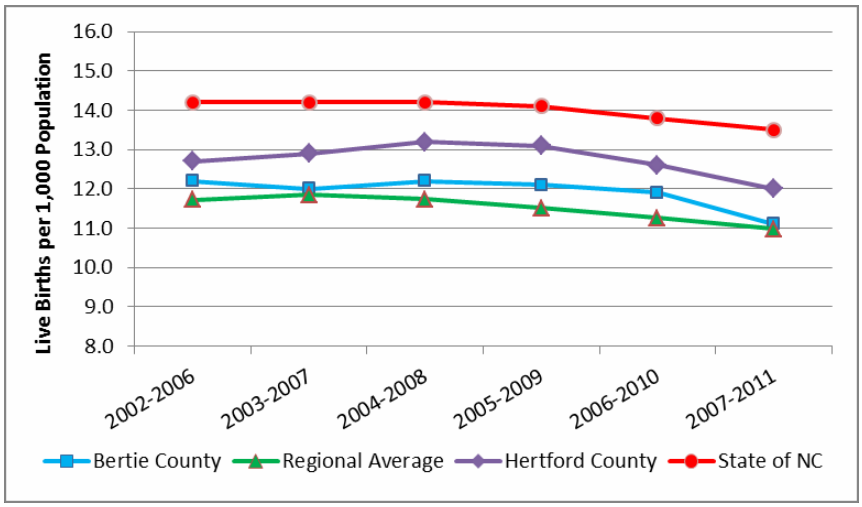
Location	Number of Persons and Percent Change										
	1980	1990	% Change 1980-1990	2000	% Change 1990-2000	2010	% Change 2000-2010	2020 (Projection)	% Change 2010-2020	2030 (Projection)	% Change 2020-2030
Bertie County	21,024	20,388	-3.0	19,757	-3.1	21,282	7.7	22,677	6.6	24,042	6.0
Regional Average	13,908	14,941	7.4	16,550	10.8	19,416	17.3	20,096	3.5	20,772	3.4
Hertford County	23,368	22,523	-3.6	22,977	2.0	24,669	7.4	26,537	7.6	28,359	6.9
State of NC	5,880,095	6,632,448	12.8	8,046,485	21.3	9,535,483	18.5	10,966,956	15.0	12,465,481	13.7

Note: percentage change is calculated.
Source: Log Into North Carolina (LINC) Database, Topic Group Population and Housing, Total Population, Population (Data Item 5001); http://data.osbm.state.nc/pls/linc/dyn_linc_main.show.

Birth Rate

Overall population growth is a function both of increase (via immigration and birth) and decrease (via emigration and death). Figure 2 illustrates that the birth rate is declining in NC and all three other jurisdictions in the comparison.) In Bertie County, the birth rate decreased from 12.2 live births per 1,000 population in the 2002-2006 aggregate period to 11.1 live births per 1,000 population in the 2007-2011 aggregate period, a decrease of 9%. The birth rate for NC exceeded the comparable rates in the other jurisdictions for every period cited.

Figure 2. Birth Rate Trend, Live Births per 1,000 Total Population (Five-Year Aggregates, 2002-2006 through 2007-2011)



Source: NC State Center for Health Statistics, Health Data, County Level Data, County Health Databooks 2008, 2009, 2010, 2011, 2012, 2013; http://www.schs.state.nc.us/schs/data/databook/.

Population Density

With the exception of the period from 2010 to 2020, the Bertie County population appears to be *decreasing* in density, which is *not* the case with its comparator jurisdictions. In every period cited, Bertie County was the least densely populated jurisdiction among those being compared (Table 4).

Table 4. Decadal Population Density (1980-2030)

Location	Persons per Square Mile					
	1980	1990	2000	2010 (Estimate)	2020 (Projection)	2030 (Projection)
Bertie County	29.99	29.16	28.26	27.65	36.70	25.43
Regional Average	50.91	55.99	62.72	75.55	86.94	94.46
Hertford County	65.62	63.68	65.04	68.80	70.94	71.90
State of NC	120.4	136.1	165.2	191.9	219.9	248.2

Source: Log Into North Carolina (LINC) Database, Topic Group Population and Housing, Total Population, Population Density (Data Item 5004); http://data.osbm.state.nc/pls/linc/dyn_linc_main.show.

Race and Ethnicity

The population of Bertie County is more racially diverse than both the ARHS region and NC as a whole. For example, according to data in Table 5 from the 2010 US Census, the non-white population in Bertie County was approximately 65% of the total population, a proportion approximately twice the comparable proportion in NC as a whole (32%) and slightly less than twice the comparable proportion for the region (36%). The non-white population in Bertie County was similar in proportion to the non-white population in Hertford County (64%).

According to data in Table 5, in Bertie County:

- Whites composed 35.2% of the total population; regionally the comparable figure was 63.7% and statewide the figure was 68.5%.
- Blacks/African Americans composed 62.5% of the total population; regionally the comparable figure was 32.2% and statewide the figure was 21.5%.
- American Indians and Alaskan Natives composed 0.5% of the total population; regionally the comparable figure was 0.4% and statewide the figure was 1.3%.
- Asians, Native Hawaiians and Other Pacific Islanders composed 0.5% of the total population; regionally the comparable figure was 0.7% and statewide the figure was 2.3%.
- Hispanics/Latinos of any race composed 1.3% of the total population; regionally the comparable figure was 2.8% and statewide the figure was 8.4%.

Table 5. Population Distribution by Race/Ethnicity (2010 US Census)

Location	Total	Number and Percent													
		White		Black or African-American		American Indian and Alaskan Native		Asian, Native Hawaiian and Other Pacific Islander		Some Other Race		Two or More Races		Hispanic or Latino of Any Race	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Bertie County	21,282	7,488	35.2	13,296	62.5	96	0.5	109	0.5	96	0.5	197	0.9	267	1.3
Regional Average	19,416	12,378	63.7	6,256	32.2	75	0.4	145	0.7	232	1.2	330	1.7	541	2.8
Hertford County	24,669	8,786	35.6	14,933	60.5	274	1.1	136	0.6	235	1.0	305	1.2	644	2.6
State of NC	9,535,483	6,528,950	68.5	2,048,628	21.5	122,110	1.3	215,566	2.3	414,030	4.3	206,199	2.2	800,120	8.4
Source	a	a	b	a	b	a	b	a	b	a	b	a	b	a	b

Note: percentages are calculated.
Source: US Census Bureau, American Fact Finder, 2010 Census, Summary File DP-1, 2010 Demographic Profile Data, Profile of General Population and Housing Characteristics: 2010; http://factfinder2.census.gov.

Race and Ethnicity by Township

The following information about racial and ethnic population diversity at the township level in Bertie County was derived from 2010 US Census data presented in Table 6.

- All townships in Bertie County *except* Whites Township were predominately Black/African American.
- Windsor Township was the township with by far the largest *number* of Black/African Americans, 4,673; this figure represented 22.0% of the total county population and 35% of all Black/African American persons in the county.
- Windsor Township also was the township with the largest *number* of whites, 3,022; this figure represented 14.2% of the total county population and 40% of all the white persons in the county.
- Windsor Township also was the township with the largest *number* of Hispanics/Latinos, 84; this figure represented 0.4% of the total county population and 31% of all Hispanic/Latino persons in the county.

Table 6. Population by Race/Ethnicity, by Township, Bertie County (2010 US Census)

Township	Persons Self-Identifying as of One Race											Two or More Races		Hispanic or Latino (of any race)	
	Total Population	White		Black or African American		American Indian and Alaska Native		Asian, Native Hawaiian or Other Pacific Islander		Some Other Race					
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No	%
Colerain Township	3,176	1,203	5.7	1,927	9.1	4	0.0	0	0.0	22	0.1	20	0.1	42	0.2
Indian Woods Township	471	58	0.3	411	1.9	1	0.0	0	0.0	0	0.0	1	0.0	8	0.0
Merry Hill Township	992	400	1.9	578	2.7	3	0.0	3	0.0	1	0.0	7	0.0	4	0.0
Mitchell Township	2,628	1,065	5.0	1,522	7.2	14	0.1	2	0.0	0	0.0	25	0.1	11	0.1
Roxobel Township	1,671	381	1.8	1,266	5.9	7	0.0	0	0.0	11	0.1	6	0.0	24	0.1
Snake Bite Township	1,410	272	1.3	1,094	5.1	6	0.0	0	0.0	30	0.1	8	0.0	49	0.2
Whites Township	1,554	913	4.3	632	3.0	1	0.0	1	0.0	2	0.0	5	0.0	8	0.0
Windsor Township	7,971	3,022	14.2	4,673	22.0	57	0.3	90	0.4	18	0.1	111	0.5	84	0.4
Woodville Township	1,409	174	0.8	1,193	5.6	3	0.0	13	0.1	12	0.1	14	0.1	37	0.2
Bertie County Total	**21,282**	**7,488**	**35.2**	**13,296**	**62.5**	**96**	**0.5**	**109**	**0.5**	**96**	**0.5**	**197**	**0.9**	**267**	**1.3**

Note: percentages are calculated from population figures. Percentage figures describe a racial or ethnic group as a proportion of the overall county population.
Source: US Census Bureau, American Fact Finder, 2010 Census, Summary File DP-1, 2010 Demographic Profile Data, Profile of General Population and Housing Characteristics: 2010; http://factfinder2.census.gov.

Age

The following information about the age (and gender) distribution of the Bertie County population was derived from 2010 US Census data presented in Table 7. Generally, these data demonstrate that Bertie County had a population distribution skewed older than the distribution for the state as a whole.

- In terms of both numbers (1,765) and percent (8.3%), the largest segment of the population in Bertie County was the age group 50-54. This differed slightly from NC as a whole, where the segment composing the largest number and percent (7.3%) of the state's population was the next younger age group, 45-49.
- Persons 65 years of age or older composed 17.2% of the population in Bertie County, but 12.8% of the population of NC.
- Persons 19 years of age and younger composed 23.2% of the population in Bertie County, but 26.8% of the population of NC.
- In both Bertie County and NC, in the age groups 50-54 and older the percent of the population composed of females exceeded or equaled the percent of the population composed of males.

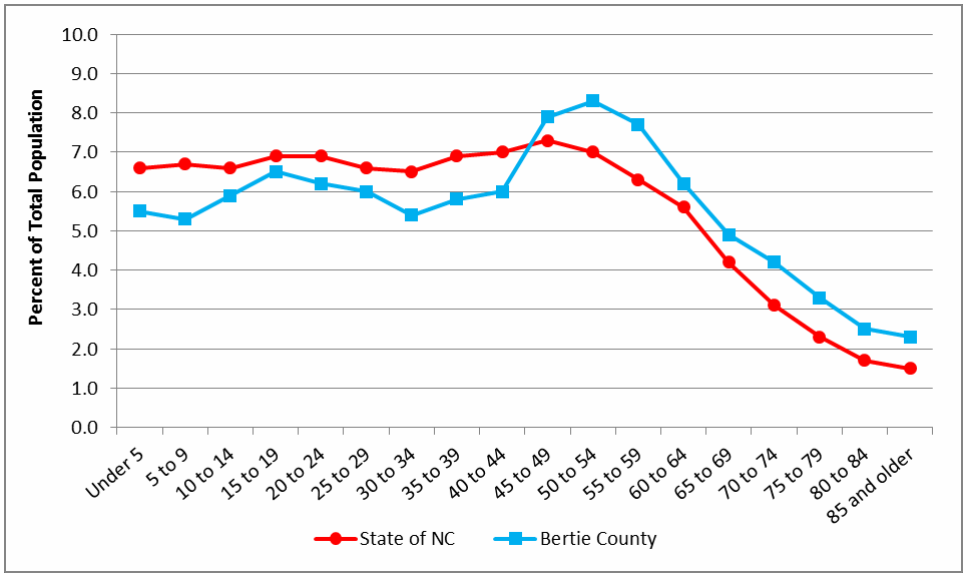
Table 7. Population Distribution by Age and Gender, Number and Percent (2010 US Census)

Age Group	Bertie County						North Carolina					
	No. in Population			% of Total Population			No. in Population			% of Total Population		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
All ages	21,282	10,534	10,748	100.0	49.5	50.5	9,535,483	4,645,492	4,889,991	100.0	48.7	51.3
Under 5	1,176	596	580	5.5	2.8	2.7	632,040	322,871	309,169	6.6	3.4	3.2
5 to 9	1,128	580	548	5.3	2.7	2.6	635,945	324,900	311,045	6.7	3.4	3.3
10 to 14	1,264	635	629	5.9	3.0	3.0	631,104	322,795	308,309	6.6	3.4	3.2
15 to 19	1,379	728	651	6.5	3.4	3.1	659,591	338,271	321,320	6.9	3.5	3.4
20 to 24	1,329	753	576	6.2	3.5	2.7	661,573	336,648	324,925	6.9	3.5	3.4
25 to 29	1,280	742	538	6.0	3.5	2.5	627,036	311,499	315,537	6.6	3.3	3.3
30 to 34	1,157	666	491	5.4	3.1	2.3	619,557	304,807	314,750	6.5	3.2	3.3
35 to 39	1,235	637	598	5.8	3.0	2.8	659,843	324,681	335,162	6.9	3.4	3.5
40 to 44	1,274	628	646	6.0	3.0	3.0	667,308	329,652	337,656	7.0	3.5	3.5
45 to 49	1,676	844	832	7.9	4.0	3.9	698,753	341,432	357,321	7.3	3.6	3.7
50 to 54	1,765	852	913	8.3	4.0	4.3	669,893	323,702	346,191	7.0	3.4	3.6
55 to 59	1,645	772	873	7.7	3.6	4.1	600,722	285,244	315,478	6.3	3.0	3.3
60 to 64	1,318	622	696	6.2	2.9	3.3	538,039	255,034	283,005	5.6	2.7	3.0
65 to 69	1,034	465	569	4.9	2.2	2.7	403,024	188,125	214,899	4.2	2.0	2.3
70 to 74	902	384	518	4.2	1.8	2.4	294,543	133,021	161,522	3.1	1.4	1.7
75 to 79	711	291	420	3.3	1.4	2.0	223,655	94,981	128,674	2.3	1.0	1.3
80 to 84	522	179	343	2.5	0.8	1.6	165,396	63,573	101,823	1.7	0.7	1.1
85 and older	487	160	327	2.3	0.8	1.5	147,461	44,256	103,205	1.5	0.5	1.1

Source: US Census Bureau, American FactFinder, 2010 Census, 2010 Demographic Profile Data, Summary File DP-1, Profile of General Population and Housing Characteristics: 2010; http://factfinder2.census.gov.

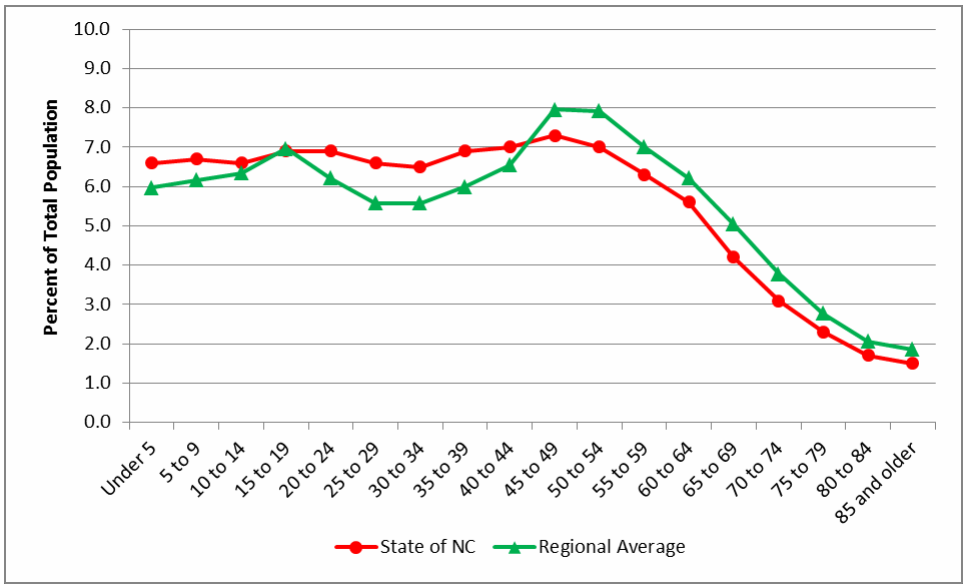
Figures 3 and 4 compare the age distribution of the NC population to the age distribution of the populations in Bertie County and the ARHS Region, respectively. Throughout the region and Bertie County, there was a smaller proportion of young persons and a larger proportion of older persons than demonstrated in the state age distribution profile.

Figure 3. Population Distribution by Age, Bertie County and NC (2010)



Source: US Census Bureau, American FactFinder, 2010 Census, 2010 Demographic Profile Data, Summary File DP-1, Profile of General Population and Housing Characteristics: 2010 (Geographies as noted); http://factfinder2.census.gov.

Figure 4. Population Distribution by Age, ARHS Region and NC (2010)



Source: US Census Bureau, American FactFinder, 2010 Census, 2010 Demographic Profile Data, Summary File DP-1, Profile of General Population and Housing Characteristics: 2010 (Geographies as noted); http://factfinder2.census.gov.

Age by Township

The discussion below is based on the 2010 US Census data presented in Table 8.

- Snake Bite Township was the township with the highest proportion of persons under the age of 18 (27.3%).
- Windsor Township had the highest proportion of persons ages 18-24 (9.8%), ages 25-34 (14.4%) and ages 35-44 (12.5%).
- Indian Woods Township had the highest proportion of persons ages 45-54 (18.9%) and ages 55-64 (20.0%).
- Merry Hill Township had the highest proportion of persons ages 65 and older (21.5%).

Table 8. Population by Age, by Township, Bertie County (2010 US Census)

Township	Percent of Total Population						
	<18	18-24 Years	25-34 Years	35-44 Years	45-54 Years	55-64 Years	65 Years and Over
Colerain Township	21.0	8.4	9.3	11.6	15.5	14.3	20.0
Indian Woods Township	16.8	7.9	5.9	11.9	18.9	20.0	18.7
Merry Hill Township	18.2	5.8	8.1	9.1	17.7	19.6	21.5
Mitchells Township	23.3	8.3	10.8	12.2	16.9	14.2	14.6
Roxobel Township	22.1	9.2	9.0	11.2	17.6	14.4	16.5
Snake Bite Township	27.3	6.8	11.1	11.2	18.4	11.6	13.6
Whites Township	18.0	6.5	10.0	12.1	17.0	15.9	20.5
Windsor Township	18.9	9.8	14.4	12.5	15.0	12.7	16.8
Woodville Township	25.5	9.7	10.2	10.1	15.9	13.3	15.2
Bertie County Total	20.8	8.6	11.5	11.8	16.2	13.9	17.2

Source: US Census Bureau, American FactFinder, 2010 Census, 2010 Census Summary File 1 (SF-1), Table QT-P1, Age Groups and Sex (geographies as listed); http://factfinder2.census.gov.

Elderly Population

Because the proportion of the Bertie County population age 65 and older is larger than the proportion of that age group statewide, it merits closer examination. The population segment age 65 and older often requires more and different health and social services than the rest of the population, and understanding how that population will change in coming years will be an important consideration in planning to meet future health and human service needs.

The following information regarding the elderly population in Bertie County was extracted from multi-part Table 9, which was based on 2000 and 2010 US Census figures and current projections for the years 2020 and 2030 from the NC Office of State Budget and Management.

- The proportion of every age group in Bertie County age 65 and older will increase through the year 2030.
- Though all segments of the elderly population will grow, the segment expected to grow by the largest percentage in the 20 years between 2010 and 2030 is the group aged 65-74, which is predicted to grow by 42% over that period, from 9.1% to 12.9% of the total county population.
- The segment of the population expected to grow by the second largest percentage between 2010 and 2030 is the group aged 75-84, which is predicted to grow by 41% over that period, from 5.8% to 8.2% of the total county population.
- The segment of the Bertie County population age 65 and older is projected to total 4,866 persons by 2030.

Table 9. Growth Trend for the Elderly (Age 65 and Older) Population, by Decade (2000 through 2030)

Location	2000 Census Data								
	Total Population (2000)	# Population Age 65 and Older	% Population Age 65 and Older	# Age 65-74	% Age 65-74	# Age 75-84	% Age 75-84	# Age 85+	% Age 85+
Bertie County	19,773	3,160	16.0	1,719	8.7	1,091	5.5	350	1.8
Regional Total	116,155	17,502	15.1	9,504	8.2	6,011	5.2	1,987	1.7
Regional Average	16,594	2,500	n/a	1,358	n/a	859	n/a	284	n/a
Hertford County	22,601	3,565	15.8	1,927	8.5	1,232	5.5	406	1.8
State of NC	8,049,313	969,048	12.0	533,777	6.6	329,810	4.1	105,461	1.3
Source	1	1	1	1	5	1	5	1	5

Location	2010 Census Data								
	Total Population (2010)	# Population Age 65 and Older	% Population Age 65 and Older	# Age 65-74	% Age 65-74	# Age 75-84	% Age 75-84	# Age 85+	% Age 85+
Bertie County	21,282	3,656	17.2	1,936	9.1	1,233	5.8	487	2.3
Regional Total	135,913	21,119	15.5	12,006	8.8	6,579	4.8	2,534	1.9
Regional Average	19,416	3,017	n/a	1,715	n/a	940	n/a	362	n/a
Hertford County	24,669	3,898	15.8	2,158	8.7	1,267	5.1	473	1.9
State of NC	9,535,483	1,234,079	12.9	697,567	7.3	389,051	4.1	147,461	1.5
Source	2	2	2	2	5	2	5	2	5

Table 9. Growth Trend for the Elderly (Age 65 and Older) Population, by Decade (2000 through 2030)
Continued

Location	2020 (Projected)								
	Total Projected Population	# Population Age 65 and Older	%Population Age 65 and Older	# Age 65-74	% Age 65-74	# Age 75-84	% Age 75-84	# Age 85+	% Age 85+
Bertie County	20,588	4,203	20.4	2,441	11.9	1,239	6.0	523	2.5
Regional Total	141,935	27,796	19.6	16,069	11.3	8,592	6.1	3,135	2.2
Regional Average	20,276	3,971	19.6	2,296	n/a	1,227	n/a	448	n/a
Hertford County	24,334	4,897	20.1	2,912	12.0	1,445	5.9	540	2.2
State of NC	10,614,862	1,763,950	16.6	1,051,688	9.9	519,963	4.9	192,299	1.8
Source	3	3	5	3	5	3	5	3	5

Location	2030 (Projected)								
	Total Projected Population	# Population Age 65 and Older	%Population Age 65 and Older	# Age 65-74	% Age 65-74	# Age 75-84	% Age 75-84	# Age 85+	% Age 85+
Bertie County	20,588	4,866	23.6	2,657	12.9	1,678	8.2	531	2.6
Regional Total	149,095	34,752	23.3	19,056	12.8	11,566	7.8	4,130	2.8
Regional Average	21,299	4,965	n/a	2,722	n/a	1,652	n/a	590	n/a
Hertford County	23,972	5,542	23.1	2,951	12.3	1,977	8.2	614	2.6
State of NC	11,629,556	2,262,855	19.5	1,241,404	10.7	765,598	6.6	255,853	2.2
Source	4	4	5	4	5	4	5	4	5

1 - US Census Bureau, American FactFinder. *Profile of General Demographic Characteristics: 2000 (DP-1), SF1;* http://factfinder2.census.gov.
2 - US Census Bureau, American FactFinder. *Profile of General Population and Housing Characteristics: 2010 (DP-1);* http://factfinder2.census.gov.
3 - NC Office of State Budget and Management, County/State Population Projections. *Age, Race, and Sex Projections, Age Groups - Total, July 1, 2020 County Total Age Groups - Standard;* http://www.osbm.state.nc.us/ncosbm/facts_and_figures/socioeconomic_data/population_estimates/county_projections.shtm.
4 - NC Office of State Budget and Management, County/State Population Projections. *Age, Race, and Sex Projections, Age Groups - Total, July 1, 2030 County Total Age Groups - Standard;* http://www.osbm.state.nc.us/ncosbm/facts_and_figures/socioeconomic_data/population_estimates/county_projections.shtm.
5 – Percentages are calculated using age group population as numerator and total population as denominator.

Demographic Characteristics of the Elderly Population

Table 10 summarizes a variety of data describing the educational and financial status of the elderly population. Regarding the populations aged 65 or older in the jurisdictions presented for comparison in the table, the elderly population in Bertie County had:

- the highest proportion with less than a high school diploma or GED (49.7%);
- the lowest proportion with a graduate or professional degree (2.6%);
- the second lowest median household income ($21,842), $10,000 lower than the NC average; and
- the lowest average monthly social security benefits ($965).

In addition, Bertie County had the second lowest proportion of persons age 65 or older in the labor force (12.7%) and the second highest proportion of elderly homeowners (80.7%).

Table 10. Demographic Characteristics of the Population Age 65+

Location	% Persons Age 65+ with < HS Diploma or GED (2006-2010)	% Persons Age 65+ with Graduate or Professional Degree (2006-2010)	% Homeowners Age 65+ (2010)	% Persons Age 65+ in Labor Force (2006-2010)	Median Household Income Persons Age 65+ (2006-2010)	Average Monthly Social Security Benefit for Persons Age 65+ (2010)
Bertie County	49.7	2.6	80.7	12.7	$21,842	$965
Regional Average	31.7	4.6	84.6	15.2	$30,795	$1,047
Hertford County	42.8	2.9	78.4	9.2	$20,461	$1,028
State of NC	28.4	7.5	79.9	14.9	$31,025	$1,151

Source: NC DHHS Division of Aging and Senior Services, County Profiles; http://www.dhhs.state.nc.us/aging/cprofile/cprofile.htm.

Non-English Speaking Population

The foreign-born population in a community is one that potentially does not speak English, and so is of concern to service providers.

In NC, the greatest proportion of the increase in foreign-born persons is represented by immigrants of Hispanic origin; however, statewide there has also been an influx of foreign-born immigrants from Southeast Asia.

According to US Census Bureau estimates summarized in Table 11:

- There were 205 foreign-born residents residing in Bertie County in 2010. Using a base 2010 county population figure of 21,282, foreign-born residents made up 1% of the total county population at that time.
- Since 1980, the largest influx of the foreign-born population in Bertie County—84 persons—arrived between 2000 and 2010, an increase of 69.4% over that 10-year span. That rate of county increase was approximately the same as the comparable figure for NC as a whole, 67.4%.
- Between 2000 and 2010 the foreign-born population in both the region and Hertford County grew by approximately the same percentage, ~71%

Table 11. Growth of the Foreign-Born Population (Before 1980 through 2010)

Location	Number of Persons Arriving				% Increase 2000-2010
	Before 1980	1980-1989	1990-1999	After 2000	
Bertie County	52	31	38	84	69.4
Regional Total	1,345	581	595	1,784	70.8
Hertford County	163	143	219	378	72.0
State of NC	116,761	104,544	240,941	311,461	67.4
	1	1	1	1	a

Source: US Census Bureau, American Fact Finder, 2010 ACS 5-Year Estimates, Table B05005: Year of Entry by Citizenship Status in the United States. http://factfinder2.census.gov.

Linguistic Isolation

"Linguistic isolation", reflected as an inability to communicate because of a lack of language skills, can be a barrier preventing foreign-born residents from accessing needed services. The US Census Bureau tracks linguistically isolated households according to the following definition:

> *A linguistically isolated household is one in which no member 14 years and over (1) speaks only English, or (2) speaks a non-English language and speaks English "very well". In other words, all members 14 years old and over have at least some difficulty with English.*

The following information about linguistically isolated households is derived from the 2005-2009 five-year US Census Bureau estimates presented in Table 12.

- Of the 7,766 Bertie County households included in the statistic, an estimated 216 (2.8%) spoke a language other than English. Of these, an estimated 32 (14.8%) were linguistically isolated.
- The only linguistically isolated households in Bertie County in the period cited occurred within the Spanish-speaking population. Region-wide, there also were linguistically isolated households where Asian or Pacific island languages were spoken instead of English.

Table 12. Household Language by Linguistic Isolation
(Five-Year Estimate, 2005-2009)

Location	Total Households	Number of Households								
		English-Speaking	Spanish-Speaking		Speaking Other Indo-European Languages		Speaking Asian or Pacific Island Languages		Speaking Other Languages	
			Isolated	Not isolated	Isolated	Not isolated	Isolated	Not isolated	Isolated	Not isolated
Bertie County	7,766	7,550	32	161	0	14	0	9	0	0
Regional Total	49,669	47,242	206	1,102	0	901	21	132	0	65
Regional Average	7,096	6,749	29	157	0	129	3	19	0	9
Hertford County	8,572	8,383	20	109	3	32	2	22	0	1
State of NC	3,541,807	3,194,328	71,843	137,729	7,637	67,897	10,388	35,597	2,466	13,922

Source: US Census Bureau, American Fact Finder, Table B16002: Household Language by Linguistic Isolation, 2009 American Community Survey 5-Year Estimates. http://factfinder.census.gov.

Age Distribution of the Latino Population

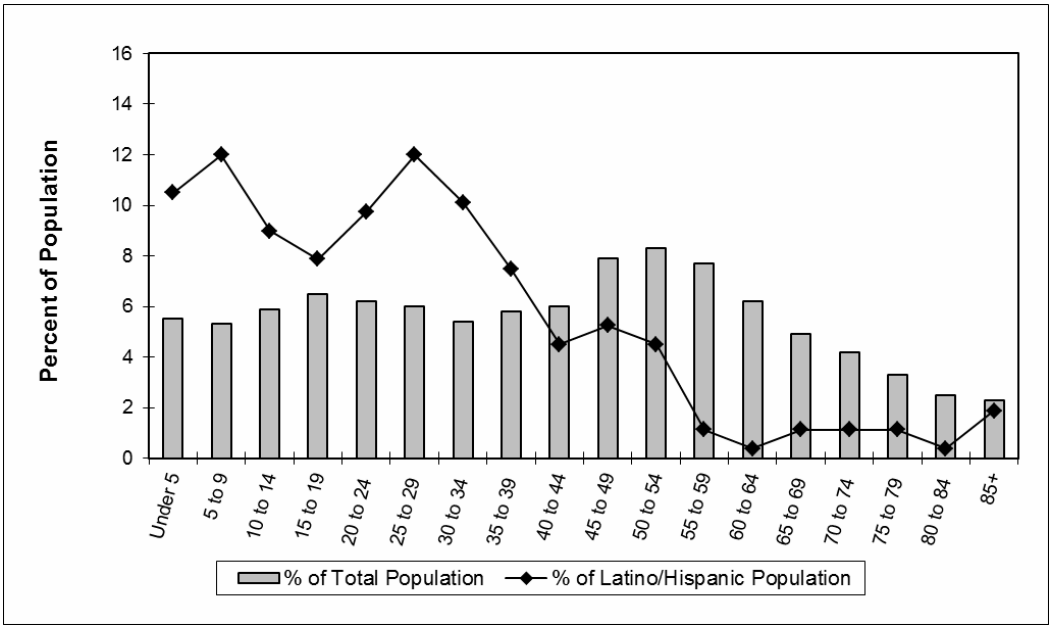
Since the Hispanic/Latino population is the principal linguistically-isolated group in Bertie County, further knowledge of the characteristics of this group is helpful in anticipating service needs.

In Bertie County, as in other counties in NC, a major impetus for immigration—at least until the economic downturn that began in 2008—was the prospect of employment opportunities. One would expect then that the age groups predominant in this population would be those in their "prime" for work, especially the physical labor-type jobs in construction, agricultural, and fishing industries available to them in the coastal region of the state. The spouses of these workers would be in the midst of their childbearing years, so it might also be expected that this population would have children.

Figure 5 is a graphic depiction of the 2010 US Census population profile by age group of the total Bertie County population compared to the same profile for the Hispanic/Latino population.

- In Bertie County all age groups under the age of 40 were present in higher proportions in the Hispanic/Latino population than in the overall county population. There were lower proportions for Hispanics/Latinos than for the general population in all the other age groups.
- The highest proportions of the Hispanic/Latino population in Bertie County occurred in the 5-9 and the 25-29 age groups. In the overall county population, the highest proportions were in age groups covering the span from 45 to 59.

Figure 5. Age Distribution of Overall and Latino Populations in Bertie County (2010)



Note: percentages are calculated from Census figures.
Source (Overall Population): US Census Bureau, American Fact Finder, 2010 Census, Summary File DP-1, 2010 Demographic Profile Data, Profile of General Population and Housing Characteristics: 2010; http://factfinder2.census.gov.
Source (Latino Population): US Census Bureau, American Fact Finder, 2010 Census, Summary File 1 (SF-1), PCT12H, Sex by Age (Hispanic or Latino) (geographies as noted); http://factfinder2.census.gov.

Special Populations

Military Veterans

A population group that sometimes needs special health services is military veterans. Table 13 summarizes information about that population for the aggregate period 2006-2010.

The population in Bertie County had the smallest proportion of military veterans among the jurisdictions under comparison. Veterans composed 7.5% of Bertie County's overall adult civilian population in the period cited.

Although it was not home to the largest contingent, Bertie County apparently was home to the oldest veteran population among the comparators: 44.4% of the veterans in Bertie County were

age 65 or older, compared to 38.0% in the region and 34.1% in Hertford County. Nationally, 40.0% of the veteran population was age 65 or older; in NC the comparable figure was 35.7%.

Table 13. Veteran Status of Population (Five-Year Estimate, 2006-2010)

Location	Civilian Population 18 years and over					% Veterans by Age				
	Total	# Non-Veterans	% Non-Veterans	# Veterans	% Veterans	18 to 34 years	35 to 54 years	55 to 64 years	65 to 74 years	75 years and over
Bertie County	16,300	15,076	92.5	1,224	7.5	0.7	28.3	26.6	22.6	21.8
Regional Total	101,634	88,534	87.1	13,100	12.9	n/a	n/a	n/a	n/a	n/a
Regional Average	14,519	12,648	87.1	1,871	12.9	5.9	26.3	25.4	19.7	18.3
Hertford County	19,039	17,513	92.0	1,526	8.0	4.0	34.9	26.9	13.1	21.0
State of NC	6,947,547	6,200,495	89.2	747,052	10.8	8.7	30.0	25.7	17.9	17.8
National Total	228,808,831	206,156,335	90.1	22,652,496	9.9	7.8	26.3	25.4	19.0	21.4

Source: US Census Bureau, American Fact Finder. Veteran Status, 2010 American Community Survey 5-Year Estimate. Table S2101: Veteran Status; http://factfinder2.census.gov.

Blind and Visually-Impaired Persons

Table 14 presents recent data on the number of blind or visually-impaired persons in the jurisdictions being compared. In 2011, there were 72 blind or visually-impaired persons living in Bertie County, and a total of 463 persons with those disabilities region-wide.

Table 14. Blind and Visually-Impaired Persons (2011)

Location	Number Blind/Visually Impaired (2011)
Bertie County	72
Regional Total	463
Regional Average	66
Hertford County	148
State of NC	20,972

Source: Log into North Carolina (LINC) Database, Topic Group Vital Statistics and Health (Data Item 520); http://data.osbm.state.nc.us/pls/linc/dyn_linc_main.show

CIVIC ENGAGEMENT

Electoral Process

One measure of a population's engagement in community affairs is its participation in the electoral process. Tables 15 and 16 summarize current voter registration and historical voter turnout data. Note that turnout in any particular election is at least partially determined by the voters' interest and investment in the particular issues on the ballot at that time.

Registered Voters

- According to the State Board of Elections, the proportion of the voting age population registered to vote in Bertie County in 2012 was 100.2%, a phenomenon that occurs because of the source of the figures (see the footnote to the table, below).
- Approximately 60% of the registered voters in Bertie County were Black/African American, close to the proportion this racial group represented in the overall county population (62.5%) in 2010.

Table 15. Registered Voters, by Race/Ethnicity, Number and Percent (As of 12/29/12)

Location	Estimated Voting Age Population (2012)	Number and Percent of Voting Age Population Registered to Vote											
		Total		White		Black		American Indian		Hispanic		Other	
		No.[1]	%	No.	%	No.	%	No.	%	No.	%	No.	%
Bertie County	14,994	15,001	100.2	5,369	35.8	8,988	59.9	20	0.1	28	0.2	624	4.2
Regional Average	15,719	14,031	100.4	9,055	66.5	4,458	30.1	25	0.2	61	0.4	493	3.2
Hertford County	19,466	15,398	100.4	5,302	34.4	9,612	62.4	107	0.7	55	0.4	377	2.4
State of NC	7,351,323	6,624,136	101.7	4,698,878	70.9	1,489,770	22.5	53,833	0.8	114,149	1.7	381,654	5.8
Source:	a	b	c	b	c	b	c	b	c	b	c	b	c

[1] The total number of registered voters reported by the NC State Board of Elections is based on the sum of registrations by party affiliation, and does not necessarily equal the sum of registrations by race. Therefore, the sum of the percentages does not equal 100%.

a - Log Into North Carolina (LINC) Database, Topic Group Government, Voters and Elections, Voting Age Population (Data Item 1714), 2012; http://data.osbm.state.nc/pls/linc/dyn_linc_main.show.

b - NC State Board of Elections, Voter Registration, Voter Statistics, Voter Registration Statistics, By County; http://www.app.sboe.state.nc.us/webapps/voter_stats/.

c - Percentages are calculated

Voter Turnout

Note that voter turnout was higher in every jurisdiction cited in elections that included a presidential race (2004 and every four-years).

Table 16. Voter Turnout in General Elections (2004-2012)

Location	% Registered Voters that Voted				
	2004	2006	2008	2010	2012
Bertie County	57.00	30.00	69.88	47.24	69.30
Regional Average	58.57	35.29	68.67	44.37	65.81
Hertford County	56.00	29.00	70.62	45.19	71.96
State of NC	64.00	37.00	69.93	43.75	68.42

Source: NC State Board of Elections, Elections Central, Elections Results Data (years as noted), General Elections; http://www.sboe.state.nc.us/content.aspx?id=69.

RELIGIOUS LIFE

The fabric of a community is often maintained and repaired through its citizens' participation in organized religion. Increasingly, health and human service providers have come to realize that the faith community can be an important partner in assuring the health and well-being of at least its members if not larger segments of the population.

Table 17 lists the religious bodies in Bertie County. These data, gathered in January 2013, show that there is a range of options for exploring faith and religion within the county.

Table 17. Religious Bodies in Bertie County (January, 2013)

Religious Bodies	Number of Congregations	Number of Adherents
Assemblies of God	5	750
Bahai	0	24
Catholic Church	1	76
Christian Church (Disciples of Christ)	2	0
Church of God in Christ	3	473
Episcopal Church	3	206
International Pentecostal Holiness Church	2	304
Jehovah's Witness	1	n/a
National Baptist Convention, USA, Inc.	5	710
National Missionary Baptist Convention, Inc.	1	177
Non-denominational	2	462
Southern Baptist Convention	23	4,424
United Methodist Church	4	409
TOTAL	52	8,015

Source: Association of Religious Data Archives (ARDA), US Congregational Membership: Reports, County Membership Report, Browse Reports, Counties; http://www.thearda.com/rcms2010/.

COMMUNITY SERVICES AND ORGANIZATIONS

Law Enforcement

There are three municipalities in Bertie County that have their own police departments: Aulander, Windsor, and Lewiston-Woodville. The rest of the county is covered by the Bertie County Sheriff's Office, headquartered in Windsor.

Fire and Rescue Departments

The ten fire departments that serve Bertie County are listed in Table 18.

Table 18. Fire Departments in Bertie County (February, 2013)

Department Name	Location
Askewville Volunteer Fire Department	Windsor
Aulander Municipal Volunteer Fire Department	Aulander
Blue Jay Volunteer Fire Department	Windsor
Colerain Volunteer Fire Department	Colerain
Lewiston Woodville Volunteer Fire and EMS, Inc	Lewiston Woodville
Merry Hill-Midway Volunteer Fire Department	Merry Hill
Millennium Fire Department, Inc	Aulander
Powellsville Volunteer Fire Department, Inc	Powellsville
Roxobel Volunteer Fire Department	Roxobel
Windsor Fire Department	Windsor

Source: Fire Department Directory, North Carolina, Bertie County; http://firedepartmentdirectory.com/location/County-Fire-Departments.aspx?state=North%20Carolina&county=Bertie

Public Libraries

There are three public libraries that serve the people of Bertie County (13):

- Lawrence Memorial Public Library (Windsor)
- Sallie Harrell Jenkins Memorial Library (Aulander), and
- Albemarle Regional Library (Winton).

Council on Aging/Senior Center

The Bertie County Council on Aging serves all Bertie County senior citizens, age 60 and older. Council programs serve between 400 and 500 seniors and their family caregivers during a typical year. Council on Aging programs include (14):

- *Congregate nutrition* provides a noontime meal Monday through Friday at three sites in the county: Windsor, Aulander, and Colerain. Each participant age 60 and older is asked to contribute $1.00 toward the cost of a meal.

- *Home delivered meals,* or "Meals on Wheels" provides a lunchtime meal to home-bound seniors on Monday through Friday. There are two delivery routes in the county, one in Windsor and one in Aulander. Meals-to-go are available for pick-up, but not delivery, in Colerain. Each participant age 60 and older is asked to contribute $1.00 toward the cost of a meal.
- *Transportation* for seniors from all areas of the county is provided to the Windsor nutrition site, the Department of Social Services, the Health Department, grocery stores, drug stores, the post office and other county sites on a pre-scheduled basis through a contract with the Choanoke Public Transportation Authority. Each participant is asked to contribute $1.00 to help subsidize the service.
- *In-home respite* care via certified nursing assistants is provided to relieve primary, unpaid caregivers. Space is limited and many families are on a waiting list. Each family is asked to contribute $1.00 per hour toward the cost of the service.
- The *Senior Center*, located in Windsor, provides activities for seniors and information on services available to them.
- *Wellness, Exercise and Arts and Crafts* classes and programs are offered at sites in Windsor and Colerain. The Senior Center also plans and administers day field trips.
- *Health Services*, such as flu shots and blood pressure checks, are provided by the health department at nutrition sites.
- *Library Services* available to seniors include a large-print library and periodic visits from a Bookmobile.

Other Community Services and Organizations

It is a nearly impossible task to create a print catalogue or listing of community resources that is current beyond its print date. Therefore, this CHA document provides instead *links* to on-line or telephone resources that provide information on community organizations and services available to Bertie County residents. These particular community resource directories and guides have been included because they are sponsored and/or maintained by entities likely to remain in existence, and because they cover a range of community resources.

[Note that Health and Health Care Resources, while included in some of the directories and guides cited below, are discussed in detail in a separate section of this CHA.]

Bertie County Community Resource Directories and Guides

Windsor-Bertie Chamber of Commerce

Lists of schools, churches and civic organizations in Bertie County.
Portal - http://www.obxchamber.com/Bertiedirectory.cfm.

Bertie County Government Directory of Services

Alphabetical list of live links to services provided by the county.
Portal: http://www.co.bertie.nc.us/.

Albemarle Smart Start Partnership Community Resource Guide

Searchable on-line directory of programs and services available throughout the Albemarle Region.
Currently catalogs annotated listings for 125 local and regional agencies and organizations.
Portal - http://www.albemarlessp.org/resource-guide.
Also available as a printable version at:
http://www.albemarlessp.org/sites/default/files/community-resource-guide.pdf.

North Carolina Arts Council

The NC Arts Council maintains a resource list of cultural, arts, and civic organizations that is searchable by county.
Currently catalogs 33 regional resources.
Portal: http://www.ncarts.org/county.cfm?county=Bertie.

CHAPTER TWO: SOCIOECONOMIC DATA

ECONOMIC CLIMATE

Tier Designation

The NC Department of Commerce annually ranks the state's 100 counties based on economic well-being and assigns a Tier Designation. The parameters included in the assignment include unemployment rate, median household income, population growth, and assessed property value per capita. The 40 most distressed counties are designated as Tier 1, the next 40 as Tier 2, and the 20 least distressed as Tier 3. The Tier system is incorporated into various state programs, including a system of tax credits (Article 3J Tax Credits) that encourage economic activity and business investment in less prosperous areas of NC. In 2013, Bertie County and Hertford Counties were assigned Tier 1 designations (15).

County Revenue Indicators

Local government in Bertie County tracks certain revenue indicators (e.g., building permits, sales, and receipts) in order to assess changes in the economic well-being of the community. Table 19 presents an annual summary of two of these indicators—commercial and residential building permits—for 2008-2012. These parameters are indicators of economic development through investment in buildings and lands, and their growth could be considered a sign of confidence in the county's economic infrastructure.

- The number and value of commercial building permits fluctuated over the period from 2008 through 2012, without particular congruence with signs of an improving national economy.
- The number and value of residential building permits fell from year to year throughout the period cited. This may or may not be a sign of a faltering local economy, since residential building permits sometimes increase dramatically with the initiation of major residential housing developments, only to fall once building is underway.

Table 19. Bertie County Revenue Indicators (2008-2012)

Revenue Indicator	Calendar Year				
	2008	2009	2010	2011	2012
Commercial Building Permits					
Number of Permits	24	25	13	25	14
Value of Permits	$2,701,563	$3,075,750	$1,172,850	$2,310,178	$1,335,625
Residential Building Permits					
Number of Permits	174	134	129	100	63
Value of Permits	$7,115,106	$4,333,634	$4,415,424	$2,688,578	$3,065,306

Source: Sandy H. Bryant, Bertie County Government. Personal communication to Dana Hamill, Public Health Educator, Albemarle Regional Health Services, Perquimans County Health Department, January 30, 2013.

Income

While revenue indicators give us some idea of economic health from the community economic development standpoint, income measures tell us about the economic well-being of individuals

in the community. Among the more useful income measures are personal income, family income, and household income. For comparison purposes, personal income is calculated on a per capita basis; family income and household income are viewed as a median value for a target population. The following are definitions of each of the three income categories:

- *Per capita personal income* is the income earned per person 15 years of age or older in the reference population.
- *Median household income* pertains to the incomes of all the people 15 years of age or older living in the same household (i.e., occupying the same housing unit) regardless of relationship. For example, two roommates sharing an apartment would be a household, but not a family.
- *Median family income* pertains to the income of all the people 15 years of age or older living in the same household who are related either through marriage or bloodline. For example, in the case of a married couple who rent out a room in their house to a non-relative, the household would include all three people, but the family would be just the couple.

Table 20 summarizes recent income data for Bertie County and its comparators. Among these jurisdictions:

- Bertie County had the lowest income figures in every category, and its measures were consistently and significantly below the comparable state averages.
- Per capita personal income was highest statewide and lowest in Bertie County, where the figure was almost $7,000 lower than the state figure.
- Median household income was highest statewide and lowest in Bertie County, where the figure was almost $16,000 lower than the state figure.
- Median family income was highest as the seven-county regional average and lowest in Bertie County, where it was more than $13,300 below the state average.

Table 20. Income Measures

Location	Per Capita Personal Income (2011)	Per Capita Income Difference from State	Estimated Median Household Income (2011)	Median Household Income Difference from State	Estimated Median Family Income (2010)	Median Family Income Difference from State
Bertie County	$16,977	-$6,978	$28,142	-$15,774	$39,443	-$13,477
Regional Average	$19,135	-$4,820	$36,236	-$7,680	$55,017	$2,097
Hertford County	$17,143	-$6,812	$29,172	-$14,744	$39,973	-$12,947
State of NC	$23,955	n/a	$43,916 [1]	n/a	$52,920 [1]	n/a

[1] US Census Bureau, American Fact Finder, 2010 ACS 5-Year Estimate. http://factfinder2.census.gov.
Source (except as noted): NC Department of Commerce, AccessNC, Community Demographics, County Report, County Profile, http://accessnc.commerce.state.nc.us/EDIS/page1.html.

Employment

The following definitions will be useful in understanding the data in this section.

- *Labor force*: includes all persons over the age of 16 who, during the week, are employed, unemployed or in the armed services.
- *Unemployed*: civilians who are not currently employed but are available for work and have actively looked for a job within the four weeks prior to the date of analysis; also, laid-off civilians waiting to be called back to their jobs, as well as those who will be starting new jobs in the next 30 days.
- *Unemployment rate*: calculated by dividing the number of unemployed persons by the number of people in the civilian labor force.

Employment by Sector

Table 21 details the various categories of industry by sector in Bertie County and its three jurisdictional comparators for 2011, showing the number employed in each sector, the percentage of all employment that that number represents, and the average annual wage for people employed in each sector.

- The industry in Bertie County that employed the largest percentage of the workforce (29.86%) was Health Care and Social Assistance. This was also the sector among those listed with the sixth lowest average annual wage per employee ($22,241).
- Public Administration accounted for the second largest percentage of the Bertie County workforce, at 19.07%, followed in third place by Educational Services, at 13.80%. No other single sector accounted for as much as 10% of the total workforce in Bertie County.
- In Hertford County, the sector employing the largest percentage of the workforce (23.90%) also was Health Care and Social Assistance, followed by Manufacturing, (12.11%), and Educational Services (12.02%).
- Region-wide, the sector employing the largest percentage of the workforce (17.30%) was Health Care and Social Assistance, followed by Educational Services (14.16%) and Retail Trade (13.22%).
- Statewide, the sector employing the largest percentage of the workforce was Health Care & Social Assistance (14.33%), followed by Manufacturing (11.64%) and Retail Trade (11.46%).
- The average annual wage per employee in Bertie County in 2011 was $27,861, $5,913 less than the average annual wage per employee in Hertford County, $2,350 less than the average region-wide, and $18,911 less than the average statewide.

Table 21. Insured Employment and Wages by Sector
(Annual Summary, 2011)

Sector	Bertie County			Hertford County			Regional Average			North Carolina		
	Avg. Ann. No. Employed	% Total Annual Employment in Sector[1]	Average Annual Wage per Employee	Avg. Ann. No. Employed	% Total Annual Employment in Sector	Average Annual Wage per Employee	Avg. Ann. No. Employed	% Total Annual Employment in Sector	Average Annual Wage per Employee	Avg. Ann. No. Employed	% Total Annual Employment in Sector	Average Annual Wage per Employee
Agriculture, Forestry, Fishing & Hunting	327	8.04	$32,372	190	2.15	$29,061	956	2.94	$32,961	29,340	0.76	$28,752
Mining	*	n/a	*	n/a	n/a	n/a	0	n/a	n/a	3,378	0.09	$45,828
Utilities	*	n/a	*	81	0.92	$64,000	8	0.02	n/a	13,917	0.36	$76,552
Construction	*	n/a	*	304	3.45	$45,684	1,119	3.45	$29,678	194,022	5.03	$41,316
Manufacturing	*	n/a	*	1,068	12.11	$58,527	1,326	4.08	$39,387	448,566	11.64	$52,613
Wholesale Trade	147	3.62	$43,570	455	5.16	$28,258	1,187	3.66	$37,610	167,533	4.35	$61,194
Retail Trade	292	7.18	$22,168	996	11.30	$21,101	4,292	13.22	$20,787	441,664	11.46	$24,650
Transportation & Warehousing	174	4.28	$43,560	105	1.19	$39,397	1,129	3.48	$40,975	125,395	3.25	$43,400
Information	11	0.27	$20,757	74	0.84	$28,865	217	0.67	$32,064	72,495	1.88	$63,833
Finance & Insurance	84	2.07	$32,318	160	1.81	$40,986	1,006	3.10	$39,722	149,135	3.87	$75,088
Real Estate & Rental & Leasing	9	0.22	$10,755	90	1.02	$30,684	635	1.96	$22,342	49,753	1.29	$38,476
Professional, Scientific & Technical Services	49	1.21	$29,867	117	1.33	$23,553	1,062	3.27	$43,178	180,237	4.68	$66,951
Management of Companies & Enterprises	n/a	n/a	n/a	*	n/a	*	53	0.16	$23,125	73,019	1.89	$88,763
Administrative & Waste Services	120	2.95	$35,119	418	4.74	$44,316	1,180	3.63	$29,725	212,177	5.50	$30,258
Educational Services	561	13.80	$31,741	1,060	12.02	$33,120	4,597	14.16	$34,771	382,110	9.91	$39,787
Health Care & Social Assistance	1214	29.86	$22,241	2,107	23.90	$28,075	5,619	17.30	$29,459	552,337	14.33	$42,811
Arts, Entertainment & Recreation	21	0.52	$28,073	*	n/a	*	341	1.05	$18,092	68,749	1.78	$28,474
Accommodation & Food Services	178	4.38	$11,593	602	6.83	$11,332	2,866	8.82	$12,263	346,059	8.98	$14,877
Other Services	103	2.53	$19,201	263	2.98	$15,740	1,136	3.50	$23,337	241,703	6.27	$43,641
Public Administration	775	19.07	$34,586	727	8.25	$31,456	3,747	11.54	$34,317	94,676	2.46	$28,182
Unclassified	*	n/a	*	*	n/a	*	0	0.00	n/a	9,010	0.23	n/a
TOTAL/AVERAGE ALL SECTORS	4,065	100.00	$27,861	8,817	100.00	$33,774	32,476	100.00	$30,211	3,855,275	100.00	$46,772

[1] Percent Total Employment in Sector values were calculated by dividing the Avg. Number of Employed within a sector by the total employees in All Sectors.

* Disclosure suppressed

Source: NC Employment Security Commission, Labor Market Information, Industry Information. Employment and Wages Data by Industry, 2011, Annual Summary. By State or by County; http://eslmi23.esc.state.nc.us/ew/EWYear.asp?Report=1. (Search tool inputs: Ownership type = aggregate of all types; Industry NAICS level = Sector (2 digit); both Employment and Wages.)

Largest Employers

Table 22 lists the largest 25 employers in Bertie County as of the end of the 3rd Quarter, 2011.

- Only one employer listed—Perdue Products, Inc.—employed more than 1,000 people.
- The second largest employer was the Bertie County Board of Education, followed by the NC Department of Corrections.

Table 22. Largest 25 Employers in Bertie County (Third Quarter, 2011)

Rank	Employer	Industry	No. Employed
1	Perdue Products Incorporated	Manufacturing	1000+
2	Bertie County Board Of Education	Education & Health Services	500-999
3	State Of NC Dept Of Correction	Public Administration	250-499
4	Baufour Beatty Construction	Construction	250-499
5	County Of Bertie	Public Administration	100-249
6	Solid Foundation	Education & Health Services	100-249
7	East Carolina Health Inc	Education & Health Services	100-249
8	Home Life Care Inc	Education & Health Services	50-99
9	New Hope Foundation Inc	Education & Health Services	50-99
10	Avoca Inc	Manufacturing	50-99
11	Land Contractors Inc	Trade, Transportation & Utilities	50-99
12	Perdue Fats & Proteins Llc	Manufacturing	50-99
13	Liberty Healthcare Group Llc	Education & Health Services	50-99
14	Brian Ctr Health & Retirement	Education & Health Services	50-99
15	Michael W Burke Inc	Trade, Transportation & Utilities	50-99
16	Livermans Metal Recycling Inc	Professional & Business Services	50-99
17	Town Of Windsor	Public Administration	50-99
18	White Oak Medical Transport Service	Education & Health Services	Below 50
19	Golden Peanut Company	Natural Resources & Mining	Below 50
20	Uplift Residential Services Inc	Education & Health Services	Below 50
21	Lawrence Academy	Education & Health Services	Below 50
22	Eastern Home Healthcare Inc	Education & Health Services	Below 50
23	Food Lion Llc	Trade, Transportation & Utilities	Below 50
24	Windsor House	Education & Health Services	Below 50
25	Bertie Ambulance Service Inc	Education & Health Services	Below 50

Source: NC Department of Commerce, Economic Intelligence Development System (EDIS), Business Data, Top Employers, by County; http://accessnc.commerce.state.nc.us/EDIS/business.html.

Travel for Employment

Data gathered by the US Census Bureau on how many resident workers travel outside the county for employment can help demonstrate whether or not a county provides adequate employment opportunities for its own citizens. The economic impact of out-of-state employment is that those workers may pay taxes and spend part of their income out of state. Table 23 summarizes 2007-2011 estimated travel for employment data for Bertie County and its comparator jurisdictions.

- A majority—60%—of Bertie County resident workers were employed within the county.
- Of the 3,209 Bertie County resident workers who left the county for work, 467 worked out-of-state and 2,742 worked elsewhere in NC.
- In Hertford County, 66% of resident workers worked in-county; of the 2,889 who worked elsewhere, 31% (892) worked out-of-state.

- Region-wide, only 45% of resident workers worked in-county; approximately 24% worked out-of-state.
- Statewide, roughly 72% of resident workers worked in their county of residence; 25% worked in another county, and less than 3% worked out-of-state.

Table 23. Place of Work for Resident Workers Over Age 16 (Five-Year Estimate, 2007-2011)

Location	Number and Percent of Residents										
	Total # Workers Over 16	# Working in NC	% Working in NC	# Working in County	% Working in County	# Working out of County	% Working out of County	# Working out of State	% Working out of State	Total # Leaving County for Work	Total % Leaving County for Work
Bertie County	7,998	7,531	94.2	4,789	59.9	2,742	34.3	467	5.8	3,209	40.1
Regional Average	8,155	6,265	75.6	4,236	44.8	2,029	30.8	1,890	24.4	3,919	55.2
Hertford County	8,509	7,617	89.5	5,620	66.0	1,997	23.5	892	10.5	2,889	34.0
State of NC	4,221,511	4,115,156	97.5	3,035,545	71.9	1,065,215	25.2	105,186	2.5	1170401	27.7

Note: percentages are calculated and may include some rounding error.
Source: US Census Bureau, American Fact Finder, 2011 ACS 5-Year Estimate, Table B08007: Sex of Workers by Place of Work, State and County Level; http://factfinder.census.gov.

Modes of Transportation to Work

Besides serving as an indicator of environmentalism, the mode of transportation workers use to get to their places of employment can also point to the relative convenience of local workplaces and the extent of the local public transportation system. Table 24 compares data on modes of transportation to work from the 2000 US Census and a 2011 Census Bureau estimate.

- Very few Bertie County workers used public transportation to get to work in either 2000 or 2007-2011. Use of public transportation for getting to work was not common in any of the jurisdictions being compared.
- The number of Bertie County workers who carpooled decreased between 2000 and 2007-2011. Carpooling also decreased in Hertford County and statewide over the same period, but increased slightly region-wide.
- The number of workers who walked to work increased in Bertie County and NC.
- The number of Bertie County workers who worked at home increased by 73% between 2000 and 2007-2011. Working-at-home also increased in NC and region-wide.

Table 24. Modes of Transportation to Work (2000 and 2007-2011 Five -Year Estimate)

Location	Number of Persons									
	Drove Alone		Carpooled		Used Public Transportation		Walked		Worked at Home	
	2000	2007-2011	2000	2007-2011	2000	2007-2011	2000	2007-2011	2000	2007-2011
Bertie County	5,504	6,025	1,490	1,312	19	18	181	249	123	213
Regional Average	5,233	6,065	1,185	1,249	49	36	166	135	164	220
Hertford County	6,065	6,473	1,884	1,595	68	17	181	153	156	107
State of NC	3,046,666	3,405,376	538,264	462,747	34,803	44,920	74,147	76,424	102,951	177,145
Source:	a	b	a	b	a	b	a	b	a	b

a - US Census Bureau, American Fact Finder, 2000 US Census Data Sets, Summary File 3, Detailed Tables, Means of Transportation to Work for Workers 16 Years and Over; http://factfinder.census.gov.
b - US Census Bureau, American Fact Finder, 2011 American Community Survey 5-Year Estimates, Data Profiles, County, North Carolina (Counties as listed); http://factfinder.census.gov.

Public Transportation in Bertie County

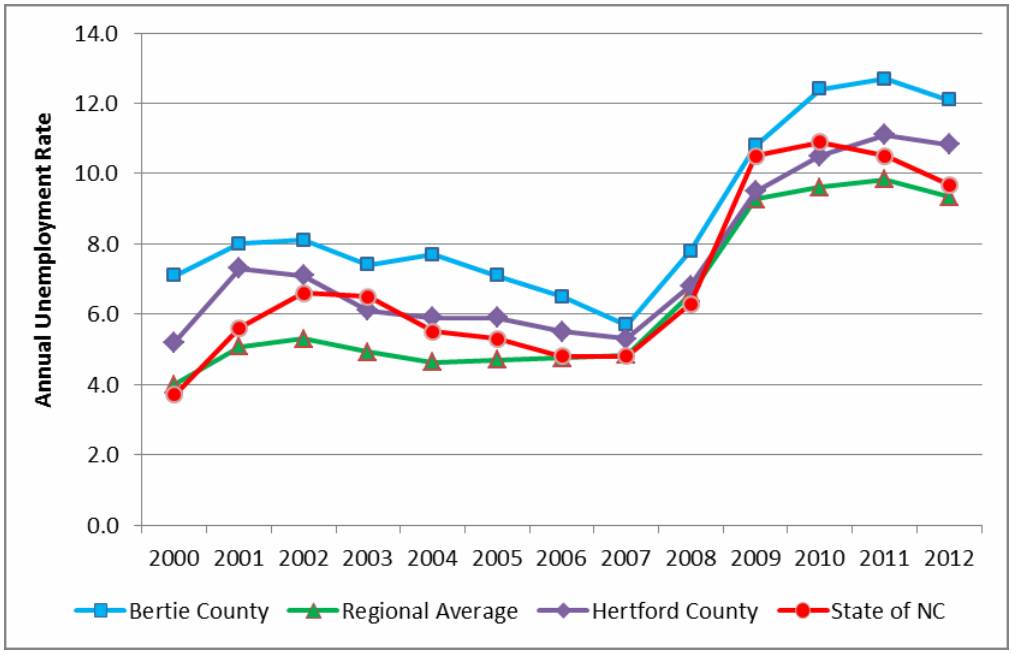
The only public transportation in Bertie County is the Choanoke Public Transportation Authority (CPTA), named for its location in the basin of the Chowan and Roanoke rivers. CPTA serves an area of over 2,300 square miles in Bertie, Halifax, Hertford and Northampton Counties. CPTA, established in 1977, is the oldest regional public transportation authority in NC and one of the first coordinated systems. CPTA provides subscription route (scheduled and recurring on a standard pattern) demand-response (scheduled as services are needed) and Rural General Public Services. CPTA operates Monday through Friday only except for dialysis routes. CPTA contracts to serve departments of social services, public health and aging/senior services in its coverage area. Trips out of the service area to medical facilities in Rocky Mount and Greenville are offered on specified days. Services are open to the general public and routes are accessible to persons with disabilities (16). In FY2011-12, CPTA provided 34,975 trips for Bertie County passengers (17).

Unemployment

Figure 6 plots the unemployment rate in Bertie County and its jurisdictional comparators.

- Beginning with 2008 data, the unemployment rate began to rise sharply in all four jurisdictions. Unemployment began to decrease in Bertie and Hertford Counties as well as the region as a whole beginning in 2012. The decrease statewide began in 2011.
- Throughout the period cited, the unemployment rate in Bertie County was the highest among the four jurisdictions.

Figure 6. Annual Unemployment Rate (2000-2012)



Note: 2012 figures represent the average monthly rate from January through September.
Source: NC Employment Security Commission, Labor Market Information, Workforce Information, Employed, Unemployed and Unemployment Rates, Labor Force Statistics, Single Areas for All Years; http://eslmi03.esc.state.nc.us/ThematicLAUS/clfasp/startCLFSAAY.asp.

Business Closings and Layoffs

The NC Employment Security Commission monitors business closings and layoffs across the state, by county. The data collection system is partially anecdotal and therefore imprecise, since it relies on data submitted to the commission and on monitored newspaper reports. Sometimes the data notes a layoff or closing, but not re-hirings or re-openings. Table 25 lists the business closings and layoffs catalogued for Bertie County for the period from 2008 to 2012.

- According to these data, from 2008 through 2012 there was one announced business closing in Bertie County, involving an unknown number of workers. In addition, there was one announced layoff, involving eight persons, during the same period.

Table 25. Business Closings and Layoffs in Bertie County (2008-2012)

Effective Date	Company	City	Product	No. Affected	Reason	Closing/ Layoff
2011	Bertie County Schools	Windsor	Education	8	Reduction in force	LY
2010	C.G. White School	Powellsville	School	n/a	Budget cuts	CL

Source: NC Employment Security Commission, Labor Market Information Division, Demand Driven Data Delivery System, Announced Business Closings and Permanent Layoffs; http://esesc23.esc.state.nc.us/d4/AnnounceSelection.aspx.

Poverty

The poverty rate is the percent of the population (both individuals and families) whose money income (which includes job earnings, unemployment compensation, social security income, public assistance, pension/retirement, royalties, child support, etc.) is below a federally established threshold; this is the "100%-level" figure.

Table 26 shows the annual poverty rate for the period from 1970-2000 and the estimated poverty rate for two five year periods: 2006-2010 and 2007-2011. The data in this table describe an overall rate, representing the entire population in each geographic entity. As subsequent data will show, poverty may have strong racial and age components that are not discernible in these numbers.

- In Bertie County, the seven-county ARHS region and the state of NC, the poverty rate fell each decade from 1970 through 2000. Since 2000, the poverty rate in Bertie County has been flat, at approximately 23.4%.
- In the ARHS region, the average poverty rate remained at around 16.4% in 2000 and 2006-2010, but rose 7% to 17.5% in 2007-2011.
- The poverty rate in Hertford County was quite volatile over the entire period cited, and stood at 24.7% in 2007-2011, the highest rate for the county since 1990.
- Bertie County had the highest poverty rate among the four jurisdictions for the decades 1970 through 2000 and the second-highest poverty rate in 2006-2010 and 2007-2011.
- Overall, the poverty rates in all four jurisdictions fell between 1970 and 2007-2011. In Bertie County, the overall decrease was 47%.

Table 26. Annual Poverty Rate
(1970-2000; 2006-2010 and 2007-2011 Five-Year Estimates)

Location	Percent of All People in Poverty					
	1970	1980	1990	2000	2006-2010	2007-2011
Bertie County	44.3	29.4	25.9	23.5	23.2	23.6
Regional Average	31.8	21.5	18.1	16.5	16.4	17.5
Hertford County	34.7	24.3	25.0	18.3	24.1	24.7
State of NC	20.3	14.8	13.0	12.3	15.5	16.1
Source:	a	a	a	a	b	c

a - Log Into North Carolina (LINC) Database, Topic Group Employment and Income (Data Item 6094); http://data.osbm.state.nc.us/pls/linc/dyn_linc_main.show.
b - US Census Bureau, American Fact Finder, American Community Survey, 2010 American Community Survey 5-Year Estimates, Data Profiles, County, North Carolina (Counties as listed); http://factfinder2.census.gov.
c - US Census Bureau, American Fact Finder, American Community Survey, 2011 American Community Survey 5-Year Estimates, Data Profiles, County, North Carolina (Counties as listed); http://factfinder2.census.gov.

Table 27 presents poverty data stratified by broad racial group (white/black). It is clear from these data that Blacks/African Americans have much higher poverty rates than whites.

- Across all time periods and in all jurisdictions cited in the table, the poverty rate among blacks was two to three-and-one-half times the poverty rate among whites.

Table 27. Persons in Poverty by Race
(2000; 2006-2010 and 2007-2011 Five-Year Estimates)

Location	2000				2006-2010				2007-2011			
	Total No. in Poverty	Total % in Poverty	% White in Poverty	% Black in Poverty	Total No. in Poverty	Total % in Poverty	% White in Poverty	% Black in Poverty	Total No. in Poverty	Total % in Poverty	% White in Poverty	% Black in Poverty
Bertie County	4,597	23.5	9.4	31.5	4,724	23.2	12.2	29.3	4,758	23.6	9.3	31.5
Regional Average	2,769	16.5	8.9	29.7	3,094	16.4	9.9	29.2	3,330	17.5	10.7	30.6
Hertford County	4,078	18.3	9.7	23.3	5,448	24.1	14.2	30.9	5,598	24.7	14.7	31.8
State of NC	958,667	12.3	8.5	22.9	1,399,945	15.5	11.2	25.6	1,473,556	16.1	11.8	26.1
	a	a	a	a	b	b	b	b	c	c	c	c

a - Log Into North Carolina (LINC) Database, Topic Group Employment and Income (Data Items 6094, 6096, 6098); http://data.osbm.state.nc.us/pls/linc/dyn_linc_main.show.
b - US Census Bureau, American Fact Finder, American Community Survey, 2010 American Community Survey 5-Year Estimates, Data Profiles, County, North Carolina (Counties as listed); http://factfinder2.census.gov.
c - US Census Bureau, American Fact Finder, American Community Survey, 2011 American Community Survey 5-Year Estimates, Data Profiles, County, North Carolina (Counties as listed); http://factfinder2.census.gov.

Table 28 presents poverty data stratified by age group. From these data it is apparent that children suffer disproportionately from poverty.

- In all four jurisdictions in every time period cited in the table, the poverty rate for children under the age of 18 exceeded the overall poverty rate by from 16% to 75%, with the greatest average variance—47%—occurring in the ARHS region. The remaining average variances were 44% in Bertie County, 42% in Hertford County, and 35% in NC.

Table 28. Persons in Poverty by Age
(2000; 2006-2010 and 2007-11 Five-Year Estimates)

Location	2000			2006-2010			2007-2011		
	Total % in Poverty	% Children Under 18 in Poverty	% Adults 65 or Older in Poverty	Total % in Poverty	% Children Under 18 in Poverty	% Adults 65 or Older in Poverty	Total % in Poverty	% Children Under 18 in Poverty	% Adults 65 or Older in Poverty
Bertie County	23.5	30.7	28.3	23.2	29.5	17.0	23.6	41.2	18.2
Regional Average	16.5	22.2	19.2	16.4	24.3	12.7	17.5	27.7	12.6
Hertford County	18.3	21.3	21.0	24.1	37.8	17.5	24.7	37.5	18.7
State of NC	12.3	15.7	13.2	15.5	21.3	10.7	16.1	22.6	10.3
Source:	a	a	a	b	b	b	c	c	c

a - Log Into North Carolina (LINC) Database, Topic Group Employment and Income (Data Items 6094, 6100, 6102, 6104); http://data.osbm.state.nc.us/pls/linc/dyn_linc_main.show.
b - US Census Bureau, American Fact Finder, American Community Survey, 2010 American Community Survey 5-Year Estimates, Data Profiles, County, North Carolina (Counties as listed); http://factfinder2.census.gov.
c - US Census Bureau, American Fact Finder, American Community Survey, 2011 American Community Survey 5-Year Estimates, Data Profiles, County, North Carolina (Counties as listed); http://factfinder2.census.gov.

Children Receiving Free or Reduced-price School Lunch

Other data corroborate the impression that children, especially the very young, bear a disproportionate burden of poverty, and that their burden is increasing. One measure of poverty among children is the number and/or percent of school-age children who are eligible for and receive free or reduced-price school lunch.

Students have to be eligible to receive meals; not everyone who is eligible will choose to enroll in the program and receive meals. To be eligible for *free* lunch under the National School Lunch Act students must live in households earning at or below 130 percent of the Federal poverty guidelines. To be eligible for *reduced-price* lunch students must live in households earning at or below 185 percent of the Federal poverty guidelines.

Tables 29 and 30 show the percent of students *enrolled* to receive free or reduced-price lunch. The source for the data in Table 29 is the national Annie E. Casey Foundation *Kids Count Data Center*; the source for the data in Table 30 (specific to Bertie County only) is Bertie County Schools. To help readers grasp the numbers behind the percentages in all jurisdictions, Table 31, based on data from the NC Department of Public Instruction, shows the number of students who *received* either free or reduced-price school lunch in several recent school years (SYs).

- The percentage of students in Bertie County enrolled for free or reduced-price school lunch appeared to vary without a clear pattern throughout the school years presented in the table. In SY2010-11, 74.0% of students were enrolled in the program; this figure was the lowest of the time interval shown.
- Free and reduced-price school lunch enrollment in the other jurisdictions also seemed to vary without a clear pattern. The percent of students eligible for free or reduced-price lunch statewide reached its highest over the period cited in SY2010-11.

Table 29. Percent of Students Enrolled for Free or Reduced-price School Lunch (SY2003-04 through SY2010-11)

Location	Percent Students Enrolled for Free or Reduced-Price Lunch							
	SY2003-04	SY2004-05	SY2005-06	SY2006-07	SY2007-08	SY2008-09	SY2009-10	SY2010-11
Bertie County	92.6	92.5	97.1	92.4	81.7	79.5	84.4	74.0
Regional Average	54.8	54.2	54.7	53.0	52.0	52.4	55.9	54.8
Hertford County	70.1	82.6	83.1	72.2	77.7	83.0	84.2	83.0
State of NC	48.2	47.7	48.4	48.5	48.4	49.9	53.7	53.9

Source: Annie E. Casey Foundation, Kids Count Data Center, Data by State, North Carolina, Profiles (state and counties as noted), Other Education, Percent of Students Enrolled in Free and Reduced Lunch; http://datacenter.kidscount.org/data/bystate/StateLanding.aspx?state=NC.

- While the table above presented the percentage of students *enrolled* in free and reduced-price lunch programs, Table 30 presents data on the number and percent of students *eligible for* free and reduced-price lunch, which should be the higher figures. According to the locally provided data in Table 30, the total percent of students eligible for free and reduced-price lunch reached a four-year maximum of 85% in the current school year, SY2012-13.

Table 30. Bertie County Students Eligible for Free or Reduced-price School Lunch (SY2009-10 through SY2012-13)

	SY2009-10		SY2010-11		SY2011-12		SY2012-13	
	No.	%	No.	%	No.	%	No.	%
Enrollment	3,091	n/a	2,892	n/a	2,935	n/a	2,812	n/a
Paid	655	21	510	18	472	16	405	14
Reduced	292	9	232	8	256	9	248	8
Free	2,144	69	2,150	74	2,207	75	2,159	77

Source: Kimberly Cooper, Bertie County Schools. Personal communication to Dana Hamill, Public Health Educator, Albemarle Regional Health Services, Perquimans County Health Department, January 17, 2013.

From the *counts* of students receiving free or reduced-price lunch presented in Table 31 it is perhaps more clear how the population using that benefit has grown over time.

- In Bertie County the number of students receiving free or reduced-price lunch *decreased* 22% between SY2006-07 and SY2011-12.
- Region-wide the comparable figure *increased* 9% between SY2006-07 and SY2011-12.
- Statewide, the number of students receiving free or reduced-price lunch increased 18% over the same period, with incremental increases every school year.

Table 31. Number of Students Receiving Free or Reduced-price School Lunch (SY2006-07 through SY2011-12)

Location	No. Students RECEIVING Free or Reduced-Price Lunch					
	SY2006-07	SY2007-08	SY2008-09	SY2009-10	SY2010-11	SY2011-12
Bertie County	2,861	2,451	2,290	2,377	2,019	2,231
Regional Average	1,624	1,557	1,563	1,627	1,574	1,777
Hertford County	2,434	2,510	2,623	2,596	2,570	2,574
State of NC	671,831	679,877	703,887	752,708	759,361	793,893

Source: NC Department of Instruction, Data & Statistics, Other Education Data: Select Financial Data, Free and Reduced Meals Application Data (by school year). http://www.ncpublicschools.org/fbs/resources/data/.

County Economic Service Utilization

The Bertie County Department of Social Services (DSS) manages a number of programs that provide assistance to low-income people.

The *Food and Nutrition Services* program (formerly known as Food Stamps) helps eligible households buy the food they need for a nutritionally adequate diet. Benefits may be used to purchase most foods at participating stores; they may not be used to purchase tobacco, pet food, paper products, soap products, or alcoholic beverages (18).

WorkFirst is North Carolina's Temporary Assistance for Needy Families (TANF) program, through which parents can get short-term training and other services, including cash supports, to help them become employed and self-sufficient. Most families have two years to move off WorkFirst Family Assistance (19).

Table 32 presents data on the economic services provided by Bertie County DSS in FY2012-13.

- If a "case" is an individual, the caseload for food and nutrition services that totaled 2,622 represented 12.3% of the Bertie County population in the 2010 US Census.
- WorkFirst sometimes is not a very popular program due to stringent requirements once an individual enrolls. This may be why the total caseload is smaller than the number of applications approved.

Table 32. Economic Services Provided by Bertie County Department of Social Services (FY2012-13 YTD as of January 30, 2013)

Program	Applications Taken	Applications Approved	Total Caseload
Food and Nutrition	1,121	973	2,622
WorkFirst	171	109	73

Source: Linda Speller, Bertie County Department of Social Services. Personal communication to Dana Hamill, Public Health Educator, Albemarle Regional Health Services, Perquimans County Health Department, January 30, 2013.

In the fall of 2012, public and private partners in Bertie County opened the *Hive House* in Lewiston-Woodville. Home to a technology and job center, food bank and after school programs, the facility's goal is to improve the lives and economic prospects of Bertie County residents (20).

HOUSING

Table 33 presents US Census Bureau data on housing by type.

- There was roughly 15% vacant housing in Bertie County in both time periods cited, higher than the state average but lower than the regional rate, which may have reflected housing geared to seasonal residents or tourists.
- Of the occupied housing units in Bertie County, approximately 74% were owner occupied; 26% were renter occupied.
- The highest proportion of mobile homes in both periods (~31%) was in Bertie County.
- In 2000 the median monthly mortgage cost was highest statewide and second highest in the ARHS region; in 2006-2010 the highest median monthly mortgage cost was the regional average. The lowest mortgage cost in both periods was in Bertie County.
- Median monthly mortgage cost in Bertie County increased by 32% between 2000 and 2006-2010.
- In 2000 and 2006-2010 the highest median gross monthly cost for rent was the state average.
- Median gross monthly rent cost in Bertie County increased by 64% between 2000 and 2006-2010.

Table 33. Housing by Type
(2000 and 2006-2010 Five-Year Estimate)

Location	2000												
	Total Housing Units	Vacant Housing Units		Occupied Housing Units		Owner Occupied Units		Median Monthly Housing Cost, Owner with Mortgage	Renter Occupied Units		Median Gross Monthly Rent	Mobile Home Units	
	No.	No.	%	No.	%	No.	%	$	No.	%	$	No.	%
Bertie County	9,050	1,307	14.4	7,743	85.6	5,797	74.9	$649	1,946	25.1	$358	2,865	31.7
Regional Average	7,696	1,362	16.8	6,334	83.2	4,715	76.9	$854	1,619	23.1	$464	1,781	24.3
Hertford County	9,724	771	7.9	8,953	92.1	6,267	70.0	$746	2,686	30.0	$410	2,481	25.5
State of NC	3,523,944	391,931	11.1	3,132,013	88.9	2,172,355	69.4	$985	959,658	30.6	$548	577,323	16.4
Source:	a	a	a	a	a	a	a	b	a	a	c	d	d

Location	2006-2010 Estimate												
	Total Housing Units	Vacant Housing Units		Occupied Housing Units		Owner Occupied Units		Median Monthly Housing Cost, Homes With Mortgage	Renter Occupied Units		Median Gross Monthly Rent	Mobile Home Units	
	No.	No.	%	No.	%	No.	%	$	No.	%	$	No.	%
Bertie County	9,822	1,463	14.9	8,359	85.1	6,093	72.9	$855	2,266	27.7	$588	3,055	31.3
Regional Average	9,242	1,786	17.5	7,456	82.5	5,467	75.3	$1,258	1,989	24.7	$714	1,972	22.9
Hertford County	10,635	1,301	12.2	9,334	87.8	6,251	67.0	$1,009	3,083	33.0	$593	1,941	18.5
State of NC	4,327,528	582,373	13.5	3,745,155	86.5	2,497,900	66.7	$1,244	1,247,255	33.3	$718	605,418	14.3
Source:	e	e	e	e	e	e	e	f	e	e	f	f	f

a - US Census Bureau, American FactFinder, 2000 US Census, Summary File 1 (SF-1), 2000 Demographic Profile Data, DP-1, Profile of General Population and Housing Characteristics: 2000 (geographies as listed); http://factfinder2.census.gov.
b - US Census Bureau, American FactFinder, 2000 US Census, Summary File 3 (SF-3), 100-Percent Data, Table H091, Median Selected Monthly Owner Costs (Dollars) for Specified Owner-Occupied Housing Units by Mortgage Status (geographies as listed); http://www.factfinder2.census/gov.
c - Log Into North Carolina, LINC Services; State and Counties: North Carolina and selected counties; Topic Group: Population and Housing; Housing Characteristics (Data Field V6115), 2000; http://data.osbm.state.nc.us/pls/linc/dyn_linc_main.show
d - US Census Bureau, American FactFinder, 2000 US Census, Summary File 3 (SF-3), Table QTH4, Physical Housing Characteristics - All Housing Units: 2000 (geographies as listed); http://www.factfinder2.census/gov.
e - US Census Bureau, American FactFinder, 2010 US Census, Summary File 1 (SF-1), 2010 Demographic Profile Data, DP-1, Profile of General Population and Housing Characteristics: 2010 (geographies as listed); http://factfinder2.census.gov.
f - US Census Bureau, American Fact Finder, 2010 ACS 5-Year Estimates, Table DP04: Selected Housing Characteristics (geographies as listed). http://factfinder2.census.gov.

Table 34 presents data on housing costs as a percent of household income.

- In both time periods cited, the percentage of *renter-occupied* housing units costing more than 30% of household income was highest in Bertie County, and the percentage increased 4% from one period to the next.
- In 2005-2009 the percentage of *mortgaged* housing units costing more than 30% of household income was highest region-wide; in 2006-2010 the highest percentage was in Hertford County.
- In Bertie County the percentage of mortgaged units costing more than 30% of household income decreased 2% between intervals.

Table 34. Estimated Housing Cost as Percent of Household Income (2005-09 and 2006-2010 Five-Year Estimates)

Location	Renter Occupied Units						Mortgaged Housing Units					
	2005-2009			2006-2010			2005-2009			2006-2010		
	Total Units	Units Spending >30% Household Income on Housing		Total Units	Units Spending >30% Household Income on Housing		Total Units	Units Spending >30% Household Income on Housing		Total Units	Units Spending >30% Household Income on Housing	
		#	%		#	%		#	%		#	%
Bertie County	2,036	1,084	53.2	1,883	1,045	55.5	3,007	1,166	38.8	3,150	1,199	38.1
Regional Average	1,876	844	45.0	1,836	840	45.8	3,303	1,299	39.3	3,397	1,360	40.0
Hertford County	2,930	1,432	48.9	3,067	1,334	43.5	3,230	1,254	38.8	3,287	1,345	40.9
State of NC	1,131,480	486,934	43.0	1,157,690	513,340	44.3	1,634,410	513,340	31.4	1,688,790	535,120	31.7
Source	1	1	3	2	2	3	1	1	3	2	2	3

1 - US Census Bureau, American FactFinder. 2009 ACS 5-Year Estimates. Table DP04: Selected Housing Characteristics (geographies as listed). http://factfinder2.census.gov.
2 - US Census Bureau, American FactFinder. 2010 ACS 5-Year Estimates. Table DP04: Selected Housing Characteristics (geographies as listed). http://factfinder2.census.gov.
3 – Percentages are calculated.

Affordable Housing

According to information from the NC Rural Economic Development Center based on 2006-2010 US Census data estimates, 38% of housing in Bertie County was classified as "unaffordable", compared to 37% in Hertford County, and averages of 35% region-wide and 32% statewide (21). This data is at least partially reflective of the population living in households that pay more than 30% of the household income for housing costs.

The US Department of Housing and Urban Development (HUD) maintains a system for tracking "affordable" housing for its low-income clients, to whom it provides housing subsidies. HUD services are delivered through Public and Indian Housing Authority (PHA) offices throughout NC.

There is no PHA office located in Bertie County to assist residents in accessing HUD services. The nearest offices are in Elizabeth City (Pasquotank County), Edenton (Chowan County), Hertford (Perquimans County), Plymouth (Washington County), Ahoskie (Hertford County), Williamston (Martin County) and Washington (Beaufort County) (22). At the time this report was developed, there were *no* HUD-subsidized single-family homes available in Bertie County (23) and only two low-rent apartment facilities: an ARC facility in Windsor for developmentally disabled persons, and a family apartment facility, Windsor Oaks, also in Windsor (24).

The US Department of Agriculture (USDA) catalogues information about rental properties available in rural areas. The agency's Multi-Family Housing (MFH) Rental website provides an

online guide to Government assisted rental projects. At the time this report was developed, the MFH website listed four qualifying rental properties in Bertie County: Sandpiper Square in Aulander, and Cashie Apartments, Windsor Oaks, and Windsor Village, all in Windsor (25).

Homelessness

The NC Coalition to End Homelessness coordinates a statewide *Point-in-Time Count*, an unduplicated count of homeless people, held on one night in the last week of January each year. It is not clear which of the counties in the Albemarle region do or do not participate in this count, but results are available only for Pasquotank County, which reported 43 total homeless persons in 2011 and 36 in 2012. (26).

HOUSEHOLDS

Table 35 describes the number of persons living in households in the four comparator jurisdictions.

- The average number of persons per household in Bertie County—2.39—was lower than the state average and the regional average, and about the same as the figure for Hertford County.
- The percent of one-person households in Bertie County—32.9%—was higher than the comparable figure for each of the other jurisdictions.
- The percent of one-person households where the resident is age 65 or older in Bertie County—42.2%—was higher than the comparable state average, but lower than the figures for the region and Hertford County.

Table 35. Household Characteristics
(2010 US Census)

Location	Total No. Households[1]	Persons per Household	No. Households One-person	% Households One-person	No. Households One-person and Age ≥65	% Households One-person and Age ≥65
Bertie County	8,359	2.39	2,751	32.9	1,161	42.2
Regional Average	7,456	2.52	1,886	24.8	805	43.1
Hertford County	9,334	2.40	2,754	29.5	1,198	43.5
State of NC	3,745,155	2.48	1,011,348	27.0	341,864	33.8

1 - A household includes all the persons who occupy a housing unit. A housing unit is a house, an apartment, a mobile home, a group of rooms, or a single room that is occupied (or if vacant, is intended for occupancy) as separate living quarters. Separate living quarters are those in which the occupants live and eat separately from any other persons in the building and which have direct access from the outside of the building or through a common hall. The occupants may be a single family, one person living alone, two or more families living together, or any other group of related or unrelated persons who share living arrangements. (People not living in households are classified as living in group quarters.
Source: US Census Bureau, American FactFinder, 2010 Census, 2010 Demographic Profile Data, Summary File DP-1, Profile of General Population and Housing Characteristics (geographies as noted); http://factfinder2.census.gov.

Single-Parent Families

Data in Table 36 describe some characteristics of single-parent families. In order to interpret the table please note the following definitions provided by the data source:

Family: A family consists of two or more persons, including the householder, who are related by birth, marriage, or adoption, and who live together as one household; all such persons are considered as members of one family. (Persons not in families and not inmates of institutions are classified as unrelated individuals.)

Families with Own Children: Families with their own children under age 18. An "own child" is a never-married child under 18 years who is a son, daughter, stepchild, or adopted child of the householder.

Female Householder Families with Children: Families with a female householder, with no husband present, and with their own children under 18.

Male Householder Families with Children: Families with a male householder, no wife present, and with their own children under 18.

Children Living with Both Parents: Children under 18 who live with both parents; own children of householders living in households that are classified as married-couple family households.

Children Not Living With Both Parents: Children under 18 who do not live with both parents. Includes children under 18 living: in a family with a male householder and no wife present, in a family with a female householder and no husband present, with other relatives, with nonrelatives, in group quarters, or, in some cases, living as householders themselves or as a spouse of a householder.

- In Bertie County the percent of children under the age of 18 *not* living with both parents increased by 18% (from 51.8% to 60.9%) between 2000 and 2010. Statewide the increase was 14% (from 35.5% to 40.4%).
- In Bertie County the percent of *female* family householders with children under the age of 18 decreased 17% (from 34.0% to 28.1%) between 2000 and 2010. Over the same period, the percent of *male* family householders with children under the age of 18 decreased 22% (from 5.9% to 4.6%). Statewide between 2000 and 2010 there was a decrease of 4% in the percent of female family householders with children (from 22.8% to 22.0%), and a 5% increase in the percent of male family householders with children (from, 6.1% to 6.4%).

Table 36. Single-Parent Families
(2000 and 2010)

Location	2000										
	Total Families	Total Families with Own Children	Female Family Householders with Children < 18		Male Family Householders with Children < 18		Total Children <18	Children <18 Living with Both Parents		Children <18 Not Living with Both Parents	
	Number	Number	Number	%	Number	%	Number	Number	%	Number	%
Bertie County	5,424	2,303	783	34.0	135	5.9	5,163	2,488	48.2	2,675	51.8
Regional Average	4,580	2,016	527	24.0	123	6.2	4,147	2,441	61.1	1,706	38.9
Hertford County	6,237	2,684	948	35.3	177	6.6	5,723	2,740	47.9	2,983	52.1
State of NC	2,158,869	995,648	227,351	22.8	60,791	6.1	1,964,047	1,266,526	64.5	697,521	35.5
Source:	a	a	a	b	a	b	b	a	b	a	b

Location	2010										
	Total Families	Total Families with Own Children	Female Family Householders with Children < 18		Male Family Householders with Children <18		Total Children <18	Children <18 Living with Both Parents		Children < 18 Not Living with Both Parents	
	Number	Number	Number	%	Number	%	Number	Number	%	Number	%
Bertie County	5,496	2,807	788	28.1	130	4.6	4,436	1,736	39.1	2,700	60.9
Regional Average	5,258	2,589	570	20.8	160	6.1	4,396	2,418	55.7	1,978	44.3
Hertford County	6,146	3,284	930	28.3	167	5.1	5,197	2,056	39.6	3,141	60.4
State of NC	2,499,174	1,331,533	292,504	22.0	85,199	6.4	2,281,635	1,359,045	59.6	922,590	40.4
Source:	a	a	a	b	a	b	b	a	b	a	b

a - Log Into North Carolina (LINC) Database, Topic Group Population and Housing (Data Items 6044, 6046, 6048, 6049, 6050, 6051), 2000 and 2010; http://data.osbm.state.nc/pls/linc/dyn_linc_main.show.
b - Figures are calculated

Grandparents Responsible for Minor Children

Table 37 presents data on grandparents with responsibility for minor children. Data on grandparents as primary caregivers were derived from US Census Bureau American Community Survey questions. Data were collected on whether a grandchild lives with a grandparent in the household, whether the grandparent has responsibility for the basic needs of the grandchild, and the duration of that responsibility. Responsibility of basic needs determines if the grandparent is financially responsible for food, shelter, clothing, day care, etc., for any or all grandchildren living in the household. Percent is derived with the number of grandparents responsible for grandchildren (under 18 years) as the numerator and number of grandparents living with own grandchildren (under 18 years) as the denominator.

- In Bertie County for the period cited, an estimated 62.4% of grandparents living with their minor grandchildren were also responsible for their care.
- Among the jurisdictions being compared, the estimated percentage of grandparents living with and responsible for their minor grandchildren was highest in Bertie County; the regional average was the lowest comparable figure.

Table 37. Grandparents with Responsibility for Minor Children (Five-Year Estimate, 2006-2010)

Location	# Grandparents Living with Own Grandchildren (<18 Years)	Grandparent Responsible for Grandchildren (under 18 years)*	
		Est. #	%
Bertie County	590	368	62.4
Regional Average	450	225	47.5
Hertford County	635	370	58.3
State of NC	187,626	95,027	50.6

Source: US Census Bureau, American FactFinder, 2006-2010 American Community Survey 5-Year Estimates. Selected Social Characteristics in the United States (DP02); http://factfinder2.census.gov.

CHILD CARE

Child Care Facilities

The NC Division of Child Development is the state agency charged with overseeing the child care industry in the state, including the regulation of child day care programs. The Division licenses child care facilities that keep more than two unrelated children for more than four hours a day. In NC, regulated child day care facilities are divided into two categories—Child Care Centers and Family Child Care Homes—with the categories delineated on the basis of enrollment. A *child care center* is a larger program providing care for three or more children, but not in a residential setting. The number of children in care is based upon the size of individual classrooms and having sufficient staff, equipment and materials. A *family child care home* is a smaller program offered in the provider's residence where three to five preschool children are in care. A family child care home may also provide care for three school-age children (27).

In 1999, the NC Division of Child Development began issuing "star rated" licenses to all eligible Child Care Centers and Family Child Care Homes. NC's Star Rated License System gave from one to five stars to child care programs based on how well they were doing in providing quality child care. A rating of one star meant that a child care program met the state's minimum licensing standards for child care. Programs that chose to voluntarily meet higher standards could apply for a two to five star license. (Note: Religious-sponsored child care programs could opt to continue to operate with a notice of compliance and not receive a star rating.)

Three areas of child care provider performance were assessed in the star system: program standards, staff education, and compliance history. Each area had a range of one through five points. The star rating was based on the total points earned for all three areas.

Then, in 2005, the way facilities were evaluated was changed in order to give parents better information about a program's quality. The new rules made a 75% "compliance history" a minimum standard for any licensed facility. Because it is now a minimum requirement, all programs earn their star rating based only on the two components that give parents the best indication of quality: staff education and program standards. In addition, programs having a two component license can earn a "quality point" for enhanced standards in staff education and program standards.

According to data in Table 38:

- Of the 13 licensed child care centers in Bertie County at the time of the report, five (38%) were five-star facilities and one (8%) was a four-star facility.
- Of the 14 licensed family child care homes in Bertie County, there were no five-star facilities; three (21%) were four-star facilities and four (29%) were three-star facilities.

Table 38. NC-Licensed Child Care Facilities in Bertie County (November, 2012)

Type of Facility	Number
Child Care Centers (13)	
Five-star	5
Four-star	1
Three-star	4
Two-star	0
One-star	0
GS 110-106 (Church-affiliated)	1
Temporary	2
Family Child Care Homes (14)	
Five-star	0
Four-star	3
Three-star	4
Two-star	6
One-star	1

Source: NC Department of Health and Human Services, Division of Child Development, Child Care Facility Search Site; http://ncchildcaresearch.dhhs.state.nc.us/search.asp

Table 39 presents total enrollment summaries for child care facilities.

Table 39. Children Enrolled in NC-Regulated Child Care (2008-2011)

Location	No. Children (0-5) Enrolled in Child Care Centers				No. Children (0-12) Enrolled in Family Care Homes			
	2008	2009	2010	2011	2008	2009	2010	2011
Bertie County	304	380	264	339	49	63	55	73
Regional Average	347	355	351	428	45	45	45	41
Hertford County	577	576	548	584	93	108	84	100
State of NC	172,717	168,953	169,852	194,632	15,354	14,936	14,384	13,321

Source: Annie E. Casey Foundation, Kids Count Data Center, Community Level Data, North Carolina Indicators; http://datacenter.kidscount.org/data/bystate/StateLanding.aspx?state=NC.

The WorkFirst Employment Program discussed previously includes child care subsidies for families that qualify. Table 40 presents the number of children in each jurisdiction that received WorkFirst Working Connections Child Care Subsidies.

- The number of children in Bertie County that received a WorkFirst child care subsidy decreased steadily over the period cited, as for the most part did the comparable figures for the region and Hertford County.
- In each jurisdiction, including the state of NC, the figures were their lowest of the entire period in 2010.

Table 40. Number of Children Receiving WorkFirst Child Care Subsidy (2007-2010)

Location	2007	2008	2009	2010
Bertie County	198	179	148	104
Regional Average	110	118	91	77
Hertford County	163	161	159	138
State of NC	41,075	43,124	42,944	39,341

Note: the number of children is based on the number of children under 18 receiving Work First benefits for the month of December for a particular year.
Source: Annie E. Casey Foundation, Kids Count Data Center, Community Level Data, North Carolina Indicators; http://datacenter.kidscount.org/data/bystate/chooseindicator.aspx?state=NC.

EDUCATION

Higher Education

There are no four-year colleges or universities physically located in Bertie County, but there are several in the ARHS region accessible to Bertie County residents. One community college—Martin Community College—operates a satellite campus physically located in Windsor, in Bertie County.

College of the Albemarle

The College of The Albemarle (COA) is a community college that serves northeastern NC with sites in several locations throughout the region, including a campus in Edenton, one in Elizabeth City, and a third in Manteo. A comprehensive community college, COA offers two-year degrees in college transfer and career programs, basic skills programs, continuing education classes for personal enrichment as well as credit, customized business and industry training, and cultural enrichment opportunities including an annual summer program called College for Kids. The COA is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award associate degrees (28).

Roanoke-Chowan Community College

Roanoke-Chowan Community College (RCCC) is a regional community college located in Ahoskie, NC (Hertford County). The College currently has about 20 curricular programs in which students may seek degrees, diplomas and short term skills-based certificates. RCCC recently added an Associate of Fine Arts Degree in Visual Arts, in addition to diplomas in high demand occupational training in Building Construction, Plumbing and other construction-related technologies. The College offers a Lateral Entry Teacher Certificate tailored to meet the need of public schools within the region to fully credential educators who have entered the classroom without the advantage of full unrestricted licensure.

RCCC has established formal transfer agreements with the 16-member University of North Carolina System and several private colleges to provide transfer opportunities for students to pursue higher-level degrees. RCCC has expanded its distance learning studies to include Internet-based courses, and has increased efforts with area school systems to provide more opportunities for high school students to take college courses, either on the RCCC campus or at their respective high schools.

The RCCC Continuing Education and Workforce Development Division meets business needs by establishing basic or occupation-related classes within local industries and by developing Focused Industrial Training (FIT) opportunities. Its Small Business component works on a one-on-one basis with individuals and small companies wanting to start and or enhance a small business enterprise. The Hertford County JobLink Career Center is also located on the RCCC Campus (29).

Chowan University

Chowan University is a small (~1,300 students) four-year liberal arts university located in Murfreesboro, NC (Hertford County). Chowan University is affiliated with the Southern Baptist Association. The university offers over 63 academic programs and the recently-opened School

of Graduate Studies provides students the opportunity to earn Masters Degrees. Currently, Chowan offers the Master of Education (M.Ed.) degree with advanced teacher license.

Chowan University enrolls about 30 adult students in the Adult Degree Completion Program. Through this program, adult students take classes at Halifax Community College in Weldon, NC, at the main campus in Murfreesboro, NC, and online.

The Chowan University student/faculty ratio is 16:1, with an average class size of 15. The university has a campus-wide fiber-optic network and Blackboard communication system, computer labs, "smart" multimedia classrooms, hardware and software discounts, in-house technical support, and 24/7 high-speed Internet access (30).

Martin Community College

Martin Community College (MCC) is a regional community college located in Williamston, NC (Martin County) with a satellite campus located in Windsor. MCC provides adult basic education, adult high school education, extension classes, and selected curriculum courses in 20 vocational and technical areas. MCC also offers an Associate in Arts College Transfer Program and a Transfer Core Diploma. The college offers online curricular and continuing education classes via a system called *ed2go* (31).

Elizabeth City State University

Elizabeth City State University (ECSU) is a four-year state university located in Elizabeth City, NC (Pasquotank County). Originally an institution for African-American students, the university now has an increasingly multicultural student body. In the fall of 2012, ECSU had a total enrollment of 2878. A constituent institution of The University of North Carolina System, ECSU offers 37 baccalaureate degrees and four master's degrees in four academic schools: Arts and Humanities; Business and Economics; Education and Psychology; and Mathematics, Science and Technology. The university has academic programs that appeal to various interests and fields of study, including the honors program, military science, study abroad, Viking Fellows for education majors, and “signature” programs in aviation and pharmacy (32).

East Carolina University

East Carolina University (ECU) is a large, four-year state university located in Greenville, NC (Pitt County). ECU is a constituent member of the UNC System founded in 1907 to alleviate the desperate shortage of teachers in the eastern part of NC. Since then, the ECU College of Education has been joined by programs of high distinction in health care and the fine and performing arts. Today the university offers over 100 bachelor’s degree programs, more than 70 master’s degree programs, four specialist degree programs, an MD program, and 16 doctoral programs. The university is the largest educator of nurses in NC, and its Brody School of Medicine is consistently ranked among the top medical schools in the nation that emphasize primary care. The school was recently ranked second in the nation by the American Academy of Family Physicians for productivity of family physicians.

ECU is the state’s leader in distance education, offering more than 60 degrees and certificate programs in subjects such as business, education, health care, and technology. Two of the top

distance-education programs in the nation are run by ECU's colleges of nursing and education (33).

Primary and Secondary Education

Schools and Enrollment

Tables 41 through 50 focus on data pertaining to primary and secondary (mostly public) schools in Bertie County (as well as its comparator jurisdictions where appropriate).

- There are eight public schools in the Bertie County school district: four elementary schools, one middle school, and three secondary schools. There also are two private schools in the county (Table 41).

Table 41. Number of Schools
(SY2011-12)

Location	Public				Private			
	Elementary (PK-8)	Middle (4-8)	Secondary (9-12)	Combined	K-12	K-9/8	9-12	Other
Bertie County Schools	4	1	3	0	2	0	0	0
Regional Total	25	10	12	0	5	2	0	2
Source:	a	a	a	a	b	b	b	b

a - NC Department of Public Instruction, NC School Report Cards, Search by School District. http://www.ncreportcards.org/src/main.jsp?pList=1&pYear=2011-2012.
b - Private School Review, North Carolina Private Schools, Search by Zip Code; http://www.privateschoolreview.com/find_schools.php.

- Bertie Middle School in Windsor was the largest school in the district, with a SY2011-12 enrollment of 614. Bertie High School, also in Windsor, was the second largest school in the district, with a SY2011-12 enrollment of 554. (Table 42).

Table 42. Bertie County Public Schools
(November, 2012)

School	Location	School Type/Calendar	Grade Range	Enrollment SY2011-12
Aulander Elementary	Aulander	Regular School, Traditional Calendar	PK-5	164
Bertie Early College High	Windsor	Regular School, Traditional Calendar	9-13	100
Bertie High	Windsor	Regular School, Traditional Calendar	9-12	554
Bertie Middle	Windsor	Regular School, Traditional Calendar	6-8	614
Bertie STEM High	Windsor	Regular School, Traditional Calendar	9-12	211
Colerain Elementary	Colerain	Regular School, Traditional Calendar	PK-5	256
West Bertie Elementary	Kelford	Regular School, Traditional Calendar	PK-5	345
Windsor Elementary	Windsor	Regular School, Traditional Calendar	PK-5	422

Source: NC Department of Public Instruction, Data and Statistics, Education Data, NC School Report Cards, School Year 2009-10; http://www.ncschoolreportcards.org/src.

- K-12 public school enrollment in Bertie County declined every year between SY2004-05 and SY2010-11 before rebounding some in SY2011-12; a similar pattern occurred across the ARHS region, with continuous enrollment declines from SY2007-08 through SY2010-11 (Table 43).

- The two private schools in Bertie County enrolled a total of 483 students in SY2009-10 (34).

Table 43. K-12 Public School Enrollment (SY2004-05 through SY2011-12)

Location	Number of Students							
	SY2004-05	SY2005-06	SY2006-07	SY2007-08	SY2008-09	SY2009-10	SY2010-11	SY2011-12
Bertie County Schools	3,463	3,412	3,240	3,146	3,008	2,928	2,833	2,988
Regional Average	3,123	3,210	3,212	3,150	3,101	3,038	3,017	3,122
State of NC	1,395,810	1,428,912	1,452,420	1,458,156	1,456,558	1,446,650	1,450,435	n/a
	a	a	a	a	a	a	a	b

Note: this data excludes charter school enrollment.
a - NC Department of Public Instruction, Data and Statistics, Education Data: NC Statistical Profile. NC Statistical Profile Online: Local Education Agencies Information, Pupil Accounting. http://apps.schools.nc.gov/pls/apex/f?p=1:1:497147721913602.
b - NC Department of Public Instruction, Data and Statistics, Education Data: Attendance and Membership Data. Principals Monthly Report. Month 1 for each school year, then look for the appropriate LEA by number.
http://www.ncpublicschools.org/fbs/accounting/data/.

Educational Attainment

Table 44 presents data on several measures of educational attainment.

- As of a 2006-2010 US Census Bureau estimate, Bertie County had the lowest percentages of both high school graduates and residents with a bachelor's degree or higher among the four jurisdictions being compared.
- According to SY2011-12 End of Grade (EOG) Test results, significantly lower percentages of third graders in Bertie County public schools demonstrated grade-appropriate proficiency in both reading and math than students in the other three jurisdictions. End of Grade test performance among Bertie County eighth graders was better, with 52% scoring at or above grade level in reading, and 87% scoring at or above grade level in math.
- No SAT data was available for Bertie County. Region-wide, the average score (956) was 4% lower than the average score statewide of 997.

Table 44. Educational Attainment

Location	%Population High School Graduate or Higher	% Population Bachelor's Degree or Higher	%3rd Graders At or Above Grade Level, ABCs EOG Reading Test	%3rd Graders At or Above Grade Level, ABCs EOG Math Test	%8th Graders At or Above Grade Level, ABCs EOG Reading Test	%8th Graders At or Above Grade Level, ABCs EOG Math Test	SAT Participation Rate	Average Total SAT Scores
	2010	2010	SY2011-12	SY2011-12	SY2011-12	SY2011-12	SY2011-12	SY2011-12
Bertie County	72.3	10.1	47.7	61.9	52.3	86.8	n/a	n/a
Regional Average	81.8	15.6	68.4	80.2	70.2	87.6	60%	956
Hertford County	73.5	15.7	50.7	70.7	42.6	69.1	62%	778
State of NC	83.6	26.1	68.8	82.8	71.1	85.2	68%	997
Source:	a	a	b	b	b	b	b	b

a - US Census Bureau, American Fact Finder, American Community Survey, 2006-2010 American Community Survey (ACS) 5-Year Estimates, Data Profiles, Detailed Tables, Selected Social Characteristics, Educational Attainment, by State or County; http://factfinder.census.gov.
b - NC Department of Public Instruction, Data and Statistics, Education Data, NC School Report Cards. District Profile. http://www.ncreportcards.org/src/.

Educational Expenditures

Table 45 presents data on local, state and federal expenditures on public education.

- In the 2011-12 school year the total per pupil expenditure (the sum of Federal, state and local investments) in Bertie County ($10,279) was 7% higher than the average for the ARHS region ($9,645), and 22% higher than the average for the state as a whole ($8,417).
- In all jurisdictions, the state contributed the highest proportion to the total per-pupil expenditure: 72% in Bertie County, an average of 69% region-wide, and an average of 64% statewide.

Table 45. Educational Expenditures (SY2011-12)

Location	Per-Pupil Expenditure			
	Local	State	Federal	Total
Bertie County Schools	$1,092	$7,372	$1,815	$10,279
Regional Average	$1,698	$6,655	$1,292	$9,645
State of NC	$1,904	$5,355	$1,158	$8,417

Source: NC Department of Public Instruction, Data and Statistics, Education Data, NC School Report Cards. District Profile. http://www.ncreportcards.org/src/.

High School Drop-Out Rate

Table 46 presents data on the high school (grades 9-12) drop-out rate. According to the NC Department of Public Instruction, a "drop-out" is any student who leaves school for any reason before graduation or completion of a program of studies without transferring to another elementary or secondary school. For reporting purposes, a drop-out is a student who was enrolled at some time during the previous school year, but who was not enrolled (and who does not meet reporting exclusions) on day 20 of the current school year. The data below is specific to high school students.

- The high school drop-out rate in Bertie County fluctuated over the period cited in the table, but was highest (5.59) in SY2009-10.
- From SY2004-05 through SY2008-09 the drop-out rate in Bertie County was the lowest among the three jurisdictions.

Table 46. High School Drop-Out Rate (SY2004-05 through SY2010-11)

Location	Drop-Out Rate						
	SY2004-05	SY2005-06	SY2006-07	SY2007-08	SY2008-09	SY2009-10	SY2010-11
Bertie County Schools	4.33	4.26	2.41	4.74	3.52	5.59	3.57
Regional Average	4.90	4.94	4.38	4.78	3.65	3.42	3.53
State of NC	4.74	5.04	5.27	4.97	4.27	3.75	3.43

a - NC Department of Public Instruction, Research and Evaluation, Dropout Data and Collection Process, Annual Dropout Reports; http://www.ncpublicschools.org/research/dropout/reports/.

Graduation Rate

The four-year cohort graduation rates for subpopulations of 9th graders entering high school in SY2008-09 and graduating in SY2011-12 are presented in Table 47.

- The overall graduation rate (71.8%) and the graduation rate for males (57.4%) were lowest in Bertie County Schools. The graduation rate among females was highest region-wide (87.9%) and next highest in Bertie County Schools (86.6%).
- Among economically disadvantaged students, the highest graduation rate occurred region-wide (78.9%); the second-highest rate was in Bertie County (75.9%).

Table 47. Four Year Cohort Graduation Rate
(9th Graders Entering SY2008-09 and Graduating SY2011-12 or Earlier)

Location	All Students			Male			Female			Economically Disadvantaged		
	Total Students	# Students Graduating	%Students Graduating	Total Students	# Students Graduating	%Students Graduating	Total Students	# Students Graduating	%Students Graduating	Total Students	# Students Graduating	%Students Graduating
Bertie County Schools	241	173	71.8	122	70	57.4	119	103	86.6	203	154	75.9
Regional Average	214	175	82.4	113	88	77.2	100	88	87.9	107	84	78.9
State of NC	110,886	89,187	80.4	56,675	43,348	76.5	54,211	45,839	84.6	48,553	36,268	74.7

Note: subgroup information is based on data collected when a student is last seen in the cohort
Source: Public Schools of North Carolina, Cohort Graduation Rate. 4-Year Cohort Graduation Rate Report, 2008-09 Entering 9th Graders Graduating in 2011-12 or Earlier. http://www.ncpublicschools.org/accountability/reporting/cohortgradrate.

Local historical graduation rate data provided by Bertie County schools show that the four-year cohort graduation rate was 68.6% in FY2009-10, 78.6% in SY2010-11, and 71.8% in SY2011-12 (as shown above).

Similar data on the five-year graduation rate shows greater and steadier improvement. The five-year cohort graduation rate was 67.1% in SY2009-10, but improved to 76.9% in SY2010-11 and to 82.6% in SY2011-12 (35).

School Crime and Violence

Along with test scores and dropout rates, schools now also track and report acts of crime and violence that occur on school property.

The NC State Board of Education has defined 17 criminal acts that are to be monitored and reported, ten of which are considered dangerous and violent:

- Homicide
- Assault resulting in serious bodily injury
- Assault involving the use of a weapon
- Rape
- Sexual offense
- Sexual assault
- Kidnapping
- Robbery with a dangerous weapon
- Robbery without a dangerous weapon
- Taking indecent liberties with a minor

The other seven criminal acts are:

- Assault on school personnel
- Bomb threat
- Burning of a school building
- Possession of alcoholic beverage
- Possession of controlled substance in violation of law
- Possession of a firearm or powerful explosive
- Possession of a weapon

Table 48 summarizes crime and violence catalogued by the NC Department of Public Instruction for schools in Bertie County, the ARHS region, Hertford County, and the state overall.

- The number and rate of acts of school crime and violence in Bertie County Schools and the other jurisdictions fluctuated dramatically over the period cited. Only the statewide average showed any stability, likely due to the large size of the sample. The state rate increased in the two most recent school years cited.

Table 48. School Crime and Violence Trend
(SY2004-05 through SY2010-11)

Location	SY2004-05		SY2005-06		SY2006-07		SY2007-08		SY2008-09		SY2009-10		SY2010-11	
	No. Acts[1]	Rate[2]	No. Acts	Rate	No. Acts	Rate	No. Acts	Rate	No. Acts	Rate	No. Acts	Rate	No. Acts	Rate
Bertie County Schools	8	2.4	10	3.1	6	1.9	31	10.3	7	2.4	12	4.3	17	6.2
Regional Average	12	4.4	14	4.8	17	5.5	21	7.6	19	6.0	14	5.0	16	4.6
Hertford County Schools	31	8.9	22	6.4	9	2.7	30	9.3	32	10.1	22	7.1	13	4.2
State of NC	10,107	7.5	10,959	7.9	11,013	7.8	11,276	7.9	11,116	7.6	11,608	8.0	11,657	8.0
Source	a	a	a	a	a	a	b	b	b	b	b	b	b	b

[1] For list of reportable acts see accompanying text

[2] Rate is number of acts per 1,000 students

a - NC Department of Public Instruction, Research and Evaluation, Discipline Data, Annual Reports, Annual Reports of School Crime and Violence (years as noted); http://www.ncpublicschools.org/research/discipline/reports/#consolidated.
b - NC Department of Public Instruction, Research and Evaluation, Discipline Data, Consolidated Data Reports. Crime & Violence Table C-5. http://www.ncpublicschools.org/research/discipline/reports/#consolidated.

Table 49 displays locally-provided detail on the acts of crime and violence committed in Bertie County Schools in SY2009-10 through SY2011-12.

- According to this data, the most common offenses in Bertie County Schools were possession of a weapon, accounting for 17 reportable acts over the three years cited, and possession of a firearm, accounting for 15 reportable acts.
- The third most common offense was possession of an alcoholic beverage, accounting for a total of five reportable acts in SY2009-10 through SY2011-12.

Table 49. School Crime and Violence in Bertie County Schools, by Type of Offense (SY2009-10 through SY2011-12)

Offense	Number of Acts		
	SY2009-10	SY2010-11	SY2011-12
Assault resulting in serious injury	0	0	1
Assault involving use of weapon	0	0	0
Assault of school personnel	0	1	1
Bomb threat	0	0	0
Burning of school building	0	0	0
Death by other natural causes	0	0	0
Kidnapping	0	0	0
Possession of alcoholic beverage	1	1	3
Possession of firearm	6	6	3
Possession of controlled substance	2	0	0
Possession of weapon	3	7	7
Rape	0	0	0
Robbery with a dangerous weapon	0	0	0
Sexual assault	0	0	0
Sexual offense	0	2	0
Taking liberties with a minor	0	0	0
Total Reportable Acts	12	17	15
Total Students	2,817	2,730	2,666
Acts per 1,000 Students	4.2	6.2	5.6

Source: Kimberly Cooper, Executive Administrative Assistant to the Superintendent, Bertie County Schools. Personal communication to Dana Hamill, Public Health Educator, Albemarle Regional Health Services, Perquimans County Health Department, January 17, 2013.

Table 50 presents data summarizing disciplinary activity in the public schools. Since the data represent counts of activity of school systems of different sizes, direct comparisons are problematic.

- In all the school systems under comparison the most common disciplinary activity was the short-term suspension. Long-term suspensions were invoked more frequently in Hertford County than in Bertie County, and expulsions were rare throughout the region.

Table 50. School Disciplinary Activity (SY2007-08 through SY2010-11)

School System	SY2007-08			SY2008-09			SY2009-10			SY2010-11		
	No. Short-Term Suspensions [1]	No. Long-Term Suspensions [2]	No. Expulsions	No. Short-Term Suspensions	No. Long-Term Suspensions	No. Expulsions	No. Short-Term Suspensions	No. Long-Term Suspensions	No. Expulsions	No. Short-Term Suspensions	No. Long-Term Suspensions	No. Expulsions
Bertie County Schools	659	1	0	518	2	0	553	9	0	692	5	0
Regional Average	611	7	0	570	10	0	584	8	1	570	6	0
Hertford County Schools	1399	15	0	1027	14	1	868	27	0	854	13	0
State of NC	308,010	5,225	116	293,453	3,592	116	277,206	3,368	88	262,858	2,586	59

[1] A short-term suspension is up to 10 days.

[2] A long term suspension is 11 or more days.

a - NC Department of Public Instruction, Research and Evaluation, Discipline Data, Consolidated Data Reports (years as noted); http://www.ncpublicschools.org/research/discipline/reports/#consolidated.

b - Nancy Griffin, Director Secondary Education, Bertie County Schools. Personal communication to Lara Snyder, Public Health Education Specialist, Bertie County Department of Public Health, November 26, 2012

CRIME AND SAFETY

Crime Rates

All crime statistics reported below were obtained from the NC Department of Justice, State Bureau of Investigation unless otherwise noted.

Index crime is composed of *violent crime* and *property crime*. Violent crime includes murder, forcible rape, robbery, and aggravated assault; property crime includes burglary, larceny, arson, and motor vehicle theft.

Table 51 presents the rates for index crime, violent crime, and property crime for the period from 2007 through 2011.

- The overall index crime rate in Bertie County fluctuated between 2007 and 2011 but was lower than the comparable rates for Herford County and NC as a whole throughout the period cited and lower than the average index crime rate for the region in every year except 2007 and 2008.
- The largest component of index crime in all four jurisdictions was property crime.
- In every year except 2009 the violent crime rate in Bertie County was the lowest among the four jurisdictions.

Table 51. Crime Rates, Crimes per 100,000 Population (2007-2011)

Location	Crimes per 100,000 Population														
	2007			2008			2009			2010			2011		
	Index Crime	Violent Crime	Property Crime	Index Crime	Violent Crime	Property Crime	Index Crime	Violent Crime	Property Crime	Index Crime	Violent Crime	Property Crime	Index Crime	Violent Crime	Property Crime
Bertie County	2,326.7	159.7	2,167.0	1,973.2	159.7	1,813.5	2,203.2	240.8	1,962.4	1,871.2	117.6	1,753.6	2,138.3	188.3	1,950.1
Regional Average	2,212.1	208.9	2,003.1	2,400.3	266.4	2,133.9	2,237.1	231.7	2,005.4	2,191.1	211.0	1,980.1	2,512.8	196.6	2,316.2
Hertford County	3,480.2	389.5	3,090.7	4,358.5	364.3	3,994.2	3,870.3	398.9	3,471.4	3,148.0	274.3	2,873.7	3,215.0	266.8	2,948.1
State of NC	4,658.9	480.2	4,178.7	4,554.6	474.2	4,080.4	4,178.4	417.2	3,761.2	3,955.7	374.4	3,581.4	3,919.8	354.6	3,565.2

* - Indicates incomplete or missing data.
Source: NC Department of Justice, State Bureau of Investigation, Crime, View Crime Statistics, Crime Statistics (by Year); http://ncdoj.gov/Crime/View-Crime-Statistics.aspx.

Table 52 presents detail on index crime committed in Bertie County from 2006-2011. Note the following definitions:

Robbery: larceny by the threat of violence;
Aggravated assault: a physical attack on another person which results in serious bodily harm and/or is made with a deadly or dangerous weapon such as a gun, knife, sword, ax or blunt instrument;
Burglary: unlawful breaking and entering into the premises of another with the intent to commit a felony;
Larceny: the theft of property without use of force; and
Motor vehicle theft: the theft or attempted theft of a motor vehicle

- The predominant violent crime reported in every year cited was aggravated assault.
- Larceny was the predominant property crime reported in every year except 2009, when there were more reports of burglary than of larceny.

Table 52. Types of Crimes Reported in Bertie County (2006-2011)

Type of Crime	Number of Crimes					
	2006	2007	2008	2009	2010	2011
Violent Crime						
Murder	0	0	1	4	0	2
Rape	3	2	5	4	1	4
Robbery	6	12	7	11	3	10
Aggravated Assault	14	16	18	27	19	23
Property Crime						
Burglary	171	182	156	184	130	173
Larceny	238	192	168	180	190	209
Motor VehicleTheft	61	33	29	16	23	22
Total Index Crimes	493	437	384	426	366	443

Source: NC State Bureau of Investigation, Crime in North Carolina, North Carolina Crime Statistics, Crime Statistics in Detailed Reports (By Year), 2011 Annual Reports, County Offenses Ten Year Trend, http://crimereporting.ncdoj.gov/ ,

Other Criminal Activities

Table 53 summarizes data on other types of criminal activities.

- As of January 2, 2013 there were 39 registered sex offenders in Bertie County, compared to 55 in Hertford County. The regional average was 32.
- According to the NC Governor's Crime Commission, in 2012 there was one gang in Bertie County, and none in Hertford County. The same year, the Crime Commission sited a total of 963 gangs statewide.
- According to the NC State Bureau of Investigation, there were no methamphetamine drug lab busts in Bertie County during the period from 2005 through 2011. Over the same period, 1,664 meth lab busts were recorded statewide.

Table 53. Other Criminal Activity

Location	No. Registered Sex Offenders (1/2/13)	No. Gangs	No. Methamphetamine Lab Busts						
		2012	2005	2006	2007	2008	2009	2010	2011
Bertie County	39	1	0	0	0	0	0	0	0
Regional Average	32	2	<1	<1	<1	<1	<1	<1	<1
Hertford County	55	0	0	0	0	0	0	0	0
State of NC	14,028	963	328	197	157	197	206	235	344
Source:	a	b	c	c	c	c	c	c	c

a - NC Department of Justice, Sex Offender Statistics, Offender Statistics; http://sexoffender.ncdoj.gov/stats.aspx.
b - NC Department of Crime Control and Public Safety, Governor's Crime Commission, Publications. Gangs in North Carolina: An Analysis of GangNET Data, March 2012, Table 4. Gang Numbers and Node by County; http://www.ncgccd.org/pdfs/pubs/gang%20crime/2012GangReport.pdf.
c - NC Department of Justice, State Bureau of Investigation, Crime, Enforce Drug Laws, Meth Focus, Meth Lab Busts; http://www.ncdoj.gov/getdoc/b1f6f30e-df89-4679-9889-53a3f185c849/Meth-Lab-Busts.aspx.

Juvenile Crime

The following definitions will be useful in understanding the subsequent data and discussion.

Complaint: A formal allegation that a juvenile committed an offense, which will be reviewed by a counselor who decides whether to approve or not approve the complaint. If approved, it will be heard in juvenile court.
Undisciplined: Describes a juvenile between the ages of six and 16, who is unlawfully absent from school, or regularly disobedient and beyond disciplinary control of parent/guardian, or is regularly found where it is unlawful for juveniles to be, or has run away from home for more than 24 hours. It also includes 16-17 year olds who have done any of the above except being absent from school.
Delinquent: Describes a juvenile between the ages of six and not yet 16 who commits an offense that would be a crime under state or local law if committed by an adult.
Diversion: If a complaint is not approved, it may be diverted to a community resource or placed on a diversion contract or plan that lays out stipulations for the juvenile (like community service) to keep the juvenile out of court.
Non-divertible: Non-divertible offenses include offenses like: murder, rape, sexual offense, arson, first degree burglary, crime against nature, willful infliction of serious bodily harm, assault with deadly weapon, etc.
Transfer to Superior Court: A juvenile who is 13, 14 or 15 who is alleged to have committed a felony may be transferred to Superior Court and tried and sentenced as an adult. If a juvenile is over 13 and charged with first degree murder, the judge must transfer the case to Superior Court if probable cause is found.
Rate: The number per 1,000 persons that are aged 6 to 17 in the county.

Table 54 presents a summary of juvenile justice complaints and outcomes for 2010 and 2011.

- Between 2010 and 2011 the *number* of complaints of *undisciplined* youth in Bertie County decreased from 8 to 4 (50%), and the *rate* of *undisciplined* youth decreased from 2.49 to 1.37 (45%).
- Over the same period the *number* of complaints of *delinquent* youth in Bertie County increased minimally from 51 to 52, and the *rate* of *delinquent* youth increased from 19.37 to 21.80 (13%).
- In both 2010 and 2011 higher numbers of Bertie County juveniles were sent to secure detention than the regional averages, or than the figures for Hertford County.
- Two Bertie County juveniles were sent to youth development centers in 2010; none were transferred to Superior Court in either 2010 or 2011.

Table 54. Juvenile Justice Complaints and Outcomes (2010 and 2011)

Location	Complaints								Outcomes					
	No. Undisciplined		No. Delinquent		Rate Undisciplined (Complaints per 1,000 Ages 6 to 17)		Rate Delinquent (Complaints per 1,000 Age 6 to 15)		No. Sent to Secure Detention		No. Sent to Youth Development Center		No. Transferred to Superior Court	
	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011
Bertie County	8	4	51	52	2.49	1.37	19.37	21.80	14	15	2	0	0	0
Regional Average	10	9	83	66	2.92	2.89	29.06	24.99	9	10	0	0	0	0
Hertford County	9	5	36	24	2.53	1.43	12.94	8.34	8	3	1	0	0	0
State of NC	4,285	3,603	33,299	33,556	2.94	2.34	27.55	26.08	4,297	3,558	357	307	30	28

Source: NC Department of Juvenile Justice and Delinquency Prevention, Statistics and Legislative Reports, County Databooks (Search by Year); http://www.ncdjjdp.org/statistics/databook.html.

Sexual Assault

Table 55 summarizes data from the Domestic Violence Commission of the NC Council for Women on the number of individuals who filed complaints of sexual assault from FY2004-05 through FY2010-11.

- Since the figures are counts and not rates, they are difficult to compare from one jurisdiction to another.
- The annual number of complaints varies without a clear pattern in all four jurisdictions over the period covered but appeared to have increased dramatically—by almost 120%—in Bertie County between FY2009-10 and FY2010-11.
- Statewide, there was a 58% increase in the number of complaints between FY2008-09 and FY2009-10, and a smaller increase between FY2009-10 and FY2010-11.

Table 55. Sexual Assault Complaint Trend (FY2004-05 through FY2010-11)

Location	No. of Individuals Filing Complaints ("Clients")						
	FY2004-05	FY2005-06	FY2006-07	FY2007-08	FY2008-09	FY2009-10	FY2010-11
Bertie County	n/a	n/a	44	21	43	32	70
Regional Average	77	38	39	17	58	66	51
Hertford County	134	100	54	32	49	39	63
State of NC	8,564	8,721	7,444	6,527	8,494	13,392	13,881

* Program submitted partial data.
Source: NC Department of Administration, Council for Women, Domestic Violence Commission, Statistics, County Statistics (years as noted); http://www.doa.state.nc.us/cfw/stats.htm.

Table 56 presents details on the types of sexual assaults reported in FY2010-11.

- The largest proportion of sexual assault complaints in Bertie County (72.9%) and Hertford County (74.6%) was for child sexual offense. The second largest proportion (10.0% in Bertie County and 17.5% in Hertford County) was for incest.
- Region-wide the largest proportion of sexual assault complaints (39.7%) was by adult survivors of child sexual assault, and the second highest proportion (22.6%) was for child sexual offense.
- Statewide the largest proportion of sexual assault complaints (23.7%) involved adult rape; the second largest proportion (22.2%) involved child sexual offense.

Table 56. Types of Sexual Assaults (FY2010-11)

Location	Total Assault Clients	Type of Assault													
		Adult Rape		Date Rape		Adult Survivor of Child Sexual Assault		Marital Rape		Child Sexual Offense		Incest		Other	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Bertie County	70	2	2.9	5	7.1	0	0.0	1	1.4	51	72.9	7	10.0	4	5.7
Regional Average	51	6	11.7	3	6.4	20	39.7	5	10.3	12	22.6	3	6.1	2	3.1
Hertford County	63	1	1.6	1	1.6	0	0.0	0	0.0	47	74.6	11	17.5	3	4.8
State of NC	13,881	3,289	23.7	1,328	9.6	2,393	17.2	1,162	8.4	3,086	22.2	1,216	8.8	1,407	10.1

Source: NC Department of Administration, Council for Women, Domestic Violence Commission, Statistics, 2010-2011 County Statistics; http://www.doa.state.nc.us/cfw/stats.htm.

Table 57 details the types of offenders involved in sexual assaults in FY2010-11.

- In Bertie County the most common offender in sexual assault complaints was an acquaintance (46.2%), followed by a relative (25.0%).
- In Hertford County the most common offender was an acquaintance (50.0%), followed by a relative (40.3%).
- Region-wide, the most common offender was a relative (51.4%), followed by an acquaintance (33.1%).
- Statewide the most common offender was a relative (36.6%), followed closely by an acquaintance (33.1%).

Table 57. Types of Offenders in Sexual Assaults (FY2010-11)

Location	Total Offenders	Type of Offender									
		Relative		Acquaintance		Boy/Girl Friend		Stranger		Unknown	
		No.	%	No.	%	No.	%	No.	%	No.	%
Bertie County	52	13	25.0	24	46.2	3	5.8	7	13.5	5	9.6
Regional Average	49	28	51.4	14	33.1	5	8.7	2	4.9	1	1.9
Hertford County	62	25	40.3	31	50.0	1	1.6	4	6.5	1	1.6
State of NC	13,603	4,978	36.6	4,505	33.1	1,635	12.0	928	6.8	1,557	11.4

Source: NC Department of Administration, Council for Women, Domestic Violence Commission, Statistics, 2010-2011 County Statistics; http://www.doa.state.nc.us/cfw/stats.htm.

Domestic Violence

Table 58 summarizes data from the Domestic Violence Commission of the NC Council for Women on the number of individuals who filed complaints of domestic violence from FY2004-05 through FY2010-11.

- Since the figures are counts and not rates, they are difficult to compare from one jurisdiction to another.
- The annual number of complaints varies without a clear pattern in all four jurisdictions over the period covered.

Table 58. Domestic Violence Complaint Trend (FY2004-05 through FY2010-11)

Location	No. of Individuals Filing Complaints ("Clients")						
	FY2004-05	FY2005-06	FY2006-07	FY2007-08	FY2008-09	FY2009-10	FY2010-11
Bertie County	167	176	256	104	290	130	155
Regional Average	177	145	180	134	163	252	216
Hertford County	381	220	157	57	81	401	369
State of NC	50,726	48,173	47,305	41,787	51,873	66,320	61,283

* Program submitted partial data.
Source: NC Department of Administration, Council for Women, Domestic Violence Commission, Statistics, County Statistics (years as noted); http://www.doa.state.nc.us/cfw/stats.htm.

Table 59 provides details on the services received by domestic violence complainants in FY2010-11.

- The 155 complaints of domestic violence in Bertie County were addressed by a total of 1,496 services.
- The largest numbers of services received by domestic violence complainants in Bertie County were for information (454) followed by services of the courts (421) and advocacy (340).
- The largest numbers of services received by domestic violence complainants in Hertford County were for information (3,355), advocacy (2,049) and counseling (1,473), in that order.
- The largest numbers of services received by complainants region-wide were for advocacy, information and counseling.
- The local domestic violence shelter in Bertie County was full on 42 days and the shelter in Hertford County was full on 57 days.

Table 59. Services Received by Domestic Violence Complainants (FY2010-11)

Location	Total Domestic Violence Clients	Services Received									Days Local Shelter was Full
		Total	Information	Advocacy	Referral	Transport	Counseling	Hospital	Court	Other	
Bertie County	155	1,496	454	340	146	85	50	0	421	0	42
Regional Average	216	3,302	731	1,236	441	72	606	1	214	1	110
Hertford County	369	7,718	3,355	2,049	7	67	1,473	0	753	14	57
State of NC	61,283	476,979	107,679	105,203	69,533	27,933	68,981	1,232	48,995	47,423	7,999

Source: NC Department of Administration, Council for Women, Domestic Violence Commission, Statistics, 2010-11 County Statistics; http://www.doa.state.nc.us/cfw/stats.htm.

Roanoke Chowan Services for Abused Families with Emergencies (SAFE)

Roanoke Chowan S.A.F.E. is a non-profit organization, founded in 1984, that provides direct services, support, education and public awareness to victims of domestic/family violence and sexual assault in the counties of Hertford, Gates, Bertie and Northampton. SAFE provides the following services: 24 hour crisis line, emergency shelter, food, clothing, court advocacy, crisis intervention, transportation, assistance in filing victim's compensation forms, referrals, and more considering the circumstances. The goal of the agency is to enable clients to live violence-free and to become self-sufficient. SAFE does not charge for its services (36).

Telephone & Crisis Line: (252) 332-1933
Fax: (252) 332-2450
Address: PO Box 98 Ahoskie, NC 27910
Website: www.roanoke-chowansafe.webs.com

Child Maltreatment

The responsibility for identifying and reporting cases of child abuse, neglect and exploitation falls to the child protective services program within a county's department of social services. Generally speaking, such a unit will have sufficient staff to handle intake of all reports. However, an agency's ability to investigate and monitor reported cases may vary from year to year, depending on the number of properly trained staff available to it; hence, follow-up on reports may vary independently of the number of reports. Table 60 presents child protective services data from the state's Child Welfare website for the period from FY2004-05 through FY2011-12.

- The total number of findings of child abuse, neglect or dependency in Bertie County fluctuated annually without a clear pattern. For the period cited, the highest number of findings was 111 in FY2004-05, and the lowest was 65 in FY2009-10. The average number of reports of child abuse, neglect or dependency per year throughout the period cited was 85.
- Over the period covered in the table the annual total number of *substantiated* findings of abuse and neglect, abuse only, and neglect only covered by those reports ranged from a high of 41 in FY2004-05 to a low of 0 in FY2008-09 and FY2010-11, and averaged approximately 10 per year.

Table 60. Reports of Child Abuse and Neglect, Bertie County (FY2004-05 through FY2011-12)

Category	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Total No. of Findings of Abuse, Neglect, Dependency	111	88	106	89	70	65	72	77
No. Substantiated[1] Findings of Abuse and Neglect	2	0	0	0	0	0	0	1
No. Substantiated Findings of Abuse	0	1	1	2	0	1	0	1
No. Substantiated Findings of Neglect	39	20	3	2	0	2	0	5
Services Recommended	0	2	14	12	28	13	11	10
No. Unsubstantiated Findings	70	51	37	27	3	7	6	9
Services Not Recommended	0	14	40	37	24	30	44	32

[1] A "substantiated" report of child abuse, neglect or exploitation indicates that the investigation supports a conclusion that the subject child(ren) was/were abused, neglected, or exploited.
Source: Child Welfare, Reports of Abuse and Neglect section, Reports of Abuse and Neglect Type of Finding/Decision (Not Exclusive) (Longitudinal Data); http://sasweb.unc.edu/cgi-bin/broker?_service=default&_program=cwweb.tbReport.sas&county=Alamance&label=County&format=html&entry=10&type=CHILD&fn=FRST&vtype=xfind.

Table 61 presents demographic detail from the same source as above on the cases in Bertie County described for FY2011-12.

- Six of the seven substantiated findings of abuse, neglect, or abuse and neglect involved white Hispanic children; the seventh involved an African American non-Hispanic child.
- For the year cited, four of the cases involved females and three involved males; one victim was very young (age 0-5), three were age 6-12 and three were age 13-17.

Table 61. Demographic Detail of Child Abuse Cases, Bertie County (FY2011-12)

Finding	Total	White	African-American	American Indian/ Alaskan	Other Races	Hispanic	Non-Hispanic	Male	Female	Ages 0-5	Ages 6-12	Ages 13-17
Abuse and Neglect	1	1	0	0	0	1	0	1	0	0	0	1
Abuse	1	0	1	0	0	0	1	0	1	0	0	1
Neglect	5	5	0	0	0	5	0	2	3	1	3	1
Services Needed	2	1	1	0	0	0	2	2	0	2	0	0
Services Provided, No Longer Needed	17	0	16	0	1	0	17	10	7	9	4	4
Services Recommended	10	1	9	0	0	0	10	3	7	2	4	4
Unsubstantiated	9	0	8	0	1	0	9	6	3	1	4	4
Services Not Recommended	32	5	23	0	4	1	31	18	14	15	14	3

Source: Child Welfare, Reports of Abuse and Neglect section, Table of Summary Data: Type of Finding by Category (Longitudinal). http://sasweb.unc.edu/cgi-bin/broker?_service=default&_program=cwweb.icans.sas&county=North%20Carolina&label=&entry=10.

Adult Maltreatment

Adults who are elderly, frail, or mentally challenged are also subject to abuse, neglect and exploitation. County DSS Adult Protective Services units screen, investigate and evaluate reports of what may broadly be referred to as adult maltreatment. Table 62 presents state-cataloged adult protective service survey data for 2009 and 2011.

- Note that reports "screened out" do not meet the legal definition of potential maltreatment and are not investigated further.
- In Bertie County the proportion of reports screened in for further investigation and services was 65% in 2009 and 44% in 2011.
- Services most frequently provided to Bertie County adult maltreatment victims were outreach, information and referral, and services from a DHSR or Home Specialist.

Table 62. NC Adult Protective Services Survey Results (2009 and 2011)

Location	2009										
	Reports Received	Reports Screened In	Reports Screened Out	Information and Referral	Outreach	Law Enforcement	DHSR or Home Specialist	District Attorney	Veterans Admin	Division of Medical Assistance	Social Security
Bertie County	23	15	8	4	2	0	4	2	0	0	0
Regional Average	31	16	14	4	6	1	1	1	0	0	0
Hertford County	40	23	17	17	10	3	6	13	0	0	0
State of NC	17,073	9,835	7,239	2,443	2,640	471	568	488	34	42	134

Location	2011										
	Reports Received	Reports Screened In	Reports Screened Out	Information and Referral	Outreach	Law Enforcement	DHSR or Home Specialist	District Attorney	Veterans Admin	Division of Medical Assistance	Social Security
Bertie County	27	12	15	0	5	1	2	1	0	0	1
Regional Average	35	21	14	3	7	1	1	1	0	0	0
Hertford County	31	24	7	5	3	2	1	2	0	0	0
State of NC	19,635	10,929	8,706	2,665	2,736	725	475	651	33	30	152

Source: NC DHHS. Division of Aging and Adult Services. Adult Protective Services. APS Survey Data, 2009 and 2011; http://www.ncdhhs.gov/aging/adultsvcs/afs_aps.htm

CHAPTER THREE: HEALTH RESOURCES

Access to and utilization of healthcare is affected by a range of variables including the availability of medical insurance coverage, availability of medical professionals, transportation, cultural expectations and other factors.

MEDICAL INSURANCE

Medically Indigent Population

In most communities, citizens' utilization of health care services is related to their ability to pay for those services, either directly or through private or government health insurance plans/programs. People without these supports are called “medically indigent”, and theirs is often the segment of the population least likely to seek and/or to be able to access necessary health care.

Table 63 presents data on the proportion of the population (by age group) without health insurance of any kind. The health insurance system in the US is built largely upon employer-based insurance coverage, so an increase in the number of unemployed people usually leads to an increase in the number of uninsured.

- Over the period cited in the table, the percent of the Bertie County population overall (age 0-64) without health insurance changed very little from one biennium to the next.
- In all jurisdictions the younger age group (0-18) had a lower percent without health insurance than the older age group (19-64).
- The percent of uninsured in the younger age group in Bertie County decreased from 13.1% in 2006-2007 to 8.7% in 2010-2011, a 34% improvement.

Table 63. Percent of Population without Health Insurance, by Age Group (2006-07, 2008-09, and 2010-11)

Location	2006-2007			2008-2009			2010-2011		
	0-18	19-64	0-64	0-18	19-64	0-64	0-18	19-64	0-64
Bertie County	13.1	24.6	20.9	11.6	24.0	20.4	8.7	24.8	20.6
Regional Average	11.6	24.4	20.4	10.2	24.2	20.1	7.8	21.4	17.6
Hertford County	11.6	26.9	22.1	11.5	25.6	21.5	8.9	22.7	18.8
State of NC	11.3	19.5	19.5	11.5	23.2	19.7	9.4[1]	23.0[1]	18.9[1]

Source: North Carolina Institute of Medicine, NC Health Data, Uninsured Snapshots, Characteristics of Uninsured North Carolinians; http://www.nciom.org/nc-health-data/uninsured-snapshots/.
[1] Source: North Carolina Institute of Medicine, NC Health Data, Uninsured Snapshots, Characteristics of Uninsured North Carolinians 2020-2011, http://www.nciom.org/nc-health-data/uninsured-snapshots/.

North Carolina Health Choice

In 1997, the Federal government created the *State Children’s Health Insurance Program* (SCHI)—later known more simply as the *Children’s Health Insurance Program* (CHIP)—that provides matching funds to states for health insurance for families with children. The program covers uninsured children in low-income families who earn too much to qualify for Medicaid (37).

States are given flexibility in designing their CHIP eligibility requirements and policies within broad Federal guidelines. The NC CHIP program is called NC Health Choice for Children (NCHC). This plan, which took effect in October 1998, includes the same benefits as the State Health Plan, plus vision, hearing and dental benefits (following the same guidelines as Medicaid). Children enrolled in NCHC are eligible for benefits including sick visits, check-ups, hospital care, counseling, prescriptions, dental care, eye exams and glasses, hearing exams, hearing aids, and more (38). In NC, the maximum income limit for participation in the NCHC program is 200% of the Federal Poverty Guideline.

Table 64 presents enrollment figures for NCHC for FY2008-2010. It should be noted that enrollment is directly related to the funding available, which may change at either the Federal or state level.

- In Bertie County the *number* of children eligible was relatively static at between 401 and 427 from year to year during the period shown.
- In Bertie County the percent of eligible children actually enrolled fell dramatically between FY2009 and FY2010, from 96.0% to 79.4%, a decrease of 17%. Statewide, the percent of eligible children enrolled in the program increased 16% over the same period.

Table 64. NC Health Choice Enrollment (FY2008 through FY2010)

Location	FY2008			FY2009			FY2010		
	# Children Eligible	# Eligibles Enrolled	% Eligibles Enrolled	# Children Eligible	# Eligibles Enrolled	% Eligibles Enrolled	# Children Eligible	# Eligibles Enrolled	% Eligibles Enrolled
Bertie County	427	390	91.3	401	385	96.0	417	331	79.4
Regional Average	283	207	63.7	284	218	70.2	282	216	72.9
Hertford County	375	264	70.4	370	315	85.1	353	282	79.9
State of NC	131,446	87,234	66.4	140,141	103,624	73.9	143,022	122,536	85.7

Source: NC Division of Medical Assistance, Statistics and Reports, Medicaid Data, County-Specific Snapshots for NC Medicaid Services, 2006-2010; http://www.ncdhhs.gov/dma/countyreports/index.htm.

Medicaid

Medicaid is a health insurance program for low-income individuals and families who cannot afford health care costs. It serves low-income parents, children, seniors, and people with disabilities. Both coverage and eligibility requirements are different for people with different kinds of needs. Chief among these requirements is low income, which depending on service can range from 51% to 200% of the Federal Poverty Guideline.

Table 65 summarizes data on Medicaid eligibility and expenditures for the period from FY2008 through FY2010.

- The number of Bertie County residents eligible for Medicaid increased from one year to the next throughout the period cited, but the percent eligible varied little.
- The expenditure/cost per adult enrollee in Bertie County rose from FY2008 to FY2009 and decreased thereafter.
- Bertie County had the highest proportion of Medicaid-eligible residents throughout the period cited, averaging 27.3%. The average statewide was approximately 16%.

Table 65. Medicaid Eligibility and Expenditures (FY2008 through FY2010)

Location	FY2008			FY2009			FY2010		
	No. Eligible	% Eligible	Average Cost per Adult Enrollee	No. Eligible	% Eligible	Average Cost per Adult Enrollee	No. Eligible	% Eligible	Average Cost per Adult Enrollee
Bertie County	5,407	27.0	$7,092	5,610	28.0	$7,323	5,686	27.0	$7,034
Regional Average	3,286	17.1	$6,597	3,441	17.7	$6,673	3,543	17.9	$6,389
Hertford County	6,145	26.0	$7,050	5,329	27.0	$6,765	6,310	26.0	$6,659
State of NC	1,397,732	15.0	$7,244	1,500,204	16.0	$7,389	1,577,121	17.0	$7,256

Source: NC Division of Medical Assistance, Statistics and Reports, Medicaid Data, County-Specific Snapshots for NC Medicaid Services, 2006-2010 (geographies as noted); http://www.ncdhhs.gov/dma/countyreports/index.htm.

The county department of social services is responsible for facilitating its clients' access to the range of Medicaid services for which they may qualify. Table 66 presents local data on Medicaid services facilitated by Bertie County DSS in part of FY2012-13.

Table 66. Medicaid Services Provided by Bertie County Department of Social Services (FY2012-13 YTD as of January 30, 2013)

Program	Applications Taken	Applications Approved	Total Caseload
Adult Medicaid	728	252	2,385
Family and Children Medicaid	1,332	1,144	1,967

Source: Linda Speller, Bertie County Department of Social Services. Personal communication to Dana Hamill, Public Health Educator, Albemarle Regional Health Services, Perquimans County Health Department, January 30, 2013.

Health Check Early Periodic Screening, Diagnosis and Treatment

Federal law requires that Medicaid-eligible children under the age of 21 receive any medically necessary health care service covered by the federal Medicaid law, even if the service is not normally included in the NC State Medicaid Plan. This requirement is called Early Periodic Screening, Diagnosis and Treatment (EPSDT). In NC, Health Check EPSDT covers complete medical and dental check-ups, provides vision and hearing screenings, and referrals for treatment (39).

Table 67 presents a four-year summary of the participation of eligible children in the NC HealthCheck program.

- The participation ratio for Bertie County children decreased 28% between FY2007-08 and FY2010-11 even as the number of eligible Bertie County children due initial or periodic Health Check EPSDT services increased 62% during the same period. Similar phenomena were observed in the other three jurisdictions as well.
- The Health Check participation ratio in Bertie County was below the comparable state ratio during each fiscal year cited.

Table 67. Participation in Health Check (EPSDT)
(FY2007-08 through FY2010-11)

Location	FY2007-08			FY2008-09			FY2009-10			FY2010-11		
	No. Eligible	No. Eligibles Due Initial or Periodic Service	Participation Ratio	No. Eligible	No. Eligibles Due Initial or Periodic Service	Participation Ratio	No. Eligible	No. Eligibles Due Initial or Periodic Service	Participation Ratio	No. Eligible	No. Eligibles Due Initial or Periodic Service	Participation Ratio
Bertie County	3,237	1,685	66.2	3,226	1,710	69.2	3,237	2,853	46.1	3,204	2,726	47.5
Regional Average	2,181	1,175	72.6	2,235	1,211	71.8	2,282	1,955	47.2	2,296	1,896	46.1
Hertford County	3,693	2,003	68.5	3,729	2,056	78.4	3,767	3,310	51.4	3,682	3,176	52.9
State of NC	n/a	563,421	77.3	n/a	594,043	80.0	1,185,510	963,619	53.8	1,146,716	961,381	54.7

Note: the participation ratio is calculated by dividing the number of eligibles receiving at least one initial screening service by the number of eligibles who should receive at least 1 initial or period screenings (not shown in the table).
Source: NC Division of Medical Assistance, Statistics and Reports, Health Check Participation Data; http://www.ncdhhs.gov/dma/healthcheck/participationdata.htm.

Medicaid Managed Care: Community Care of North Carolina/Carolina ACCESS

The goal of Medicaid managed care is to create community health networks to achieve long-term quality, cost, access, and utilization objectives. NC's approach to Medicaid managed care is to create medical homes for eligible Medicaid recipients by enrolling them into Community Care of North Carolina/Carolina ACCESS (CCNC/CA). Today CCNC/CA combines Carolina ACCCESS and ACCESS II/III, which are primary care case management health plans (40).

Carolina ACCESS

Carolina ACCESS, implemented in 1991, is NC's Primary Care Case Management (PCCM) Program for Medicaid recipients. It serves as the foundation managed care program for Medicaid recipients and brings a system of coordinated care to the Medicaid program by linking each eligible recipient with a primary care provider (PCP) who has agreed to provide or authorize healthcare services for each enrollee. Primary care providers bill fee-for-service and are reimbursed based on the Medicaid fee schedule; they also receive a small monetary incentive per member per month for coordinating the care of program participants enrolled with their practice. By improving access to primary care and encouraging a stable doctor-patient relationship, the program helps to promote continuity of care, while reducing inappropriate health service utilization and controlling costs. The program expanded statewide in 1998. Carolina ACCESS created the infrastructure for ACCESS II/III, an enhanced community-based primary care case management health plan.

Carolina ACCESS II/III

ACCESS II and III are enhanced primary care programs initiated in 1998 to work with local providers and networks to manage the Medicaid population with processes that impact both the quality and cost of healthcare. ACCESS II/III includes local networks comprised of community providers such as primary care practices, hospitals, health departments, departments of social services, and others who have agreed to work together in a public/private partnership to operate as a Carolina ACCESS PCP and provide the care management systems and supports that are needed to manage enrollee care. In addition to a primary care provider, ACCESS II and III enrollees have care managers who assist in developing, implementing, and evaluating enhanced managed care strategies for them. Because health care is planned and provided on the community level, larger community health issues can be addressed. Providers in ACCESS II and III receive a small monetary incentive per member per month; the PCPs are paid a small per member per month care management fee. A majority of Medicaid recipients enrolled in managed care are linked with a CCNC network. There are fourteen networks operating

statewide; Bertie County is a member of the Community Care Plan of Eastern Carolina, which also includes 26 other counties in the eastern part of the state.

Table 68 summarizes CCNC/CA enrollment data for the period from 2007-2010.

- The percent of Medicaid eligible persons in Bertie County enrolled in CCNC/CA increased in 2010, to 73% from a three-year average of approximately 63%; this increase in enrollment occurred as the number of county residents enrolled in Medicaid increased by 5%.
- Statewide, the percent of Medicaid eligible persons enrolled in CCNC/CA averaged approximately 65% over the four-year period cited; region-wide the average was 61%.

Table 68. Community Care of NC/Carolina ACCESS Enrollment (2007-2010)

Location	2007		2008		2009		2010	
	No. Enrolled in Medicaid	% Medicaid Eligibles Enrolled	No. Enrolled in Medicaid	% Medicaid Eligibles Enrolled	No. Enrolled in Medicaid	% Medicaid Eligibles Enrolled	No. Enrolled in Medicaid	% Medicaid Eligibles Enrolled
Bertie County	5,345	62	5,407	62	5,610	64	5,686	73
Regional Average	3,210	61	3,286	59	3,441	63	3,543	61
Hertford County	6,201	56	6,145	54	6,329	62	6,310	67
State of NC	1,330,485	62	1,397,732	64	1,500,204	67	1,577,121	66

Source: NC Division of Medical Assistance, Statistics and Reports, Medicaid Data, County-Specific Snapshots for NC Medicaid Services, 2006-2010 (geographies as noted); http://www.ncdhhs.gov/dma/countyreports/index.htm.

Medicare

Medicare is the US government's health insurance program for senior citizens (people 65 years of age or older), certain younger people with specific disabilities, and people with end-stage renal disease. Medicare is an entitlement program and is not based on financial need. Medicare benefits are available to all Americans or their spouses who have paid Social Security taxes through their working years.

Some persons who receive Medicare also qualify for Medicaid; these persons are referred to as “dually enrolled”, and tend to be elderly and poor. Table 69 summarizes dual Medicare/Medicaid enrollment data for the period from 2007-2010.

- Bertie County had the highest percentage of dual Medicare/Medicaid enrollees in each year cited.

Table 69. Medicare/Medicaid Dual Enrollment (2007-2010)

Location	Percent of Eligibles Dually Enrolled			
	2007	2008	2009	2010
Bertie County	25.9	25.9	24.1	24.1
Regional Average	19.4	19.0	18.0	17.4
Hertford County	22.4	22.4	21.1	21.0
State of NC	16.7	16.1	15.0	14.5

Source: NC Division of Medical Assistance, Statistics and Reports, Medicaid Data, County Specific Snapshots for NC Medicaid Services; http://www.ncdhhs.gov/dma/countyreports/index.htm.

HEALTH CARE PROVIDERS

Practitioners

One way to judge the supply of health professionals in a jurisdiction is to calculate the ratio of the number of health care providers to the number of persons in the population of that jurisdiction. In NC, there is data on the ratio of active health professionals per 10,000 population calculated at the county level. Table 70 presents those data (which for simplicity's sake will be referred to simply as the "ratio") for Bertie County, Hertford County, the Albemarle Region, the state of NC and the US for five key categories of health care professionals: physicians, primary care physicians, registered nurses, dentists and pharmacists. The period covered is 2009-2011.

- The Bertie County ratios for all health professionals were lower than the comparable Hertford County, NC, and US ratios in every year cited.
- The Bertie County ratios were lower than or equal to comparable regional ratios in all categories in every year except for RNs in 2009 and pharmacists in 2009 and pharmacists in 2011.
- The Bertie County ratio for dentists (0.5) was particularly low and did not improve over the period shown in the table.
- The ratio for RNs in Hertford County far exceeded comparable ratios for NC and the US in every year cited.

Table 70. Active Health Professionals per 10,000 Population (2009-2011)

Location	2009					2010					2011				
	MDs	Primary Care MDs	DDSs	RNs	Pharms	MDs	Primary Care MDs	DDSs	RNs	Pharms	MDs	Primary Care MDs	DDS	RNs	Pharms
Bertie County	4.5	4.5	0.5	56.7	4.6	4.2	4.2	0.5	49.7	3.8	3.8	2.9	0.5	48.8	4.3
Regional Average	8.0	4.5	1.7	52.0	3.9	8.6	4.6	1.6	49.7	4.2	8.6	3.9	1.7	49.4	4.0
Hertford County	17.5	8.3	3.3	126.5	6.7	15.8	8.1	2.4	123.8	8.1	15.1	6.5	2.9	130.8	8.6
State of NC	21.2	9.2	4.4	96.9	9.3	21.7	9.4	4.4	97.3	9.2	22.1	7.8	4.4	98.6	9.5
United States	23.4[2]	8.5[2]	5.3[3]	92.5[3]	8.7[3]	22.7[2]	8.2[2]	5.7[3]	92.0[3]	8.3[3]	22.7[2]	8.2[2]	5.7[3]	92.0[3]	8.3[3]

Abbreviations used: MDs (Physicians), RNs (Registered Nurses), DDSs (Dentists), Pharms (Pharmacists)

[1] Primary Care Physicians are those who report their primary specialty as family practice, general practice, internal medicine, pediatrics, or obstetrics/gynecology

[2] US ratio from US Census Bureau estimates. Comparison data is for date two years previous.

[3] US ratio from Bureau of Labor Statistics. Comparison data matches.

Source for NC Data: Cecil G. Sheps Center for Health Services Research, North Carolina Health Professions Data System, North Carolina Health Professions Data Books, Table 14 (2008, 2009, 2010, 2011); http://www.shepscenter.unc.edu/hp/publications.htm.

Since the health professional ratio for dentists in Bertie County is so low to begin with, accessing dental care may be a tremendous problem for Medicaid enrollees. Table 71 lists dental practices in the Albemarle Region (i.e., northeastern NC or southeastern VA) that accept Medicaid and/or NC Health Choice clients. Two of these practices were in Bertie County, in Windsor and Aulander. Note that this list was correct at a past point in time but should not necessarily be considered up-to-date at the present time.

Table 71. Dentists in the Albemarle Region Accepting Medicaid/Health Choice Clients (Fall, 2012)

Practice Name/Provider Name	Location	Clients Accepted	Insurance Accepted
Albemarle Regional Health Services Dental Clinic	Camden & Edenton, NC	No information	Medicaid/HC
Attkisson, Wayne P.	Windsor, NC	No information	Medicaid/HC
Bald, Francis A. (Oral Surgery)	Elizabeth City, NC	No information	Medicaid/HC
Bernstein, James Dental Center	Greenville, NC	Children ages 5 and up; adults	Medicaid; sliding fee
Bradley, Jerry	Edenton, NC	No information	Medicaid/HC
Bullock, Steve	Virginia Beach, VA	Children ages up to 13	Medicaid
Burton, Kevin	Greenville, NC	Children and adults	Medicaid
Dandar, Regis A.	Elizabeth City, NC	Children ages 3 and up; adults	Medicaid
Epps, John'e J. (Cosmetic Dentistry)	Ahoskie, Aulander, Elizabeth City, NC	No information	HC
Gilliam, Robert	Elizabeth City, NC	No information	Medicaid/HC
Jones, Clifford	Elizabeth City, NC	Children ages 3 and up; adults	Medicaid/HC
Kaplin, Marvin (Orthodontics)	Chesapeake, VA	Children ages 8-17	Medicaid
Martin, J., IV	Portsmouth, VA	Children ages 1-18	Medicaid
Martin-Tyrrell-Washington District Dental Unit	Plymouth, NC	Children ages 1-20	Medicaid
Morgan, Partick H., Jr.	Currituck, NC	No information	HC
Smile Starters - Medicaid Dental Center	Raleigh, NC	Children ages 1-20	Medicaid
Smith, Jacqueline	Edenton, NC	No information	Medicaid/HC
Solomon, Albert P.	Chesapeake, VA	Children ages 3 and up; adults	Medicaid
Sundin, Allan C.	Virginia Beach, VA	Children ages up to 13	Medicaid
Wuertz, Karen	Elizabeth City, NC	No information	HC

Sources:
Division of Medical Assistance, Medicaid, Find a Doctor, NC Medicaid and NC Health Choice Dental Provider Lists; http://www.ncdhhs.gov/dma/dental/dentalprov.htm.
Lara Snyder, Public Health Education Specialist, Dare County Department of Public Health. Personal communication to Sheila Pfaender, Public Health Consultant, December 18, 2012.
Melissa Stokely, Perquimans County Department of Social Services. Personal communication to Dana Hamill, Public Health Educator, Albemarle Regional Health Services, Perquimans County Health Department, November 30, 2012.

Table 72 lists the number of active health professionals in Bertie County and the ARHS region, by specialty, for 2011:

- There were no general practitioners, pediatricians, certified nurse midwives, chiropractors, optometrists, or podiatrists in Bertie County at the time of the count.
- There were five or fewer practitioners in Bertie County for all other specialties named in the list *except* for: registered nurses (102), licensed practical nurses (29), pharmacists (9), and physician assistants (8).
- At the regional level there were no general practitioners and only one podiatrist listed in 2011.

Table 72. Number of Active Health Professionals, by Specialty (2011)

Category of Professionals	Bertie County	Regional Total
Physicians		
Primary Care Physicians	6	64
Family Practice	4	23
General Practice	0	0
Internal Medicine	1	21
Obstetrics/Gynecology	1	11
Pediatrics	0	9
Other Specialities	2	96
Dentists and Dental Hygienists		
Dentists	1	26
Dental Hygienists	1	29
Nurses		
Registered Nurses	102	823
Nurse Practitioners	4	28
Certified Nurse Midwives	0	6
Licensed Practical Nurses	29	284
Other Health Professionals		
Chiropractors	0	10
Occupational Therapists	2	22
Occupational Therapy Assistants	3	15
Optometrists	0	6
Pharmacists	9	67
Physical Therapists	1	36
Physical Therapy Assistants	5	41
Physician Assistants	8	33
Podiatrists	0	1
Practicing Psychologists	1	12
Psychological Assistants	2	9
Respiratory Therapists	5	32

[1] Numbers reported include those active within the profession and those newly licensed in 2009 with unknown activity status; inactives are excluded.
Source: Cecil G. Sheps Center for Health Services Research, North Carolina Health Professions Data System. Publications. 2011 North Carolina Health Professions Databook; http://www.shepscenter.unc.edu/hp/publications/2011_HPDS_DataBook.pdf.

Hospitals

Table 73, which lists the number of general hospital beds in the four jurisdictions being included in this report, reflects the fact that there is only one hospital in Bertie County: Vidant Bertie Hospital.

Table 73. Number of General Hospital Beds[1]
(2004-2010)

Location	2004	2005	2006	2007	2008	2009	2010
Bertie County	6	6	6	6	6	6	6
Regional Average	37	34	34	34	34	34	34
Hertford County	94	86	86	86	86	86	86
State of NC	20,590	20,338	20,329	20,322	20,443	20,647	20,699

[1] Defined as "general acute care beds" in hospitals; that is, beds which are designated for short-stay use. Excluded are beds in service for dedicated clinical research, substance abuse, psychiatry, rehabilitation, hospice, and long-term care. Also excluded are beds in all federal hospitals and state hospitals.
Source: Log Into North Carolina (LINC) Database, Topic Group Vital Statistics and Health (Data Item 524); http://data.osbm.state.nc/pls/linc/dyn_linc_main.show.

Vidant Bertie Hospital

Vidant Bertie Hospital (VBER) is a six-bed hospital in Windsor, NC that provides surgical, emergency and diagnostic services, specialty clinics and primary care clinics. The hospital also operates Vidant Family Medicine – Windsor, a primary care physician practice, and has a telemedicine link with the Brody School of Medicine at East Carolina University (41).

Hospital services include:

- **Behavioral health:** Hospital staff, including a psychiatrist and social worker, provides thorough psychiatric and behavioral assessments along with counseling, transportation, structured outpatient group treatment, and referral services.
- **Children's services:** VBER offers well-child check-ups at Vidant Family Medicine - Windsor and other outpatient services through the emergency department, rehabilitation services and ear-nose-throat clinic. The hospital also offers special programs such as a Childhood Asthma Program focused on reducing hospitalization rates for asthmatic children. When children need more advanced medical attention, the hospital may transfer them to Vidant Children's Hospital at Vidant Medical Center in Greenville, NC.
- **Diagnostic imaging:** The VBER radiology department, staffed 24 hours a day, seven days a week, offers a full range of inpatient and outpatient services including diagnostic radiology, X-ray, mammography, ultrasound, and CT. Services are provided through Eastern Radiologists, Inc., of Greenville, NC, one of the largest radiology groups in the state. Through tele-radiology services and computerized radiography, the hospital can transmit X-rays to board-certified radiologists in Greenville for consultation. All specialty films, such as mammograms, are read by radiologists at VBER and sent to Greenville for a second reading.
- **Emergency services:** Vidant Bertie Hospital has a 24-hour emergency department supported by Vidant Air and Vidant Ground, which provide services to immediately transfer patients in need of further treatment.
- **Family medicine:** The Vidant Family Medicine – Windsor practice is located inside VBER. It operates from 8:00 AM to 6:00 PM Monday through Friday, and besides

diagnosing and treating patients refers them to the hospital's specialty clinics or other specialty treatment if more advanced care is required. Services offered include: pediatric well-checks and preventive care; pediatric sick child visits; well-woman exams; physicals; disease management; drug screenings; urinalysis and blood sugar screenings; and drug assistance for low-income patients.

- **Heart and vascular care:** VBER offers adult cardiology services through its specialty clinic. Patients requiring more advanced care can be transferred to the East Carolina Heart Institute at Vidant Medical Center in Greenville, NC.
- **Home health and Hospice:** The hospital offers home care through Vidant Home Health and Hospice. With home care, patients and their families learn self-care skills under the careful supervision of a professional staff. Patients often have access to services that would normally be available only in a hospital or ambulatory care setting. The hospice division has two offices serving eastern NC counties including Bertie. Hospice staff works with patients and families to create a care plan tailored to each individual patient's end-of-life decisions and needs.
- **Orthopedics:** Orthopedic services at VBER are provided in the hospital's Specialty Clinic. The orthopedic clinic offers a range of outpatient services, including evaluation, assessment and referrals for foot and ankle services, sports medicine services, and orthopedic surgeries; pre-surgery education; post-surgical follow-up; and steroid injections for joint pain.
- **Rehabilitation Services:** VBER offers rehabilitation services including speech, occupational and physical therapy. These therapies assist patients with a variety of conditions recover as quickly as possible and get back to their lives.
- **Stroke care:** The hospital has a team in place to immediately begin treatment for patients experiencing a stroke. VBER also has access to the region's only primary stroke center located at Vidant Medical Center in Greenville, NC.
- **Surgical services:** VBER physicians perform a wide range of outpatient surgical procedures, including: endoscopy, gastroenterology, general surgery, ophthalmology, podiatry, and urology.
- **Wellness and prevention services:** The hospital offers numerous health education programs in the community, such as health fairs, health screenings, and a diabetes management program, and provides support groups to help patients after they have received treatment at the hospital.
- **Women's services:** VBER provides women's services including mammography and obstetrics and gynecology care through its specialty clinic. Women can receive annual well-woman exams at Vidant Family Medicine - Windsor, located within the hospital.

Other Hospitals

Table 74 lists the eight hospitals in northeastern NC that are accessed by Bertie County residents. Of these, only Vidant Medical Center in Greenville offers a Trauma Center (rated for Level I care).

Table 74. Licensed Hospitals in Northeastern NC (February, 2013)

Facility Name	Location	No. Beds	Operating Rooms
Bertie County			
Vidant Bertie Hospital	Windsor	General - 6	Shared inpatient/ambulatory surgery - 2
Chowan County			
Vidant Chowan Hospital	Edenton	General - 49	Shared inpatient/ambulatory surgery - 3
		Nursing Home - 40	Endoscopy - 1
Dare County			
The Outer Banks Hospital, Inc.	Nags Head	General - 21	C-section - 1
			Shared inpatient/ambulatory surgery - 2
			Endoscopy - 2
Hertford County			
Vidant Roanoke-Chowan Hospital	Ahoskie	General - 186	C-section - 1
		Psychiatric - 28	Shared inpatient/ambulatory surgery - 3
			Endoscopy -1
Martin County			
Martin General Hospital	Williamston	General - 49	
Pasquotank County			
Albemarle Hospital	Elizabeth City	General - 182	C-section - 2
			Shared inpatient/ambulatory surgery - 8
			Endoscopy - 3
Pitt County			
Vidant Medical Center	Greenville	General - 748	C-section - 4
		Rehabilitation - 75	Shared inpatient/ambulatory surgery - 26
		Psychiatric - 52	Endoscopy - 2
			Other inpatient - 3
Washington County			
Washington County Hospital	Plymouth	General - 49	Shared inpatient/ambulatory surgery - 2

Source: NC Department of Health and Human Services, Division of Health Service Regulation. Hospitals Licensed by the State of North Carolina; http://www.ncdhhs.gov/dhsr/reports.htm .

Residents of Bertie County also may seek medical services in southeastern VA, primarily in the area referred to as the *Tidewater Region*. Table 75 lists hospitals in the cities in this region.

Table 75. Hospitals in Southeastern Virginia (February, 2013)

Hospital	Location
Chesapeake General Hospital	Chesapeake
Hampton VA Medical Center	Hampton
Riverside Behavioral Health Center	Hampton
Sentara Careplex Hospital	Hampton
Mary Immaculate Hospital	Newport News
Riverside Memorial Medical Center	Newport News
Riverside Rehabilitation Institute	Newport News
Children's Hospital of the Kings Daughters	Norfolk
DePaul Medical Center	Norfolk
Lake Taylor Hospital	Norfolk
Sentara Heart Hospital	Norfolk
Sentara Leigh Hospital	Norfolk
Sentara Norfolk General Hospital	Norfolk
Tidewater Psychiatric Institute	Norfolk
Maryview Medical Center	Portsmouth
Naval Medical Center	Portsmouth
Sentara Obici Hospital	Suffolk
Sentara Bayside Hospital	Virginia Beach
Sentara Princess Anne Hospital	Virginia Beach
Sentara Virginia Beach General Hospital	Virginia Beach
Virginia Beach Psychiatric Center	Virginia Beach

Source: The Agape Center, Virginia Hospitals; http://www.theagapecenter.com/Hospitals/Virginia.htm.

Utilization of Hospital Emergency Department Services

The emergency departments (EDs) of hospitals have become providers of convenience, urgency, or last resort for many healthcare consumers and an examination of ED utilization patterns can reveal much about the healthcare resource status of a community.

The four hospitals partnering in the development of this CHA—Vidant Bertie Hospital (VBER), Vidant Chowan Hospital (VCHO), The Outer Banks Hospital (TOBH) and Albemarle Hospital (AH)—have made available extensive utilization data, some of which will be examined in conjunction with health statistics in a later section of this report. Vidant Roanoke-Chowan Hospital (VROA) also provided utilization data which will be used as appropriate. Presented here are demographic summaries of the population of Bertie County residents who were admitted to the emergency departments of Vidant Bertie, Vidant Chowan, Vidant Roanoke Chowan and Albemarle Hospital in recent years.

Emergency Department Admission Demographics

Table 76 summarizes the total of ED visits at each hospital.

Table 76. Emergency Department Admissions, Bertie County Residents (FY2010-FY2012)

Hospital	Number of ED Visits		
	2010	2011	2012
Vidant Bertie Hospital	7,134	7,957	8,276
Vidant Chowan Hospital	476	549	549
Vidant Roanoke-Chowan Hospital	4,014	4,225	4.292
Albemarle Hospital	61	61	82
Total No. ED Visits by Bertie County Residents	11,685	12,792	13,204

Source: Vidant Bertie Hospital, Vidant Chowan Hospital, Vidant Roanoke-Chowan Hospital, and Albemarle Health.

Residence (Table 77)

- Since very few Bertie County residents visit the ED of Albemarle Hospital, it is a small fraction of total ED traffic there. The data below refers instead to the EDs of Vidant Bertie, Vidant Chowan, and Vidant Roanoke Chowan Hospitals only.
- Over the three-year period cited, 34.6% of all Emergency Department admissions of ARHS region patients at the three hospitals were residents of Bertie County.
- The largest proportion of Bertie County residents who were admitted to the EDs of these hospitals in each year cited (three-year average of 16.9% of all ED admissions of ARHS region residents to the three hospitals) were residents of Windsor.

Table 77. Percent ED Visits by Patient Residence, Bertie County Residents Vidant Bertie, Vidant Chowan, and Vidant Roanoke-Chowan Hospitals (FY2010-FY2012)

Location	Percent of ED Visits		
	2010	2011	2012
Aulander	5.0	5.0	5.0
Colerain	4.4	4.3	4.4
Kelford	1.1	1.1	1.2
Lewiston-Woodville	3.2	3.2	3.0
Merry Hill	2.1	2.4	2.3
Powellsville	1.2	1.1	1.1
Roxobel	0.8	0.7	0.6
Windsor	16.9	17.4	16.5
Total Bertie County Patients	34.5	35.3	34.1
Total No. ED Visits by ARHS Region Residents	33,681	36,057	38,528

Source: Vidant Bertie Hospital, Vidant Chowan Hospital, Vidant Roanoke-Chowan Hospital.

Age (Table 78)

- The largest proportion of Bertie County residents who were admitted to the EDs in each year cited were adults between the ages of 18 and 64. The senior population (people age 65 or older) composed the second largest proportion.

Table 78. Percent ED Visits by Patient Age, Bertie County Residents Vidant Bertie, Vidant Chowan, and Vidant Roanoke-Chowan Hospitals (FY2010-FY2012)

Age Group	Percent of ED Visits		
	2010	2011	2012
Adult	20.0	20.5	20.2
Pediatric	6.6	6.6	6.3
Senior	7.9	8.2	7.6
Total Bertie County Patients	34.5	35.3	34.1
Total No. ED Visits by ARHS Region Residents	33,681	36,057	38,528

Adult = age 18-64; Pediatric = age 0-17; Senior = age 65 and older
Source: Vidant Bertie Hospital, Vidant Chowan Hospital, Vidant Roanoke-Chowan Hospital.

Race (Table 79)

- Blacks composed the largest proportion of Bertie County residents admitted to the three EDs; blacks from Bertie County composed an annual average of 25.1% of all ED admissions of ARHS region residents to the three hospitals over the three-year period cited.

- Whites composed the second-largest proportion of Bertie County residents admitted to the three EDs; whites from Bertie County composed an annual average of 9.1% of all ED admissions to the three hospitals over the three-year period cited.

Table 79. Percent ED Visits by Patient Race, Bertie County Residents Vidant Bertie, Vidant Chowan, and Vidant Roanoke-Chowan Hospitals (FY2010-FY2012)

Race/Ethnicity	Percent of ED Visits		
	2010	2011	2012
Asian	<0.1	<0.1	<0.1
Black	25.0	25.5	24.8
Hispanic	0.2	0.2	0.2
Indian (Native or Alaskan)	<0.1	<0.1	<0.1
Other	0.2	0.2	0.2
Unknown	<0.1	<0.1	<0.1
White	9.1	9.4	8.8
Total Bertie County Patients	34.5	35.3	34.1
Total No. ED Visits by ARHS Region Residents	33,681	36,057	38,528

Source: Vidant Bertie Hospital, Vidant Chowan Hospital, Vidant Roanoke-Chowan Hospital.

Payer (Table 80)

- Medicare was the predominant primary payer among Bertie County residents who were admitted to the three EDs over the period cited, averaging 11.3% of all ED visits annually.
- Medicaid was the second-most frequent primary payer among Bertie County admissions to the EDs, averaging 10.0% of all visits annually.
- Self-pay admissions composed the third-most frequent payer group, averaging 5.2% of all visits annually.

Table 80. Percent ED Visits by Payer Group, Bertie County Residents Vidant Bertie, Vidant Chowan, and Vidant Roanoke-Chowan Hospitals (FY2010-FY2012)

Payer Group	Percent of ED Visits		
	2010	2011	2012
Agencies	0.2	0.2	0.2
CHAMPUS	0.2	0.2	0.1
Commercial/Managed Care	7.8	7.3	6.7
Medicaid	9.9	10.2	9.9
Medicare	10.9	11.7	11.3
Self-pay	5.0	5.2	5.4
Workman's Compensation	0.3	0.3	0.3
Other	0.2	0.2	0.2
Total Bertie County Patients	34.5	35.3	34.1
Total No. ED Visits by ARHS Region Residents	33,681	36,057	38,528

Source: Vidant Bertie Hospital, Vidant Chowan Hospital, Vidant Roanoke-Chowan Hospital.

Diagnosis-related emergency department data and inpatient hospitalization data is presented in the Health Statistics section of this report as appropriate.

Bertie County Emergency Medical Services

The following historical description of emergency medical services in Bertie County was excerpted from the Bertie County EMS Plan (undated) (42).

Bertie County began its rescue service in early 1961 when only a first aid card was required to perform rescue services. The first unit, formed by the Bertie County Peace Officers Association, obtained its equipment through federal surplus. The unit was housed at Clayton Bennett's Service Station, which remained the main station until about 1966. The original unit was manned by approximately 20 personnel from Lewiston and Windsor, but in 1964 the men from the Lewiston area decided to break away from Bertie Rescue and form their own squad in conjunction with the Fire Department in Lewiston. Since that time there have been as many as five squads in Bertie County.

At the time the Bertie County Emergency Medical Services Plan was written, there were several service providers in the Bertie County EMS system. This part of the Bertie County EMS report has been updated to include only those providers verifiably still in operation. Names and titles have been updated to reflect current usage.

- **Askewville EMS** (formerly **White Oak Medical Transport)** in Windsor provides Basic Life Support and transportation to stretcher-bound patients or any other patients that meet medical necessity guidelines, and can assist and serve as mutual aid when asked to do so. Service is provided 24/7 to the entire area of Bertie County.
- **Bertie County Rescue Squad** operates at the Intermediate level of emergency care. Bertie Rescue provides coverage for approximately 400 square miles.
- **Lewiston-Woodville EMS** provides the EMT level of emergency care. Lewiston-Woodville EMS provides emergency coverage for approximately 120 square miles.
- **Colerain Emergency Medical Services, Inc.** operates at the EMT level of emergency care. Colerain Rescue provides coverage for approximately 125 square miles.

Vidant Bertie Hospital located in Windsor, NC is identified as a Critical Access Hospital. The Emergency Room is staffed 24/7 by a physician or physician assistant and emergency room nurses. Martin General Hospital, Vidant Roanoke-Chowan Hospital, and Vidant Chowan Hospital also receive emergency patients from Bertie County EMS providers.

Specialty ground and air transports also are available to the Bertie County EMS system. EMS helicopters and Intensive Ground Unit services are available from **EastCare**, based at Vidant Medical Center, Greenville, NC, the only Level-1 Trauma Center in the region. EMS units may call EastCare Air Service directly when the condition of the patient clearly exceeds the capability of local hospitals. Infrequently, the air transports units of Duke Medical Center or other major medical centers may be activated to transport a patient to a facility where treatment warrants.

Bertie County Emergency Management provided semi-quantitative local data on the chief complaints logged by Bertie County EMS providers in CY2012 (43). Chief complaints, catalogued by EMS service provider, are listed below.

- Askewville EMS: traumatic back pain (2 cases), difficulty breathing (2 cases); many other complaints at the level of one case each.
- Bertie County Rescue Squad: altered mental status (approximately 60 cases), unspecified chest pain, nausea with vomiting, generalized weakness, and unresponsive

patient (all at ~25-30 cases); the largest category of service was labeled "Other" (~400 cases).
- Lewiston-Woodville EMS: unspecified chest pain (approximately 35 cases), difficulty breathing (~30 cases) and respiratory distress (~20 cases). The largest category of service was labeled "Other" (~575 cases)
- Colerain EMS, Inc.: altered mental status (approximately 25 cases), difficulty breathing (~20 cases), and shortness of breath (~15 cases). The largest category of service was labeled "Other" (~175 cases).

Public Health Department: Albemarle Regional Health Services

Albemarle Regional Health Services (ARHS) is a regional Public Health agency in rural, northeastern NC serving the seven counties of Bertie, Camden, Chowan, Currituck, Gates, Pasquotank and Perquimans. ARHS has provided over 70 years of service to the Albemarle Region.

The regional Public Health agency provides the following healthcare services: immunizations, diabetes care and management, women's preventive health, maternal health, including high-risk perinatal services, child health, WIC and nutrition counseling, pediatric asthma management, services for people with communicable diseases including STDs, adult day health care, children's developmental services, Public Health preparedness and response, public information, interpreter assistance, home health care, and hospice.

Albemarle Regional Health Services also administers the following programs: Environmental Health, Regional Landfill, Solid Waste Authority and Recycling, LifeQuest Worksite Wellness, and the Inter-County Public Transportation Authority. The more than 29 ARHS operational sites are completely networked by technology to increase the efficiency and effectiveness of service delivery across the agency (44).

Bertie County Health Department

Services offered at the Bertie County Health Department, physically located in Windsor, NC, include: clinical services, WIC, health education and promotion, environmental health and preparedness and response.

Clinical Services

- **Adult Health.** Comprehensive physical assessments and clinical services are provided for all adults in an effort to detect and prevent chronic diseases, which may cause disability or premature mortality. The Breast and Cervical Cancer Control Program (BCCCP) provides access to screening services for financially and medically eligible women. The WiseWoman program provides cholesterol and bold pressure check-ups, as well as education to help lower the risk of heart disease and stroke. Women enrolled in BCCCP are eligible for WiseWoman.
- **Child Health.** Primary child health services are provided in an effort to detect problems so that appropriate interventions can begin as early as possible. The focus of *Care Coordination for Children (CC4C*) is the total well-being of the child; emotional, social, health, and environmental. Local agencies work as a team to ensure that optimal level of care for the child is achieved. The program goal of *Health Check* is to guarantee that Medicaid-eligible children receive all recommended child health services.

- **Immunizations.** Immunizations are provided to children and adults in an effort to prevent communicable diseases such as: polio, pertussis, tetanus, mumps, measles, rubella, diphtheria, and hepatitis. The goal is to have all children fully immunized by two years of age and then to receive recommended booster doses. Adult immunizations include the annual influenza and pneumonia campaign, in addition to all recommended adult immunizations.
- **General Communicable Disease.** Conducts surveillance of various communicable diseases and provides educational counseling for individuals. Presentations and overviews of potential biological, chemical, and nuclear agents can be given by the ARHS Team.
- **Sexually Transmitted Disease.** STD & HIV diagnosis, treatment, and counseling are available on a walk-in basis. There are no fees associated with STD services.
- **Women's Preventive Health.** Family Planning helps women and men maintain optimal reproductive health and assists families in determining the number, timing, and spacing of their children.
- **Maternal Health.** Primary Prenatal Health Care services are provided in an effort to reduce infant mortality and ensure that all pregnant women receive the highest level of health care. The health department maintains a close working relationship with the area's private physicians and local hospitals for the provision of deliveries, emergency and specialized care. Referrals are made to the High Risk Perinatal Clinic at the Pasquotank County Health Department. In addition to comprehensive health care, patients receive nutrition education, medical social work intervention, and childbirth preparation and parenting education. *Pregnancy Care Management (PCM)* is an integral component of the maternal patient's health care services. PCM ensures that all health, social, mental and environmental needs are met.

Women, Infants and Children (WIC)

WIC is a federal program, funded by the US Department of Agriculture, designed to provide food to low-income pregnant, postpartum and breastfeeding women, infants and children until the age of five. The program provides a combination of nutrition education, supplemental foods, breastfeeding promotion and support, and referrals for health care. WIC has proven effective in preventing and improving nutrition related health problems within its population. All WIC clients must meet medical and financial eligibility requirements.

Diabetes Care

Referrals for individuals living with diabetes and their families are made to the comprehensive Diabetes Care Center located at the Pasquotank County Health Department. The Albemarle Regional Diabetes Program works to council patients on blood sugar monitoring, physical activity, and proper nutrition. This program incorporates a team approach to diabetes care focusing on medical care, education, and health promotion. Individualized counseling, follow-up, nutrition education, disease management and referral are integral components of the program. The Albemarle Regional Diabetes Care program is recognized by the American Diabetes Association for Quality Self-Management Education.

Bertie County Home Health

Bertie County Home Health provides comprehensive home care including nursing, physical and occupational therapy, and home health aide services in Bertie, Hertford, Northampton, Martin and Washington Counties. The staff works with each patient's physician, family, and other caregivers to develop a plan of care that meets each patient's needs. Bertie County Home

Health is Medicare- and Medicaid-certified and accredited by the Accreditation Commission for Health Care, Inc.

Health Education and Health Promotion

The Health Education Team is responsible for the assessment and identification of community health issues and problems. While identifying diseases as significant health problems that cause disability, mortality, premature death, and morbidity, Health Education Specialists utilize tools and expertise to analyze demographics and socioeconomic status data of the individual client within the community.

After selecting target populations, Health Education staff assists in planning, implementing, and evaluating educational programs with community health partners to promote and maintain behavioral change with the individual.

The Team is primarily responsible for school and community health education programs, Public Health networking in the communities of care, patient education offered in the clinical setting, mass media education, the development and evaluation of educational materials, agency orientation/staff development, higher education-public health liaison work, coalition building and coordination, and grants management.

Environmental Health Services

ARHS Environmental Health ensures the health and safety of residents while reducing the threat of the spread of communicable diseases through evaluation and education of environmental health policies and regulations.

Programs managed by Environmental Health include: water and sewage inspections, swimming pool inspections, communicable disease investigations, food and lodging inspections, lead investigations, on-site wastewater, the Albemarle Regional Solid Waste Management Authority, and Perquimans-Chowan-Gates Solid Waste Management.

Public Health Preparedness and Response

Through its Public Health Preparedness and Response (PHP&R) program, ARHS aims to work with its constituent communities and local emergency management partners and response agencies to keep everyone safe and prepared for any natural or man-made disaster.

Health Department Utilization Data

ARHS has provided data on the utilization of agency services at the level of each county. Table 81 summarizes the demographic profile of clients who patronized the Bertie County Health Department in 2012 compared to comparable averages for all of ARHS.

- Children under the age of 18 composed 29% of all Bertie County Health Department patients; ARHS-wide the comparable percentage was 31%.
- Persons ages 45-64 composed 24% of all health department patients in Bertie County; ARHS-wide the comparable percentage was 19%.
- These utilization data probably reflect the fact that Bertie County had lower proportions of young people and higher proportions of older people than did the region.
- The largest proportion of Bertie County Health Department patients—74%--were African American. African Americans and whites each composed 47% of patients ARHS-wide.

- Females composed 71% of Bertie County Health Department patients and 75% of ARHS patients.

Table 81. Demographic Profile of Patients, Bertie County Health Department and ARHS: Age, Race and Sex (2012)

Demographic Parameter	Unduplicated Counts			
	Bertie		Agency-Wide	
	Patients	Visits	Patients	Visits
Age				
0-17	638	856	4,531	7,546
18-24	368	872	2,539	6,093
25-34	350	841	2,317	5,427
35-44	232	480	1,437	2,797
45-54	258	568	1,476	2,636
55-64	258	428	1,265	1,898
65+	115	256	899	1,609
Total	2,219	4,301	14,464	28,006
Race				
American Indian/Alaskan Native	3	5	10	21
Asian	10	19	121	254
Black/African American	1,647	3,369	6,388	13,214
Native Hawaiian/Pacific Islander	1	2	14	31
Unknown	9	11	582	1,402
White	549	895	7,349	13,084
Total	2,219	4,301	14,464	28,006
Sex				
Female	1,580	3,277	10,077	21,094
Male	639	1,024	4,387	6,912
Total	2,219	4,301	14,464	28,006

Source: Ginger Midgett, Albemarle Regional Health Services. Personal communication to Dana Hamill, Public Health Educator, Albemarle Regional Health Services, Perquimans County Health Department, January 25, 2013.

Table 82 summarizes the payer profile for services utilized by patients of the Bertie County Health Department in 2012. The list is organized according to program area.

- The largest proportion of all payers listed in connection with services utilized at the Bertie County Health Department—50%--was the “patient pay only” category.
- Adult Health was the Bertie County Health Department program with the largest number (610) and percent (86%) of “patient pay only” clients.
- Medicaid only or some combination of Medicaid and another payer composed the second largest proportion of all payers, 36%.
- HealthCheck Child Health Physicals was the program with the largest proportion of Medicaid payers (84%), which is expected since HealthCheck is a Medicaid-mandated program.

Table 82. Payer Profile, Bertie County Health Department (2012)

Program	Total Unduplicated Patients	Total Visits	Medicaid and Other	Medicaid and Commercial	Medicaid Only	Patient Pay Only	Tricare	Medicare B	Commercial Only	Total Payers Listed
Adult Health	811	1,491	14	0	24	610	1	43	18	710
Child Health	83	100	1	0	34	20	0	0	3	58
Epidemiology	10	10	0	0	0	0	0	0	0	0
Family Planning	366	879	44	11	88	119	1	3	24	290
HealthCheck Child Health Physicals	215	228	7	7	159	19	0	0	14	206
Immunization	739	821	2	1	309	162	4	22	193	693
Maternal Health	39	185	4	4	30	1	0	0	0	39
Pregnancy Tests	52	52	2	1	21	26	0	0	1	51
STD	324	488	3	1	53	141	0	3	8	209
Tuberculosis	79	252	2	0	1	46	0	1	0	50
TOTAL	2,718	4,506	79	25	719	1,144	6	72	261	2,306

Source: Ginger Midgett, Albemarle Regional Health Services. Personal communication to Dana Hamill, Public Health Educator, Albemarle Regional Health Services, Perquimans County Health Department, January 25, 2013.

Federally-Qualified Health Centers

The Federally-Qualified Health Center (FQHC) benefit under Medicare was added effective October 1, 1991, when the Social Security Act was amended to qualify “safety net” providers such as community health centers, public housing centers, outpatient health programs funded by the Indian Health Service, and programs serving migrants and the homeless to receive enhanced reimbursement from Medicare and Medicaid, as well as other benefits.

The main purpose of the FQHC Program is to enhance the provision of primary care services in underserved urban and rural communities. FQHCs must serve an underserved area or population, offer a sliding fee scale, provide comprehensive services, have an ongoing quality assurance program, and have a governing board of directors. Certain tribal organizations and FQHC Look-Alikes (an organization that meets PHS Section 330 eligibility requirements, but does not receive grant funding) also may receive special Medicare and Medicaid reimbursement (45).

The US Health Resources and Services Administration (HRSA) lists four FQHCs in Bertie County as of March 23, 2013 (46). By press time there was no utilization data available from any of the four.

- Colerain Primary Care (Roanoke-Chowan Community Health Center) (Colerain, NC),
- Lewiston Community Health Center (Lewiston-Woodville, NC),
- Windsor Community Health Center (Windsor, NC), and
- Windsor Family Medical Center (Windsor, NC).

School Health

Bertie County Schools provides at least part-time services of a school nurse at Aulander Elementary School, Colerain Elementary School, West Bertie Elementary School, Windsor Elementary School, Bertie Middle School and Bertie High School (47).

Table 83 presents SY2009-10 and SY2010-11 student to school nurse ratios for the four jurisdictions being compared.

- The average student-to-school nurse ratio in Bertie County for the two-year period cited was 693.5:1, below the recommended maximum of 750:1.

Table 83. Student to School Nurse Ratio (SY2009-10 and SY2010-11)

Location	Student to School Nurse Ratio	
	SY2009-2010	SY2010-2011
Bertie County	704	683
Regional Average	713	712
Hertford County	616	619
State of NC	1,185	1,201

Source - NC DHHS, DPH, Women's and Children's Health, Facts & Figures, Data Reports & Publications. Annual School Health Services Reports, End-of-Year-Reports, years as listed. http://www.ncdhhs.gov/dph/wch/stats/.

Long-Term Care Facilities

The NC Division of Aging and Adult Services is the state agency responsible for planning, monitoring and regulating services, benefits and protections to support older adults, persons with disabilities, and their families. Among the facilities under the agency's regulatory jurisdiction are nursing homes, family care homes, and adult care homes. Each category of long-term care is discussed subsequently, but Table 84 lists by name all facilities in Bertie County.

Table 84. NC-Licensed Long-Term Care Facilities in Bertie County (November, 2012)

Facility Type/Name	Location	# Beds SNF (ACH)[1]	Star Rating (If applicable)
Adult Care Homes/Homes for the Aged			
Rivers Edge Rest Home	Windsor	25	3
Windsor House	Windsor	60	2
Family Care Homes			
Cherry's Family Care Home #3	Aulander	6	3
Hawthorne House	Merry Hill	6	4
Moore's Family Care	Powellsville	5	no rating
Pathways	Aulander	6	0
Pathways II	Aulander	6	2
Pathways III	Aulander	4	3
Pathways IV	Aulander	4	3
Sure Promise Family Care Home II	Aulander	6	4
United Services Health	Lewiston	6	4
Virginia's Place	Windsor	6	no rating
Nursing Homes/Homes for the Aged			
Brian Center Health and Rehabilitation - Windsor	Windsor	82 (0)	n/a
Three Rivers Health and Rehab	Windsor	60 (20)	n/a

[1] - SNF(ACH) = Maximum number of nursing or adult care home beds for which the facility is licensed.
Source - NC Department of Health and Human Services, Division of Health Services Regulation (DHSR), Licensed Facilities, Adult Care Homes, Family Care Homes, Nursing Facilities (by County); http://www.ncdhhs.gov/dhsr/reports.htm.

Nursing Homes

Nursing homes are facilities that provide nursing or convalescent care for three or more persons unrelated to the licensee. A nursing home provides long term care of chronic conditions or short term convalescent or rehabilitative care of remedial ailments, for which medical and nursing care are indicated. All nursing homes must be licensed in accordance with state law by the NC Division of Health Service Regulation Licensure Section (48).

Table 85 presents the number of nursing facility beds in the four jurisdictions being compared. Note that the local figures have not changed in seven years.

- At the time this report was prepared, there were two nursing homes in Bertie County offering a total of 142 beds: Brian Center Health and Rehabilitation in Windsor (82 beds) and Three Rivers Health and Rehab in Windsor (60 beds).

Table 85. Number of Nursing Facility Beds (2005-2011)

Location	2005	2006	2007	2008	2009	2010	2011
Bertie County	142	142	142	142	142	142	142
Regional Average	118	118	118	118	118	118	118
Hertford County	161	161	151	151	151	151	151
State of NC	43,987	44,248	44,210	44,234	44,315	45,143	45,382

Note: this count includes beds licensed as nursing facility beds, meaning those offering a level of care less than that offered in an acute care hospital, but providing licensed nursing coverage 24 hours a day, seven days a week.
Source: Log Into North Carolina (LINC) Database, Topic Group Vital Statistics and Health (Data Item 513); http://data.osbm.state.nc/pls/linc/dyn_linc_main.show.

Adult Care Homes

Adult care homes are residences for aged and disabled adults who may require 24-hour supervision and assistance with personal care needs. People in adult care homes typically need a place to live, some help with personal care (such as dressing, grooming and keeping up with medications), and some limited supervision. Medical care may be provided on occasion but is not routinely needed. Medication may be given by designated, trained staff. These homes vary in size from *family care homes* of two to six residents to *adult care homes* of more than 100 residents. These homes were previously called "domiciliary homes," or "rest homes." The smaller homes, with two to six residents, are still referred to as family care homes. In addition, there are Group Homes for Developmentally Disabled Adults, which are licensed to house two to nine developmentally disabled adult residents (49).

Adult care homes are different from nursing homes in the level of care and qualifications of staff. They are licensed by the state Division of Health Service Regulation (Group Care Section) under State regulations and are monitored by Adult Home Specialists within county departments of social services. Facilities that violate licensure rules can be subject to sanctions, including fines.

- As cited previously, at the time this report was prepared there were two state-licensed adult care homes in Bertie County: Rivers Edge Rest Home (25 beds) and Windsor House (60 beds), both located in Windsor.
- In addition, there were 10 state-licensed family care homes in Bertie County, offering a total of 55 beds.

In January, 2009, NC Division of Health Services Regulation introduced a “Star Rated Certificate” program to provide consumers with more information about the quality of care offered by the state’s adult care homes and family care homes. The Star Rated Certificate program is based on an inspections-related point scale, and ratings range from zero to four stars (50).

- As cited previously, of the two adult care homes in Bertie County, one was rated three stars and the other 2 stars.
- Of the 10 family care homes in Bertie County, three were rated four stars and three were rated three stars.

Alternatives to Institutional Care

An alternative to institutional care preferred by many disabled and senior citizens is to remain at home and use community in-home health and/or home aide services. Table 86 below lists the home care, home health, and hospice providers in Bertie County. Note that there may be additional providers that refer to themselves as "home health service (or care) providers"; the table below lists only those licensed by the state.

Table 86. NC-Licensed Home Care, Home Health and Hospice Service Providers in Bertie County
(As of March, 2013)

Provider Name	Location
Bertie County Home Health	Windsor
Eastern Home Health Care, Inc.	Windsor
Home Life Care, Inc.	Windsor
New Destiny Home Care, Inc.	Windsor
Positive Step Home Care Agency	Windsor
Quality Home Staffing, Inc.	Windsor
Sure Care Health Services, Inc.	Kelford
Vidant Home Health and Hospice	Windsor

Source - NC Department of Health and Human Services, Division of Health Services Regulation (DHSR), Licensed Facilities, Home Care All (by County); http://www.ncdhhs.gov/dhsr/reports.htm.

According to local data provided by the agency, Bertie County Home Health served a total of 125 patients with 1,762 visits in 2012 (51).

Adult Day Care/Adult Day Health Centers

Adult day care provides an organized program of services during the day in a community group setting for the purpose of supporting the personal independence of older adults and promoting their social, physical and emotional well-being. Also included in the service, when supported by funding from the Division of Aging and Adult Services (NCDAAS), are no-cost medical examinations required for admission to the program. Nutritional meals and snacks, as appropriate, are also expected. Providers of adult day care must meet State Standards for Certification, which are administrative rules set by the state Social Services Commission. These standards are enforced by the office of the Adult Day Care Consultant within the NCDAAS. Routine monitoring of compliance is performed by Adult Day Care Coordinators located at county departments of social services. Costs to consumers vary, and there is limited funding for adult day care from state and federal sources (52).

Adult day health services are similar programs to adult day care programs in that they provide an organized program of services during the day in a community group setting to support the personal independence of older adults and promote their social, physical, and emotional well-being. In addition, providers of adult day health services, as the name implies, offer health care services to meet the needs of individual participants. Programs must also offer referral to and assistance in using other community resources, and transportation to and from the program may be provided or arranged when needed and not otherwise available. Also included in the

service, when supported by funding from the NCDAAS, are medical examinations required for individual participants for admission to day health care services and thereafter when not otherwise available without cost. Food and services to provide a nutritional meal and snacks as appropriate are expected as well (53).

The NCDAAS did not list any adult day care/adult day health centers for Bertie County at the time this report was developed. However, *DayBreak*, an affiliate of Albemarle Regional Health Services, provides care and support for adults who, due to frailty or physical disability, require assistance during the day. Daybreak provides a range of activities designed to promote social, physical, and emotional well-being. The agency's facility is located in Elizabeth City. Participants may be dropped off by family members, or transportation can be arranged. Services include: instruction/assistance with personal care and health care; nutritious meals and daily snacks; appropriate physical activities; educational/cultural programs; and social/recreational activities (54).

Mental Health Services and Facilities

The unit of NC government responsible for overseeing mental health services is the Division of Mental Health, Developmental Disabilities and Substance Abuse Services (DMH/DD/SAS). In NC, the mental health system is built on a system of Local Management Entities (LMEs). LMEs are agencies of local government—area authorities or county programs—that are responsible for managing, coordinating, facilitating and monitoring the provision of mental health, developmental disabilities and substance abuse services in the catchment area served. LME responsibilities include offering consumers 24/7/365 access to services, developing and overseeing providers, and handling consumer complaints and grievances (55).

At the time this report was prepared, the LME for Bertie County was East Carolina Behavioral Health (ECBH). ECBH serves a total of 19 counties in eastern NC, facilitating mental health services for both children and adults. Services offered include: diagnostic assessment, outpatient therapy, multi-systemic therapy, psychosocial rehabilitation, developmental therapy, intensive in-home services, medication management, substance abuse residential care, day treatment, community respite, group living, supportive living, supportive employment, substance abuse treatment (outpatient and residential), day activity and vocational program for the developmentally disabled, personal assistance, and targeted case management.

Table 87 (on the following page) lists ECBH network providers serving Bertie County residents.

It should be noted, however, that the list of ECBH providers is a master list of those offering services throughout the LME's 19-county service area; at the present time only one network provider—Vidant Bertie Hospital—was physically located in Bertie County.

Table 87. East Carolina Behavioral Health Network Providers Serving Bertie County (As of September, 2012)

Provider	Location (Nearest, if Several)	Service	Age Group
A Plus Results Independent Living, Inc.	Plymouth	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Act Medical Group, PA	Numerous	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Albemarle Hospital	Elizabeth City	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Albemarle Psychological Innovations	Elizabeth City	Mental Health	Child/Adult
Anointed Mental Health, LLC	Greenville	Mental Health, Substance Abuse	Child/Adult
ARC of NC	Elizabeth City, Ahoskie	Developmental Disability, Mental Health	Child/Adult
Axford, Mary Claire, LCSW	Nags Head	Mental Health	Child/Adult
Benjamin House Community Services	Elizabeth City	Developmental Disability, Substance Abuse	Child/Adult
Bowens, William C., MD	Elizabeth City	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Buscemi, Cary S. / Sea Oats Counseling	Nags Head	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Career Fulfillment Services, PLLC	Greenville	Mental Health	Child/Adult
Carolinaeast Medical Center	New Bern	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Catholic Charities of the Diocese of Raleigh, Inc.	Hertford	Mental Health	Child/Adult
Chasteen, Athena, LCSW	Elizabeth City	Mental Health, Substance Abuse	Adult
Children and Family Counseling Services	Nags Head	Mental Health	Child/Adult
Crisp, Bryan, MA, LMFT, BCBA	Greenville	Developmental Disability, Mental Health	Child/Adult
Dickinson, Patricia S., PhD	Havelock	Developmental Disability, Mental Health	Child/Adult
Dixon Social Interactive Services, Inc.	Washington	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Dream Provider Care Services, Inc.	Plymouth, Edenton, Columbia	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Eastern Psychiatric & Behavioral Specialists, PLLC	Greenville	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
ECU Physicians Pediatrics	Greenville	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
ECU Physcians Psychiatry Outpatient Center	Greenville	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Evans Health Psychological Services	Ahoskie	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Hoffmier, Elizabeth G., LCSW	Nags Head	Mental Health	Child/Adult
Hunsberger, Hilary K., LCSW	Elizabeth City	Mental Health	Child/Adult
Integrated Family Services	Elizabeth City, Ahoskie	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Jaworski, Jeffrey A., LPC, LCAS	Nags Head	Mental Health, Substance Abuse	Child/Adult
Johnston, Edward Angus, MS, CRC, LCAS, LPC	Greenville	Mental Health, Substance Abuse	Child/Adult
Johnston, Grace G., MSW, LCSW, LCAS	Greenville	Mental Health, Substance Abuse	Child/Adult
Kenyear, Stephanye A., RN, NP, PLLC	Greenville	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Life, Inc.	Goldsboro	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Making the Difference Services, LLC	Greenville	Developmental Disability, Mental Health	Child/Adult
Martin General Hospital	Williamston	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Medical Park Psychiatric Associates	Greenville	Mental Health	Adult
Minor-Schork, Debra, RN, LLC	Edenton	Mental Health	Adult
Monarch	Manteo	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
New Bern Professional Health Services, PC	New Bern	Developmental Disability, Mental Health	Child/Adult
New Hope Counseling Services, PA	Washington	Mental Health	Child/Adult
OneCare Behavioral Health System	Elizabeth City	Mental Health, Substance Abuse	Child/Adult
Pathways Counseling Center	Elizabeth City	Mental Health, Substance Abuse	Child/Adult
Peele Counseling, PLLC	Nags Head	Mental Health, Substance Abuse	Child/Adult
PORT Human Services	Nags Head	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Precision Health Care Services, Inc.	Greenville	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Pride in North Carolina	Elizabeth City	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Recovery Innovations - Wellness City	Greenville	Mental Health, Substance Abuse	Adult
Rescare Inc., CNC/Access, Inc	Nags Head	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Roberts, Christopher James, LCSW, LCAS	Manteo	Mental Health, Substance Abuse	Child/Adult
Roberts, Kelly, LCSW	Manteo	Mental Health, Substance Abuse	Child/Adult
Rosenke, Dorothy, PsyD	Elizabeth City	Developmental Disability, Mental Health	Child/Adult
Sandalwood Counseling	Nags Head	Mental Health	Child/Adult
Scott, Jean D., CCSW, LCSW, RN	Elizabeth City	Mental Health	Adult
The Outer Banks Hospital	Nags Head	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Thomas, Elizabeth M., LPC	Elizabeth City	Mental Health	Child/Adult
Vidant Adult Behavioral Health Center	Ahoskie	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Vidant Bertie Hospital	Windsor	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Vidant Chowan Hospital	Edenton	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Vidant Medical Group, UHS Physicians, LLC	Greenville	Developmental Disability, Mental Health, Substance Abuse	Child/Adult
Vidant Medical Center	Greenville	Developmental Disability, Mental Health, Substance Abuse	Child/Adult

Source: East Carolina Behavioral Health Provider Network Directory, September 2012

There is a list of NC-licensed mental health *facilities* (not service providers) physically located in Bertie County, as shown in Table 88. These facilities offer mostly day activities, substance abuse treatment, or supervised living.

Table 88. NC-Licensed Mental Health Facilities in Bertie County (G.S. 122C) (November, 2012)

Operator/Name of Facility	Location	Category	Capacity
Bertie-Camden Solid Foundation Facilities, Inc.	Windsor	Supervised living, developmentally disabled adult	6
Bertie County Day Reporting Center	Windsor	Day treatment for substance abuse	n/a
Cherry's Group Home #1	Aulander	Supervised living, MI adult	5
Corday Place	Windsor	Community respite services	4
Dameron Home	Windsor	Community respite services	3
Deacon Dan's Place	Windsor	Supervised living, MI adult	4
East Creek	Windsor	Supervised living, developmentally disabled adult	3
Farmwood	Windsor	Supervised living, developmentally disabled adult; community respite services	4
Hillcrest Place	Windsor	Supervised living, developmentally disabled adult	3
Kasheena House	Kelford	Residential Treatment Level III	4
Mary Gladys	Windsor	Day Activity	n/a
Rachel's House Day Treatment	Windsor	Day Treatment; Psychosocial rehabilitation	n/a
Residential Loving Care #2, Inc.	Windsor	Supervised living, MI adult	4
Uplift Academy	Windsor	Day Treatment	n/a
Visions in View, Inc.	Merry Hill	Psychosocial rehabilitation	n/a
West Creek	Windsor	Supervised living, developmentally disabled adult	3
Windsor House	Windsor	Residential Treatment Level III	4
Windsor Psychosocial Rehabilitation	Windsor	Psychosocial rehabilitation	n/a

Source - NC Department of Health and Human Services, Division of Health Services Regulation (DHSR), Licensed Facilities, Mental Health Facilities (G.S. 122C) (by County); http://www.ncdhhs.gov/dhsr/reports.htm .

Other Healthcare Resources

Table 89 lists other healthcare facilities in the Albemarle Region that are licensed by the state of NC. Note that none were physically located in Bertie County

- As of March, 2013 there were no NC-licensed ambulatory surgical facilities or nursing pools in the Albemarle Region.
- There were two NC-licensed cardiac rehabilitation facilities in the region: the Cardiopulmonary Rehabilitation Program at Albemarle Hospital in Elizabeth City and HealthSteps in Edenton.

Table 89. Other NC Licensed Healthcare Facilities in the Albemarle Region (As of March, 2013)

Type and Name of Facility	County	Location
Licensed Ambulatory Surgical Facilities		
None		
Licensed Cardiac Rehabilitation Facilities		
Albemarle Hospital Cardio-Pulmonary Rehabilitation Program	Pasquotank	Elizabeth City
HealthSteps	Chowan	Edenton
Licensed Nursing Pools		
None		

Source - NC Department of Health and Human Services, Division of Health Services Regulation (DHSR), Licensed Facilities, Hospitals (by County); http://www.ncdhhs.gov/dhsr/reports.htm.

Dialysis Centers

Table 90 lists dialysis centers in the Albemarle Region, one of which was physically located in Bertie County, in Windsor.

Table 90. Dialysis Centers in the Albemarle Region (2012)

Name of Facility	County	Location	Features
BMA of Windsor	Bertie	Windsor	20 hemodialysis stations, no evening hours
Edenton Dialysis	Chowan	Edenton	17 hemodialysis stations; no evening hours
Elizabeth City Dialysis	Pasquotank	Elizabeth City	24 hemodialysis stations; no evening hours

Source: Dialysis Facility Compare, http://www.Medicare.gov/Dialysis/Include/DataSection/Questions.

Urgent Care Centers

There are no free-standing urgent care centers listed for Bertie County, but Internet searches identify urgent care centers in Washington, NC and Elizabeth City, NC. Bertie County residents with urgent (and evening, weekend and holiday) health issues are most likely to report to Vidant Bertie Hospital or another nearby hospital.

Other Bertie County Medical Practitioners

Table 91 presents a list of active NC Medical Board-licensed physicians and physician assistants in Bertie County.

Table 91. Active NC Licensed Physicians and Physician Assistants in Bertie County (As of February, 2013)

Physician Name	Location	Specialty	Practice Affiliation
Alford, Kimberly Ann	Windsor	Emergency Medicine	Vidant Medical Group
Brooks, Ricky Lorenzo	Windsor	Internal Medicine/ObGyn	Bertie County Rural Health Assoc.
Brown, Sherry Bernita	Windsor	Family Medicine	Bertie County Health Department
Duncan, Hazel Vanessa	Windsor	Family Medicine	Bertie County Rural Health Assoc.
El-Khoury, Semaan Yacoub	Aulander	Internal Medicine	Aulander Medical Practice
Ferguson, Steven Wallace	Powellsville	General Practice	Eastern Carolina Geriatric Associates & Family Care Center
Francis, John Arlie	Merry Hill	Ob/Gyn	Private
Harris, Philip Gordon	Windsor	Family Practice	Vidant Family Medicine - Windsor
Mombeyarara, Rudo	Windsor	Family Medicine	Vidant Family Medicine - Windsor
Oeters, Rhonda C.	Windsor	Emergency Medicine	Vidant Bertie Hospital
Threlkeld, Billie Jo	Windsor	Emergency Medicine	Vidant Bertie Hospital
Ugoji, Amanze Olufemi Ofondu	Windsor	Family Medicine/Geriatrics	Cashie Medical Center
Zaidi, Syed Navaid	Windsor	Not listed	Vidant Bertie Hospital
Physician Assistant Name		**Area of Practice**	**Practice Affiliation**
Barber, Kathryn Parshley	Windsor	Adolescent/Young Adult Medicine	Bertie County Rural Health Assoc.
Binion-Brown, Kareen	Windsor	Family Medicine	Bertie County Rural Health Assoc.
Johnson, Robert Edward	Windsor	Emergency Medicine	Vidant Bertie Hospital
Velazquez, Louis Manuel	Aulander	Internal/Family/Emergency Medicine	Aulander Medical Practice, PA
Woglom, Peter B.	Windsor	Family Medicine	Bertie Correctional Institution

Source: Licensee Information. NC Medical Board, http://wwwapps.ncmedboard.org/Clients/NCBOM/Public/LicenseeInformationSearch.aspx.

Recreational Facilities

Table 92 lists some of the public parks and recreational centers in Bertie County; Table 93 lists some of the private facilities in the county.

Table 92. Public Recreational Facilities in Bertie County

Category/Name	Location	Facilities/Programs
Parks and Recreational Facilities		
Livermon Park and Mini Zoo	Windsor	Zoo, playground, picnic pavillions, restrooms
Historic Hope Plantation	near Windsor	Restored home of a former NC governor; architectural interest
Roanoke-Cashie River Center	Windsor	Wildlife displays, riverfront boardwalk, educational wetland ponds, natural area for picnicking, canoe/kayak rentals, amphitheater
Cashie Wetlands Walk	Windsor	Observation deck and boardwalk along the Cashie River wetlands
Windsor Farmers Market	Windsor	Open Saturdays from May through September
River Ramblings	Windsor	Boat tours of the Cashie River; operating April through October; free
Sans Souci Ferry	Windsor	One of the three surviving two-car inland ferries in NC; Cashie River
Windsor Historic Walking Tour	Windsor	Self-guided walking tour of historic district in Windsor; brochure avilable
Charles Kuralt Nature Trail	Windsor	Self-guided exploration of bottomland along the Roanoke River
Roanoke River National Wildlife Refuge	Windsor	Refuge lands along 70 miles of the Roanoke River; offers environmental education programs for the public; use opportunities include trails, fishing, hunting, wildlife observation and photography
Council on Aging Gym	Windsor	Bertie County Parks and Recreation offers bowling, exercise, yoga and hobby classes for seniors year-round, and youth teams for soccer and T-ball in the spring and flag and tackle football in the fall.
Davis Ball Park	Windsor	
Windsor Recreational Park	Windsor	
Windsor Municipal Park	Windsor	
Cultural Arts Facilities		
Bertie County Arts Council	Windsor	Gallery of fine art and handmade items
Moses B. Gillam Technology Center	Windsor	Free use of computers; computer classes

Sources: Things to Do in Windsor. Town of Windsor website: http://windsornc.com/index/0-2.
Parks and Recreation. Bertie County government website: http://www.co.bertie.nc.us/departments/rec/rec.html.

Table 93. Private Recreational Facilities in Bertie County

Name	Location	Facilities/Programs
Cashie Golf and Country Club	Windsor	9-hole, semi-private golf club; open year round.
Bertie County YMCA	Windsor	Offers sports and fitness classes for children and adults

Source: Various Internet sites

CHAPTER FOUR: HEALTH STATISTICS

METHODOLOGY

Routinely collected mortality and morbidity surveillance data and behavior survey data can be used to describe the health status of Bertie County residents. These data, which are readily available in the public domain, typically use standardized definitions, thus allowing comparisons among county, state and national figures. There is, however, some error associated with each of these data sources. Surveillance systems for communicable diseases and cancer diagnoses, for instance, rely on reports submitted by health care facilities across the state and are likely to miss a number of cases, and mortality statistics are dependent on the primary cause of death listed on death certificates without consideration of co-occurring conditions.

Understanding Health Statistics

Age-adjustment

Mortality rates, or death rates, are often used as measures of the health status of a community. Many factors can affect the risk of death, including race, gender, occupation, education and income. The most significant factor is age, because the risk of death inevitably increases with age; that is, as a population ages, its collective risk of death increases. Therefore, an older population will automatically have a higher overall death rate just because of its age distribution. At any one time some communities have higher proportions of "young" people, and others have a higher proportion of "old" people. In order to compare mortality data from one community with the same kind of data from another, it is necessary first to control for differences in the age composition of the communities being compared. This is accomplished by *age-adjusting* the data. Age-adjustment is a statistical manipulation usually performed by the professionals responsible for collecting and cataloging health data, such as the staff of the NC State Center for Health Statistics (NC SCHS). It is not necessary to understand the nuances of age-adjustment to use this report. Suffice it to know that age-adjusted data are preferred for comparing health data from one population or community to another and have been used in this report whenever available.

Aggregate Data

Another convention typically used in the presentation of health statistics is *aggregate data,* which combines annual data gathered over a multi-year period, usually three or five years. The practice of presenting data that are aggregated avoids the instability typically associated with using highly variable year-by-year data consisting of relatively few cases or deaths. It is particularly important to aggregate data for smaller jurisdictions like Bertie County. The calculation is performed by dividing the number of cases or deaths due to a particular disease over a period of years by the sum of the population size for each of the years in the same period.

Incidence

Incidence is the population-based rate at which new cases of a disease occur and are diagnosed. It is calculated by dividing the number of newly diagnosed cases of a disease or

condition during a given period by the population size during that period. Typically, the resultant value is multiplied by 100,000 and is expressed as cases per 100,000; sometimes the multiplier is a smaller number, such as 10,000.

Incidence rate is calculated according to the following formula:

(number of new cases/population) x 100,000 = new cases per 100,000 people

The incidence rates for certain diseases, such as cancer, are simple to obtain, since data on newly discovered cases is routinely collected by the NC Central Cancer Registry. However, diagnoses of other conditions, such as diabetes or heart disease, are not normally reported to central data-collecting agencies, so accurate incidence data on these conditions is rare.

Mortality

Mortality is calculated by dividing the number of deaths due to a specific disease in a given period by the population size in the same period. Like incidence, mortality is a rate, usually presented as number of deaths per 100,000 residents. Mortality rates are easier to obtain than incidence rates since the underlying (or primary) cause of death is routinely reported on death certificates. However, some error can be associated with cause-of-death classification, since it is sometimes difficult to choose a single underlying cause of death from potentially many co-occurring conditions.

Mortality rate by cause is calculated according to the following formula:

(number of deaths due to a cause/population) X 100,000 = deaths per 100,000 people

Morbidity

Morbidity as used in this report refers generally to the presence of injury, sickness or disease (and sometimes the symptoms and/or disability resulting from those conditions) in the population. Morbidity data usually is presented as a prevalence percentage, or a count, but not a rate.

Prevalence

Prevalence, which describes the extent of a problem, refers to the number of existing cases of a disease or health condition in a population at a defined point in time or during a period. Prevalence expresses a proportion, not a rate. Prevalence is often estimated by consulting hospital records; for instance, hospital discharge records available from NC SCHS show the number of residents within a county who use hospital in-patient services for given diseases during a specific period. Typically, these data underestimate the true prevalence of the given disease in the population, since individuals who do not seek medical care or who are diagnosed outside of the hospital in-patient setting are not captured by the measure. Note also that decreasing hospital discharge rates do not necessarily indicate decreasing prevalence; rather they may be a result of a lack of access to hospital care.

Trends

Data for multiple years is included in this report wherever possible. Since comparing data on a year-by-year basis can yield very unstable trends due to the often small number of cases, events or deaths per year (see below), the preferred method for reporting incidence and mortality data is long-term trends using the age-adjusted, multi-year aggregate format. Most trend data used in this report is of that type.

Small Numbers

Year-to-year variance in small numbers of events can make dramatic differences in rates that can be misleading. For instance, an increase from two events one year to four the next could be statistically insignificant but result in a calculated rate increase of 100%. Aggregating annual counts over a five year period before calculating a rate is one method used to ameliorate the effect of small numbers. Sometimes even aggregating data is not sufficient, so the NC State Center for Health Statistics recommends that all rates based on fewer than 20 events—whether covering an aggregate period or not—be considered "unstable", and interpreted only with caution. In recent years, the NC SCHS has suppressed mortality rates based on fewer than 20 events in a five-year aggregate period. Other state entities that report health statistics may use their own minimum reporting thresholds. To be sure that unstable health data do not become the basis for local decision-making, this report will highlight and discuss primarily rates based on 20 or more events in a five-year aggregate period and on 10 or more events in a single year. Where exceptions occur, the narrative will highlight the potential instability of the rate being discussed.

Describing Difference and Change

In describing differences in data of the same type from two populations or locations, or changes over time in the same kind of data from one population or location—both of which appear frequently in this report—it is useful to apply the concept of percent difference or change. While it is always possible to describe difference or change by the simple subtraction of a smaller number from a larger number, the result often is inadequate for describing and understanding the scope or significance of the difference or change. Converting the amount of difference or change to a *percent* takes into account the relative size of the numbers that are changing in a way that simple subtraction does not, and makes it easier to grasp the meaning of the change.

For example, there may be a rate for a type of event (e.g., death) that is one number one year and another number five years later. Suppose the earlier figure is 12.0 and the latter figure is 18.1. The simple mathematical difference between these rates is 6.0. Suppose also there is another set of rates that are 212.0 in one year and 218.0 five years later. The simple mathematical difference between these rates also is 6.0. Although the same, these simple numerical differences are not of the same significance in both instances. In the first example, converting the 6 point difference to a percent yields a relative change factor of 50%; that is, the smaller number increased by half, a large fraction. In the second example, converting the 6 point difference to a percent yields a relative change factor of 2.8%; that is, the smaller number in the comparison increased by a relatively small fraction. In these examples the application of percent makes it very clear that the difference in the first example is of far greater degree than the difference in the second example. This document uses percentage almost exclusively to describe and highlight degrees of difference and change, both positive (e.g., increase, larger than, etc.) and negative (e.g., decrease, smaller than, etc.)

Behavioral Risk Factor Surveillance System (BRFSS)

Bertie County residents participate in the state's annual Behavioral Risk Factor Surveillance System (BRFSS) Survey, as part of an aggregate 41-county sample that encompasses the entire eastern third of NC. It is not possible to isolate survey responses from Bertie County BRFSS participants without oversampling the county, which rarely occurs. Since the aggregate regional data covers such a diverse area, the results cannot responsibly be interpolated to describe health in Bertie County. As a result, BRFSS data will not be used in this document *except* for local BRFSS data manipulated by the CDC to yield a county-level *estimate*.

Final Health Data Caveat

Some data that is used in this report may have inherent limitations, due to sample size, or its age, for example, but is used nevertheless because there is no better alternative. Whenever this kind of data is used, it will be accompanied by a warning about its limitations.

HEALTH RANKINGS

America's Health Rankings

Each year for more than 20 years, America's Health Rankings™, a project of United Health Foundation, has tracked the health of the nation and provided a comprehensive perspective on how the nation—and each state—measures up. America's Health Rankings is the longest running state-by-state analysis of health in the US.

America's Health Rankings are based on several kinds of measures, including *determinants* (socioeconomic and behavioral factors and standards of care that underlie health and well-being) and *outcomes* (measures of morbidity, mortality, and other health conditions). Together the determinants and outcomes help calculate an overall rank. Table 94 shows where NC stood in the 2012 rankings relative to the "best" and "worst" states, where first-ranked is best.

Table 94. Rank of North Carolina in America's Health Rankings (2012)

Location	National Rank (Out of 50)[1]		
	Overall	Determinants	Outcomes
Vermont	1	1	5
North Carolina	33	31	38
Mississippi/Louisiana (tie)	49	49/50	50/49

United Health Foundation, 2012. America's Health Rankings; http://www.americashealthrankings.org/NC/2012.

County Health Rankings

Building on the work of *America's Health Rankings*, the Robert Wood Johnson Foundation, collaborating with the University of Wisconsin Population Health Institute, undertook a project to develop health rankings for the counties in all 50 states. In this project, each state's counties are ranked according to health outcomes and the multiple health factors that determine a county's health. Each county receives a summary rank for its health outcomes and health factors and also for the four different types of health factors: health behaviors, clinical care, social and economic factors, and the physical environment.

Table 95 presents the 2013 county rankings for Bertie County, the ARHS regional average and Hertford County in terms of health outcomes and health factors; Table 96 presents additional detail for these jurisdictions as well as the average for NC and national benchmarks.

- Bertie County ranks 92nd overall in NC, chiefly due to a very high mortality rate ranking (97th) and a high morbidity ranking (83rd).
- The best Bertie County rankings are in the health factors of clinical care (66th) and physical environment (62nd).

It should be noted that the County Health Rankings serve a limited purpose, since the data on which they are based in some cases is very old and different parameters are measured in different time periods.

Table 95. County Health Rankings (2013)

Location	County Rank (Out of 100)[1]						
	Health Outcomes		Health Factors				Overall
	Mortality	Morbidity	Health Behaviors	Clinical Care	Social & Economic Factors	Physical Environment	
Bertie County	97	83	99	66	88	62	92
Regional Avg.	49	60	57	43	38	26	53
Hertford County	72	80	90	33	75	46	77

County Health Rankings and Roadmaps, 2013. University of Wisconsin Population Health Institute; http://www.countyhealthrankings.org/app/north-carolina/2013/rankings/outcomes/overall/by-rank.

Table 96. County Health Rankings Details (2013)

Health Factor		Bertie County	*ARHS Regional Average*	Hertford County	NC County Average	National Benchmark[1]
Mortality						
	Premature deaths	11,207	8,109	8,977	7,480	5,317
Morbidity						
	Poor or fair health	N/A	21%	N/A	18%	10%
	Poor physical health days	3.8	4.1	4.0	3.6	2.6
	Poor mental health days	2.0	3.0	2.7	3.4	2.3
	Low birthweight	13.9%	10.5%	12.4%	9.1%	6.0%
Health Factors						
	Health Behaviors					
	Adult smoking	N/A	23.5%	22%	21%	13%
	Adult obesity	38%	33%	35%	29%	25%
	Physical inactivity	31%	28%	35%	25%	21%
	Excessive drinking	N/A	11%	9%	13%	7%
	Motor vehicle crash death rate	46	23	29	17	10
	Sexually transmitted infections	747	407	786	441	92
	Teen birth rate	62	44	63	46	21
	Clinical Care					
	Uninsured	18%	0	19%	19%	11%
	Primary Care physicians	5318:1		1641:1	1480:1	1067:1
	Dentists	11298:1		4486:1	2171:1	1516:1
	Preventable hospital stays	78	68	72	63	47
	Diabetic screening	87%	86%	90%	88%	90%
	Mammography screening	69%	72%	72%	69%	73%
	Social & Economic Factors					
	High school graduation	72%	82%	80%	80%	N/A
	Some college	42%	53%	50%	62%	70%
	Unemployment	12.7%	9.8%	11.1%	10.5%	5.0%
	Children in poverty	35%	27%	38%	25%	14%
	Inadequate social support	N/A	15%	N/A	21%	14%
	Children in single-parent households	53%	36%	55%	35%	20%
	Violent crime rate	173	210	338	411	66
	Physical Environment					
	Daily fine particulate matter	12.3	12	12.3	12.9	8.8
	Drinking water safety	0%	0%	0%	3%	0%
	Access to recreational facilities	5	5	8	11	16
	Limited access to healthy foods	5%	4%	6%	7%	1%
	Fast food restaurants	62%	47%	60%	49%	27%

Source: County Health Rankings and Roadmaps, 2012. University of Wisconsin Population Health Institute; http://www.countyhealthrankings.org/app/north-carolina/2012/rankings/outcomes/overall.

MATERNAL AND INFANT HEALTH

Pregnancy

The following definitions and statistical conventions will be helpful in understanding the data on pregnancy:

- Reproductive age = 15-44
- Total pregnancies = live births + induced abortions + fetal death at 20+ weeks gestation
- Pregnancy rate = number of pregnancies per 1,000 women of reproductive age
- Fertility rate = number of live births per 1,000 women of reproductive age
- Abortion rate = number of induced abortions per 1,000 women of reproductive age
- Birth rate = number of live births per 1,000 *population (Note that in the birth rate calculation the denominator includes the entire population, both men and women, not just women of reproductive age.)* Since the birth rate is a measure of population growth, it was presented among the demographic data in Chapter One of this report.

Pregnancy, Fertility and Abortion Rates, Women Age 15-44

Table 97 presents total annual pregnancy, fertility and abortion rates for women age 15-44 for the period from 2007-2011.

- The *total pregnancy rate* in Bertie County was higher than the total pregnancy rate for the ARHS region but lower than the comparable pregnancy rate for NC in every year cited. The total pregnancy rate in Bertie County decreased by 7% overall between 2007 and 2011.
- The *total fertility rate* in Bertie County was higher than the total fertility rate for the ARHS region in 2008, 2009, and 2011 but lower than the comparable fertility rate for NC in every year cited. The total fertility rate in Bertie County decreased by 7% overall between 2007 and 2011.
- The *total abortion rate* in Bertie County was higher than the total abortion rate for the ARHS region in every period cited and higher than the comparable abortion rate for NC in every year cited except 2007. The total abortion rate in Bertie County decreased by 5% overall between 2007 and 2011.

Table 97. Total Pregnancy, Fertility and Abortion Rates, Ages 15-44 (Single Years, 2007-2011)

Location	Females Ages 15-44														
	2007			2008			2009			2010			2011		
	Pregnancy Rate	Fertility Rate	Abortion Rate	Pregnancy Rate	Fertility Rate	Abortion Rate	Pregnancy Rate	Fertility Rate	Abortion Rate	Pregnancy Rate	Fertility Rate	Abortion Rate	Pregnancy Rate	Fertility Rate	Abortion Rate
Bertie County	78.5	63.7	13.4	81.4	65.8	15.3	72.3	58.1	13.5	72.3	56.9	14.9	73.1	59.5	12.7
Regional Average	77.9	65.0	12.4	69.0	56.4	12.3	69.7	56.0	13.2	71.5	57.9	13.3	67.2	56.7	10.2
Hertford County	77.3	62.0	14.8	81.8	66.9	14.4	83.2	66.5	16.2	73.2	56.4	16.5	71.7	56.7	14.8
State of NC	84.7	69.1	15.1	83.9	69.1	14.4	78.9	65.1	13.4	76.4	62.7	13.2	73.3	61.5	11.4

Note: Bold type indicates an unstable rate based on a small number (fewer than 10 cases)
Source: NC Center for Health Statistics, County-level Data, County Health Data Books (2007-2013). Pregnancy and Live Births. Pregnancy, Fertility, & Abortion Rates per 1,000 Population, by Race, by Age; http://www.schs.state.nc.us/SCHS/data/databook/.

Beginning in 2010, NC SCHS began reporting stratified pregnancy, fertility and abortion data in a different manner than previously. Prior to 2010 the data was stratified by “total”, “white” and “minority”. After that date and to the present time, the data has been stratified by “total”, “White

non-Hispanic", "African-American non-Hispanic", "Other non-Hispanic", and "Hispanic". Because of this change, stratified data prior to 2010 is not directly comparable to 2010 and 2011 data. Table 98 presents pregnancy, fertility, and abortion rates stratified according to the new model.

- Pregnancy and fertility rates among Bertie County Hispanics exceeded those of the other racial and ethnic groups in the county in 2010 and 2011; the rates cited, however, were all based on below-threshold numbers of events and should be considered unstable. Stable rates for African American, non-Hispanic women were higher than the comparable stable rates for other racial and ethnic groups.

Table 98. Pregnancy, Fertility and Abortion Rates, Ages 15-44, Stratified by Race/Ethnicity (2010 and 2011)

Location	Females Ages 15-44					
	2010			2011		
	Pregnancy Rate	Fertility Rate	Abortion Rate	Pregnancy Rate	Fertility Rate	Abortion Rate
Bertie County Total	72.3	56.9	14.9	73.1	59.5	12.7
White, Non-Hispanic	58.9	54.3	**3.7**	52.9	50.1	**2.8**
African American, Non-Hispanic	77.2	57.6	19.2	80.5	62.2	16.9
Other, Non-Hispanic	**73.2**	**73.2**	**0.0**	**57.1**	**57.1**	**0.0**
Hispanic	**87.0**	**65.2**	**21.7**	**156.9**	**137.3**	**19.6**
Regional Average Total	71.5	57.9	13.3	67.2	56.7	10.2
White, Non-Hispanic	67.1	58.0	8.5	61.3	54.5	6.6
African American, Non-Hispanic	79.8	58.1	21.5	70.8	54.7	15.7
Other, Non-Hispanic	61.3	60.4	0.9	73.2	63.8	9.4
Hispanic	65.6	52.1	13.1	82.1	76.2	5.9
Hertford County Total	73.2	56.4	16.5	71.7	56.7	14.8
White, Non-Hispanic	63.7	57.0	**6.7**	64.2	58.1	**5.3**
African American, Non-Hispanic	77.0	55.7	20.9	74.4	54.3	20.1
Other, Non-Hispanic	**13.2**	**13.2**	**0.0**	**53.3**	**53.3**	**0.0**
Hispanic	114.6	104.2	**10.4**	104.8	104.8	**0.0**
State of NC Total	76.4	62.7	13.2	73.3	61.5	11.4
White, Non-Hispanic	65.6	57.1	8.2	63.6	56.4	7.0
African American, Non-Hispanic	86.1	61.0	24.4	81.5	59.7	21.1
Other, Non-Hispanic	84.5	71.3	12.8	80.6	69.4	10.9
Hispanic	114.0	99.0	14.7	106.6	94.0	12.2

Note: Bold type indicates an unstable rate based on a small number (fewer than 10 cases)
Source: NC Center for Health Statistics, County-level Data, County Health Data Books (2007-2013). Pregnancy and Live Births. Pregnancy, Fertility, & Abortion Rates per 1,000 Population, by Race, by Age; http://www.schs.state.nc.us/SCHS/data/databook/.

Pregnancy, Fertility and Abortion Rates, Women Age 15-19

Table 99 presents total annual pregnancy, fertility and abortion rates for women age 15-19 ("teens") for the period from 2007-2011.

- Throughout the period cited, the *total pregnancy rate* for Bertie County teens was higher than the total pregnancy rate for teens in the ARHS region as a whole and statewide. The total pregnancy rate among Bertie County teens fell by 57% overall between 2007 and 2011, a very significant decrease.

- The *total fertility rate* among Bertie County teens was higher than the total fertility rate among teens region-wide and statewide in all years cited. The total fertility rate among Bertie County teens decreased by 52% overall between 2007 and 2011.
- The *total abortion rate* among Bertie County teens was higher than the comparable regional and state average abortion rates in 2007, 2009 and 2010. The total abortion rate among Bertie County teens decreased by 84% overall between 2007 and 2011, based, however, on an unstable rate for 2011.

Table 99. Total Pregnancy, Fertility and Abortion Rates, Ages 15-19 (Single Years, 2007-2011)

Location	Females Ages 15-19														
	2007			2008			2009			2010			2011		
	Pregnancy Rate	Fertility Rate	Abortion Rate	Pregnancy Rate	Fertility Rate	Abortion Rate	Pregnancy Rate	Fertility Rate	Abortion Rate	Pregnancy Rate	Fertility Rate	Abortion Rate	Pregnancy Rate	Fertility Rate	Abortion Rate
Bertie County	101.7	81.1	19.1	82.5	72.9	**9.6**	77.0	55.5	21.6	56.8	43.0	**12.3**	44.0	39.2	**3.1**
Regional Average	68.0	52.3	15.1	49.2	38.6	10.5	55.1	40.9	13.3	47.7	37.9	11.4	41.5	30.7	9.7
Hertford County	76.9	56.6	18.2	76.5	65.2	11.2	88.2	67.0	21.3	54.0	43.4	10.6	53.5	41.2	12.2
State of NC	63.0	48.4	14.3	58.6	45.7	12.5	56.0	43.4	12.2	49.7	38.3	11.0	43.8	34.8	8.7

Note: Bold type indicates an unstable rate based on a small number (fewer than 10 cases)
Source: NC Center for Health Statistics, County-level Data, County Health Data Books (2007-2013). Pregnancy and Live Births. Pregnancy, Fertility, & Abortion Rates per 1,000 Population, by Race, by Age; http://www.schs.state.nc.us/SCHS/data/databook/.

Table 100 presents racially/ethnically stratified pregnancy, fertility and abortion data for teens. Racially stratified rates among minority teens are mostly too unstable for comparison.

Table 100. Pregnancy, Fertility and Abortion Rates, Ages 15-19, Stratified by Race/Ethnicity (2010 and 2011)

Location		Females Ages 15-19					
		2010			2011		
		Pregnancy Rate	Fertility Rate	Abortion Rate	Pregnancy Rate	Fertility Rate	Abortion Rate
Bertie County	Total	56.8	43.0	**12.3**	44.0	39.2	**3.1**
	White, Non-Hispanic	**50.6**	**44.9**	**5.6**	**17.5**	**17.5**	**0.0**
	African American, Non-Hispanic	60.9	43.5	**15.2**	50.9	44.2	**4.4**
	Other, Non-Hispanic	**0.0**	**0.0**	**0.0**	**142.9**	**142.9**	**0.0**
	Hispanic	**0.0**	**0.0**	**0.0**	**142.9**	**142.9**	**0.0**
Regional Average	*Total*	47.7	37.9	11.4	41.5	30.7	9.7
	White, Non-Hispanic	44.6	34.3	9.7	29.2	21.6	7.6
	African American, Non-Hispanic	60.8	44.0	16.4	51.1	38.0	12.8
	Other, Non-Hispanic	8.4	0.0	8.4	20.4	20.4	0.0
	Hispanic	0.0	0.0	0.0	55.2	49.8	5.4
Hertford County	Total	54.0	43.4	10.6	53.5	41.2	12.2
	White, Non-Hispanic	**29.5**	**21.1**	**8.4**	**32.9**	**28.2**	**4.7**
	African American, Non-Hispanic	64.7	52.9	**11.8**	59.8	44.5	15.3
	Other, Non-Hispanic	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
	Hispanic	**0.0**	**0.0**	**0.0**	**87.0**	**87.0**	**0.0**
State of NC	Total	49.7	38.3	11.0	43.8	34.8	8.7
	White, Non-Hispanic	34.4	27.2	7.0	30.8	25.2	5.5
	African American, Non-Hispanic	70.2	50.9	18.7	61.6	45.5	15.6
	Other, Non-Hispanic	48.9	38.8	9.5	39.4	32.9	6.4
	Hispanic	82.7	70.6	11.7	71.1	62.7	8.2

Note: Bold type indicates an unstable rate based on a small number (fewer than 10 cases).
Source: NC Center for Health Statistics, County-level Data, County Health Data Books (2007-2013). Pregnancy and Live Births. Pregnancy, Fertility, & Abortion Rates per 1,000 Population, by Race, by Age; http://www.schs.state.nc.us/SCHS/data/databook/.

Pregnancies among Teens (age 15-19) and Adolescents (under age 15)

Figure 101 presents trend data on the number of teen pregnancies in each jurisdiction from 2003-2011.

Table 101. Number of Teen Pregnancies (Ages 15-19)
(Single Years, 2003-2011)

Location	Number of Pregnancies, Ages 15-19								
	2003	2004	2005	2006	2007	2008	2009	2010	2011
Bertie County	47	58	53	59	64	60	50	37	28
Regional Average	36	38	47	46	43	37	38	31	28
Hertford County	71	92	96	92	72	75	83	51	48
State of NC	17,390	18,143	18,259	19,192	19,615	19,398	18,142	15,957	13,909

Source: NC State Center for Health Statistics, North Carolina Health Data Query System. Pregnancy Data. North Carolina Reported Pregnancy Data. Year: 2003-2011. (Counties and age groups as indicated); http://www.schs.state.nc.us/SCHS/data/preg/preg.cfm.

Figure 102 presents trend data on the number of adolescent pregnancies in each jurisdiction from 2003-2011.

Table 102. Number of Adolescent Pregnancies (Under Age 15)
(Single Years, 2003-2011)

Location	Number of Pregnancies, Age 14 and Younger								
	2003	2004	2005	2006	2007	2008	2009	2010	2011
Bertie County	1	2	1	0	1	4	1	3	1
Hertford County	2	0	2	1	0	1	2	1	1
State of NC	443	472	468	405	404	376	324	282	255

Source: NC State Center for Health Statistics, North Carolina Health Data Query System. Pregnancy Data. North Carolina Reported Pregnancy Data. Year: 2003-2011. (Counties and age groups as indicated); http://www.schs.state.nc.us/SCHS/data/preg/preg.cfm.

Pregnancy Risk Factors

High Parity and Short Interval Births

According to the NC SCHS, a birth is *high parity* if the mother is younger than 18 when she has had one or more births, or aged 18 or 19 and has had two or more births, or is 20-24 and has had four or more births, etc. A *short-interval birth* involves a pregnancy occurring less than six months since the last birth. High-parity and short-interval pregnancies can be a physical strain on the mother and sometimes contribute to complicated pregnancies and/or poor birth outcomes.

Table 103 presents data on high-parity and short interval births for the period 2007-2011.

- The percentage of high-parity births among women under age 30 in Bertie County (22.5%) was higher than the comparable average for the region (16.7%) or the state (17.2%). Among women age 30 or older the rate in Bertie County (19.9%) was higher than the regional rate (19.5%) but lower than the state average (21.2%).
- The percentage of short-interval births was highest in Bertie County (16.9%) and lowest region-wide and statewide (12.6%).

Table 103. High Parity and Short Interval Births
(Single Five-Year Aggregate Period, 2007-2011)

Location	High Parity Births				Short Interval Births	
	Mothers < 30		Mothers ≥ 30			
	No.[1]	%[2]	No.[1]	%[2]	No.[3]	%[4]
Bertie County	203	22.5	43	19.9	122	16.9
Regional Average	138	16.7	59	19.5	89	12.6
Hertford County	274	24.6	76	24.3	150	15.4
State of NC	70,404	17.2	47,110	21.2	52,600	12.6
Source:	a	a	a	a	b	b

[1] Number at risk due high parity
[2] Percent of all births with age of mother in category indicated
[3] Number with interval from last delivery to conception of six months or less
[4] Percent of all births excluding 1st pregnancies
a - NC State Center for Health Statistics, County-level Data, County Health Data Book (2013), Pregnancy and Births, 2007-2011 Number At Risk NC Live Births due to High Parity by County of Residence; http://www.schs.state.nc.us/SCHS/data/databook/.
b - NC State Center for Health Statistics, County-level Data, County Health Data Book (2013), Pregnancy and Births, 2007-2011 NC Live Births by County of Residence, Number with Interval from Last Delivery to Conception of Six Months or Less; http://www.schs.state.nc.us/SCHS/data/databook/.

Smoking during Pregnancy

Smoking during pregnancy is an unhealthy behavior that may have negative effects on both the mother and the fetus. Smoking can lead to fetal and newborn death, and contribute to low birth weight and pre-term delivery. In pregnant women, smoking can increase the rate of placental problems, and contribute to premature rupture of membranes and heavy bleeding during delivery (56).

Table 104 presents trend data on smoking during pregnancy for the aggregate periods from 2001-2005 through 2005-2009.

- The percent of births to mothers who smoked during pregnancy was lowest (or tied for lowest) in Bertie County in every period cited,
- The percentages of mothers who smoked during their pregnancies rose in every jurisdiction except the state between 2001-2005 and 2005-2009.

Table 104. Smoking during Pregnancy Trend
(Five-Year Aggregate Periods, 2001-2005 through 2005-2009)

Location	Number and Percent of Births to Mothers Who Smoked Prenatally									
	2001-2005		2002-2006		2003-2007		2004-2008		2005-2009	
	No.	%	No.	%	No.	%	No.	%	No.	%
Bertie County	78	6.3	98	8.1	109	9.2	119	9.9	125	10.4
Regional Average	127	12.4	130	12.3	136	12.6	136	12.3	135	12.5
Hertford County	116	7.8	134	8.8	146	9.5	164	10.5	162	10.4
State of NC	76,712	12.9	74,901	12.4	73,887	11.9	72,513	11.5	70,529	11.0

Source: NC State Center for Health Statistics, Vital Statistics, Volume 1 (2005, 2006, 2007,-2008, 2009, 2010, and 2011): Population, Births, Deaths, Marriages, Divorces, (geography as noted), Mother Smoked; http://www.schs.state.nc.us/schs/data/vitalstats.cfm.

Early Prenatal Care

Good pre-conception health and early prenatal care can help assure women the healthiest pregnancies possible.

Table 105 presents trend data on the percent of all women receiving prenatal care in the first trimester for the four jurisdictions included in this report.

- The percent of all pregnant women in Bertie County who received early prenatal care averaged approximately 84% over the period cited, marginally higher than the state average for the period (83%) and marginally lower than the regional average (85%).
- The percentage of pregnant black women in Bertie County who received early prenatal care averaged approximately 81% over the period cited, higher than the comparable average for black women region-wide (78%) and statewide (75%).

Table 105. Women Receiving Prenatal Care in the First Trimester (Five-Year Aggregate Periods, 2001-2005 through 2005-2009)

Location	Percent of Women Receiving Prenatal Care in the First Trimester														
	2001-2005			2002-2006			2003-2007			2004-2008			2005-2009		
	Total	Black	Nat. Amer	Total	Black	Nat. Amer	Total	Black	Nat. Amer	Total	Black	Nat. Amer	Total	Black	Nat. Amer
Bertie County	84.5	80.8	0.0	83.9	80.5	0.0	84.5	81.3	100.0	83.6	80.5	100.0	83.1	80.0	100.0
Regional Average	85.4	76.6	42.9	85.2	78.1	60.0	85.6	78.2	67.9	85.2	77.8	69.0	85.1	77.1	54.8
Hertford County	84.8	81.5	100.0	85.5	82.6	100.0	85.7	82.6	100.0	85.5	82.1	100.0	85.6	82.3	100.0
State of NC	83.5	75.5	79.6	83.0	75.4	79.3	82.5	75.2	78.5	82.1	75.0	77.7	82.1	75.2	77.1

Source: NC State Center for Health Statistics, Basic Automated Birth Yearbook (BABY Book), North Carolina Residents (2005, 2006, 2007,-2008, 2009, 2010, and 2011) (geographies as noted): Table 6 (and others): County Resident Births by Month Prenatal Care Began, All Women; http://www.schs.state.nc.us/schs/births/babybook/ .

Pregnancy Outcomes

Low Birth Weight and Very Low Birth Weight

Low birth weight can result in serious health problems in newborns (e.g., respiratory distress, bleeding in the brain, and heart, intestinal and eye problems), and cause lasting disabilities (mental retardation, cerebral palsy, and vision and hearing loss) or even death (57).

Table 106 presents five-year aggregate data on low birth weight births: infants weighing 2,500 grams (5.5 pounds) or less.

- In the first period cited (2006-2010) the percentages of total low birth-weight births and low birth-weight births among blacks were highest in Bertie County; in the second period cited (2007-2011) those same percentages of low-birth weight births were highest in Hertford County.
- Note that several of the racially/ethnically stratified percentages shown in the table were based on small numbers of events and should be considered unstable. In NC as a whole, where the percentages were based on larger numbers, black non-Hispanic women had the highest percentage of low birth-weight births.

Table 106. Low Birth-Weight Births
(Five Year Aggregate Periods, 2006-2010 and 2007-2011)

Location	Percent of Low Birth Weight (≤2,500 Gram) Births									
	2006-2010					2007-2011				
	Total	White, Non-Hispanic	Black, Non-Hispanic	Other Non-Hispanic	Hispanic	Total	White, Non-Hispanic	Black, Non-Hispanic	Other Non-Hispanic	Hispanic
Bertie County	13.0	**5.6**	15.9	**0.0**	**7.1**	12.8	**6.7**	15.0	**0.0**	**11.1**
Regional Average	10.3	7.7	14.8	7.3	7.7	9.9	7.5	14.1	6.2	9.3
Hertford County	12.4	7.9	14.3	**11.8**	**9.1**	13.3	7.5	15.9	**11.1**	**7.9**
State of NC	9.1	7.7	14.4	9.3	6.3	9.1	7.7	14.3	9.4	6.5

Note: Bold type indicates an unstable rate based on a small number (fewer than 20 cases).
Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (2012, 2013), Pregnancy and Births, Low and Very Low Weight Births; http://www.schs.state.nc.us/SCHS/data/databook/.

Table 107 presents five-year aggregate data on very low birth-weight births: infants weighing 1,500 grams (3.3 pounds) or less.

- The total percentage of very low birth-weight births in Bertie County was the highest among the four comparator jurisdictions in both periods cited.
- In both counties the percentages of very low birth-weight births among minority groups were based on small numbers of events and thus were unstable. At the state level, black non-Hispanic women had higher percentages of very low birth-weight births than women in other minority groups.

Table 107. Very Low Birth-Weight Births
(Five-Year Aggregate Periods, 2006-2010 and 2007-2011)

Location	Percent of Very Low Birth Weight (≤1,500 Gram) Births									
	2006-2010					2007-2011				
	Total	White, Non-Hispanic	Black, Non-Hispanic	Other Non-Hispanic	Hispanic	Total	White, Non-Hispanic	Black, Non-Hispanic	Other Non-Hispanic	Hispanic
Bertie County	3.2	**1.0**	3.9	**0.0**	**7.1**	3.3	**1.1**	3.9	**0.0**	**11.1**
Regional Average	2.4	1.6	4.2	1.3	3.9	2.1	1.3	3.9	0.9	4.5
Hertford County	2.3	**1.2**	2.7	**0.0**	**3.0**	2.5	**0.8**	3.3	**0.0**	**2.6**
State of NC	1.8	1.3	3.4	1.5	1.2	1.8	1.3	3.3	1.5	1.2

Note: Bold type indicates an unstable rate based on a small number (fewer than 20 cases).
Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (2012, 2013), Pregnancy and Births, Low and Very Low Weight Births; http://www.schs.state.nc.us/SCHS/data/databook/.

Cesarean Section Delivery

Table 108 presents data on the percent of births delivered by Cesarean section.

- As elsewhere in the US, the percentage of Cesarean section delivery in all four jurisdictions has risen over time. Over the period cited in the table, Cesarean deliveries rose by 24% in Bertie County, 13% in the ARHS region, 43% in Hertford County, and 13% statewide.

Table 108. Cesarean Section Deliveries.0
(Five-Year Aggregate Periods, 2001-2005 through 2007-2011)

Location	Percent of Resident Births Delivered by Cesarean Section						
	2001-2005	2002-2006	2003-2007	2004-2008	2005-2009	2006-2010	2007-2011
Bertie County	23.4	24.2	24.8	25.7	27.0	28.6	29.0
Regional Average	28.6	29.5	30.3	30.8	31.3	31.8	32.2
Hertford County	22.4	23.6	24.9	27.2	28.5	30.0	32.1
State of NC	27.7	28.7	29.6	30.3	30.9	31.2	31.2

Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (2007-2013), Pregnancy and Births, Births Delivered by Caesarian Section; http://www.schs.state.nc.us/SCHS/data/databook/ .

Birth Complications

Data on inpatient hospitalizations from the hospitals in the region speaks to the frequency of problems connected with Bertie County infants upon birth. Table 109 summarizes some of that data for 2012. Note that there were no births reported for Vidant Bertie Hospital.

- Of 114 hospitalizations associated with infants born to Bertie County resident mothers in 2012, 88 (77%) involved "normal" infants. An additional four births (4%) involved infants that presented with "major" problems, and 22 (19%) involved infants that presented with "significant" problems.

Table 109. Discharges of Newborn Infants, Bertie County Resident Mothers (2012)

DRG Code	Diagnosis	Number of Discharges, by Hospital		
		Vidant Chowan Hospital	Vidant Roanoke-Chowan Hospital	Albemarle Hospital
795	Normal newborn	19	68	1
793	Full-term neonate with major problems	0	4	0
794	Neonate with other significant problems	1	21	0

Source: Vidant Bertie Hospital, Vidant Chowan Hospital, Vidant Roanoke-Chowan Hospital, and Albemarle Health.

Infant Mortality

Infant mortality is the number of infant (under one year of age) deaths per 1,000 live births.

Table 110 presents infant mortality data for Bertie County, the ARHS region, Hertford County and the state of NC.

- Due to infant deaths numbering fewer than 20 per aggregate period in Bertie County in most aggregate periods, stable rates for comparison are few. The two stable rates for Bertie County (17.5 in 2005-2009 and 17.1 in 2006-2010) were higher than the comparable rates for Hertford County, and more than double the rates for NC as a whole.

Table 110. Total Infant Deaths
(Five-Year Aggregate Periods, 2001-2005 through 2007-2011)

Location	Infant Deaths													
	2001-2005		2002-2006		2003-2007		2004-2008		2005-2009		2006-2010		2007-2011	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Bertie County	**18**	**14.6**	**13**	**10.8**	**17**	**14.4**	**19**	**15.8**	21	17.5	20	17.1	**19**	**17.0**
Regional Average	**10**	**9.4**	**10**	**9.2**	**11**	**10.1**	**13**	**11.3**	**14**	**11.8**	**13**	**11.9**	**13**	**11.4**
Hertford County	21	14.2	23	15.2	26	17	27	17.2	30	19.3	25	16.8	22	15.4
State of NC	5,056	8.5	5,084	8.4	5,234	8.4	5,333	8.4	5,289	8.3	5,066	7.9	4,899	7.8

Note: Bold type indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC Center for Health Statistics, County-level Data, County Health Data Books (2007-2013), Mortality, Infant Death Rates per 1,000 Live Births; http://www.schs.state.nc.us/SCHS/data/databook/.

Table 111 demonstrates that when stratified by race/ethnicity, infant mortality rates in the local jurisdictions under study all were unstable due to small numbers of infant deaths. State data, however, indicated that the infant mortality rate among African-American non-Hispanics was 2½ times the comparable rate for White non-Hispanics.

Table 111. Infant Deaths, Stratified by Race/Ethnicity
(Five-Year Aggregate Periods, 2006-2010 and 2007-2011)

Location		Infant Deaths			
		2006-2010		2007-2011	
		No.	Rate	No.	Rate
Bertie County	Total	20	17.1	**19**	**17.0**
	White, Non-Hispanic	**1**	**3.3**	**1**	**3.5**
	African American, Non-Hispanic	**17**	**20.2**	**17**	**20.9**
	Other, Non-Hispanic	**0**	**0**	**0**	**0**
	Hispanic	**2**	**142.9**	**1**	**55.6**
Regional Average	*Total*	**13**	**11.9**	**13**	**11.4**
	White, Non-Hispanic	**5**	**8.0**	**5**	**7.5**
	African American, Non-Hispanic	**7**	**18.3**	**7**	**18.1**
	Other, Non-Hispanic	**0**	**7.5**	**0**	**0.0**
	Hispanic	**1**	**33.9**	**1**	**20.6**
Hertford County	Total	25	16.8	22	15.4
	White, Non-Hispanic	**5**	**12.4**	**4**	**10**
	African American, Non-Hispanic	20	19.4	**18**	**18.6**
	Other, Non-Hispanic	**0**	**0**	**0**	**0**
	Hispanic	**0**	**0**	**0**	**0**
State of NC	Total	5,066	7.9	4,899	7.8
	White, Non-Hispanic	2,074	5.9	2,001	5.7
	African American, Non-Hispanic	2,208	14.7	2,129	14.3
	Other, Non-Hispanic	187	6.3	188	6.2
	Hispanic	597	5.8	581	5.8

Note: Bold type indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC Center for Health Statistics, County-level Data, County Health Data Books (2007-2013), Mortality, Infant Death Rates per 1,000 Live Births; http://www.schs.state.nc.us/SCHS/data/databook/.

LIFE EXPECTANCY

Life expectancy is the average number of additional years that someone at a given age would be expected to live if he/she were to experience throughout life the age-specific death rates observed in a specified reference period. Life expectancies in terms of years of life remaining can be calculated for any age. Because life expectancy is an average, however, a particular person may well die many years before or many years after their "expected" survival, due to life experiences, environment, and personal genetic characteristics.

Life expectancy from birth is a frequently utilized and analyzed component of demographic data. It represents the average life span of a newborn and is considered an indicator of the overall health of a population or community.

Life expectancy rose rapidly in the twentieth century due to improvements in public health, nutrition and medicine, and continued progress in these areas can be expected to have further positive impact on life expectancy in the future. Decreases in life expectancy are also possible, influenced mostly by epidemic disease (e.g. plagues of history and AIDS in the modern era), and natural and man-made disasters. One of the most significant influences on life expectancy in populations is infant mortality, since life expectancy at birth is highly sensitive to the rate of death in the first few years of life.

Table 112 presents gender- and race-stratified life expectancy at birth data for all jurisdictions.

- Overall life expectancy at birth in Bertie County increased by 2.7 years, from 71.2 to 73.9 (4%), between 1990-1992 and 2008-2010.
- In both periods cited Bertie County life expectancy at birth for females was higher than life expectancy for males, and the gap widened from 8.7 years to 10.7 years because life expectancy increased by 4.0 years for females and by 2.0 years for males.
- In 1990-1992 the life expectancy for Bertie County whites exceeded the life expectancy for African-Americans by 2.9 years; in the 2008-2010 period the difference was little changed: 3.0 years.
- Of the jurisdictions being compared, overall life expectancies at birth were lowest in Bertie County in both periods cited.

Table 112. Life Expectancy at Birth, by Gender and Race (1990-1992 and 2008-2010)

Location	Life Expectancy in Years									
	Person Born in 1990-1992					Person Born in 2008-2010				
	Overall	Male	Female	White	African-American	Overall	Male	Female	White	African-American
Bertie County	71.2	66.8	75.5	73.0	70.1	73.9	68.8	79.5	75.7	72.7
Regional Average	73.7	69.8	77.7	75.1	70.3	77.1	73.7	80.5	78.1	74.9
Hertford County	71.5	66.6	76.2	76.2	68.2	75.8	72.9	78.4	77.9	74.4
State of NC	74.9	71.0	78.7	76.4	69.8	77.8	75.1	80.4	78.5	74.8

Source: NC State Center for Health Statistics, County-level Data, Life Expectancy, State and County Estimates, Life Expectancy: North Carolina 1990-1992 and 2008-2010, State and County; http://www.schs.state.nc.us/schs/data/lifexpectancy/.

MORTALITY

Leading Causes of Death

This section describes mortality for the 15 leading causes of death, as well as mortality due to major site-specific cancers. The list of topics and the accompanying data was retrieved from the NC SCHS *County Health Databook*. Unless otherwise noted, the numerical data are age-adjusted and represent five-year aggregate periods.

Table 113 compares mortality rates for the 15 leading causes of death in Bertie County, the ARHS region, Hertford County, NC and the US for the five-year aggregate period 2007-2011 (or as otherwise noted). The causes of death are listed in descending order of rank in Bertie County. Note that the NC SCHS suppressed rates for some causes of death in each county (denoted by "N/A") because the number of deaths fell below the Center's threshold of 20 per five-year aggregate period. For that reason, discussion of some county-level differences will be limited.

Differences between Bertie County and NC mortality rates are discussed below.

Relative to the **state of NC**:

- The overall mortality rate in Bertie County (963.4) was 19% higher than the overall state mortality rate (808.4).
- The first two leading causes of death were the *same*: first, total cancer; second, diseases of the heart; however, the total cancer mortality rate in Bertie County was 9% *higher* than the state rate, and the heart disease mortality rate in Bertie County was 8% *higher* than the state rate.
- Diabetes mellitus ranked *higher* among leading causes of death in Bertie County (3rd vs. 7th). The mortality rate for diabetes in Bertie County was 58.2, 165% *higher* than the comparable state rate of 22.0.
- Cerebrovascular disease ranked the *same* (4$^{th)}$ in both Bertie County and NC, but the county rate (52.4) nevertheless was 14% *higher* than the state rate (46.0).
- Chronic lower respiratory disease ranked *lower* in Bertie County (5th vs. 3rd); the county rate (45.9) was 2% *lower* than the comparable state rate (46.6).
- Unintentional motor vehicle injury mortality ranked *higher* in Bertie County (6th vs. 10th), with the local rate 36% *higher* than the state rate.
- Mortality due to unintentional non-motor vehicle injuries (all other unintentional injuries) ranked *lower* in Bertie County (7th vs. 5th), yet the county rate (35.3) was 21% *higher* than the state rate (29.2).
- Mortality due to Alzheimer's disease ranked *lower* in Bertie County (8th vs. 6th), but the mortality rate was the *same* (29.0) in both the county and the state.
- Mortality attributable to nephritis, nephrotic syndrome and nephrosis ranked *lower* in Bertie County (9th vs. 8th), but the county mortality rate (22.9) was 23% *higher* than the comparable state rate (18.6).

Due to below-threshold numbers of deaths in the remaining six categories of mortality in Bertie County, NC SCHS suppressed the associated rates.

Table 113. Overall Age-Adjusted Mortality Rates for the 15 Leading Causes of Death, Bertie County and Comparators (Single Five-Year Aggregate Period, 2007-2011 or as Noted)[1]

Cause of Death	Bertie County			*Regional Average*			Hertford County			State of NC			United States (2011)	
	Number	Rate	Rank	Number	Rate	Rank	Number	Rate	Rank	Number	Rate	Rank	Rate	Rank
		,												
Total Cancer	260	195.5	1	*228*	*195.3*	*1*	337	226.3	1	88,518	179.7	1	168.6	2
Diseases of the Heart	257	193.0	2	*220*	*188.9*	*2*	260	178.9	2	86,099	179.3	2	173.7	1
Diabetes Mellitus	76	58.2	3	*31*	*37.8*	*5*	77	51.5	4	10,733	22.0	7	21.5	7
Cerebrovascular Disease	71	52.4	4	*51*	*43.7*	*4*	87	58.7	3	21,774	46.0	4	37.9	5
Chronic Lower Respiratory Disease	61	45.9	5	*51*	*46.1*	*3*	59	39.9	5	22,274	46.6	3	42.7	3
Unintentional Motor Vehicle Injuries	40	39.6	6	*20*	*27.9*	*7*	25	20.4	9	7,336	15.5	10	10.9	11
All Other Unintentional Injuries	42	35.3	7	*31*	*31.2*	*6*	29	22.1	8	13,781	29.2	5	38.0	4
Alzheimer's Disease	39	29.0	8	*30*	*26.9*	*8*	46	31.5	6	13,347	29.0	6	24.6	6
Nephritis, Nephrotic Syndrome, and Nephrosis	31	22.9	9	*19*	*19.8*	*9*	34	23.1	7	8,860	18.6	8	13.4	9
Chronic Liver Disease and Cirrhosis	17	N/A	N/A	*11*	*N/A*	*N/A*	17	N/A	N/A	4,723	9.3	13	9.7	13
Septicemia	17	N/A	N/A	*14*	*9.7*	*12*	28	19.1	10	6,515	13.6	11	10.5	12
Pneumonia and Influenza	16	N/A	N/A	*30*	*14.0*	*11*	22	14.9	11	8,455	17.9	9	15.7	8
Suicide	10	N/A	N/A	*10*	*17.4*	*10*	6	N/A	N/A	5,751	12.1	12	12.0	10
Acquired Immune Deficiency Syndrome	10	N/A	N/A	*4*	*N/A*	*N/A*	9	N/A	N/A	1,687	3.5	15	2.4	15
Homicide	6	N/A	N/A	*4*	*N/A*	*N/A*	8	N/A	N/A	2,949	6.3	14	3.6	14
Total Deaths All Causes (Some causes are not listed above)	1,235	963.4	N/A	*949*	*840.1*	*N/A*	1,349	933.1	N/A	388,092	808.4	N/A	740.6	N/A
Source:	a	a	b	b	b	b	a	a	b	a	a	b	c	b

[1] Rate = Number of events per 100,000 population, where the Standard = Year 2000 US Population

Sources:

a - NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

b - Calculated

c - National Center for Health Statistics, National Vital Statistics Reports, Volume 61, Number 6 (October 10, 2012), Deaths, Preliminary data for 2011; http://www.cdc.gov/nchs/data/nvsr/nvsr61/nvsr61_06.pdf.

Compared to the average mortality rates for the seven counties in the ARHS region, mortality rates in Bertie County were *higher* for *every* cause of death with a rate listed except:

- Chronic lower respiratory disease

The overall mortality rate in Bertie County (963.4) was 15% higher than the regional average overall rate (840.1).

Compared to US mortality rates, mortality rates in Bertie County were *higher* for every cause of death with comparable rates listed except:

- Other (non-motor vehicle) unintentional injuries,

The overall mortality rate in Bertie County was 30% higher than the overall US mortality rate (740.6).

Gender Disparities in Leading Causes of Death

In the past, NC CHAs have demonstrated some significant differences in mortality rates between men and women. Table 114 compares gender stratified rates for the 15 leading causes of death in Bertie County and its comparator jurisdictions. The usefulness of the table is hampered somewhat by numerous suppressed rates.

In Bertie County, mortality *rates for males were higher* than comparable rates for females for:

- Chronic lower respiratory disease (by 145%)
- Total cancer (by 109%)
- Diseases of the heart (by 103%)
- Cerebrovascular disease (by 18%), and
- Diabetes mellitus (by 8%)

While gender-stratified mortality rates for Bertie County were suppressed for the remaining causes of death, the *number* of deaths among males surpassed the *number* of deaths among females for all other causes of death except Alzheimer's disease and homicide.

In Bertie County, the overall mortality rate for males (1,296.3) was 78% higher than the overall mortality rate for females (727.1).

In NC as a whole, mortality rates for males were higher than comparable rates for females for every leading cause of death except Alzheimer's disease, and the overall mortality rate for males (969.2) was 42% higher than the overall mortality rate for females (684.0).

Table 114. Sex-Specific Age-Adjusted Death Rates for the 15 Leading Causes of Death, Bertie County and Comparators (Single Five-Year Aggregate Period, 2007-2011)

Cause of Death	Bertie County				Hertford County Rate		Regional Average Rate		State of NC Rate	
	Males		Females							
	Number	Rate	Number	Rate	Males	Females	Males	Females	Males	Females
1. Total Cancer	153	281.6	107	135.0	299.4	174.1	245.5	161.1	227.4	147.5
2. Diseases of the Heart	145	277.1	112	136.7	243.3	133.0	256.2	136.6	229.4	141.6
3. Diabetes Mellitus	30	61.1	46	56.5	61.9	44.1	61.1	36.0	26.0	18.8
4. Cerebrovascular Diseases	31	55.6	40	47.2	57.0	56.3	64.2	40.5	46.8	44.5
5. Chronic Lower Respiratory Disease	36	76.1	25	31.0	47.5	36.4	73.4	35.4	54.9	41.7
6. Unintentional Motor Vehicle Injuries	29	58.9	11	N/A	N/A	N/A	54.2	N/A	22.9	8.6
7. All Other Unintentional Injury	26	51.7	16	N/A	N/A	N/A	46.7	19.8	38.8	20.9
8. Alzheimer's Disease	16	N/A	23	26.0	N/A	32.8	N/A	N/A	22.7	32.2
9. Nephritis, Nephrotic Syndrome and Nephrosis	16	N/A	15	N/A	N/A	20.9	N/A	N/A	22.7	16.0
10. Chronic Liver Disease and Cirrhosis	12	N/A	5	N/A	N/A	N/A	N/A	N/A	13.2	5.9
11. Septicemia	11	N/A	6	N/A	N/A	N/A	N/A	N/A	15.0	12.6
12. Pneumonia and Influenza	9	N/A	7	N/A	N/A	N/A	56.7	47.9	20.9	16.1
13. Suicide	10	N/A	0	N/A	N/A	N/A	N/A	N/A	19.6	5.3
14. Acquired Immune Deficiency Syndrome	7	N/A	3	N/A	N/A	N/A	N/A	N/A	4.8	2.3
15. Homicide	3	N/A	3	N/A	N/A	N/A	N/A	N/A	9.8	2.9
Total Deaths All Causes (Some causes are not listed above)	664	1,296.3	571	727.1	1,152.0	775.3	1,042.0	717.7	969.2	684

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source - NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Racial Disparities in Leading Causes of Death

Because of below-threshold numbers of deaths during the period, 2007-2011, age-adjusted racially-stratified mortality rates for Bertie County are available only for white and African American non-Hispanics, and for only some causes of death.

According to data in Table 115, in Bertie County the overall mortality rate for African American non-Hispanics (1007.6) was 13% higher than the overall mortality rate for white non-Hispanics (890.4). Racial differences in mortality will be described in detail as each cause of death is discussed separately in subsequent sections of this report.

Table 115. Race-Specific Age-Adjusted Death Rates for the 15 Leading Causes of Death, Bertie County (Single Five-Year Aggregate Period, 2007-2011)

Cause of Death	Bertie County									
	White, non-Hispanic		African-American, non-Hispanic		Other Races, non-Hispanic		Hispanic		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
1. Total Cancer	109	181.0	150	204.2	1	N/A	0	N/A	260	195.5
2. Diseases of the Heart	135	223.0	121	165.9	1	N/A	0	N/A	257	193.0
3. Diabetes Mellitus	23	39.6	53	74.4	0	N/A	0	N/A	76	58.2
4. Cerebrovascular Diseases	22	35.9	48	65.7	0	N/A	1	N/A	71	52.4
5. Chronic Lower Respiratory Disease	31	49.7	30	42.5	0	N/A	0	N/A	61	45.9
6. Unintentional Motor Vehicle Injuries	13	N/A	26	41.3	1	N/A	0	N/A	40	39.6
7. All Other Unintentional Injuries	16	N/A	26	36.7	0	N/A	0	N/A	42	35.3
8. Alzheimer's Disease	16	N/A	23	32.4	0	N/A	0	N/A	39	29.0
9. Nephritis, Nephrotic Syndrome and Nephrosis	9	N/A	22	30.2	0	N/A	0	N/A	31	22.9
10. Chronic Liver Disease and Cirrhosis	8	N/A	9	N/A	0	N/A	0	N/A	17	N/A
11. Septicemia	7	N/A	10	N/A	0	N/A	0	N/A	17	N/A
12. Pneumonia and Influenza	8	N/A	7	N/A	0	N/A	1	N/A	16	N/A
13. Suicide	7	N/A	3	N/A	0	N/A	0	N/A	10	N/A
14. Acquired Immune Deficiency Syndrome	1	N/A	9	N/A	0	N/A	0	N/A	10	N/A
15. Homicide	2	N/A	4	N/A	0	N/A	0	N/A	6	N/A
Total Deaths All Causes (Some causes are not listed above)	516	890.4	711	1007.6	3	N/A	5	N/A	1235	963.4

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source - NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Age Disparities in Leading Causes of Death

Each age group tends to have its own leading causes of death. Table 116 lists the three leading causes of death by age group for the five-year aggregate period from 2007-2011. (Note that for this purpose it is important to use *non-age adjusted* death rates.)

The leading cause(s) of death in each of the age groups in Bertie County were:

- Age Group 00-19: Conditions originating in the perinatal period
- Age Group 20-39: Motor vehicle injuries
- Age Group 40-64: Cancer – all sites
- Age Group 65-84: Cancer – all sites
- Age Group 85+: Diseases of the heart

Noteworthy differences in the age pattern of mortality among the three jurisdictions being compared are as follows:

- SIDS was a more prominent cause of death among the 00-19 age group in Hertford County than in the other jurisdictions.
- HIV disease and cancer were more prominent causes of death in the 20-39 age group in Bertie County than in the other jurisdictions, and homicide was more prominent in the same age group in Hertford County than elsewhere.
- Diabetes was among the three leading causes of death in the 65-84 age group in Bertie County and in the 40-64 and 65-84 age groups in Hertford County, but was not among the three leading causes of death in any age group statewide.

Table 116. Three Leading Causes of Death by Age Group, by Unadjusted Death Rates, Bertie County and Comparators (Single Five-Year Aggregate Period, 2007-2011)

Age Group	Rank	Cause of Death		
		Bertie County	Hertford County	State of NC
00-19	1	Conditions originating in the perinatal period	Conditions originating in the perinatal period	Conditions originating in the perinatal period
	2	Motor vehicle injuries	SIDS	Congenital anomalies
	3	Congenital anomalies	Motor vehicle injuries	Motor vehicle injuries
20-39	1	Motor vehicle injuries	Motor vehicle injuries	Motor vehicle injuries
	2	HIV disease	Homicide	Other unintentional injuries
	3	Cancer-all sites	Diseases of the heart	Suicide
		Suicide		
40-64	1	Cancer-all sites	Cancer-all sites	Cancer-all sites
	2	Diseases of the heart	Diseases of the heart	Diseases of the heart
	3	Other unintentional injuries	Diabetes mellitus	Other unintentional injuries
65-84	1	Cancer-all sites	Cancer-all sites	Cancer-all sites
	2	Diseases of the heart	Diseases of the heart	Diseases of the heart
	3	Diabetes mellitus	Diabetes mellitus	Chronic lower respiratory diseases
85+	1	Diseases of the heart	Diseases of the heart	Diseases of the heart
	2	Cancer-all sites	Cancer-all sites	Cancer-all sites
	3	Chronic lower respiratory diseases	Cerebrovascular disease	Cerebrovascular disease

Source: NC State Center for Health Statistics, County Health Data Book (2013), Mortality, Death Counts and Crude Death Rates per 100,000 for Leading Causes of Death, by Age Groups, NC, 2007-2011; http://www.schs.state.nc.us/SCHS/data/databook/.

Differences in mortality statistics will be covered as each cause of death is discussed separately below, in the order of highest Bertie County rank to lowest, beginning with total cancer. It is important to emphasize once more that because of below-threshold numbers of deaths there will be no stable county rates for some causes of death, especially among racially stratified groups. Some unstable data will be presented in this document, but always accompanied by cautions regarding its use.

Cancer

Cancer is a term for diseases in which abnormal cells divide without control and can invade nearby tissues. Cancer cells also can spread to other parts of the body through the blood and lymph systems. If the disease remains unchecked, it can result in death (58).

Total Cancer

Total cancer (cancers of all types) was the leading cause of death in Bertie County, the ARHS region, Hertford County and the state of NC in the 2007-2011 period (cited previously).

Malignant Neoplasm Hospitalizations

Table 117 presents the hospital discharge rate trend data for malignant neoplasms.

- The malignant neoplasm discharge rate in Bertie County was higher than the comparable rates region-wide in every year cited, and higher than (or equal to) the comparable rate for the state as a whole in every year except 2010. Statewide, hospitalizations for this diagnosis decreased over time; there was no clear pattern in Bertie County.

Table 117. All Malignant Neoplasms Hospital Discharge Rate Trend (2005-2011)

Location	Rate (Discharges per 1,000 Population)						
	2005	2006	2007	2008	2009	2010	2011
Bertie County	5.3	5.2	3.9	4.6	4.8	3.1	4.1
Regional Average	3.6	3.4	3.5	2.9	2.9	2.4	2.4
Hertford County	3.6	3.4	4.8	3.5	3.4	4.0	3.1
State of NC	3.9	3.9	3.9	3.6	3.4	3.3	3.2

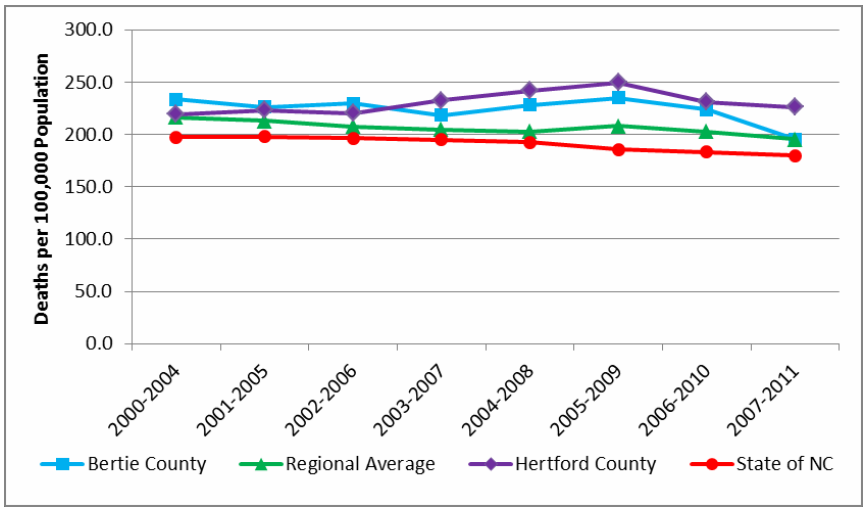
Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (2007-2013), Morbidity, Inpatient Hospital Utilization and Charges by Principal Diagnosis and County of Residence; http://www.schs.state.nc.us/SCHS/data/databook/.

Total Cancer Mortality Rate Trend

Figure 7 displays total cancer mortality rate trends over time in the four jurisdictions being compared in this CHA.

- The total cancer mortality rate in Bertie County fluctuated for several aggregate periods before falling in 2006-2010 and 2007-2011 to a current rate of 195.5.
- Throughout much of the entire time period cited the total cancer mortality rate in Bertie County exceeded the comparable rates for the region and the state but was lower than the rate for Hertford County.
- In every jurisdiction except Hertford County the total cancer mortality rate in 2007-2011 was lower than the rate in 2000-2004.
- At the state level, the total cancer mortality rate fell gradually over the period cited, to a current low (179.7).

Figure 7. Overall Total Cancer Mortality Rate Trend
(Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Gender and Racial Disparities in Total Cancer Mortality

Table 118 presents total cancer mortality data for the aggregate period 2007-2011, stratified by race and sex.

- Note that due to below-threshold numbers of total cancer deaths among some minority populations in Bertie County and elsewhere, mortality rates for those groups were suppressed.
- In the jurisdictions where total cancer mortality rates for African American non-Hispanics were available they exceeded comparable rates for white non-Hispanics. For example, in Bertie County the total cancer mortality rate among African American non-Hispanics was 13% higher than the rate for white non-Hispanics. In Hertford County the rate difference between those two groups was around 8%. Region-wide the comparable difference was 22%; statewide the difference was 20%.
- There appeared to be a significant gender difference in total cancer mortality in all jurisdictions; this disparity will be described in greater detail below.

Table 118. Race/Ethnicity-Specific and Sex-Specific Total Cancer Mortality
(Single Five-Year Aggregate Period, 2007-2011)

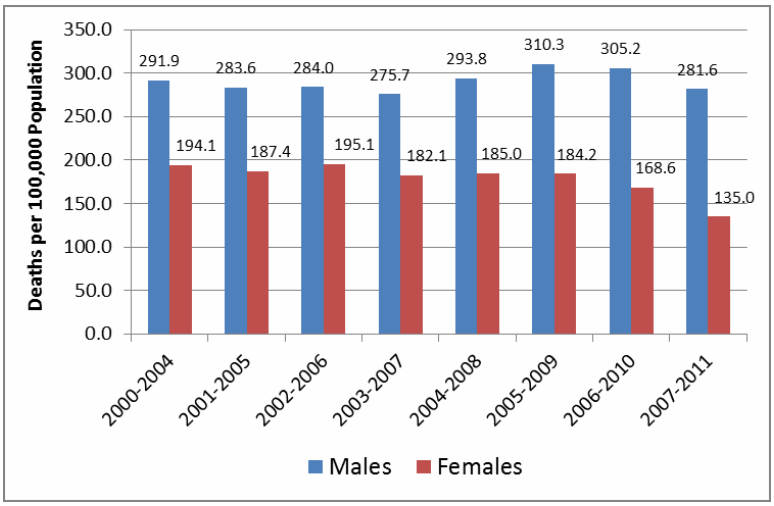
Location	Deaths, Number and Rate (Deaths per 100,000 Population)													
	White, Non-Hispanic		African American,		Other Races, Non-Hispanic		Hispanic		Male		Female		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Bertie County	109	181.0	150	204.2	1	N/A	0	N/A	153	281.6	107	135.0	260	195.5
Regional Average	152	188.4	75	229.4	0	N/A	1	N/A	121	245.5	107	161.1	228	195.3
Hertford County	144	217.0	183	234.9	7	N/A	3	N/A	185	299.4	152	174.1	337	226.3
State of NC	68,577	176.8	17,982	211.4	1,240	120.7	719	65.1	47,193	227.4	41,325	147.5	88,518	179.7

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race/Ethnicity Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Figure 8 depicts gender-stratified total cancer mortality rates in Bertie County for the aggregate periods 2000-2004 through 2007-2011.

- It appears that the gender difference in total cancer mortality noted in Bertie County for 2007-2011 is actually longstanding.
- The total cancer mortality rate for females decreased steadily over most of the period cited while the comparable rate for males was more variable.

Figure 8. Sex-Specific Total Cancer Mortality Rate Trend, Bertie County (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Table 119 presents total cancer mortality rate data stratified by gender and race/ethnicity for the period 2007-2011.

- Because of below-threshold numbers of total cancer deaths in some stratified populations the NC SCHS suppressed the related mortality rates.
- In Bertie County, the ARHS region and Hertford County the total cancer mortality rates for African American non-Hispanic males exceeded the rate for white non-Hispanic males, and the rates for African American non-Hispanic females exceeded the rates for white non-Hispanic females.
- At the state level, total cancer mortality rates among African American non-Hispanics, both male and female, were higher than comparable rates among their white, non-Hispanic counterparts. Total cancer mortality rates were lowest statewide among both male and female Hispanics.

Table 119. Race/Ethnicity and Sex-Specific Total Cancer Mortality Rate (Single Five-Year Aggregate Period, 2007-2011)

Location	Rate (Deaths per 100,000 Population)							
	Males				Females			
	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic
Bertie County	251.5	304.6	N/A	N/A	124.7	139.7	N/A	N/A
Regional Average	228.1	307.0	N/A	N/A	160.0	181.0	N/A	N/A
Hertford County	264.9	333.2	N/A	N/A	175.0	175.5	N/A	N/A
State of NC	220.7	293.2	145.7	72.2	146.6	164.0	103.1	59.4

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County-level Data, County Health Data Book (2013), Mortality, 2007-2011 NC Resident Race/Ethnicity and Sex-Specific Age-Adjusted Death Rates, by County; http://www.schs.state.nc.us/SCHS/data/databook/.

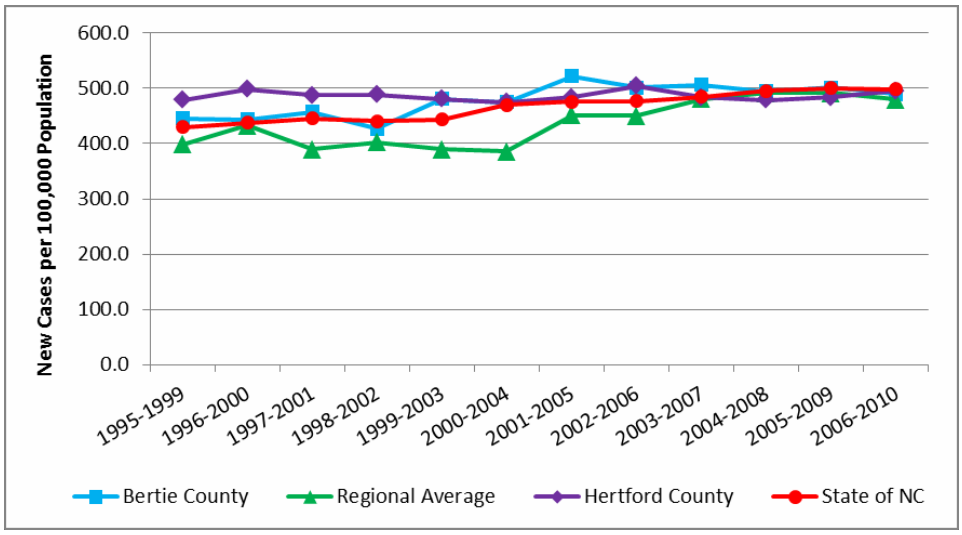
Total Cancer Incidence

Since total cancer is a significant cause of death, it is useful to examine patterns in the development of new cases. The statistic important to understanding the growth of a health problem is *incidence*, the population-based rate at which new cases of a disease occur and are diagnosed (methodology for which was described previously). Cancer incidence rates used in this report were obtained from the NC Cancer Registry, which collects data on newly diagnosed cases from NC clinics and hospitals as well as on NC residents whose cancers were diagnosed at medical facilities in bordering states.

Figure 9 plots the incidence rate trend for total cancer.

- The total cancer incidence rate in Bertie County fluctuated over time, but increased 10% in net over the entire period cited, from 445.1 in 1995-1999 to 489.2 in 2006-2010.
- The total cancer incidence rate region-wide increased 20% in net over the same time period, from 398.8 to 479.5. This was the largest percent increase among the four jurisdictions.
- The total cancer incidence rate for the state of NC increased gradually over the period cited, and was 16% higher in 2006-2010 (498.1) than in 1995-1999 (429.4).

Figure 9. Overall Total Cancer Incidence Rate Trend
(Five-Year Aggregate Periods, 1995-1999 through 2006-2010)



Source: NC State Center for Health Statistics, Health Data, Cancer, Cancer Data Available from SCHS, Annual Reports, NC Cancer Incidence Rates for All Counties by Specified Site (Years as noted); http://www.schs.state.us.nc/SCHS/CCR/reports.html.

To this point the discussions of cancer mortality and incidence have focused on figures for total cancer. In Bertie County, as throughout the state of NC, there are four (or five) site-specific cancers that cause most cancer deaths: breast cancer, colon cancer, lung cancer, prostate cancer, and, sometimes, pancreas cancer. It should be noted that males also can have breast cancer, but since the number of cases tends to be small, the mortality rates for breast cancer (and prostate cancer) used here are gender-specific.

Table 120 presents age-adjusted *mortality* data for the five major site-specific cancers for the 2007-2011 period.

- In Bertie County, lung cancer was the site-specific cancer with the highest mortality rate, followed by prostate cancer and colon cancer. The numbers of breast cancer and pancreas cancer deaths were below threshold so the mortality rates were suppressed.
- In NC as a whole, lung cancer presents the highest mortality rate, followed by prostate cancer, breast cancer, colon cancer, and pancreas cancer.

Table 120. Mortality for Five Major Site-Specific Cancers
(Single Five-Year Aggregate Period, 2007-2011)

Location	Female Breast Cancer		Prostate Cancer		Lung Cancer		Colon Cancer		Pancreas Cancer	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Bertie County	15	N/A	22	42.2	68	49.8	32	24.6	16	N/A
Regional Average	14	27.2	13	34.1	72	64.0	21	19.4	13	10.4
Hertford County	30	36.9	25	45.9	90	60.0	49	33.0	20	13.0
State of NC	6,358	22.8	4,385	24.3	27,092	54.5	7,614	15.5	5,184	10.5

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County-level Data, County Health Data Book (2013). 2007-2011 NC Resident Race/Ethnicity and Sex-Specific Age-Adjusted Death Rates (counties and cancer sites as indicated); http://www.schs.state.nc.us/schs/data/databook/.

Table 121 presents age-adjusted *incidence* data for four of the five site-specific cancers for the 2006-2010 period. (Note that incidence data for pancreas cancer was not available.)

- In Bertie County, prostate cancer was the site-specific cancer with the highest incidence rate, followed by breast cancer, lung cancer, and colon cancer.
- Region-wide, breast cancer presented with the highest incidence rate, followed by prostate cancer, lung cancer, and colon cancer. Cancer incidence rates in Hertford County and the state as a whole followed the same pattern as the region.

Table 121. Incidence for Four Major Site-Specific Cancers (Single Five-Year Aggregate Period, 2006-2010)

Location	Female Breast Cancer		Prostate Cancer		Lung Cancer		Colon Cancer	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Bertie County	94	145.1	94	168.1	89	70.9	71	58.7
Regional Average	95	167.3	85	159.7	82	70.6	55	48.2
Hertford County	131	177.8	101	150.8	111	76.0	72	50.7
State of NC	41,169	155.9	34,733	153.7	36,287	74.8	20,968	43.4

Source: NC State Center for Health Statistics, County-level Data, County Health Data Book (2013). 2006-2010 NC Cancer Incidence Rates per 100,000 Population Age-Adjusted to the 2000 US Population; http://www.schs.state.nc.us/schs/data/databook/

Multi-year mortality and incidence rate trends for these site-specific cancers will be presented subsequently, as each cancer type is discussed separately. The cancer topics are presented in decreasing order of site-specific cancer mortality rates in the state of NC: lung cancer, prostate cancer, female breast cancer, colon cancer and pancreas cancer.

Lung Cancer

The category of cancer referred to as lung cancer traditionally *also* includes cancers of the trachea and bronchus.

Lung, Trachea and Bronchus Cancer Hospitalizations

Table122 summarizes hospital discharge rate data for trachea, bronchus and lung neoplasms.

- The hospital discharge rate for lung cancer in Bertie County fell 44% between 2005 and 2011; the comparable state rate fell 33% over the same period.

Table 122. Malignant Trachea, Bronchus, Lung Neoplasms Hospital Discharge Rate Trend (Single Years, 2005-2011)

Location	Rate (Discharges per 1,000 Population)						
	2005	2006	2007	2008	2009	2010	2011
Bertie County	0.9	0.9	0.6	0.6	0.5	0.6	0.5
Regional Average	0.5	0.5	0.7	0.5	0.4	0.5	0.4
Hertford County	**0.4**	0.7	0.5	**0.3**	0.4	0.6	0.6
State of NC	0.6	0.6	0.6	0.5	0.5	0.5	0.4

Note: Bold type indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (2007-2013), Morbidity, Inpatient Hospital Utilization and Charges by Principal Diagnosis and County of Residence; http://www.schs.state.nc.us/SCHS/data/databook/.

According to NC SCHS data on Inpatient Hospital Utilization and Charges by Principal Diagnosis, 11 Bertie County residents were hospitalized somewhere in NC for diagnoses of malignant neoplasms of the trachea, bronchus and lung in 2011 (59).

Inpatient hospitalizations of Bertie County residents in 2012 for malignant neoplasms of the trachea, bronchus and lung (ICD-9 Code 162) at the four ARHS-region hospitals are displayed in Table 123. In 2012 there were three admissions in that code category among the four regional hospitals.

Table 123. Inpatient Hospitalizations of Bertie County Residents for Malignant Neoplasms of the Trachea, Bronchus and Lung, ARHS Region Hospitals (2012)

ICD-9 Code	Number of Inpatient Hospitalizations			
	VBER	VCHO	VROA	AH
162	0	0	2	1

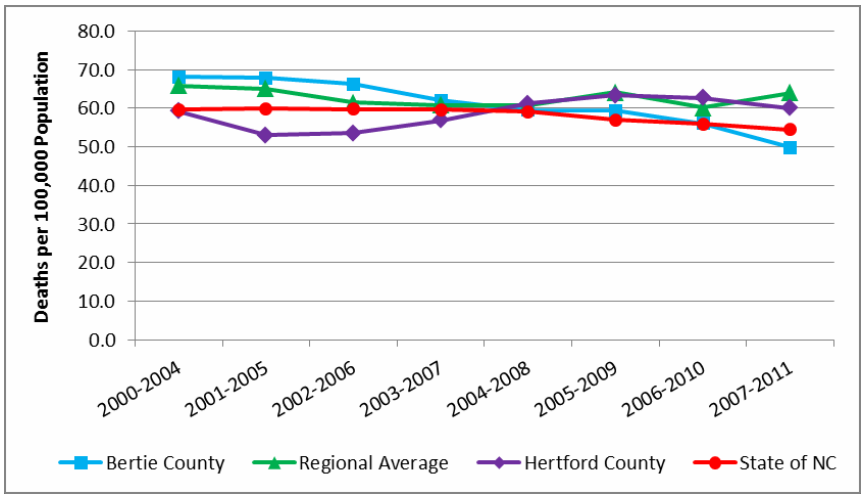
Source: Vidant Bertie Hospital, Vidant Chowan Hospital, Vidant Roanoke-Chowan Hospital and Albemarle Health

Lung Cancer Mortality Rate Trend

Figure 10 displays lung cancer mortality rate trends over time in the four jurisdictions being compared in this CHA.

- The lung cancer mortality rate in Bertie County declined steadily over the period cited, from 68.1 in 2000-2004 to 49.8 in 2007-2011, a total decrease of 27%. Over that period the lung cancer mortality rate in Bertie County fell from the highest to the lowest rate among the jurisdictions being compared.
- The NC lung cancer mortality rate also declined over the period, but by only 9%.
- The lung cancer mortality rates for the ARHS region and Hertford County fluctuated over the period cited, but in 2007-2011 were little changed from the comparable rates in 2000-2004. The difference in the region was an overall decrease of 3% and the difference in Hertford County was an increase of 1%.

Figure 10. Overall Lung Cancer Mortality Rate Trend
(Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Gender and Racial Disparities in Lung Cancer Mortality

Table 124 presents lung cancer mortality data for the 2007-2011 aggregate period, stratified by race and sex.

- Due to below-threshold numbers of lung cancer deaths among some stratified populations in Bertie County and elsewhere, mortality rates for those groups were suppressed.
- Among white non-Hispanic persons, the lung cancer mortality rate was lowest in Bertie County; the regional average was the highest rate in this population group.
- In Bertie County the lung cancer mortality rate for African American non-Hispanics was 19% *lower* than the comparable rate for white non-Hispanics.
- Statewide, the lung cancer mortality rate for African American non-Hispanics was 3% *lower* than the comparable rate for white non-Hispanics.
- There appeared to be a gender difference in lung cancer mortality in the ARHS region, County, Hertford County, and NC as a whole.

Table 124. Race/Ethnicity-Specific and Sex-Specific Lung Cancer Mortality
(Single Five-Year Aggregate Period, 2007-2011)

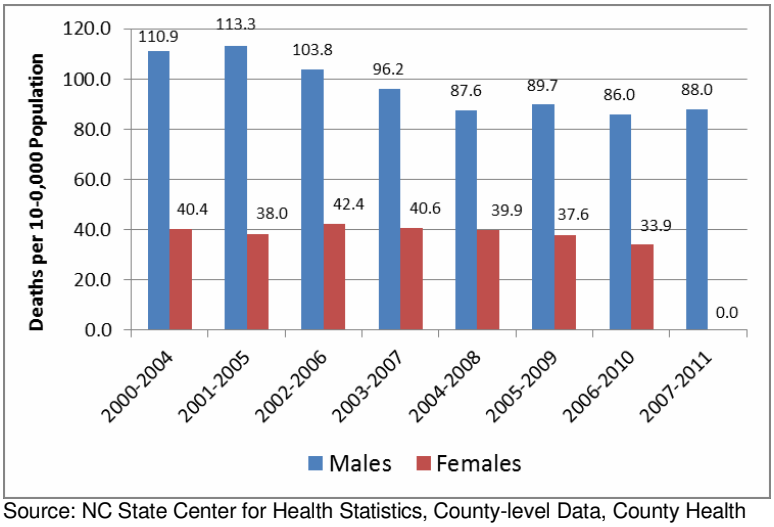
Location	Deaths, Number and Rate (Deaths per 100,000 Population)													
	White, Non-Hispanic		African American, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Male		Female		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Bertie County	33	54.9	34	44.4	1	N/A	0	N/A	51	88.0	17	N/A	68	49.8
Regional Average	54	68.7	18	53.0	0	N/A	0	N/A	44	89.5	29	51.0	72	64.0
Hertford County	42	62.2	44	55.4	4	N/A	0	N/A	66	105.1	24	28.1	90	60.0
State of NC	21,946	55.9	4,667	54.1	369	35.4	110	11.9	15,876	74.4	11,216	40.0	27,092	54.5

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race/Ethnicity Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Figure 11 depicts gender-stratified lung cancer mortality rates in Bertie County for the aggregate periods 2000-2004 through 2007-2011.

- The lung cancer mortality rate among Bertie County males fell over the period cited, from 110.9 in 2000-2004 to 88.0 in 2007-2011, a 21% decrease.
- The lung cancer mortality rate among Bertie County females fell 16% overall from 40.4 in 2000-2004 to 33.9 in 2006-2009. The final data point for females in 2007-2011 is not true "zero"; the zero value represents a rate suppressed due to a below-threshold number of deaths.
- In 2000-2004, the lung cancer mortality rate for Bertie County males was 175% higher than the comparable rate for Bertie County females; by 2006-2010 the difference—still significant—had decreased to 154%.

Figure 11. Sex-Specific Lung Cancer Mortality Rate Trend, Bertie County (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



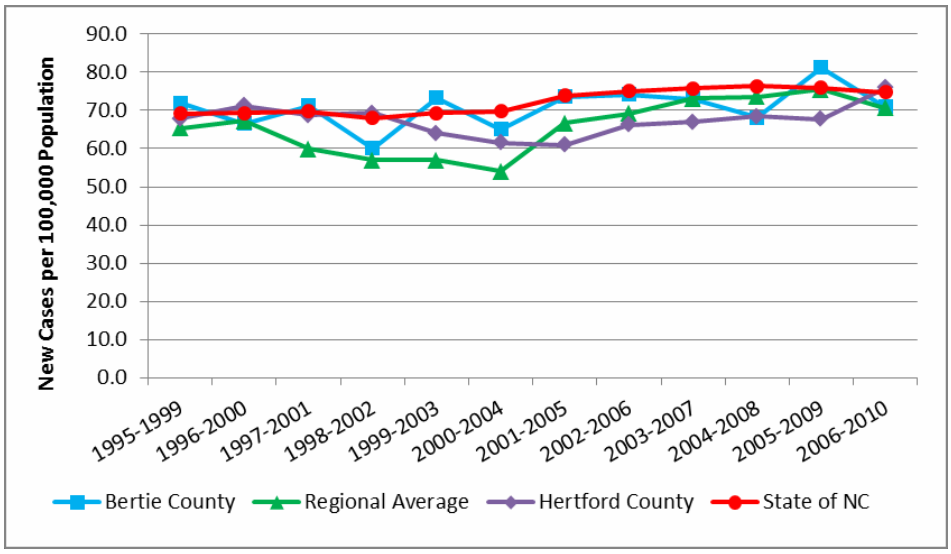
Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (2006-2013), Mortality, NC Resident Race-Specific and Sex-Specific Age-Adjusted Death Rates, by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Lung Cancer Incidence

Figure 12 plots the incidence rate trend for lung cancer.

- Lung cancer incidence rates increased at least slightly over the period cited in every jurisdiction.
- Sometimes increases in incidence are noted after major screening campaigns. It is not known whether or not increased screening activity played a role in the lung cancer incidence increases in these jurisdictions, especially since screenings for breast, prostate and colon cancer are more common than screenings for lung cancer.

Figure 12. Lung Cancer Incidence Rate Trend
(Five-Year Aggregate Periods, 1995-1999 through 2006-2010)



Source: NC State Center for Health Statistics, Health Data, Cancer, Cancer Data Available from SCHS, Annual Reports, NC Cancer Incidence Rates for All Counties by Specified Site (Years as noted); http://www.schs.state.us.nc/SCHS/CCR/reports.html.

Prostate Cancer

Prostate Cancer Hospitalizations

Table125 summarizes hospital discharge rate data for prostate cancer.

- Most hospital discharge rates for prostate cancer shown in the table were unstable due to small numbers of events.
- Statewide, the discharge rate for prostate cancer was mostly steady at 0.3.

Table 125. Malignant Prostate Neoplasms Hospital Discharge Rate Trend
(Single Years, 2005-2011)

Location	Rate (Discharges per 1,000 Population)						
	2005	2006	2007	2008	2009	2010	2011
Bertie County	**0.5**	**0.2**	**0.5**	**0.2**	**0.2**	**0.0**	**0.4**
Regional Average	**0.3**	**0.2**	**0.3**	**0.2**	**0.2**	**0.2**	**0.3**
Hertford County	**0.2**	**0.3**	**0.3**	**0.3**	**0.1**	**0.3**	**0.1**
State of NC	0.3	0.3	0.4	0.3	0.3	0.3	0.3

Note: Bold type indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (2007-2013), Morbidity, Inpatient Hospital Utilization and Charges by Principal Diagnosis and County of Residence; http://www.schs.state.nc.us/SCHS/data/databook/.

According to NC SCHS data on Inpatient Hospital Utilization and Charges by Principal Diagnosis, in 2011 there were eight hospitalizations of Bertie County residents somewhere in NC for treatment of malignant neoplasms of the prostate (59).

Inpatient hospitalizations of Bertie County residents in 2012 for diagnosis and/or treatment of neoplasms of the prostate (ICD-9 Code 185) at the four ARHS-region hospitals are displayed in Table 126. In 2012 there were two inpatient hospitalizations in that code category among the four regional hospitals.

Table 126. Inpatient Hospitalizations of Bertie County Residents for Neoplasms of the Prostate, ARHS Region Hospitals (2012)

ICD-9 Code	Number of Inpatient Hospitalizations			
	VBER	VCHO	VROA	AH
185	1	1	0	0

Source: Vidant Bertie Hospital, Vidant Chowan Hospital, Vidant Roanoke-Chowan Hospital and Albemarle Health

Table 127 presents data on outpatient/day surgery procedures of the prostate performed among Bertie County residents at the region's four hospitals in 2010-2012. The ICD-9 Procedure Code 60 (Operations on Prostate and Seminal Vesicles) was used to conduct the data search. Note that this data is not necessarily specific to a diagnosis of prostate cancer.

Table 127. Outpatient Operations on the Prostate and Seminal Vesicles, Bertie County Residents, ARHS Region Hospitals (2010-2012)

Year	ICD-9 Procedure Code 60 Operations			
	VBER	VCHO	VROA	AH
2010	4	1	1	0
2011	3	2	0	0
2012	4	0	0	0

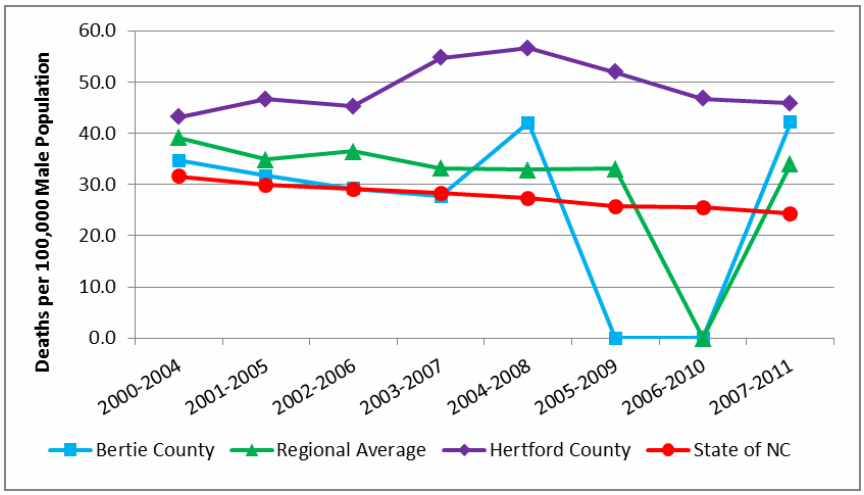
Source: Vidant Bertie Hospital, Vidant Chowan Hospital, Vidant Roanoke-Chowan Hospital and Albemarle Health

Prostate Cancer Mortality Rate Trend

Figure 13 displays prostate cancer mortality rate trends over time in the four jurisdictions being compared in this CHA.

- The erratic nature of the plot of the Bertie County prostate cancer mortality rate is a reflection of the instability in the rates. Note that only the 2004-2008 and 2007-2011 rates were stable. A "zero" plot represents a suppressed rate, and not a true value of zero.
- Region-wide, the "zero" plot for 2006-2010 represents a suppressed rate. However, all the rates should be considered unstable since the mean includes several unstable rates.
- The NC prostate cancer mortality rate decreased by 23% over the period cited, from 31.6 in 2000-2004 to 24.3 in 2007-2011.

Figure 13. Overall Prostate Cancer Mortality Rate Trend (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Racial Disparities in Prostate Cancer Mortality

Table 128 presents prostate cancer mortality rate data for the 2007-2011 aggregate period, stratified by race.

- Due to below-threshold numbers of prostate cancer deaths among racially-stratified populations in all jurisdictions except NC, mortality rates for those groups were suppressed.
- Statewide, the prostate cancer mortality rate for African American non-Hispanic males (55.6) was 2.8 *times* the comparable rate for white non-Hispanic males (19.6).
- Statewide the prostate cancer mortality rates for Other race non-Hispanic men and Hispanic men were 12% and 39% lower, respectively, than the comparable rate for white non-Hispanic men.

Table 128. Race/Ethnicity-Specific Prostate Cancer Mortality Rate (Single Five-Year Aggregate Period, 2007-2011)

Location	Deaths, Number and Rate (Deaths per 100,000 Male Population)									
	White, Non-Hispanic		African American, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Bertie County	6	N/A	16	N/A	0	N/A	0	N/A	22	42.0
Regional Average	6	N/A	6	N/A	0	N/A	0	N/A	13	34
Hertford County	5	N/A	20	82.7	0	N/A	0	N/A	25	45.9
State of NC	2,882	19.6	1,416	55.6	51	17.3	36	12.0	4,385	24.3

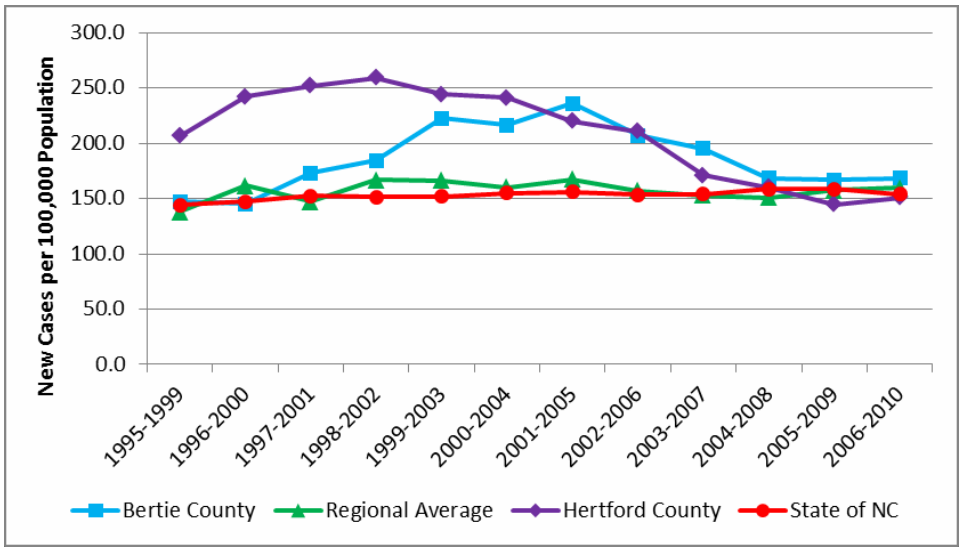
Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race/Ethnicity Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Prostate Cancer Incidence

Figure 14 plots the incidence rate trend for prostate cancer.

- The prostate cancer incidence rates in Bertie County rose and fell dramatically over the period cited, but in the end was 14% higher in 2006-2010 (168.1) than in 1995-1999 (147.0).
- The prostate cancer incidence rate for the region fluctuated considerably, but ultimately rose 16% over the period cited; the rate for the state rose 7% over the same period.
- The prostate cancer incidence rate decrease in Hertford County was dramatic, falling 42% from 258.9 in 1998-2002 to 150.8 in 2006-2010.

Figure 14. Prostate Cancer Incidence Rate Trend
(Five-Year Aggregate Periods, 1995-1999 through 2006-2010)



Source: NC State Center for Health Statistics, Health Data, Cancer, Cancer Data Available from SCHS, Annual Reports, NC Cancer Incidence Rates for All Counties by Specified Site (Years as noted); http://www.schs.state.us.nc/SCHS/CCR/reports.html.

It is not known whether or not increased screening activity played a role in any of the increases in prostate cancer incidence.

Female Breast Cancer

For purposes of this report, breast cancer pertains exclusively to women, although males can and do contract the disease. There were no breast cancer deaths among males in Bertie County or Hertford County in the 2007-2011 period; there were, however, 56 breast cancer deaths among males statewide.

Breast Cancer Hospitalizations

Table129 summarizes hospital discharge rate data for breast cancer.

- Hospital discharge rates for breast cancer in the two counties were unstable due to small numbers of hospitalizations; the rates for the region also were unstable since the regional average was based on county rates many of which were unstable.
- Statewide, the discharge rate for female breast cancer was steady at 0.2 until the most recent period, when it fell to 0.1.

Table 129. Malignant Female Breast Neoplasms Hospital Discharge Rate Trend (Single Years, 2005-2011)

Location	Rate (Discharges per 1,000 Population)						
	2005	2006	2007	2008	2009	2010	2011
Bertie County	**0.1**	**0.2**	**0.1**	**0.0**	**0.1**	**0.1**	**0.1**
Regional Average	**0.2**	**0.2**	**0.3**	**0.2**	**0.2**	**0.2**	**0.1**
Hertford County	**0.1**	**0.1**	**0.2**	**0.2**	**0.1**	**0.1**	**0.0**
State of NC	0.2	0.2	0.2	0.2	0.2	0.2	0.1

Note: Bold type indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (2007-2013), Morbidity, Inpatient Hospital Utilization and Charges by Principal Diagnosis and County of Residence; http://www.schs.state.nc.us/SCHS/data/databook/.

According to NC SCHS data on Inpatient Hospital Utilization and Charges by Principal Diagnosis, in 2011 there were three hospitalizations of Bertie County residents somewhere in NC for treatment of malignant neoplasms of the female breast (59).

Inpatient hospitalizations of Bertie County residents in 2010-2012 for malignant neoplasms of the female breast (ICD-9 Code 174) at the four ARHS-region hospitals are displayed in Table 130. In 2012 there was one inpatient admission in that category among region's hospitals.

Table 130. Inpatient Hospitalizations of Bertie County Residents for Malignant Neoplasms of the Female Breast, ARHS Region Hospitals (2012)

ICD-9 Code	Number of Inpatient Hospitalizations			
	VBER	VCHO	VROA	AH
174	0	0	1	0

Source: Vidant Bertie Hospital, Vidant Chowan Hospital, Vidant Roanoke-Chowan Hospital and Albemarle Health

Table 131 presents data on outpatient/day surgery procedures of the breast performed among Bertie County residents at the region's four hospitals in 2010-2012. The ICD-9 Procedure Code 85 (Operations on the Breast) was used to conduct the data search.

Table 131. Outpatient Operations on the Breast, Bertie County Residents, ARHS Region Hospitals (2010-2012)

Year	ICD-9 Procedure Code 85 Operations			
	VBER	VCHO	VROA	AH
2010	0	0	2	0
2011	0	6	6	0
2012	1	0	2	0

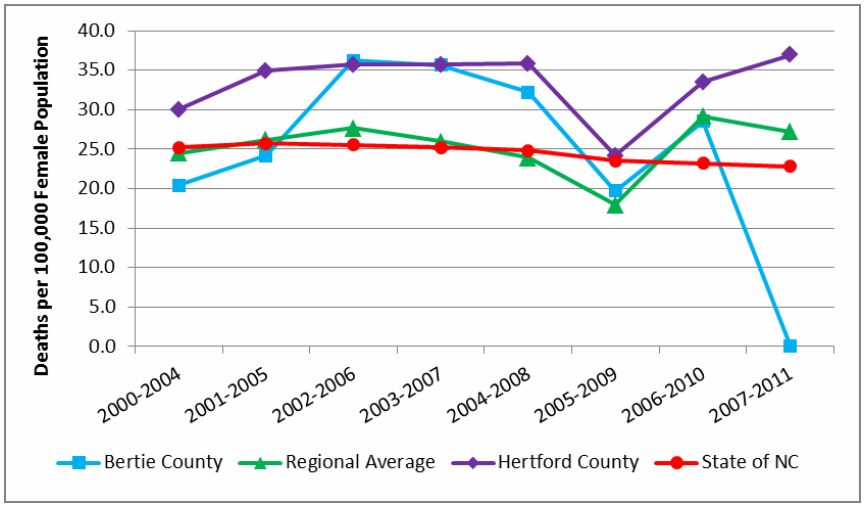
Source: Vidant Bertie Hospital, Vidant Chowan Hospital, Vidant Roanoke-Chowan Hospital and Albemarle Health

Breast Cancer Mortality Rate Trend

Figure 15 displays female breast cancer mortality rate trends over time in the four jurisdictions being compared in this CHA.

- The breast cancer mortality rate in Bertie County was erratic over the period cited, likely due to small and varying numbers of deaths. The first two data points were unstable, and final rate, for 2007-2011, was plotted as zero, signifying that the NC SCHS suppressed the rate due to below-threshold numbers of deaths.
- Region-wide the breast cancer mortality rate for 2007-2011 (27.2) was 11% higher than the rate for 2000-2004 (24.5).
- The NC breast cancer mortality rate declined 10% over the period cited, from 25.2 to 22.8.
- Breast cancer mortality rates in Hertford County were the highest over the entire period cited.

Figure 15. Overall Female Breast Cancer Mortality Rate Trend (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Racial Disparities in Breast Cancer Mortality

Table 132 presents breast cancer mortality rate data for the 2007-2011 aggregate period, stratified by race.

- Due to below-threshold numbers of breast cancer deaths among stratified groups in Bertie County and elsewhere, NC SCHS suppressed the associated mortality rates, leaving no data to compare.
- Statewide, the breast cancer mortality rate for African American non-Hispanic women was 40% *higher* than the comparable rate for white non-Hispanic women, and the rates for Other race non-Hispanic women and Hispanic women were 40% and 60% lower, respectively, than the comparable rate for white non-Hispanic women.

Table 132. Race/Ethnicity-Specific Female Breast Cancer Mortality (Single Five-Year Aggregate Period, 2007-2011)

Location	Rate (Deaths per 100,000 Female Population)			
	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic
Bertie County	N/A	N/A	N/A	N/A
Regional Average	N/A	N/A	N/A	N/A
Hertford County	N/A	N/A	N/A	N/A
State of NC	21.5	30.1	11.9	8.5

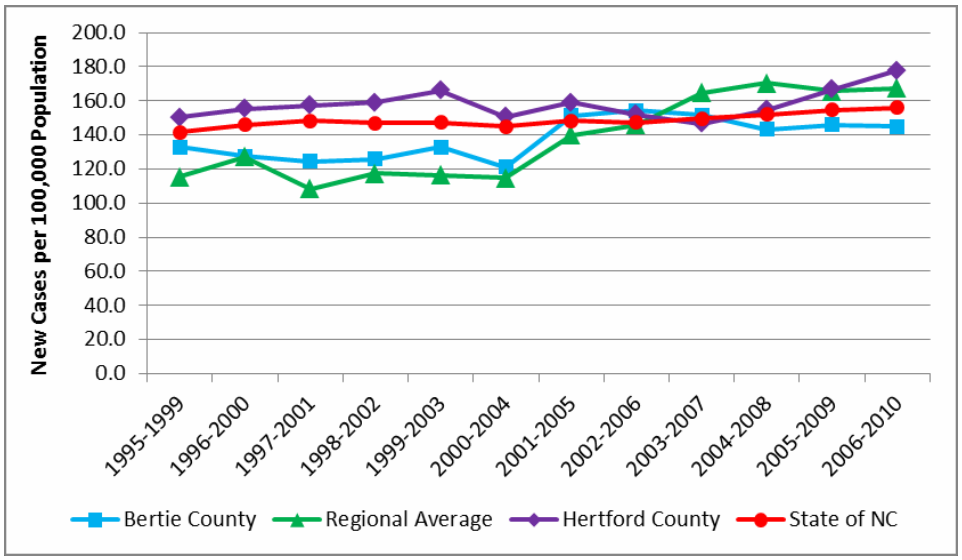
Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race/Ethnicity Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Breast Cancer Incidence

Figure 16 plots the incidence rate trend for breast cancer.

- Breast cancer incidence rates increased at least slightly in every jurisdiction over the period cited. In Bertie County the overall increase was 9%, from 132.8 in 1995-1999 to 145.1 in 2006-2010. Comparable net increases were 18% in Hertford County, 45% region-wide, and 10% statewide.

Figure 16. Breast Cancer Incidence Rate Trend (Five-Year Aggregate Periods, 1995-1999 through 2006-2010)



Source: NC State Center for Health Statistics, Health Data, Cancer, Cancer Data Available from SCHS, Annual Reports, NC Cancer Incidence Rates for All Counties by Specified Site (Years as noted); http://www.schs.state.us.nc/SCHS/CCR/reports.html.

It is not known whether or not increased screening activity played a role in any of the increases in breast cancer incidence, although breast cancer screening activities are common.

Colon Cancer

The category of cancer referred to as colon cancer (sometimes referred to as *colorectal cancer*) traditionally *also* includes cancers of the rectum and anus.

Colon Cancer Hospitalizations

Table133 summarizes hospital discharge rate data for malignant neoplasms of the colon, rectum and anus. The hospital discharge rate for colon cancer in Bertie County peaked in 2008 and has been lower since, but was higher than the state rate throughout the period cited.

Table 133. Malignant Colon, Rectum and Anus Neoplasms Hospital Discharge Rate Trend (Single Years, 2005-2011)

Location	Rate (Discharges per 1,000 Population)						
	2005	2006	2007	2008	2009	2010	2011
Bertie County	0.8	0.8	0.9	1.0	0.9	0.5	0.8
Regional Average	**0.5**	**0.7**	**0.6**	**0.5**	**0.5**	**0.3**	**0.4**
Hertford County	0.8	0.5	1.0	0.9	0.5	**0.4**	0.6
State of NC	0.5	0.5	0.5	0.4	0.4	0.4	0.4

Note: Bold type indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (2007-2013), Morbidity, Inpatient Hospital Utilization and Charges by Principal Diagnosis and County of Residence; http://www.schs.state.nc.us/SCHS/data/databook/.

According to NC SCHS data on Inpatient Hospital Utilization and Charges by Principal Diagnosis, 16 Bertie County residents were hospitalized somewhere in NC with diagnoses of malignant neoplasms of the colon, rectum and anus in 2011 (59).

Inpatient hospitalizations of Bertie County residents in 2012 for malignant neoplasms of the colon, rectum and anus (ICD-9 Codes 153 and 154) at the four ARHS-region hospitals are displayed in Table 134. In 2012 there were six inpatient admissions in those code categories among the four regional hospitals.

Table 134. Inpatient Hospitalizations of Bertie County Residents for Malignant Neoplasms of the Colon, Rectum and Anus, ARHS Region Hospitals (2012)

DRG Code	Number of Inpatient Hospitalizations			
	VBER	VCHO	VROA	AH
153	0	3	1	0
154	0	0	2	0

Source: Vidant Bertie Hospital, Vidant Chowan Hospital, Vidant Roanoke-Chowan Hospital and Albemarle Health

There are several diagnostic procedures routinely performed to diagnose colon cancer, including sigmoidoscopy and colonoscopy. Those procedures, as well as others that are more invasive, are assigned the ICD-9 procedure code 45.2, Diagnostic Procedures on the Large Intestine. In addition, a colonoscopy may also include excision of polyps or other tissue coincident with the examination; that procedure is coded 45.4. Table 135 tracks outpatient/day surgery admissions in those categories for Bertie County residents at the four regional hospitals. There were 185 total procedures in these categories among Bertie County residents in the period from 2010-2012.

Table 135. Outpatient Procedures on Large Intestine, Bertie County Residents, ARHS Region Hospitals (2010-2012)

Year	ICD-9 Procedure Code 45.2 and 45.4 Procedures			
	VBER	VCHO	VROA	AH
2010	45	0	2	2
2011	68	0	2	1
2012	60	0	4	1

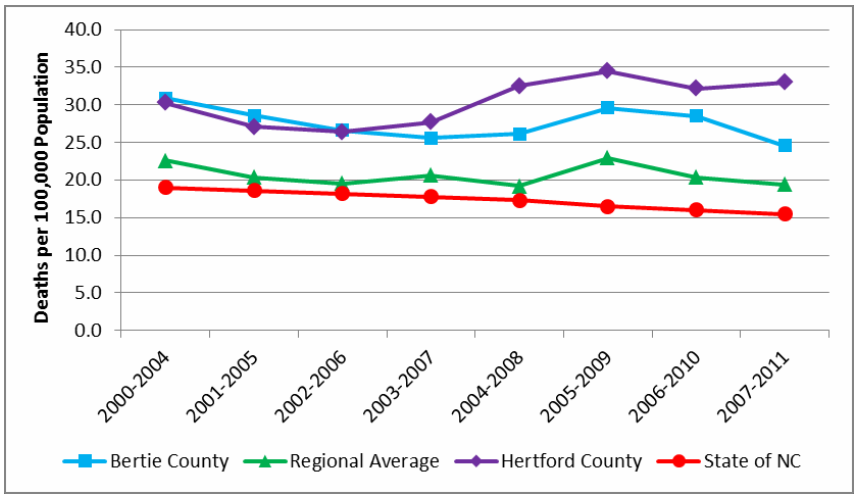
Source: Vidant Bertie Hospital, Vidant Chowan Hospital, Vidant Roanoke-Chowan Hospital and Albemarle Health

Colon Cancer Mortality Rate Trend

Figure 17 displays colon cancer mortality rate trends over time for the four jurisdictions being compared in this CHA.

- The colon cancer mortality rate in Bertie County fluctuated over the period cited but fell 26% overall, from 30.9 in 2000-2004 to 24.6 in 2007-2011. For most of the period cited, the Bertie County colon cancer rate was significantly higher than the comparable rate for the state or region, but lower than the rate for Hertford County.
- The regional colon cancer mortality rate fell 14% over the period cited.
- The NC colon cancer mortality rate declined 18% overall in the period cited.

Figure 17. Overall Colon Cancer Mortality Rate Trend (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Gender and Racial Disparities in Colon Cancer Mortality

Table 136 presents colon cancer mortality data for the 2007-2011 aggregate period, stratified by race and sex.

- Due to below-threshold numbers of colon cancer deaths among most stratified populations at the county level, mortality rates for those groups were suppressed.
- Statewide, the colon cancer mortality rate for African American non-Hispanics was 52% *higher* than the comparable rate for white non-Hispanics, and the rates for other non-Hispanics and Hispanics were far below the comparable rate for white non-Hispanics.
- Gender-stratified colon cancer mortality rates for Bertie County were suppressed, but at the state level the colon cancer mortality rate for males (19.0) was 47% higher than the comparable rate for females (12.9). In Hertford County the rate for males was 13% higher than the rate for females.

Table 136. Race/Ethnicity-Specific and Sex-Specific Colon Cancer Mortality (Single Five-Year Aggregate Period, 2007-2011)

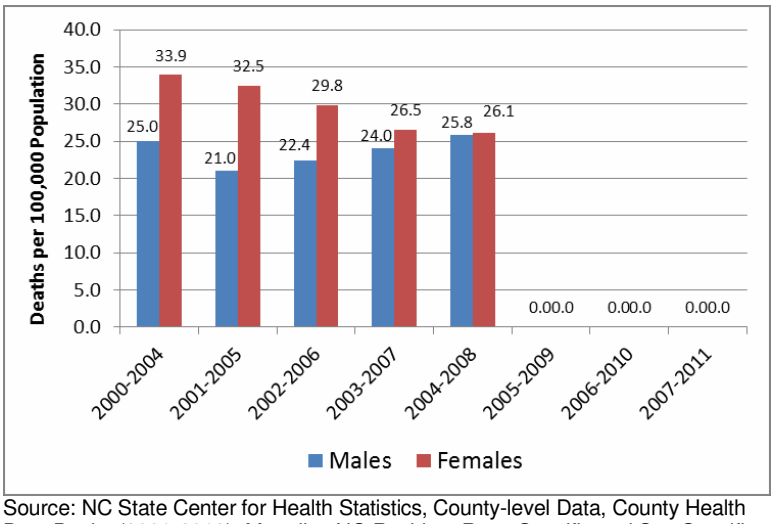
Location	Deaths, Number and Rate (Deaths per 100,000 Population)													
	White, Non-Hispanic		African American, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Male		Female		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Bertie County	13	N/A	19	N/A	0	N/A	0	N/A	14	N/A	18	N/A	32	24.6
Regional Average	13	13.8	8	N/A	0	N/A	0	N/A	10	N/A	12	15.8	21	19.4
Hertford County	19	N/A	28	36.4	1	N/A	1	N/A	21	34.2	28	31.8	49	33.0
State of NC	5,604	14.5	1,851	22.1	96	9.6	63	6.3	3,964	19.0	3,650	12.9	7,614	15.5

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race/Ethnicity Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Figure 18 depicts gender-stratified colon cancer mortality rates in Bertie County for the aggregate periods 2000-2004 through 2007-2011.

- There may be a gender difference in colon cancer mortality rates in Bertie County that is changing. Although all the rates for males were either unstable or suppressed, and only the first three data points for females were technically stable, the degree of difference between the rates for men and women appears to be narrowing, as the rate for females decreased and the rate for males increased. Note that “zero” signifies only that a rate was suppressed.

Figure 18. Sex-Specific Colon Cancer Mortality Rate Trend, Bertie County (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



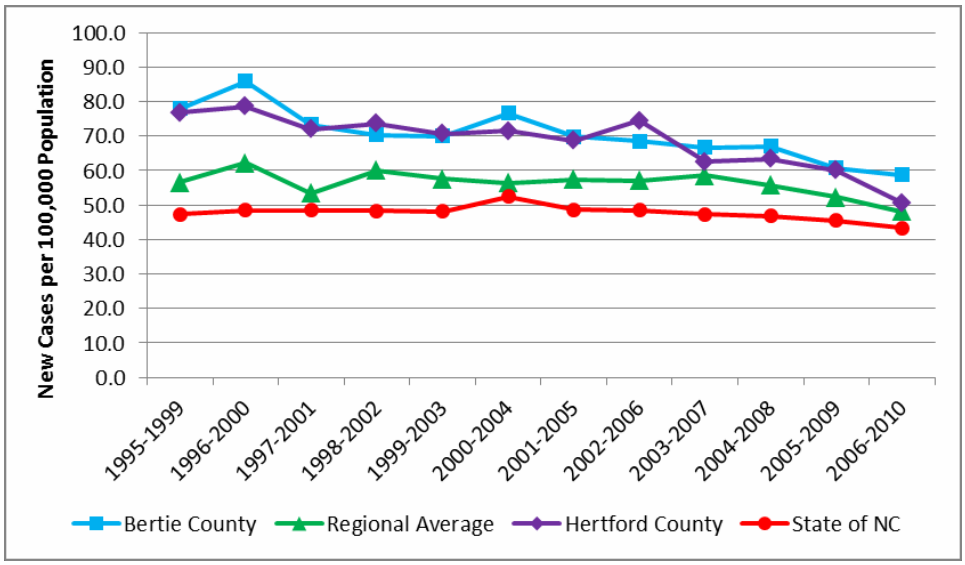
Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (2006-2013), Mortality, NC Resident Race-Specific and Sex-Specific Age-Adjusted Death Rates, by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Colon Cancer Incidence

Figure 19 plots the incidence rate trend for colon cancer.

- The colon cancer incidence rate in Bertie County fell over the period cited, from 78.0 in 1995-1999 to 58.7 in 2006-2010, a decrease of 25%.
- The regional colon cancer incidence rate, relatively steady for several aggregate periods, fell recently to a 10-year low of 48.2
- The Hertford County colon cancer incidence rate, similar to the Bertie County rate for most of the period cited, decreased by 34% over the period cited, the largest decrease among the jurisdictions being compared.
- At the state level, the colon cancer incidence rate fell from 47.4 in 1995-1999 to 43.4 in 2006-2010, an overall decrease of 8%.

Figure 19. Colon Cancer Incidence Rate Trend
(Five-Year Aggregate Periods, 1995-1999 through 2006-2010)



Source: NC State Center for Health Statistics, Health Data, Cancer, Cancer Data Available from SCHS, Annual Reports, NC Cancer Incidence Rates for All Counties by Specified Site (Years as noted); http://www.schs.state.us.nc/SCHS/CCR/reports.html.

Pancreas Cancer

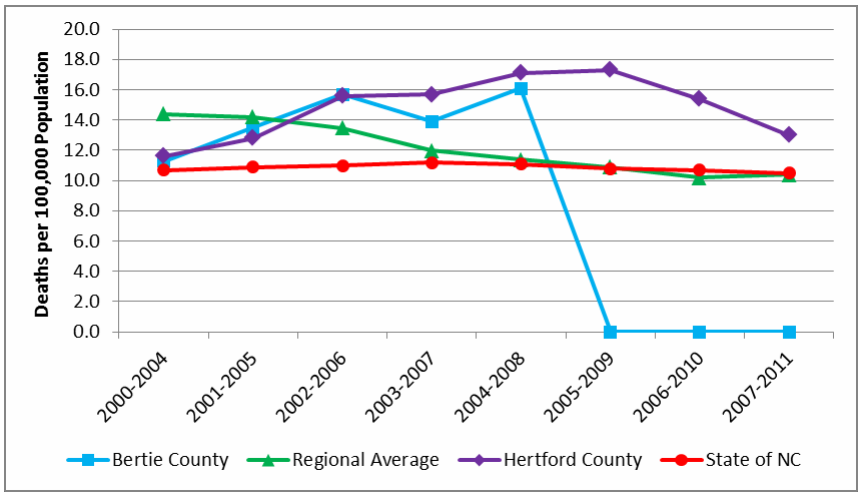
Although the pancreas cancer mortality rate is the fifth highest among the site-specific cancers in NC, some of the typical data sets referenced in this report do *not* cover this cancer; among them are the Inpatient Hospital Utilization and Charges dataset and the Cancer Incidence dataset. Pancreas cancer mortality data *is* available.

Pancreas Cancer Mortality Rate Trend

Figure 20 displays pancreas cancer mortality rate trends over time in the four jurisdictions being compared in this CHA.

- The variability in the Bertie County pancreas cancer mortality rate may be attributable to the fact that most of the rates were either unstable or suppressed. Note that the "zero" plots for the last three aggregate periods represent suppressed rates.
- Region-wide the pancreas cancer mortality rate appeared to decline 29% over the period cited, but the rates should be considered to be unstable, since the regional average was calculated from largely unstable county rates.
- The NC pancreas cancer mortality rate changed little throughout the period cited.
- The last six data points plotted for Hertford County were stable, so the significant difference between that county's pancreas cancer mortality rate and the state rate (also stable) likely was real.

Figure 20. Overall Pancreas Cancer Mortality Rate Trend (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Gender and Racial Disparities in Pancreas Cancer Mortality

Table 137 presents pancreas cancer mortality data for the aggregate period 2007-2011, stratified by race and sex.

- Due to below-threshold numbers of pancreas cancer deaths among all racially stratified populations in Bertie County and its comparator jurisdictions, all mortality rates for those groups were suppressed so there is no data below the state level to compare.
- Statewide, the pancreas cancer mortality rate for African American non-Hispanics was 39% *higher* than the comparable rate for white non-Hispanics, and the rates for other non-Hispanics and Hispanics were below the comparable rate for white non-Hispanics.
- Gender-stratified pancreas cancer mortality rates at the county level were suppressed, but at the state level the pancreas cancer mortality rate for males (11.8) was 26% higher than the comparable rate for females (9.4).

Table 137. Race/Ethnicity-Specific and Sex-Specific Pancreas Cancer Mortality (Single Five-Year Aggregate Period, 2007-2011)

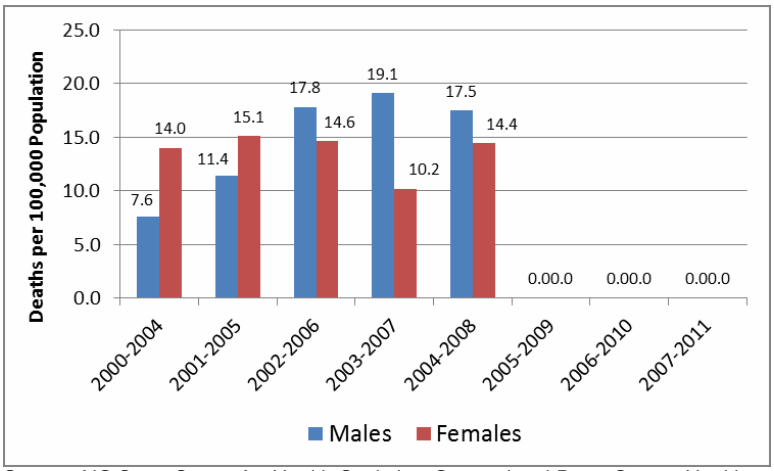
Location	Deaths, Number and Rate (Deaths per 100,000 Population)													
	White, Non-Hispanic		African American, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Male		Female		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Bertie County	3	N/A	13	N/A	0	N/A	0	N/A	6	N/A	10	N/A	16	N/A
Regional Average	7	N/A	6	N/A	0	N/A	0	N/A	5	N/A	8	N/A	13	10
Hertford County	8	N/A	11	N/A	0	N/A	1	N/A	13	N/A	7	N/A	20	13.0
State of NC	3,925	10.0	1,152	13.9	66	6.8	41	4.0	2,519	11.8	2,665	9.4	5,184	10.5

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race/Ethnicity Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Figure 21 depicts gender-stratified pancreas cancer mortality rates in Bertie County for the aggregate periods 2000-2004 through 2007-2011.

- At first glance it appears that there may be a shifting gender difference in pancreas cancer mortality in Bertie County, with higher rates for females being supplanted by higher rates for males. However, since all the gender-stratified pancreas cancer mortality rates shown were based on small numbers and therefore likely unstable, they should be interpreted with caution. Other rates were suppressed, although they are labeled "0".

Figure 21. Sex-Specific Pancreas Cancer Mortality Rate Trend, Bertie County (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (2006-2013), Mortality, NC Resident Race-Specific and Sex-Specific Age-Adjusted Death Rates, by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Pancreas Cancer Incidence

Historical pancreas cancer incidence rates are not available from NC SCHS at the present time.

Diseases of the Heart

Heart disease is an abnormal organic condition of the heart or of the heart and circulation. Heart disease is the number one killer in the US and a major cause of disability. The most common cause of heart disease, coronary artery disease, is a narrowing or blockage of the coronary arteries, the blood vessels that supply blood to the heart itself. Coronary artery disease is the major reason people have heart attacks, but other kinds of heart problems may originate in the valves in the heart, or the heart may not pump well and cause heart failure (60).

Heart disease was the second leading cause of death in Bertie County, the Albemarle Region, Hertford County and the state of NC in the 2007-2011 period (cited previously).

Heart Disease Hospitalizations

Table 138 presents hospital discharge rate trend data for several years. According to this data from NC SCHS, heart disease has been cause for a very high rate of hospitalization among Bertie County residents, a rate significantly higher than the comparable state and regional averages.

Table 138. Heart Disease Hospital Discharge Rate Trend (2005-2011)

Location	Rate (Discharges per 1,000 Population)						
	2005	2006	2007	2008	2009	2010	2011
Bertie County	17.6	18.4	15.9	15.9	16.1	17.2	14.9
Regional Average	11.4	11.9	11.1	10.6	9.7	9.7	9.9
Hertford County	14.2	14.6	13.4	12.6	14.0	13.7	12.6
State of NC	13.1	12.7	12.2	11.8	11.4	11.3	10.9

Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (2007-2013), Morbidity, Inpatient Hospital Utilization and Charges by Principal Diagnosis and County of Residence; http://www.schs.state.nc.us/SCHS/data/databook/.

According to NC SCHS data, in 2011 there were 311 hospital admissions for heart disease among Bertie County residents; this figure includes hospitalizations anywhere in NC (59).

Table 139 presents data on 2012 hospitalizations associated with diagnoses of chronic rheumatic heart disease (ICD-9 Codes 393-398), hypertensive heart disease (ICD-9 Code 402), ischemic heart disease (ICD-9 Codes 410-414), pulmonary heart disease (ICD-9 Codes 415 and 416), and other forms of heart disease (ICD-9 Codes 420-429). Note that while significant, these categories do *not* include all forms of heart disease. There were 142 inpatient hospitalizations of Bertie County residents for these categories of heart disease among the four ARHS hospitals in 2012.

Table 139. Inpatient Hospitalizations of Bertie County Residents for Diseases of the Heart, ARHS Region Hospitals (2012)

ICD-9 Code	Diagnosis	Number of Inpatient Hospitalizations			
		VBER	VCHO	VROA	AH
393-398	Chronic rheumatic heart disease	0	0	0	0
402	Hypertensive heart disease	1	0	0	0
410-414	Ischemic heart disease	1	1	11	2
415-416	Pulmonary heart disease	1	0	5	0
420-429	Other forms of heart disease	51	13	50	6
TOTAL		54	14	66	8

Source: Vidant Bertie Hospital, Vidant Chowan Hospital, Vidant Roanoke-Chowan Hospital and Albemarle Health

Table 140 presents data on the number of emergency department (ED) admissions of Bertie County residents to the four ARHS region hospitals in 2010-2012 for diagnoses associated with diseases of the heart. The list of diagnoses is the same as the list in the table above and does *not* include all types of heart disease. Bertie County residents made more than 150 ED visits for these categories of heart disease in each of the three years cited.

Table 140. Emergency Department Admissions of Bertie County Residents for Diseases of the Heart, ARHS Region Hospitals (2010-2012)

ICD-9 Code	Diagnosis	Number of ED Admissions		
		2010	2011	2012
393-398	Chronic rheumatic heart disease	0	0	0
402	Hypertensive heart disease	0	1	2
410-414	Ischemic heart disease	21	26	24
415-416	Pulmonary heart disease	7	9	4
420-429	Other forms of heart disease	120	159	161
TOTAL		148	195	191

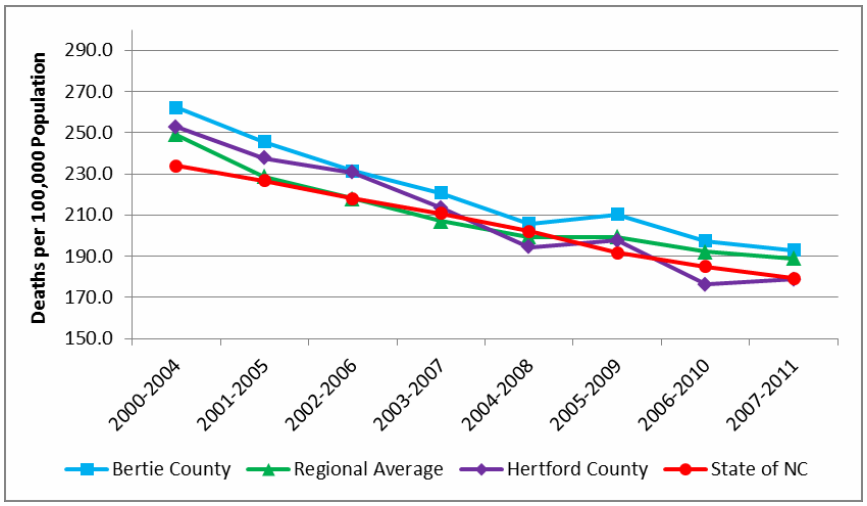
Source: Vidant Bertie Hospital, Vidant Chowan Hospital, Vidant Roanoke-Chowan Hospital and Albemarle Health

Heart Disease Mortality Rate Trend

Figure 22 displays the heart disease mortality rate trend over time in the four jurisdictions being compared in this CHA.

- The heart disease mortality rate fell significantly in all four jurisdictions over the period cited.
- The largest decrease over the period cited—29%—occurred in Hertford County.
- The heart disease mortality rate for Bertie County fell by 26% (from 262.3 to 193.0) between 2002-2004 and 2007-2011.
- At the state level, the heart disease mortality rate fell 23% over the period cited.

Figure 22. Overall Heart Disease Mortality Rate Trend (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Gender and Racial Disparities in Heart Disease Mortality

Table 141 presents heart disease mortality data for the aggregate period 2007-2011, stratified by race and sex.

- Among white non-Hispanic persons, the heart disease mortality rate was lowest in Hertford County and highest in Bertie County.
- Note that due to below-threshold numbers of heart disease deaths among some minority populations in Bertie County and elsewhere, mortality rates were suppressed for those groups.
- There appeared to be a large gender difference in heart disease mortality in all jurisdictions; this disparity will be described in greater detail below.

Table 141. Race/Ethnicity-Specific and Sex-Specific Heart Disease Mortality (Single Five-Year Aggregate Period, 2007-2011)

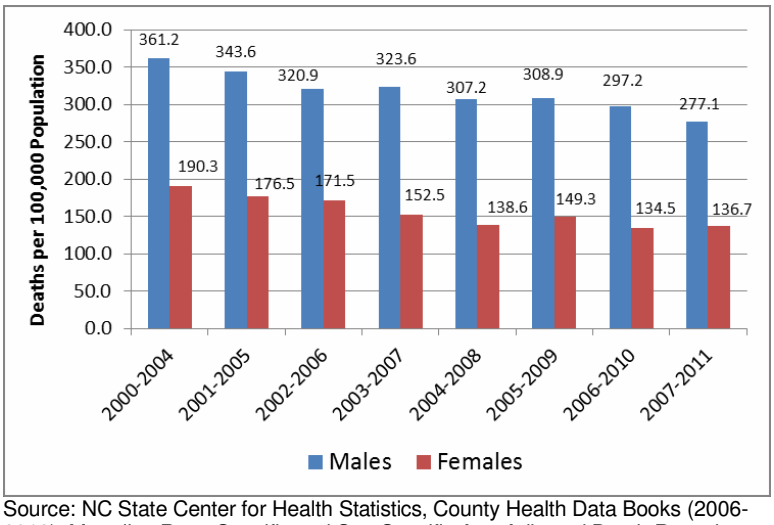
Location	Deaths, Number and Rate (Deaths per 100,000 Population)													
	White, Non-Hispanic		African American, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Male		Female		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Bertie County	135	223.0	121	165.9	1	N/A	0	N/A	145	277.1	112	136.7	257	193.0
Regional Average	148	185.4	71	222.3	1	N/A	0	N/A	122	256.2	97	136.6	220	188.9
Hertford County	106	163.1	147	193.5	7	N/A	0	N/A	138	243.3	122	133.0	260	178.9
State of NC	67,605	176.2	16,965	209.3	1,070	118.6	459	46.1	44,630	229.4	41,469	141.6	86,099	179.3

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race/Ethnicity Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Figure 23 depicts gender-stratified heart disease mortality rates in Bertie County for the aggregate periods 2000-2004 through 2007-2011.

- It appears that the gender difference in heart disease mortality noted in Bertie County for 2007-2011 is actually longstanding. Noteworthy also is the apparent decrease in heart disease mortality among both men and women since the 2000-2004 period.

Figure 23. Sex-Specific Heart Disease Mortality Rate Trend, Bertie County (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Table 142 presents heart disease mortality rate data stratified by gender and race/ethnicity for the period 2007-2011.

- Because of below-threshold numbers of heart disease deaths in some stratified minority populations the NC SCHS suppressed the related mortality rates.
- In Bertie County the heart disease mortality rate among African American, non-Hispanic males was 36% *lower* than the rate among white non-Hispanic males, and the heart disease mortality rate among African American non-Hispanic females was 10% *lower* than the rate among white non-Hispanic females.
- At the regional level, heart disease mortality rates among African American non-Hispanics, both male and female, were higher than comparable rates for white non-Hispanics, with the difference 18% among males and 31% among females.
- At the state level, heart disease mortality rates among African Americans, both male and female, were approximately 20% *higher* than among their white, non-Hispanic counterparts. Heart disease mortality statewide was lowest among both male and female Hispanics.

Table 142. Race/Ethnicity and Sex-Specific Heart Disease Mortality Rate (Single Five-Year Aggregate Period, 2007-2011)

Location	Rate (Deaths per 100,000 Population)							
	Males				Females			
	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic
Bertie County	339.2	217.1	N/A	N/A	143.7	129.8	N/A	N/A
Regional Average	252.0	296.3	N/A	N/A	136.5	178.0	N/A	N/A
Hertford County	216.4	278.4	N/A	N/A	123.2	138.9	N/A	N/A
State of NC	226.4	271.6	140.0	54.8	137.5	167.5	100.8	37.4

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County-level Data, County Health Data Book (2013), Mortality, 2007-2011 NC Resident Race/Ethnicity and Sex-Specific Age-Adjusted Death Rates, by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Diabetes Mellitus

Diabetes is a disease in which the body's blood glucose levels are too high due to problems with insulin production and/or utilization. Insulin is a hormone that helps glucose get to cells where it is used to produce energy. With Type 1 diabetes, the body does not make insulin. With Type 2 diabetes, the more common type, the body does not make or use insulin well. Without enough insulin, glucose stays in the blood. Over time, having too much glucose in the blood can damage the eyes, kidneys, and nerves. Diabetes can also lead to heart disease, stroke and even the need to remove a limb (61).

Diabetes was the third leading cause of death in Bertie County and the seventh leading cause of death statewide in 2007-2011; it ranked fourth in Hertford County and fifth regionally (cited previously).

Diabetes Mellitus Hospitalizations

Table 143 presents hospital discharge rate trend data for diabetes. The rates for Bertie County were higher than the rates for the region or NC as a whole.

Table 143. Diabetes Hospital Discharge Rate Trend (2005-2011)

Location	Rate (Discharges per 1,000 Population)						
	2005	2006	2007	2008	2009	2010	2011
Bertie County	3.3	2.9	3.7	2.8	2.4	2.3	3.0
Regional Average	1.9	1.7	1.5	1.7	1.2	1.6	1.5
Hertford County	2.4	2.9	3.4	2.9	1.9	2.6	1.6
State of NC	1.8	1.8	1.9	1.8	1.8	1.9	2.0

Note: Bold type indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (2007-2013), Morbidity, Inpatient Hospital Utilization and Charges by Principal Diagnosis and County of Residence; http://www.schs.state.nc.us/SCHS/data/databook/.

According to NC SCHS, in 2011 there were 63 hospitalizations for diabetes among Bertie County residents; this figure includes hospitalizations anywhere in NC (59).

In ICD-9 coding, diabetes falls in the category Endocrine and Metabolic Diseases (240-279), with a specific ICD-9 Code of 250 for diabetes mellitus. Table 144 presents data on 2012 hospitalizations of Bertie County residents for diagnoses of diabetes mellitus. There were 35 hospitalizations at the four ARHS hospitals for treatment of diabetes among Bertie County residents in 2012.

Table 144. Inpatient Hospitalizations of Bertie County Residents for Diabetes Mellitus, ARHS Region Hospitals (2012)

ICD-9 Code	Diagnosis	Number of Inpatient Hospitalizations			
		VBER	VCHO	VROA	AH
250.0-250.9	**Diabetes mellitus**	8	7	20	0

Source: Vidant Bertie Hospital, Vidant Chowan Hospital, Vidant Roanoke-Chowan Hospital and Albemarle Health

Table 145 presents data on the number of emergency department admissions of Bertie County residents to the four ARHS region hospitals in 2010-2012 for diagnoses associated with diabetes. For the period from 2010-2012 there was an annual average of 180 ED visits to the region's four hospitals by Bertie County residents for diagnoses associated with diabetes.

Table 145. Emergency Department Admissions of Bertie County Residents for Diabetes Mellitus, ARHS Region Hospitals (2010-2012)

ICD-9 Code	Diagnosis	Number of ED Admissions		
		2010	2011	2012
250.0-250.9	Diabetes mellitus	168	176	196

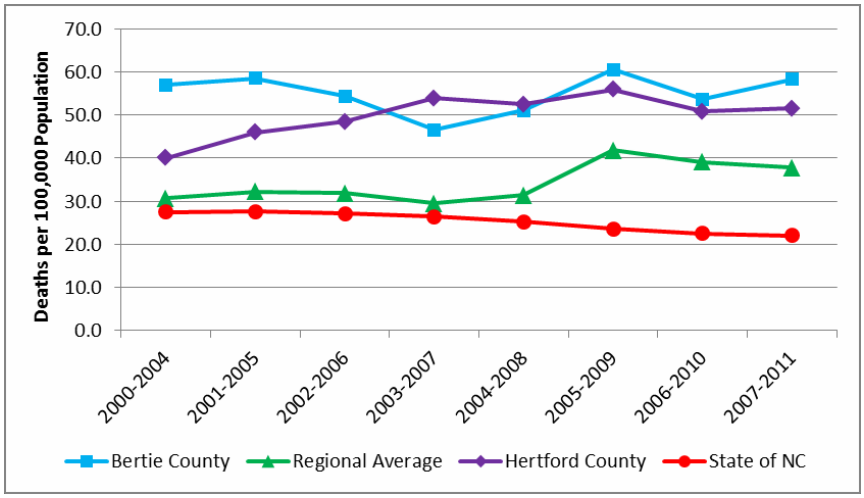
Source: Vidant Bertie Hospital, Vidant Chowan Hospital, Vidant Roanoke-Chowan Hospital and Albemarle Health

Diabetes Mellitus Mortality Rate Trend

Figure 24 displays the diabetes mortality rate trend over time for each of the four jurisdictions being compared in this CHA.

- The diabetes mortality rate in Bertie County was higher than the regional and state rates throughout the period cited. The Bertie County diabetes mortality rate was higher than the Hertford County rate for six of the eight periods cited, and when it was higher it also was the highest among the four jurisdictions.
- The diabetes mortality rate in Bertie County fluctuated for several periods but in 2007-2011 was little changed from 2000-2004 (56.9 vs. 58.2).
- The diabetes mortality rate for NC as a whole decreased 20% over the period cited.

Figure 24. Overall Diabetes Mellitus Mortality Rate Trend (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Gender and Racial Disparities in Diabetes Mellitus Mortality

Table 146 presents diabetes mortality data for the aggregate period 2007-2011, stratified by race and sex.

- Among white non-Hispanic persons, the diabetes mortality rate was highest in Hertford County and lowest statewide. The rate for Bertie County was the second highest.
- Due to below-threshold numbers of diabetes deaths among some minority populations in Bertie County and elsewhere, mortality rates were suppressed for those groups.
- Statewide, the diabetes mortality rate was higher among males than among females.

Table 146. Race/Ethnicity-Specific and Sex-Specific Diabetes Mellitus Mortality (Single Five-Year Aggregate Period, 2007-2011)

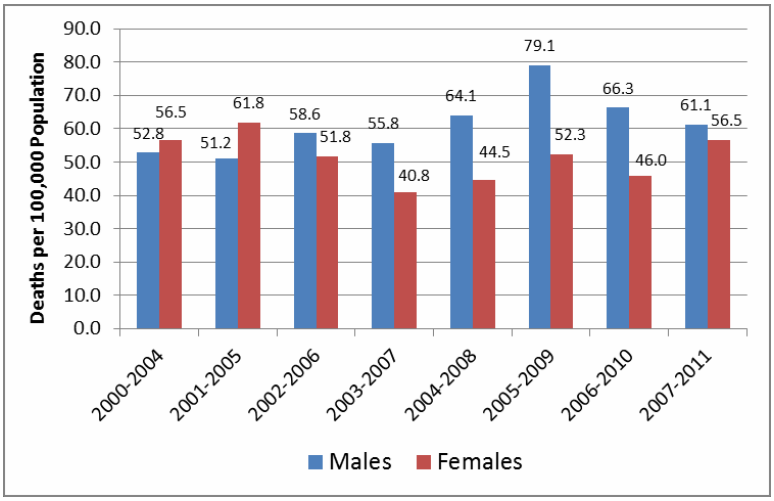
Location	Deaths, Number and Rate (Deaths per 100,000 Population)													
	White, Non-Hispanic		African American, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Male		Female		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Bertie County	23	39.6	53	74.4	0	N/A	0	N/A	30	61.1	46	56.5	76	58.2
Regional Average	15	26.9	16	52.5	0	N/A	0	N/A	14	61.1	18	36.0	31	37.8
Hertford County	27	40.4	48	60.7	2	N/A	0	N/A	36	61.9	41	44.1	77	51.5
State of NC	6,745	17.5	3,681	44.8	217	23.6	90	8.8	5,399	26.0	5,334	18.8	10,733	22.0

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race/Ethnicity Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Figure 25 depicts gender-stratified diabetes mortality rates in Bertie County for the aggregate periods 2000-2004 through 2007-2011.

- While the diabetes mortality rate among Bertie County males recently has been higher than the comparable rate among females, it was not always the case. The rate difference was reversed early in the period cited, and with the recent gap between males and females narrowing, it may reverse again in the future.

Figure 25. Sex-Specific Diabetes Mellitus Mortality Rate Trend, Bertie County (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Table 147 presents diabetes mortality rate data fully stratified by gender and race/ethnicity for the period 2007-2011.

- Because of below-threshold numbers of diabetes deaths among some stratified populations, the NC SCHS suppressed the associated mortality rates.
- At the state level, the diabetes mortality rate was highest among African American non-Hispanic males, followed by African American non-Hispanic females, other race non-Hispanic males, and other race non-Hispanic females.
- Statewide, diabetes mortality rates were higher for males than for females in every racial group. In Bertie County the diabetes mortality rate for African American non-Hispanic males (88.4) was 32% higher than the rate for African American non-Hispanic females (67.1). In Hertford County the diabetes mortality rate for African American non-Hispanic males was 77% higher than the rate for African American non-Hispanic females; statewide the rate difference between these two subpopulations was 26%.

Table 147. Race/Ethnicity and Sex-Specific Diabetes Mellitus Mortality Rate (Single Five-Year Aggregate Period, 2007-2011)

Location	Rate (Deaths per 100,000 Population)							
	Males				Females			
	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic
Bertie County	N/A	88.4	N/A	N/A	N/A	67.1	N/A	N/A
Regional Average	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hertford County	N/A	85.9	N/A	N/A	N/A	48.4	N/A	N/A
State of NC	21.7	50.9	25.7	11.4	14.2	40.4	22.2	7.0

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County-level Data, County Health Data Book (2013), Mortality, 2007-2011 NC Resident Race/Ethnicity and Sex-Specific Age-Adjusted Death Rates, by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Cerebrovascular Disease

Cerebrovascular disease describes the physiological conditions that lead to stroke. Strokes happen when blood flow to the brain stops and brain cells begin to die. There are two types of stroke. Ischemic stroke (the more common type) is caused by a blood clot that blocks or plugs a blood vessel in the brain. The other kind, called hemorrhagic stroke, is caused by a blood vessel that breaks and bleeds into the brain (62).

In the 2007-2011 aggregate period cerebrovascular disease was the fourth leading cause of death in Bertie County, the Albemarle region, and the state of NC; it was the third leading cause of death in Hertford County (cited previously).

Cerebrovascular Disease Hospitalizations

Table 148 presents the hospital discharge rate trend data for cerebrovascular disease (CVD). According to this data, CVD caused a significant proportion of illness-related hospitalizations among Bertie County residents over time, for the most part at a higher rate than in the other jurisdictions.

Table 148. Cerebrovascular Disease Hospital Discharge Rate Trend (2005-2011)

Location	Rate (Discharges per 1,000 Population)						
	2005	2006	2007	2008	2009	2010	2011
Bertie County	5.7	4.8	4.1	4.3	3.8	4.9	4.8
Regional Average	3.1	3.0	2.8	2.5	2.4	2.8	2.2
Hertford County	5.0	3.2	4.4	4.3	3.0	3.6	3.6
State of NC	3.2	3.1	3.1	3.0	3.1	3.1	3.0

Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (2007-2013), Morbidity, Inpatient Hospital Utilization and Charges by Principal Diagnosis and County of Residence; http://www.schs.state.nc.us/SCHS/data/databook/.

According to NC SCHS, in 2011 there were 100 hospital admissions for CVD among Bertie County residents; this figure includes hospitalizations anywhere in NC (59).

In the ICD-9 system, cerebrovascular disease is in the category Diseases of the Circulatory System, within the specific code range of 430-438. Table 149 presents data on 2012 hospitalizations of Bertie County residents for diagnoses of cerebrovascular disease. There were 26 hospitalizations at the four ARHS hospitals for treatment of cerebrovascular disease among Bertie County residents in 2012.

Table 149. Inpatient Hospitalizations of Bertie County Residents for Cerebrovascular Disease, ARHS Region Hospitals (2012)

ICD-9 Code	Diagnosis	Number of Inpatient Hospitalizations			
		VBER	VCHO	VROA	AH
430-438.9	**Cerebrovascular disease**	4	5	17	0

Source: Vidant Bertie Hospital, Vidant Chowan Hospital, Vidant Roanoke-Chowan Hospital and Albemarle Health

Table 150 presents data on the number of emergency department admissions of Bertie County residents to the four ARHS region hospitals in 2010-2012 for diagnoses associated with cerebrovascular disease. For the period from 2010-2012 there was an annual average of 97 ED visits to the region's four hospitals by Bertie County residents for diagnoses of cerebrovascular disease.

Table 150. Emergency Department Admissions of Bertie County Residents for Cerebrovascular Disease, ARHS Region Hospitals (2010-2012)

ICD-9 Code	Diagnosis	Number of ED Admissions		
		2010	2011	2012
430-438.9	Cerebrovascular disease	111	102	78

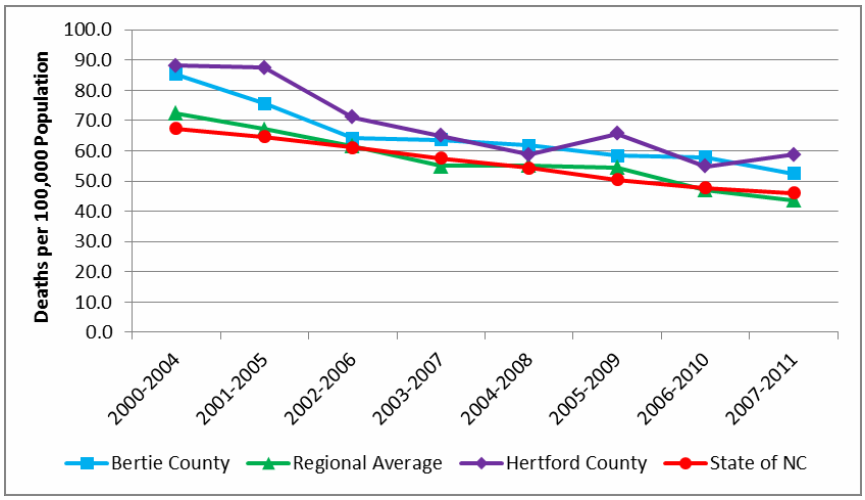
Source: Vidant Bertie Hospital, Vidant Chowan Hospital, Vidant Roanoke-Chowan Hospital and Albemarle Health

Cerebrovascular Disease Mortality Rate Trend

Figure 26 displays the CVD mortality rate trend over time for each of the four jurisdictions being compared in this CHA.

- The CVD mortality rate in Bertie County was higher than the comparable rates for the region and the state but lower than the rate for Hertford County throughout most the interval cited.
- CVD mortality rates in every jurisdiction fell over the period cited. The decrease was largest (39%) in Bertie County.

Figure 26. Overall Cerebrovascular Disease Mortality Rate Trend (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Gender and Racial Disparities in Cerebrovascular Disease Mortality

Table 151 presents CVD mortality data for the aggregate period 2007-2011, stratified by race and sex.

- Among white non-Hispanic persons, the CVD mortality rate was highest statewide and lowest in Bertie County.
- Note that due to below-threshold numbers of CVD disease deaths among some stratified populations in Bertie County and elsewhere, mortality rates were suppressed for those groups.
- In Bertie County the CVD mortality rate for African American non-Hispanic persons was 83% higher than the rate for white non-Hispanic persons. A similar racial disparity in CVD mortality was noted in the other jurisdictions as well.
- In all four jurisdictions, the CVD mortality rate for males was higher than the comparable rate for females.

Table 151. Race/Ethnicity-Specific and Sex-Specific Cerebrovascular Disease Mortality (Single Five-Year Aggregate Period, 2007-2011)

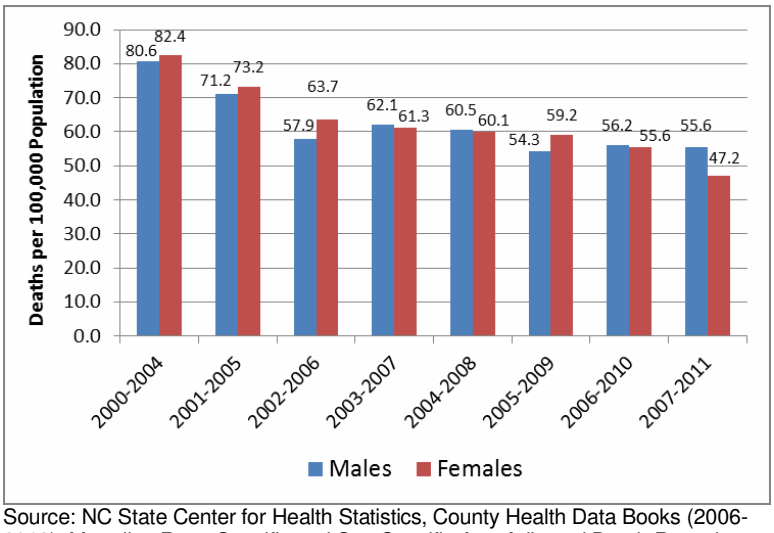
Location	Deaths, Number and Rate (Deaths per 100,000 Population)													
	White, Non-Hispanic		African American, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Male		Female		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Bertie County	22	35.9	48	65.7	0	N/A	1	N/A	31	55.6	40	47.2	71	52.4
Regional Average	29	37.3	21	67.6	0	N/A	0	N/A	21	64.2	29	40.5	51	43.7
Hertford County	27	40.9	59	76.3	1	N/A	0	N/A	33	57.0	54	56.3	87	58.7
State of NC	16,418	43.0	4,933	62.4	280	32.6	143	15.1	8,730	46.8	13,044	44.5	21,774	46.0

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race/Ethnicity Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Figure 27 depicts gender-stratified CVD mortality rates in Bertie County for the aggregate periods 2000-2004 through 2007-2011.

- The graph demonstrates that the CVD mortality rate among Bertie County males was very near to the CVD mortality rate among Bertie County females over most of the period cited, and rates for both decreased over time.

Figure 27. Sex-Specific Cerebrovascular Disease Mortality Rate Trend, Bertie County (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Table 152 presents CVD mortality rate data fully stratified by gender and race/ethnicity for the period 2007-2011.

- Because of below-threshold numbers of CVD deaths in some stratified categories, the NC SCHS suppressed the associated mortality rates, leaving little data to compare.
- At the state level, the CVD mortality rate was highest among African American non-Hispanic males, followed by African American non-Hispanic females, white non-Hispanic males, and white non-Hispanic females. CVD mortality rates statewide were lowest among male and female Hispanics.
- CVD mortality rates were higher for males than for females in every racial group *except* Hispanics, where the rate for females was higher than the comparable rate for males.

Table 152. Race/Ethnicity and Sex-Specific Cerebrovascular Disease Mortality Rate (Single Five-Year Aggregate Period, 2007-2011)

Location	Rate (Deaths per 100,000 Population)							
	Males				Females			
	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic
Bertie County	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Regional Average	57.8	94.9	N/A	N/A	38.2	60.5	N/A	N/A
Hertford County	N/A	79.2	N/A	N/A	N/A	70.2	N/A	N/A
State of NC	43.3	67.9	37.4	14.0	42.0	57.7	28.5	15.5

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County-level Data, County Health Data Book (2013), Mortality, 2007-2011 NC Resident Race/Ethnicity and Sex-Specific Age-Adjusted Death Rates, by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Chronic Lower Respiratory Disease (CLRD)

Chronic lower respiratory disease (CLRD) is composed of three major diseases, chronic bronchitis, emphysema, and asthma, all of which are characterized by shortness of breath caused by airway obstruction and sometimes lung tissue destruction. The obstruction is irreversible in chronic bronchitis and emphysema, reversible in asthma. Before 1999, CLRD was called *chronic obstructive pulmonary disease* (COPD). Some in the field still use the designation COPD, but limit it to mean chronic bronchitis and emphysema only. In the US, tobacco use is a key factor in the development and progression of CLRD/COPD, but exposure to air pollutants in the home and workplace, genetic factors, and respiratory infections also play a role (63).

CLRD was the fifth leading cause of death in Bertie County and Hertford County, and the third leading cause of death in the ARHS region and NC in the 2007-2011 period (cited previously).

CLRD/COPD Hospitalizations

Table 153 presents the hospital discharge rate trend data for COPD (the term still used by some data-compiling organizations). According to this data, COPD caused a significant proportion of illness-related hospitalizations among Bertie County residents over time, for the most part at a higher rate than in the other jurisdictions.

Table 153. COPD Hospital Discharge Rate Trend (2005-2011)

Location	Rate (Discharges per 1,000 Population)						
	2005	2006	2007	2008	2009	2010	2011
Bertie County	4.9	3.6	4.5	3.9	5.3	4.6	4.8
Regional Average	4.3	3.8	4.0	4.3	3.3	3.3	3.7
Hertford County	4.1	3.6	3.2	3.2	2.5	2.2	3.5
State of NC	3.5	3.2	3.1	3.4	3.4	3.2	3.2

Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (2007-2013), Morbidity, Inpatient Hospital Utilization and Charges by Principal Diagnosis and County of Residence; http://www.schs.state.nc.us/SCHS/data/databook/.

According to NC SCHS, in 2011 there were 101 hospital admissions for COPD among Bertie County residents; this figure includes hospitalizations anywhere in NC (59).

In the ICD-9 system, Chronic Obstructive Pulmonary Disease and Allied Conditions appear in the code range of 490-496. This category includes chronic bronchitis, emphysema, asthma, and other forms of chronic airway obstruction. Table 154 presents data on 2012 inpatient hospitalizations of Bertie County residents for diagnoses of COPD. There were 97 inpatient hospitalizations at the four ARHS hospitals for treatment of COPD among Bertie County residents in 2012.

Table 154. Inpatient Hospitalizations of Bertie County Residents for COPD, ARHS Region Hospitals (2012)

ICD-9 Code	Diagnosis	Number of Inpatient Hospitalizations			
		VBER	VCHO	VROA	AH
490-496	Chronic obstructive pulmonary disease	39	7	51	0

Source: Vidant Bertie Hospital, Vidant Chowan Hospital, Vidant Roanoke-Chowan Hospital and Albemarle Health

Table 155 presents data on the number of emergency department admissions of Bertie County residents to the four ARHS region hospitals in 2010-2012 for diagnoses associated with COPD. For the period from 2010-2012 there was an annual average of 443 ED visits to the region's four hospitals by Bertie County residents for diagnoses of COPD.

Table 155. Emergency Department Admissions of Bertie County Residents for COPD, ARHS Region Hospitals (2010-2012)

ICD-9 Code	Diagnosis	Number of ED Admissions		
		2010	2011	2012
490-496	Chronic obstructive pulmonary disease	456	423	449

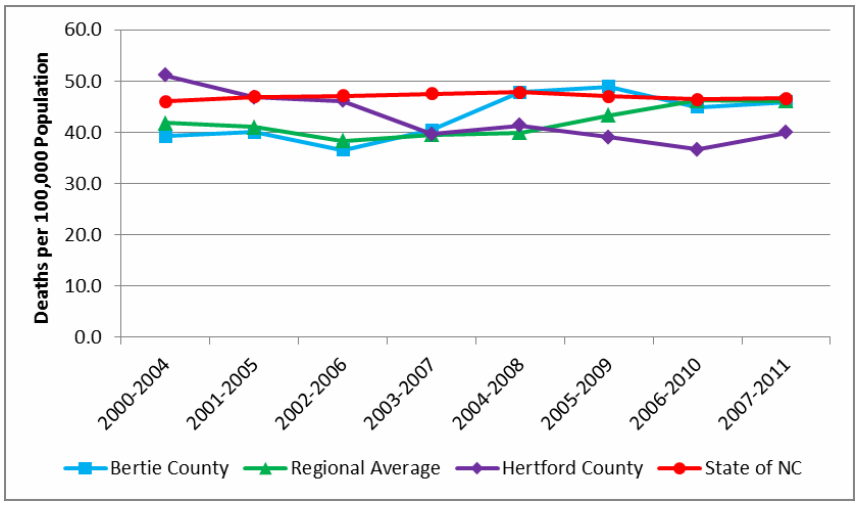
Source: Vidant Bertie Hospital, Vidant Chowan Hospital, Vidant Roanoke-Chowan Hospital and Albemarle Health

CLRD Mortality Rate Trend

Figure 28 displays the CLRD mortality rate trend over time for each of the four jurisdictions being compared in this CHA.

- The CLRD mortality rate in Bertie County, although lower than the comparable rate for NC through most of the interval cited, rose 17% overall, increasing from 39.2 in 2000-2004 to 45.9 in 2007-2011.
- The regional CLRD mortality rate also rose, by 10% between 2000-2004 and 2007-2011.
- The CLRD mortality rate in Hertford County fell 22% over the same interval.
- At the state level, the CLRD mortality rate was essentially unchanged over the period.

Figure 28. Overall CLRD Mortality Rate Trend
(Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Gender and Racial Disparities in CLRD Mortality

Table 156 presents CLRD mortality data for the aggregate period 2007-2011, stratified by race and sex.

- Among white non-Hispanic persons, the CLRD mortality rate was lowest in Hertford County and highest in the region.
- Note that due to below-threshold numbers of CLRD disease deaths among some stratified populations in Bertie County and elsewhere, mortality rates were suppressed for those groups.
- In Bertie County the CLRD mortality rate for African American non-Hispanic persons was 14% lower than the rate for white non-Hispanic persons.
- There appeared to be a gender differences in CLRD mortality in each jurisdiction, with the rate for males higher than the rate for females in every case.

Table 156. Race/Ethnicity-Specific and Sex-Specific CLRD Mortality
(Single Five-Year Aggregate Period, 2007-2011)

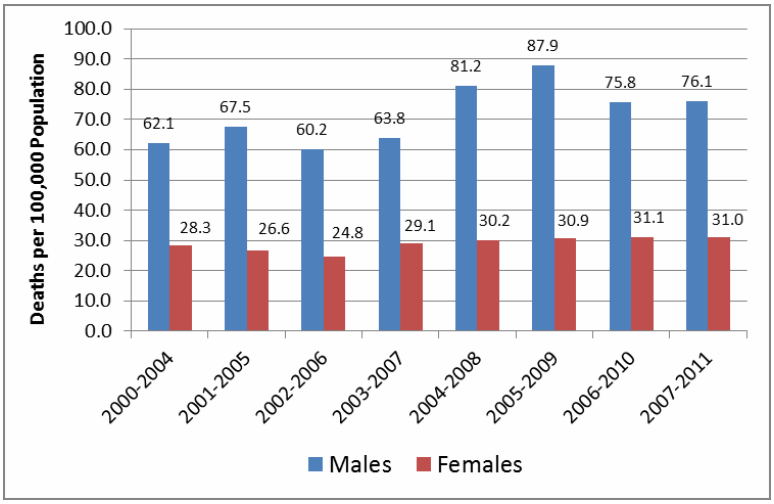
Location	Deaths, Number and Rate (Deaths per 100,000 Population)													
	White, Non-Hispanic		African American, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Male		Female		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Bertie County	31	49.7	30	42.5	0	N/A	0	N/A	36	76.1	25	31.0	61	45.9
Regional Average	41	52.9	9	42.5	0	N/A	0	N/A	29	73.4	22	35.4	51	46.1
Hertford County	31	46.3	27	34.1	1	N/A	0	N/A	25	47.5	34	36.4	59	39.9
State of NC	19,755	51.3	2,287	28.9	176	20.3	56	7.8	10,447	54.9	11,827	41.7	22,274	46.6

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race/Ethnicity Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Figure 29 depicts gender-stratified CLRD mortality rates in Bertie County for the aggregate periods 2000-2004 through 2007-2011.

- It appears that the gender difference in the CLRD mortality rate noted in Bertie County for 2007-2011 has been longstanding. The CLRD mortality rate among Bertie County males was from 2.2 to 2.8 times the comparable rate for females in each aggregate period cited. For 2007-2011 the rate for males was 2.5 times the rate for females.

Figure 29. Sex-Specific CLRD Mortality Rate Trend, Bertie County (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Table 157 presents CLRD mortality rate data fully stratified by gender and race/ethnicity for the period 2007-2011.

- Because of below-threshold numbers of CLRD deaths in some stratified categories, the NC SCHS suppressed the associated mortality rates.
- At the state level, the CLRD mortality rate was highest among white non-Hispanic males, followed by white non-Hispanic females, African American non-Hispanic males, non-Hispanic males of other races, and African American non-Hispanic females. CLRD mortality rates statewide were lowest among male and female Hispanics.
- At the state level CLRD mortality rates were higher for males than for females in every racial group *except* Hispanics, where the rate for females was higher than the comparable rate for males.

Table 157. Race/Ethnicity and Sex-Specific CLRD Mortality Rate (Single Five-Year Aggregate Period, 2007-2011)

Location	Rate (Deaths per 100,000 Population)							
	Males				Females			
	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic
Bertie County	N/A	83.2	N/A	N/A	N/A	N/A	N/A	N/A
Regional Average	78.4	83.2	N/A	N/A	42.4	N/A	N/A	N/A
Hertford County	N/A	N/A	N/A	N/A	50.8	N/A	N/A	N/A
State of NC	58.2	43.9	27.2	7.0	47.3	21.1	15.6	8.6

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County-level Data, County Health Data Book (2013), Mortality, 2007-2011 NC Resident Race/Ethnicity and Sex-Specific Age-Adjusted Death Rates, by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Unintentional Motor Vehicle Injury

The NC State Center for Health Statistics distinguishes unintentional motor vehicle injuries from all other injuries when calculating mortality rates and ranking leading causes of death. (Deaths due to all other unintentional injuries will be discussed in a subsequent section of this report.)

Mortality attributable to unintentional motor vehicle injury was the sixth leading cause of death in Bertie County, the seventh region-wide, the ninth in Hertford County, and the tenth statewide for the aggregate period 2007-2011 (cited previously).

Unintentional Motor Vehicle Injury Hospitalizations

Neither the NC SCHS nor the four regional hospitals participating in this assessment use a diagnosis specific for hospitalizations caused by motor vehicle injury. Table 158 presents the hospital discharge rate trend data from NC SCHS for a category called *Injuries and Poisonings,* which includes injuries resulting from motor vehicle crashes as well as other unintentional injuries.

- The injuries and poisonings inpatient hospitalization rate in Bertie County was the highest of the four listed in every year cited. In 2011 the Bertie County rate was almost twice the regional average.

Table 158. Injuries and Poisonings Hospital Discharge Rate Trend (2005-2011)

Location	Rate (Discharges per 1,000 Population)						
	2005	2006	2007	2008	2009	2010	2011
Bertie County	9.8	10.0	11.1	11.1	11.0	9.1	10.1
Regional Average	6.6	6.3	6.3	5.6	5.3	5.6	5.2
Hertford County	8.3	8.9	9.0	8.3	8.1	7.8	9.0
State of NC	8.5	8.6	8.6	8.5	8.3	8.2	8.2

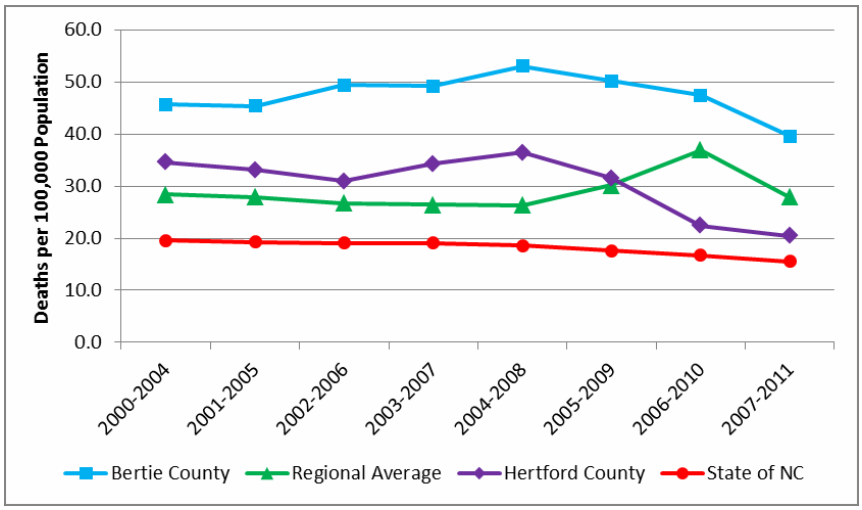
Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (2007-2013), Morbidity, Inpatient Hospital Utilization and Charges by Principal Diagnosis and County of Residence; http://www.schs.state.nc.us/SCHS/data/databook/.

Unintentional Motor Vehicle Injury Mortality Rate Trend

Figure 30 displays the unintentional motor vehicle injury mortality rate trend over time for each of the four jurisdictions being compared in this CHA.

- The unintentional motor vehicle injury mortality rate in Bertie County was significantly higher than the comparable rates in all the other jurisdictions throughout the period cited. The state rate was consistently the lowest.
- Although it rose for a span in the middle of the period cited, the unintentional motor vehicle injury mortality rate in Bertie County has fallen 25% since 2004-2008.
- At the state level, the unintentional motor vehicle injury mortality rate fell 21% over the period cited.

Figure 30. Unintentional Motor Vehicle Injury Mortality Rate Trend (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Gender and Racial Disparities in Unintentional Motor Vehicle Injury Mortality

Table 159 presents unintentional motor vehicle injury mortality data for the aggregate period 2007-2011, stratified by race and sex.

- Note that due to below-threshold numbers of unintentional motor vehicle injury deaths among racially stratified populations in Bertie County and elsewhere, mortality rates were suppressed for those groups, leaving little data to compare.
- Among white non-Hispanic persons, the unintentional motor vehicle injury mortality rate was higher across the ARHS region than statewide.
- The rates for African American non-Hispanics and white non-Hispanics statewide were nearly the same, but across the ARHS region the rate for African American non-Hispanics was 56% higher than the comparable regional rate for white non-Hispanics. Note, however, that the regional rates likely are unstable.
- Statewide, the unintentional motor vehicle injury rate for males was 2.7 *times* the comparable rate for females.

Table 159. Race/Ethnicity-Specific and Sex-Specific Unintentional Motor Vehicle Injury Mortality (Single Five-Year Aggregate Period, 2007-2011)

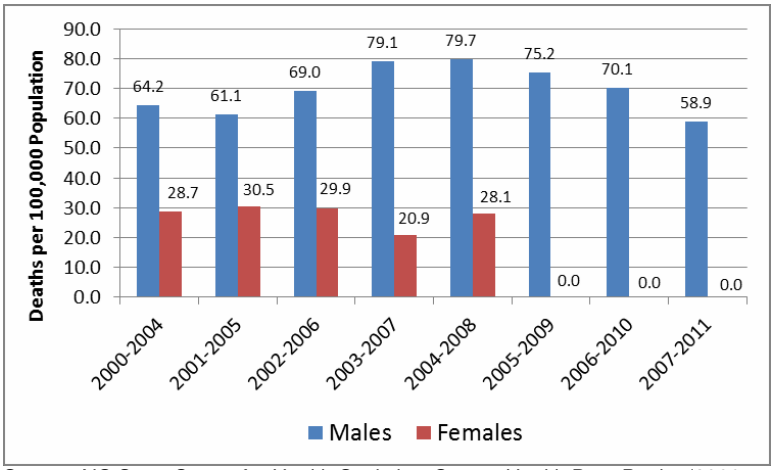
Location	Deaths, Number and Rate (Deaths per 100,000 Population)													
	White, Non-Hispanic		African American, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Male		Female		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Bertie County	13	N/A	26	41.3	1	N/A	0	N/A	29	58.9	11	N/A	40	39.6
Regional Average	12	26.5	8	41.3	0	N/A	0	N/A	16	54.2	4	N/A	20	27.9
Hertford County	7	N/A	18	N/A	0	N/A	0	N/A	17	N/A	8	N/A	25	20.4
State of NC	5,011	15.5	1,547	15.3	236	14.9	542	14.3	5,222	22.9	2,114	8.6	7,336	15.5

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race/Ethnicity Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Figure 31 depicts gender-stratified unintentional motor vehicle injury mortality rates in Bertie County for the aggregate periods 2000-2004 through 2007-2011.

- The unintentional motor vehicle injury mortality rate among males in the county was, on occasion, almost four times the comparable rate for females. Note, however, that all of the rates for females were either unstable or suppressed (as indicated by "0"), due to below-threshold numbers of deaths.

Figure 31. Sex-Specific Unintentional Motor Vehicle Injury Mortality Rate Trend, Bertie County
(Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Table 160 presents unintentional motor vehicle injury mortality rate data fully stratified by gender and race/ethnicity for the period 2007-2011.

- Because of below-threshold numbers of unintentional motor vehicle injury deaths in some stratified categories, the NC SCHS suppressed the associated mortality rates.
- Region-wide, the unintentional motor vehicle injury mortality rate for African American non-Hispanic males was 53% higher than the comparable rate for white non-Hispanic males. Note, however, that the regional average should be considered unstable.
- At the state level, the unintentional motor vehicle injury mortality rate in all racial groups was higher among males than females.
- Statewide, the unintentional motor vehicle injury mortality rate was highest among African American non-Hispanic males, followed by white non-Hispanic males, non-Hispanic members of other races, and Hispanic males. All unintentional motor vehicle injury mortality rates statewide were lowest among Hispanic females and African American non-Hispanic females.

Table 160. Race/Ethnicity and Sex-Specific Unintentional Motor Vehicle Injury Mortality Rate
(Single Five-Year Aggregate Period, 2007-2011)

Location	Rate (Deaths per 100,000 Population)							
	Males				Females			
	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic	White, Non-Hispanic	Af Amer, Non-Hispanic	Other Races, Non-Hispanic	Hispanic
Bertie County	N/A	70.0	N/A	N/A	N/A	N/A	N/A	N/A
Regional Average	45.9	70.0	N/A	N/A	N/A	N/A	N/A	N/A
Hertford County	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
State of NC	22.3	24.9	21.9	20.1	9.2	7.3	8.5	6.5

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County-level Data, County Health Data Book (2013), Mortality, 2007-2011 NC Resident Race/Ethnicity and Sex-Specific Age-Adjusted Death Rates, by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Age Disparities in Motor Vehicle Injury Mortality

The unintentional motor vehicle injury mortality rate has a strong age component.

Table 161 presents unintentional motor vehicle injury mortality data, stratified by age group. Note that this data is *not* age-adjusted.

- Statewide, the 20-39 age group has the highest motor vehicle injury mortality rate (21.1), followed by the 40-64 age group (16.0).
- Although the age-stratified mortality rates in all the counties were unstable, they appeared to follow the same pattern as NC as a whole.

Table 161. Motor Vehicle Injury Mortality, Numbers and Rates, by Age
(Five-Year Aggregate Period, 2007-2011)

Location	Number of Deaths and Unadjusted Death Rates per 100,000 Population							
	All Ages		0-19		20-39		40-64	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Bertie County	40	39.8	**5**	**20.0**	**15**	**66.7**	**13**	**35.9**
Regional Average	23	24.5	**3**	**15.3**	**7**	**32.7**	**8**	**23.7**
Hertford County	n/a	n/a	**4**	**13.0**	**10**	**35.1**	**9**	**21.8**
State of NC	7,336	15.6	1,005	7.9	2,694	21.1	2,474	16.0

Note: Bold type indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, 2013 County Health Databook, Death Counts and Crude Death Rates per 100,000 Population for Leading Causes of Death, by Age Groups, NC 2007-2011; http://www.schs.state.nc.us/SCHS/data/databook/.

Alcohol-Related Traffic Crashes

Table 162 presents several years of data on the proportion of traffic crashes that were alcohol-related.

- The percent of alcohol-related crashes varied over time without a clear pattern in all the jurisdictions.
- In Bertie County the six-year average of alcohol-related traffic crashes was 5.1%. Region-wide the comparable average was 5.7%, in Hertford County it was 4.9%, and in NC it was 5.3%

Table 162. Alcohol-Related Traffic Crashes Trend (Single Years, 2006-2011)

Location	2006			2007			2008			2009			2010			2011		
	Total Crashes			Total Crashes			Total Crashes			Total Crashes			Total Crashes			Total Crashes		
	# Reportable Crashes	# Alcohol-Related Crashes	% Alcohol-Related Crashes	# Reportable Crashes	# Alcohol-Related Crashes	% Alcohol-Related Crashes	# Reportable Crashes	# Alcohol-Related Crashes	% Alcohol-Related Crashes	# Reportable Crashes	# Alcohol-Related Crashes	% Alcohol-Related Crashes	# Reportable Crashes	# Alcohol-Related Crashes	% Alcohol-Related Crashes	# Reportable Crashes	# Alcohol-Related Crashes	% Alcohol-Related Crashes
Bertie County	512	25	4.9	508	29	5.7	442	27	6.1	513	15	2.9	510	32	6.3	424	19	4.5
Regional Average	363	22	5.9	360	23	6.5	345	18	5.2	367	21	5.8	348	20	5.7	347	18	5.1
Hertford County	470	18	3.8	480	24	5.0	465	26	5.6	485	17	3.5	428	26	6.1	401	22	5.5
State of NC	220,307	11,336	5.1	224,307	11,778	5.3	214,358	11,982	5.6	209,695	11,384	5.4	213,573	10,696	5.0	208,509	10,708	5.1
Source	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2

Note: statistical information for North Carolina Alcohol Facts was obtained from the NC Administrative Office of the Courts (AOC) and the NC Division of Motor Vehicles (DMV) for the years 2000 through 2011 (single years).
Note: Percentages appearing in **bold** type are based on fewer than 10 alcohol-related crashes per year. Such figures are likely unstable and should be interpreted with caution.
1 - UNC Chapel Hill, Highway Safety Research Center. North Carolina Alcohol Facts (2006-2011); http://www.hsrc.unc.edu/ncaf/crashes.cfm.
2 - Calculated (% alcohol related crashes is calculated by dividing # alcohol-related crashes by # reportable crashes)

Table 163 presents detail on the outcomes of alcohol-related crashes in 2011.

- In 2011 in Bertie County 4.5% of all crashes, 1.5% of all property damage only crashes, 8.9% of non-fatal crashes, and 50.0% of all fatal crashes were alcohol-related. Note however, that the figure for percent of alcohol-related fatal crashes was based on a small number of deaths, and may be unstable.
- Statewide in 2011 5.1% of all crashes, 3.5% of all property damage only crashes, 8.1% of all non-fatal crashes, and 32.6% of fatal crashes were alcohol-related.

Table 163. Outcomes of Alcohol-Related Traffic Crashes
(2011)

Location	Total Crashes			Property Damage Only Crashes			Non-Fatal Crashes			Fatal Crashes		
	# Reportable Crashes	# Alcohol-Related Crashes	% Alcohol-Related Crashes	# Reportable Crashes	# Alcohol-Related Crashes	% Alcohol-Related Crashes	# Reportable Crashes	# Alcohol-Related Crashes	% Alcohol-Related Crashes	# Reportable Crashes	# Alcohol-Related Crashes	% Alcohol-Related Crashes
Bertie County	424	19	4.5	274	4	1.5	146	13	8.9	4	2	50.0
Regional Average	347	18	5.0	236	8	2.9	108	9	9.0	3	1	28.9
Hertford County	401	22	5.5	268	10	3.7	127	8	6.3	6	4	66.7
State of NC	208,509	10,708	5.1	139,404	4,845	3.5	67,983	5,497	8.1	1,122	366	32.6
Source	1	1	2	1	1	2	1	1	2	1	1	2

Note: statistical information for North Carolina Alcohol Facts was obtained from the NC Administrative Office of the Courts (AOC) and the NC Division of Motor Vehicles (DMV) for the years 2000 through 2011 (single years).
Note: Percentages appearing in **bold** type are based on fewer than 10 alcohol-related crashes per year. Such figures are likely unstable and should be interpreted with caution.
1 - UNC Chapel Hill, Highway Safety Research Center. North Carolina Alcohol Facts (2006-2011); http://www.hsrc.unc.edu/ncaf/crashes.cfm.
2 - Calculated (% alcohol related crashes is calculated by dividing # alcohol-related crashes by # reportable crashes)

Pedestrian and Bicycle Crashes

The NC Department of Transportation, Division of Bicycle and Pedestrian Transportation maintains data on the character of crashes involving cars and bicycles and cars and pedestrians.

Table 164 displays data on automobile/pedestrian crashes in Bertie County over the period from 2006-2010.

- There were all together 29 automobile/pedestrian crashes during the period.
- The most common location for automobile/pedestrian crashes (25 of 29, or 86%) was non-intersection sites.
- The most common type of automobile/pedestrian crash involved “unusual circumstances” (9 of 29, or 31%). The second most common type of crash involved pedestrians walking along the roadway (7 of 29, or 24%).
- The motorists in automobile/pedestrian crashes were most frequently in the 20-29 age group (9 of 29, or 31%), followed by the 30-49 age group (7 of 29, or 24%).
- The pedestrians in automobile/pedestrian crashes were most frequently in the 31-50 age group (9 of 29, or 31%), followed by the 51-60 age group (6 of 29, or 21%).
- Excessive speed was indicated in only 1 of 29 crashes, or 3%.
- Five of the 29 crashes (17%) were deemed hit-and-run.
- The motorist was at fault in 10% of crashes (3 of 29) and the pedestrian was at fault in 31% of crashes (9 of 29). However, fault could not be determined or was otherwise unknown in 9% of crashes (17 of 29).

Table 164. Automobile/Pedestrian Crashes, Bertie County (2006-2010)

Parameter	2006	2007	2008	2009	2010	Total
Crash Location						
Non-Intersection	6	5	6	5	3	25
Non-Roadway	0	3	0	0	1	4
Total	6	8	6	5	4	29
Crash Type						
Backing Vehicle	0	1	0	0	0	1
Crossing Roadway – Vehicle Not Turning	2	2	0	0	0	4
Dash / Dart-Out	1	0	1	0	0	2
Off Roadway	0	1	0	0	0	1
Pedestrian in Roadway	0	1	0	1	2	4
Unusual Circumstances	1	2	2	2	2	9
Walking Along Roadway	2	1	3	1	0	7
Other / Unknown / Insufficient Details	0	0	0	1	0	1
Total	6	8	6	5	4	29
Driver Age Group						
0-19	0	1	0	1	0	2
20-29	2	2	1	2	2	9
30-49	3	1	1	2	0	7
50-69	1	0	2	0	0	3
70+	0	1	1	0	1	3
Unknown	0	3	1	0	1	5
Total	6	8	6	5	4	29
Pedestrian Age Group						
6-15	1	0	2	0	0	3
16-20	1	1	1	0	1	4
21-30	1	0	1	0	1	3
31-50	3	4	0	1	1	9
51-60	0	2	2	1	1	6
61-70	0	0	0	2	0	2
71+	0	1	0	0	0	1
Unknown	0	0	0	1	0	1
Total	6	8	6	5	4	29
Excessive Speed Indicated						
No	6	7	6	5	4	28
Yes	0	1	0	0	0	1
Total	6	8	6	5	4	29
Hit and Run						
No	6	5	5	5	3	24
Yes	0	3	1	0	1	5
Total	6	8	6	5	4	29
Fault						
Motorist at Fault	0	3	0	0	0	3
Pedestrian at Fault	4	5	0	0	0	9
Unknown	2	0	0	0	0	2
Fault Not Coded	0	0	6	5	4	15
Total	6	8	6	5	4	29

Source: NC Department of Transportation, Division of Bicycle and Pedestrian Transportation, Research and Reports, Crash Data Tool, Pedestrian Crash Data; http://www.pedbikeinfo.org/pbcat/_pedquery.cfm.

Table 165 displays data on automobile/bicycle crashes in Bertie County in the period from 2006-2010.

- There were all together 7 automobile/bicycle crashes in Bertie County during the period.

- The most common location for automobile/bicycle crashes (7 of 7, or 100%) was non-intersection sites.
- The most common type of automobile/bicycle crash involved the bicyclist riding out of a residential driveway (2 of 7, or 29%).
- The motorists in automobile/bicycle crashes were most frequently in the 70+ age group (4 of 7, or 57%), followed by the 50-69 age group (2 of 7, or 29%).
- The cyclists in automobile/bicycle crashes were most frequently in the 6-15 and 30-49 age groups (3 of 7, or 43% each) age groups.
- Excessive speed was not indicated in any of the seven crashes, and none was deemed hit-and-run.
- The bicyclist was at fault in 57% (4 of 7) of automobile/bicycle crashes, but no motorists were deemed at fault. However, fault was not coded in 43% (3 of 7) of crashes.

Table 165. Automobile/Bicycle Crashes, Bertie County (2006-2010)

Parameter	2006	2007	2008	2009	2010	Total
Crash Location						
Non-Intersection	2	2	1	n/a	2	7
Total	2	2	1	n/a	2	7
Crash Type						
Bicyclist Left Turn – Same Direction	0	1	0	n/a	0	1
Bicyclist Ride Out – Midblock - Unknown	1	0	0	n/a	0	1
Bicyclist Ride Out – Residential Driveway	0	1	0	n/a	1	2
Bicyclist Right Turn – Same Direction	0	0	1	n/a	0	1
Motorist Overtaking – Bicyclist Swerved	1	0	0	n/a	0	1
Motorist Overtaking – Misjudged Space	0	0	0	n/a	1	1
Total	2	2	1	n/a	2	7
Driver Age Group						
20-29	1	0	0	n/a	0	1
50-69	0	1	0	n/a	1	2
70+	1	1	1	n/a	1	4
Total	2	2	1	n/a	2	7
Bicyclist Age Group						
6-15	1	1	0	n/a	1	3
30-49	1	1	0	n/a	1	3
50-69	0	0	1	n/a	0	1
Total	2	2	1	n/a	2	7
Excessive Speed Indicated						
No	2	2	1	n/a	2	7
Total	2	2	1	n/a	2	7
Hit and Run						
No	2	2	1	n/a	2	7
Total	2	2	1	n/a	2	7
Fault						
Motorist at Fault	0	0	0	n/a	0	0
Bicyclist at Fault	2	2	0	n/a	0	4
Fault Not Coded	0	0	1	n/a	2	3
Total	2	2	1	n/a	2	7

Source: NC Department of Transportation, Division of Bicycle and Pedestrian Transportation, Research and Reports, Crash Data Tool, Pedestrian Crash Data; http://www.pedbikeinfo.org/pbcat/_bikequery.cfm.

All Other Unintentional Injury

This category includes death without purposeful intent due to poisoning, falls, burns, choking, animal bites, drowning, and occupational or recreational injuries; it expressly excludes unintentional injury due to motor vehicle crashes. (Death due to injury involving motor vehicles is a separate cause of death and was covered previously.)

All other unintentional injury was the seventh leading cause of death in Bertie County, the sixth region-wide, the eighth in Hertford County, and the fifth statewide in the 2007-2011 period (cited previously).

All Other Unintentional Injury Hospitalizations

Table 158, cited previously, presented the hospital discharge rate trend data from NC SCHS for a category called *injuries and poisonings,* which included hospitalizations for injuries resulting from motor vehicle crashes as well as for all other unintentional injuries. As noted previously, the injuries and poisonings inpatient hospitalization rate in Bertie County was the highest of the four listed in every year cited. In 2011 the Bertie County rate was almost twice the regional average.

Neither the NC SCHS nor the four regional hospitals participating in this assessment use a diagnosis specific for hospitalizations caused by motor vehicle injury. The region's hospitals do, however, maintain records of hospitalizations and ED admissions in an ICD-9 category called Injury and Poisoning (ICD-9 Codes 800-999).

Table 166 presents data on 2012 inpatient hospitalizations of Bertie County residents for diagnoses of injury or poisoning. Note that this list does not include all diagnoses in the category. There were 88 inpatient hospitalizations at the four ARHS hospitals for treatment of injuries and poisoning among Bertie County residents in 2012.

Table 166. Inpatient Hospitalizations of Bertie County Residents for Injury and Poisoning, ARHS Region Hospitals (2012)

ICD-9 Code	Diagnosis	Number of Inpatient Hospitalizations			
		VBER	VCHO	VROA	AH
800-829	Fractures	1	3	32	1
830-839	Dislocations	0	0	1	0
840-848	Sprains and strains	0	0	3	0
850-854	Intracranial injury	1	0	0	0
870-897	Open wounds	0	0	5	0
910-919	Superficial injury	1	0	0	0
930-939	Foreign body entering through orifice	0	0	1	0
960-979	Poisoning by drugs and medicinal substances	1	0	10	0
990--995	Other effects of external causes	2	0	2	0
996-999	Complications of surgical and medical care	0	2	22	0

Source: Vidant Bertie Hospital, Vidant Chowan Hospital, Vidant Roanoke-Chowan Hospital and Albemarle Health

According to NC SCHS, in 2011 there were 211 injury and poisoning hospitalizations among Bertie County residents; this figure includes hospitalizations anywhere in NC (59).

Table 167 presents data on the number of emergency department (ED) admissions of Bertie County residents to the four ARHS region hospitals in 2010-2012 for diagnoses associated with injury and poisoning. For the period from 2010-2012 there was an annual average of 2,224 ED visits to the region's four hospitals by Bertie County residents for diagnoses of injury and poisoning in the categories listed below.

Table 167. Emergency Department Admissions of Bertie County Residents for Injury and Poisoning, ARHS Region Hospitals (2010-2012)

ICD-9 Code	Diagnosis	Number of ED Admissions			
		2010	2011	2012	Total
800-829	Fractures	257	298	316	871
830-839	Dislocations	16	23	32	71
840-848	Sprains and strains	396	421	499	1316
850-854	Intracranial injury	13	9	12	34
860-869	Internal injury	3	3	0	6
870-897	Open wounds	387	410	483	1280
900-904	Injury to blood vessels	0	0	0	0
905-909	Late effects of external causes	0	0	0	0
910-919	Superficial injury	163	170	192	525
920-924	Contusions	365	304	352	1021
925-929	Crushing injury	6	9	2	17
930-939	Foreign body entering through orifice	50	57	57	164
940-949	Burns	41	33	31	105
950-957	Injury to nerves and spinal cord	0	0	0	0
958-959	Traumatic complications	105	173	214	492
960-979	Poisoning by drugs and medicinal substances	23	27	43	93
980-989	Toxic effects of chiefly nonmedicinal substances	48	47	42	137
990--995	Other effects of external causes	125	141	138	404
996-999	Complications of surgical and medical care	38	49	49	136
TOTAL		2036	2174	2462	6672

Source: Vidant Bertie Hospital, Vidant Chowan Hospital, Vidant Roanoke-Chowan Hospital and Albemarle Health

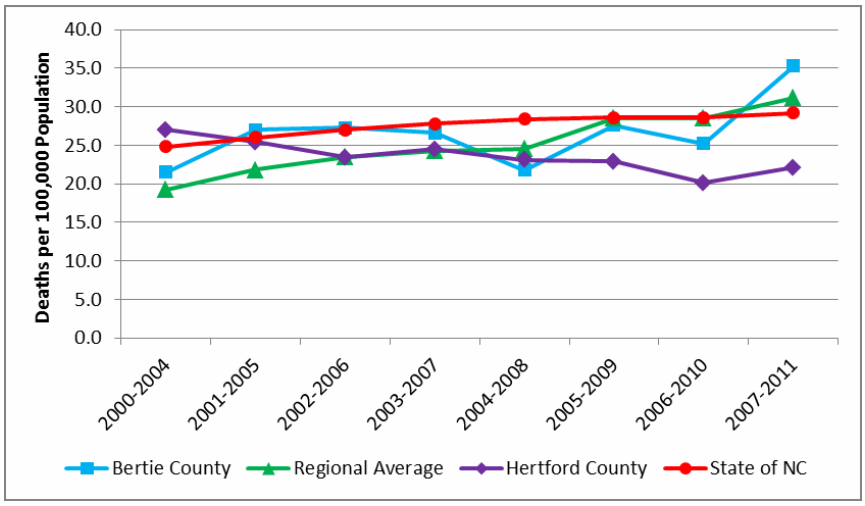
All Other Unintentional Injury Mortality Rate Trend

Figure 32 displays the all other unintentional injury mortality rate trend over time for each of the four jurisdictions being compared in this CHA.

- The all other unintentional injury mortality rate in Bertie County was quite variable over the period cited, but rose 64% overall, from 21.5 in 2000-2004 to 35.3 in 2007-2011.
- Region-wide the mortality rate for all other unintentional injuries rose 62% over the period cited, from 19.3 in 2000-2004 to 31.2 in 2007-2011.

- At the state level, the all other unintentional injury mortality rate rose 18% over the period cited.

Figure 32. Overall All Other Unintentional Injury Mortality Rate Trend (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Gender and Racial Disparities in All Other Unintentional Injury Mortality

Table 168 presents all other unintentional injury mortality data for the aggregate period 2007-2011, stratified by race and sex.

- Note that due to below-threshold numbers of all other unintentional injury deaths among some stratified populations, mortality rates were suppressed for those groups.
- Regionally, the mortality rate for African American non-Hispanics was 14% higher than the comparable rate for white non-Hispanics; at the state level, the direction of the 66% difference was the opposite.
- There appeared to be gender differences in the all other unintentional injury mortality rate in each jurisdiction with non-suppressed rates, with rates for males higher than rates for females.

Table 168. Race/Ethnicity-Specific and Sex-Specific All Other Unintentional Injury Mortality (Single Five-Year Aggregate Period, 2007-2011)

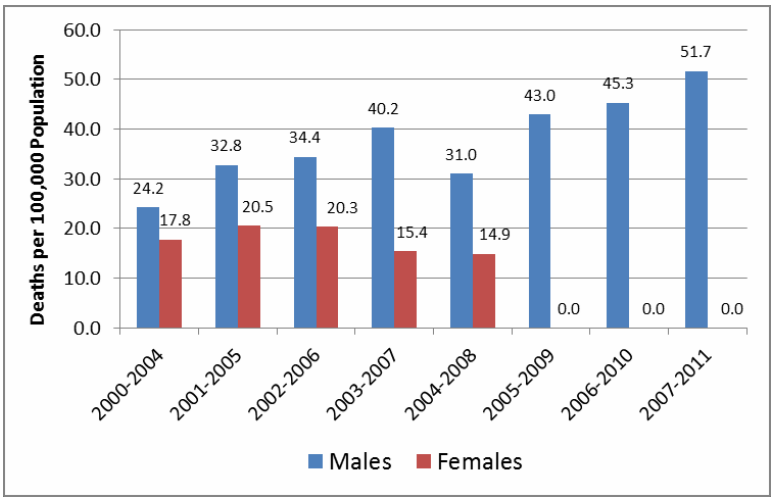
Location	Deaths, Number and Rate (Deaths per 100,000 Population)													
	White, Non-Hispanic		African American, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Male		Female		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Bertie County	16	N/A	26	36.7	0	N/A	0	N/A	26	51.7	16	N/A	42	35.3
Regional Average	22	32.1	8	36.7	0	N/A	1	N/A	18	46.7	13	19.8	31	31.2
Hertford County	11	N/A	17	N/A	1	N/A	0	N/A	19	N/A	10	N/A	29	22.1
State of NC	11,385	33.1	1,854	20.3	246	19.6	296	11.3	8,140	38.8	5,641	20.9	13,781	29.2

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race/Ethnicity Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Figure 33 depicts gender-stratified all other unintentional injury mortality rates in Bertie County for the aggregate periods 2000-2004 through 2007-2011.

- This data appears to indicate a significant gender disparity in mortality, with males experiencing the higher rate. Although the first three data points for males were unstable, the last three were not, denoting more deaths and a worsening mortality rate. Note that all of the rates for females were either unstable or suppressed (as indicated by "0"), due to below-threshold numbers of deaths.

Figure 33. Sex-Specific All Other Unintentional Injury Mortality Rate Trend, Bertie County (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Because of below-threshold numbers of all other unintentional injury deaths in all stratified categories at the county level, the NC SCHS suppressed the associated mortality rates, so there is no race and sex-specific data to compare among counties or the region.

At the state level, the all other unintentional injury mortality rate in all racial groups was higher among males than females. Statewide, the all other unintentional injury mortality rate was highest among white non-Hispanic males (43.3), followed by African American non-Hispanic males (30.1), non-Hispanic males of other races (28.2), and white non-Hispanic females (24.1). All other unintentional injury mortality rates statewide were lowest among female Hispanics (5.9), other non-Hispanic females (13.1), and African American non-Hispanic females (13.3).

Alzheimer's Disease

Alzheimer's disease is a progressive neurodegenerative disease affecting mental abilities including memory, cognition and language. Alzheimer's disease is characterized by memory loss and dementia. The risk of developing Alzheimer's disease increases with age (e.g., almost half of those 85 years and older suffer from Alzheimer's disease). Early-onset Alzheimer's has been shown to be genetic in origin, but a relationship between genetics and the late-onset form of the disease has not been demonstrated. No other definitive causes have been identified (64).

Alzheimer's disease was the eighth leading cause of death in Bertie County and the ARHS region and the sixth leading cause of death in Hertford County and NC in the 2007-2011 aggregate period (cited previously).

Alzheimer's Disease Hospitalizations

At the present time the NC SCHS does not track Alzheimer's disease-related hospitalizations.

Alzheimer's disease is coded 331.0 in the ICD-9 system; however, it can be difficult to diagnose and may first be identified as another form of dementia. Table 169 lists inpatient hospitalizations among Bertie County residents in several of the relevant ICD-9 code categories in 2012. There were 13 hospitalizations of Bertie County residents region-wide in 2012 for diagnoses associated with Alzheimer's disease and other forms of dementia.

Table 169. Inpatient Hospitalizations of Bertie County Residents for Alzheimer's Disease and Other Forms of Dementia, ARHS Region Hospitals (2012)

ICD-9 Code	Diagnosis	Number of Inpatient Hospitalizations			
		VBER	VCHO	VROA	AH
331.0	**Alzheimer's disease**	0	0	2	0
331.1	**Frontotemporal dementia**	0	0	0	0
331.2	**Senile degeneration of the brain**	0	0	0	0
290	**Dementia**	0	0	1	0
294.1	**Dementia in condition classified elsewhere**	0	0	0	0
294.2	**Dementia, unspecified**	0	0	10	0

Source: Vidant Bertie Hospital, Vidant Chowan Hospital, Vidant Roanoke-Chowan Hospital and Albemarle Health

Table 170 presents data on the number of emergency department (ED) admissions of Bertie County residents to the four ARHS region hospitals in 2010-2012 for diagnoses associated with Alzheimer's disease and other forms of dementia. For the period from 2010-2012 there was a total of 45 ED visits to the region's four hospitals by Bertie County residents for diagnoses of Alzheimer's disease or other forms of dementia.

Table 170. Emergency Department Admissions of Bertie County Residents for Alzheimer's Disease and Other Forms of Dementia, ARHS Region Hospitals (2010-2012)

ICD-9 Code	Diagnosis	Number of ED Admissions			
		2010	2011	2012	Total
331.0	Alzheimer's disease	10	8	6	24
331.1	Frontotemporal dementia	0	0	0	0
331.2	Senile degeneration of the brain	0	0	0	0
290	Dementia	0	0	0	0
294.1	Dementia in condition classified elsewhere	0	0	0	0
294.2	Dementia, unspecified	0	0	21	21

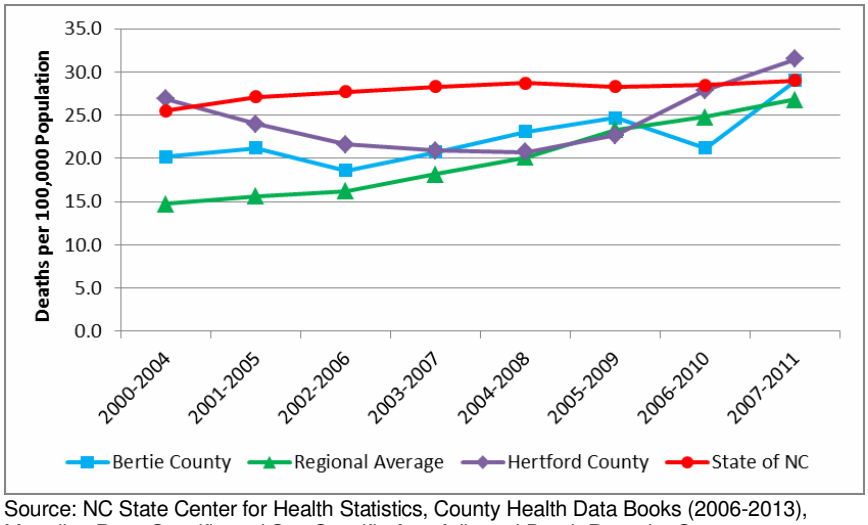
Source: Vidant Bertie Hospital, Vidant Chowan Hospital, Vidant Roanoke-Chowan Hospital and Albemarle Health

Alzheimer's Disease Mortality Rate Trend

Figure 34 displays the Alzheimer's disease mortality rate trend over time for each of the four jurisdictions being compared in this CHA.

- The Alzheimer's disease mortality rate in Bertie County was lower than the comparable rate for NC throughout most the interval cited. However, the Bertie County rate rose 44% over the period, from 20.2 in 2000-2004 to 29.0 (the same rate as for NC as a whole) in 2007-2011. Over the same period the NC rate rose 14%.
- Region-wide the Alzheimer's disease mortality rate rose 83%, from 14.7 in 2000-2004 to 26.9 in 2007-2011.

Figure 34. Overall Alzheimer's Disease Mortality Rate Trend (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Gender and Racial Disparities in Alzheimer's Disease Mortality

Table 171 presents Alzheimer's disease mortality data for the aggregate period 2007-2011, stratified by race and sex.

- Note that due to below-threshold numbers of Alzheimer's disease deaths among most stratified populations in Bertie County and elsewhere, mortality rates were suppressed for those groups.
- Among African American non-Hispanic persons, the Alzheimer's disease mortality rate was lowest statewide and highest in Bertie County.
- Statewide, the Alzheimer's disease mortality rate is highest among white non-Hispanic persons, followed by African American non-Hispanics, non-Hispanics of other races, and Hispanics.
- Statewide there appeared to be a significant gender difference in Alzheimer's disease mortality with the rate for females significantly higher than the rate for males. There were too many suppressed rates at the county level to make gender comparisons.

Table 171. Race/Ethnicity-Specific and Sex-Specific Alzheimer's Disease Mortality (Single Five-Year Aggregate Period, 2007-2011)

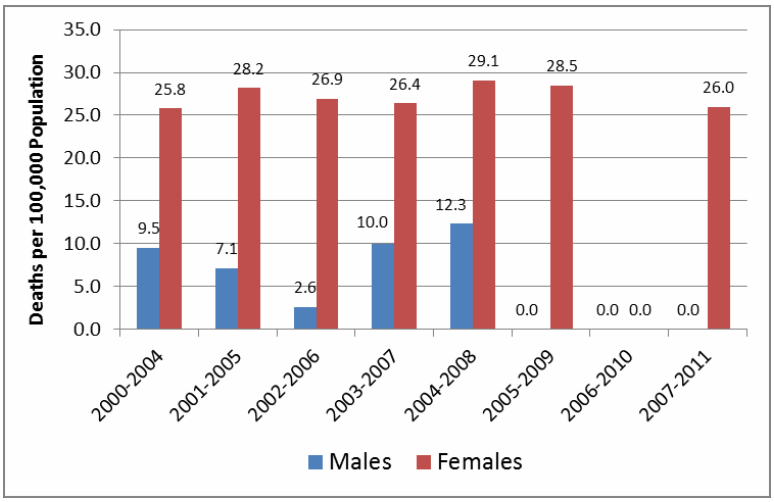
Location	Deaths, Number and Rate (Deaths per 100,000 Population)													
	White, Non-Hispanic		African American, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Male		Female		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Bertie County	16	N/A	23	32.4	0	N/A	0	N/A	16	N/A	23	26.0	39	29.0
Regional Average	20	26.3	10	30.3	0	N/A	0	N/A	9	N/A	21	28.5	30	26.9
Hertford County	32	47.4	14	N/A	0	N/A	0	N/A	13	N/A	33	32.8	46	31.5
State of NC	11,369	29.9	1,789	26.1	136	21.3	53	8.9	3,627	22.7	9,720	32.2	13,347	29.0

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race/Ethnicity Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Figure 35 depicts gender-stratified Alzheimer's disease mortality rates in Bertie County for the aggregate periods 2000-2004 through 2007-2011.

- It appears that there may be a large gender difference in Alzheimer's mortality rates in Bertie County. According to data in the graph, the Alzheimer's disease mortality rate among Bertie County females was several times the comparable mortality rate among Bertie County males. Although all the rates for males were either unstable or suppressed due to below-threshold numbers of events, this disproportional pattern of gender-based Alzheimer's disease mortality is common throughout NC.

Figure 35. Sex-Specific Alzheimer's Disease Mortality Rate Trend, Bertie County (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Because of below-threshold numbers of Alzheimer's disease deaths in all stratified categories at the county level, the NC SCHS suppressed the associated mortality rates, so there is no race and sex-specific data to compare among counties or the region.

At the state level, the Alzheimer's disease mortality rate in all racial groups was higher among females than males, and higher among whites than minorities. Statewide, the Alzheimer's diseases mortality rate was highest among white non-Hispanic females (33.4), followed by African American non-Hispanic females (28.1), non-Hispanic females of other races (24.9), white non-Hispanic males (23.4), and African American non-Hispanic males (21.2). Alzheimer's disease mortality rates statewide were lowest among female Hispanics (5.9) and non-Hispanic males of other races (15.2). The Alzheimer's disease mortality rate for Hispanic males statewide was suppressed due to a below-threshold number of deaths.

Nephritis, Nephrotic Syndrome, and Nephrosis

Nephritis refers to inflammation of the kidney, which causes impaired kidney function. Nephritis can be due to a variety of causes, including kidney disease, autoimmune disease, and infection. Nephrotic syndrome refers to a group of symptoms that include protein in the urine, low blood protein levels, high cholesterol levels, high triglyceride levels, and swelling. Nephrosis refers to any degenerative disease of the kidney tubules, the tiny canals that make up much of the substance of the kidney. Nephrosis can be caused by kidney disease, or it may be a complication of another disorder, particularly diabetes (65,66).

This composite set of kidney disorders was the ninth leading cause of death in Bertie County and region-wide, the seventh leading cause of death in Hertford County and the eighth statewide in 2007-2011 (cited previously).

Nephritis, Nephrotic Syndrome and Nephrosis Hospitalizations

Table 172 presents the hospital discharge rate trend data for the composite of kidney disorders. According to this data, kidney disease caused a higher rate of hospitalizations in Bertie County than in the ARHS region or statewide throughout the period cited.

Table 172. Nephritis, Nephrosis, Nephrotic Syndrome Hospital Discharge Rate Trend (2005-2011)

Location	Rate (Discharges per 1,000 Population)						
	2005	2006	2007	2008	2009	2010	2011
Bertie County	2.6	3.0	3.5	2.7	2.8	3.2	2.7
Regional Average	1.3	1.4	1.3	1.0	1.0	1.2	1.3
Hertford County	3.6	3.4	4.7	3.0	3.0	3.4	3.8
State of NC	1.2	1.3	1.7	1.6	1.4	1.5	1.8

Note: Bold type indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (2007-2013), Morbidity, Inpatient Hospital Utilization and Charges by Principal Diagnosis and County of Residence; http://www.schs.state.nc.us/SCHS/data/databook/.

According to NC SCHS, in 2011 there were 57 hospital admissions for nephritis, nephrotic syndrome and nephrosis among Bertie County residents; this figure includes hospitalizations anywhere in NC (59).

Diagnoses of nephritis, nephrotic syndrome and nephrosis are coded 580-589 in the ICD-9 system. Table 173 lists inpatient hospitalizations among Bertie County residents in these code categories in 2012. There were 53 hospitalizations of Bertie County residents region-wide in 2012 for diagnoses associated with nephritis, nephrotic syndrome and nephrosis.

Table 173. Inpatient Hospitalizations of Bertie County Residents for Kidney Diseases, ARHS Region Hospitals (2012)

ICD-9 Code	Diagnosis	Number of Inpatient Hospitalizations			
		VBER	VCHO	VROA	AH
580-589	Nephritis, nephrotic syndrome, nephrosis	16	1	34	2

Source: Vidant Bertie Hospital, Vidant Chowan Hospital, Vidant Roanoke-Chowan Hospital and Albemarle Health

Table 174 presents data on the number of emergency department (ED) admissions of Bertie County residents to the four ARHS region hospitals in 2010-2012 for diagnoses associated with kidney diseases. For the period from 2010-2012 there was a total of 208 ED visits to the region's four hospitals by Bertie County residents with diagnoses of nephritis, nephrotic syndrome or nephrosis.

Table 174. Emergency Department Admissions of Bertie County Residents for Kidney Diseases, ARHS Region Hospitals (2010-2012)

ICD-9 Code	Diagnosis	Number of ED Admissions			
		2010	2011	2012	Total
580-589	Nephritis, nephrotic syndrome, nephrosis	59	70	79	208

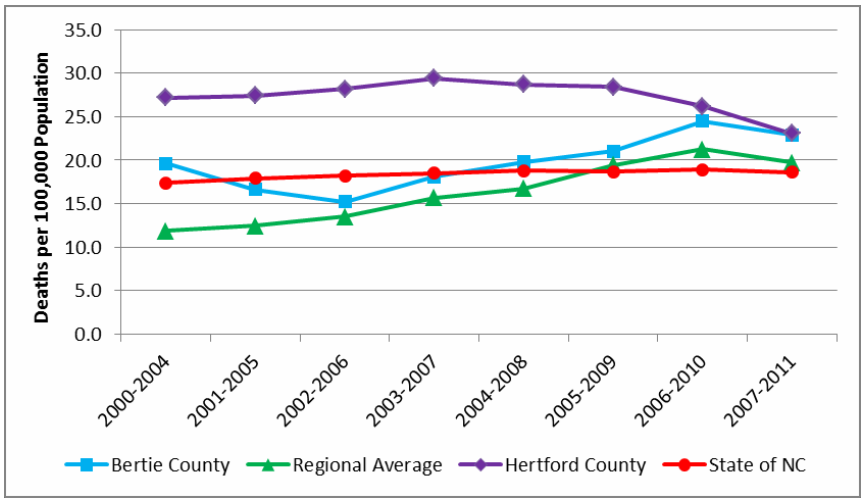
Source: Vidant Bertie Hospital, Vidant Chowan Hospital, Vidant Roanoke-Chowan Hospital and Albemarle Health

Nephritis, Nephrotic Syndrome and Nephrosis Mortality Rate Trend

Figure 36 displays the kidney disease mortality rate trend over time for each of the four jurisdictions being compared in this CHA.

- The kidney disease mortality rate was highest in Hertford County and lowest region-wide for most of the period cited.
- The nephritis, nephrotic syndrome and nephrosis mortality rate in Bertie County was lower than the comparable rate for Hertford County throughout the interval cited, but higher than the regional and state rates for most of the same interval.
- The kidney disease mortality rate in Bertie County rose 17% overall (from 19.6 to 22.9) between 2000-2004 and 2007-2011.
- Region-wide the kidney disease mortality rate rose 66%; however, the regional average rate was based on several unstable county rates.
- In Hertford County the kidney disease mortality rate fell 15% over the period cited.
- The kidney disease mortality rate for NC as a whole rose 7% overall between 2000-2004 and 2007-2011.

Figure 36. Overall Nephritis, Nephrotic Syndrome and Nephrosis Mortality Rate Trend (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Gender and Racial Disparities in Nephritis, Nephrotic Syndrome and Nephrosis Mortality

Table 175 presents kidney disease mortality data for the aggregate period 2007-2011, stratified by race and sex.

- Note that due to below-threshold numbers of kidney disease deaths among stratified populations in Bertie County and elsewhere, mortality rates were suppressed for those groups.
- Among African American non-Hispanic persons, the kidney disease mortality rate was lower in Bertie County than in NC.
- Statewide, the kidney disease mortality rate among African American non-Hispanic persons was more than twice the rate for white non-Hispanic persons.
- Statewide, the kidney disease mortality rate was significantly higher among males than among females.

Table 175. Race/Ethnicity-Specific and Sex-Specific Nephritis, Nephrotic Syndrome and Nephrosis Mortality (Single Five-Year Aggregate Period, 2007-2011)

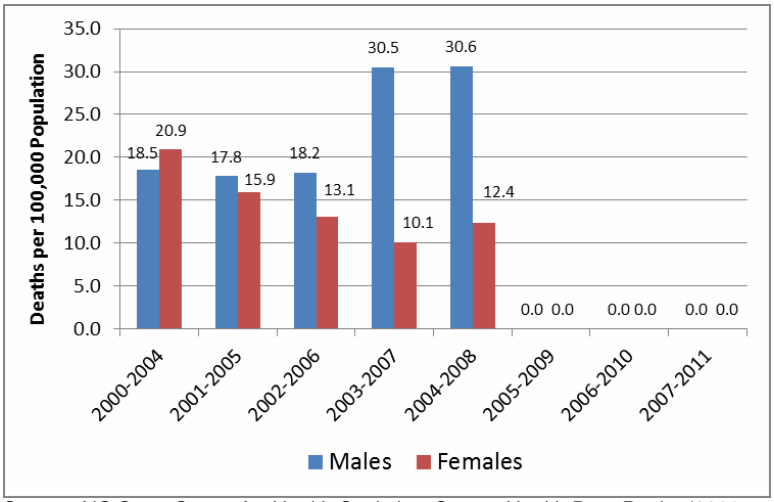
Location	Deaths, Number and Rate (Deaths per 100,000 Population)													
	White, Non-Hispanic		African American, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Male		Female		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Bertie County	9	N/A	22	30.2	0	N/A	0	N/A	16	N/A	15	N/A	31	22.9
Regional Average	10	12.6	9	30.2	0	N/A	0	N/A	9	N/A	10	17.9	19	19.8
Hertford County	13	N/A	21	27.5	0	N/A	0	N/A	14	N/A	20	20.9	34	23.1
State of NC	5,739	15.0	2,921	36.8	143	17.3	57	6.1	4,269	22.7	4,591	16.0	8,860	18.6

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race/Ethnicity Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Figure 37 depicts gender-stratified kidney disease mortality rates in Bertie County for the aggregate periods 2000-2004 through 2007-2011.

- According to the graph, the kidney disease mortality rate among Bertie County males appeared to be higher than the comparable rate among Bertie County females for most of the time periods shown. However, it should be noted that all the gender-stratified kidney disease mortality rates in the graph were either unstable or suppressed.

Figure 37. Sex-Specific Nephritis, Nephrotic Syndrome, Nephrosis Mortality Rate Trend, Bertie County
(Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Because of below-threshold numbers of kidney disease deaths in all stratified categories at the county level, the NC SCHS suppressed the associated mortality rates, so there is no race and sex-specific data to compare among counties or the region.

At the state level, the nephritis, nephrotic syndrome and nephrosis mortality rate was highest among African American non-Hispanic persons. Statewide, the kidney disease mortality rate was highest among African American non-Hispanic males (41.6); followed by African American non-Hispanic females (33.7), white non-Hispanic males (19.6), non-Hispanic females of other races (17.5), and non-Hispanic males of other races (16.7). Kidney disease mortality rates statewide were lowest among Hispanic females (4.8), Hispanic males (7.7) and white non-Hispanic females (12.2).

Chronic Liver Disease and Cirrhosis

Chronic liver disease describes an ongoing disturbance of liver function that causes illness. Liver disease, also referred to as hepatic disease, is a broad term that covers all the potential problems that cause the liver to fail to perform its designated functions. Usually, more than 75% or three quarters of liver tissue needs to be affected before decrease in function occurs. Cirrhosis is a term that describes permanent scarring of the liver. In cirrhosis, the normal liver cells are replaced by scar tissue that cannot perform any liver function (67).

Chronic liver disease and cirrhosis was an unranked cause of death in Bertie and Hertford Counties in 2007-2011 due to below-threshold numbers of deaths. It was ranked the thirteenth leading cause of death statewide in that period (cited previously). It is being discussed here in this report on the basis of causing the next highest number of deaths in Bertie County after kidney diseases.

Chronic Liver Disease and Cirrhosis Hospitalizations

Table 176 presents hospital discharge rate trend data for chronic liver disease and cirrhosis. Note that most of the county-level rates were unstable.

Table 176. Chronic Liver Disease and Cirrhosis Hospital Discharge Rate Trend (2005-2011)

Location	Rate (Discharges per 1,000 Population)						
	2005	2006	2007	2008	2009	2010	2011
Bertie County	**0.4**	**0.4**	**0.2**	0.5	**0.3**	**0.0**	**n/a**
Regional Average	**0.3**	**0.3**	**0.2**	**0.3**	**0.2**	**0.1**	**0.2**
Hertford County	**0.3**	**0.2**	**0.3**	**0.2**	**0.3**	**0.2**	**0.2**
State of NC	0.3	0.3	0.3	0.3	0.3	0.2	0.2

Note: Bold type indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (2007-2013), Morbidity, Inpatient Hospital Utilization and Charges by Principal Diagnosis and County of Residence; http://www.schs.state.nc.us/SCHS/data/databook/.

The ICD-9 Code for chronic liver disease and cirrhosis is 571, and the code for liver abscess and sequelae of chronic liver disease is 572. Table 177 presents data on 2012 hospitalizations of Bertie County residents in the region's hospitals for diagnoses in those categories. There were eight hospitalizations of Bertie County residents region-wide in 2012 for diagnoses associated with chronic liver disease and cirrhosis.

Table 177. Inpatient Hospitalizations of Bertie County Residents for Chronic Liver Disease and Cirrhosis and Sequelae, ARHS Region Hospitals (2012)

ICD-9 Code	Diagnosis	Number of Inpatient Hospitalizations			
		VBER	VCHO	VROA	AH
571	**Chronic liver disease and cirrhosis**	1	0	1	0
572	**Liver abscesses and sequelae of chronic liver disease**	4	0	2	0

Source: Vidant Bertie Hospital, Vidant Chowan Hospital, Vidant Roanoke-Chowan Hospital and Albemarle Health

Table 178 presents data on the number of emergency department (ED) admissions of Bertie County residents to the four ARHS region hospitals in 2010-2012 for diagnoses associated with chronic liver disease and cirrhosis. For the period from 2010-2012 there was a total of 26 ED visits to the region's four hospitals by Bertie County residents with diagnoses associated with chronic liver disease and cirrhosis.

Table 178. Emergency Department Admissions of Bertie County Residents for Chronic Liver Disease and Cirrhosis and Sequelae, ARHS Region Hospitals (2010-2012)

ICD-9 Code	Diagnosis	Number of ED Admissions			
		2010	2011	2012	Total
571	**Chronic liver disease and cirrhosis**	3	1	4	8
572	**Liver abscesses and sequelae of chronic liver disease**	7	5	6	18

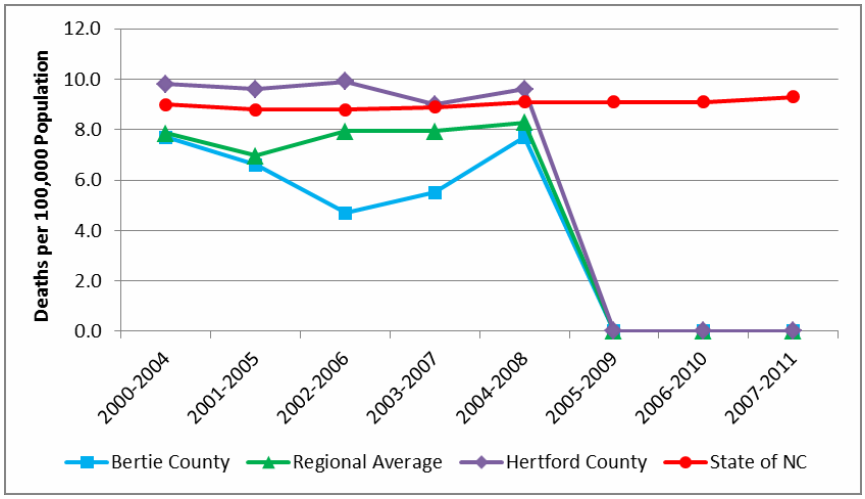
Source: Vidant Bertie Hospital, Vidant Chowan Hospital, Vidant Roanoke-Chowan Hospital and Albemarle Health

Chronic Liver Disease and Cirrhosis Mortality Rate Trend

Figure 38 displays the chronic liver disease and cirrhosis mortality rate trend over time for each of the four jurisdictions being compared in this CHA.

- All of the chronic liver disease and cirrhosis mortality rates plotted for Bertie County or the other local jurisdictions were unstable or suppressed. Given the large number of unstable or suppressed rates detailed comparisons are not warranted.
- The chronic liver disease and cirrhosis mortality rate for NC as a whole was essentially unchanged at approximately 9.0 over the period cited.

Figure 38. Overall Chronic Liver Disease and Cirrhosis Mortality Rate Trend (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Gender and Racial Disparities in Chronic Liver Disease and Cirrhosis Mortality

Table 179 presents chronic liver disease and cirrhosis mortality data for the aggregate period 2007-2011, stratified by race and sex.

- Note that due to below-threshold numbers of chronic liver disease and cirrhosis deaths among stratified populations in Bertie County and elsewhere, mortality rates were suppressed for those groups.
- Statewide, the chronic liver disease and cirrhosis mortality rate was significantly higher among males than among females, and somewhat higher among white non-Hispanics than among other racial and ethnic groups.

Table 179. Race/Ethnicity-Specific and Sex-Specific Chronic Liver Disease and Cirrhosis Mortality
(Single Five-Year Aggregate Period, 2007-2011)

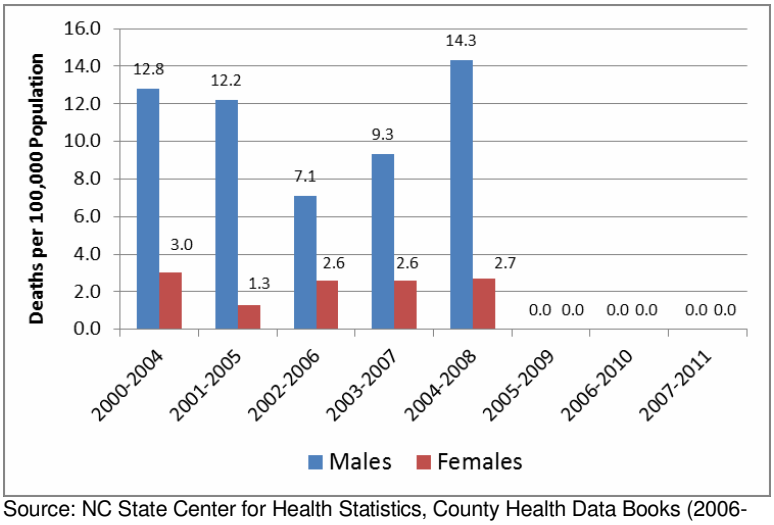
Location	Deaths, Number and Rate (Deaths per 100,000 Population)													
	White, Non-Hispanic		African American, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Male		Female		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Bertie County	8	N/A	9	N/A	0	N/A	0	N/A	12	N/A	5	N/A	17	N/A
Regional Average	8	N/A	3	N/A	0	N/A	0	N/A	8	N/A	3	N/A	11	N/A
Hertford County	11	N/A	6	N/A	0	N/A	0	N/A	10	N/A	7	N/A	17	N/A
State of NC	3,829	9.9	737	7.5	82	6.6	75	5.0	3,122	13.2	1,601	5.9	4,723	9.3

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race/Ethnicity Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Figure 39 depicts gender-stratified chronic liver disease and cirrhosis mortality rates in Bertie County for the aggregate periods 2000-2004 through 2007-2011.

- According to the graph, the chronic liver disease and cirrhosis mortality rate among Bertie County males appeared to be higher than the comparable rate among Bertie County females for all the time periods shown. However, it should be noted that all the gender-stratified mortality rates in the graph were either unstable or suppressed.

Figure 39. Sex-Specific Chronic Liver Disease and Cirrhosis Mortality Rate Trend, Bertie County
(Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Because of below-threshold numbers of chronic liver disease and cirrhosis deaths in all stratified categories at the county level, the NC SCHS suppressed the associated mortality rates, so there is no race and sex-specific data to compare among counties or the region.

At the state level, the chronic liver disease and cirrhosis mortality rate generally was higher among males than among females in each racial and ethnic group. Statewide, the chronic liver disease and cirrhosis mortality rate was highest among white non-Hispanic males (14.1), followed by African American non-Hispanic males (11.0), non-Hispanic males of other races (7.8), Hispanic males (6.3) and white non-Hispanic females (6.2). Chronic liver disease and cirrhosis mortality rates statewide were lowest among African American non-Hispanic females (4.8), and non-Hispanic females of other races (5.6). The mortality rate for Hispanic females was suppressed due to below-threshold numbers of chronic liver disease and cirrhosis deaths.

Septicemia

Septicemia is a rapidly progressing infection resulting from the presence of bacteria in the blood. The disease often arises from other infections throughout the body, such as meningitis, burns, and wound infections. Septicemia can lead to septic shock in which case low blood pressure and low blood flow cause organ failure (68). While septicemia can be community-acquired, some cases are acquired by patients hospitalized initially for other conditions; these are referred to as nosocomial infections. Sepsis is now a preferred term for septicemia, but NC SCHS continues to use the older term.

Septicemia was an unranked cause of death in Bertie County in 2007-2011 due to below-threshold numbers of deaths. It was ranked the twelfth leading cause of death in the ARHS region, tenth in Hertford County and eleventh statewide in that period (cited previously). It is being discussed here in this report on the basis of causing the next highest number of deaths in Bertie County after chronic liver disease and cirrhosis.

Septicemia Hospitalizations

Table 180 presents the hospital discharge rate trend data for septicemia. According to this data, septicemia caused a significant proportion of illness-related hospitalizations among Bertie County residents, and the county rate consistently exceeded the state rate.

Table 180. Septicemia Hospital Discharge Rate Trend (2005-2011)

Location	Rate (Discharges per 1,000 Population)						
	2005	2006	2007	2008	2009	2010	2011
Bertie County	3.9	4.1	5.0	4.2	3.9	3.7	6.4
Regional Average	**1.4**	**1.7**	**1.5**	**1.5**	**1.4**	**1.9**	**3.0**
Hertford County	3.9	5.2	5.9	4.5	3.6	5.0	6.1
State of NC	1.6	1.8	2.0	2.3	2.5	2.9	3.4

Note: Bold type indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (2007-2013), Morbidity, Inpatient Hospital Utilization and Charges by Principal Diagnosis and County of Residence; http://www.schs.state.nc.us/SCHS/data/databook/.

According to NC SCHS, in 2011 there were 133 hospital admissions for septicemia among Bertie County residents; this figure includes hospitalizations anywhere in NC (59).

The ICD-9 Code for septicemia is 038. Table 181 presents data on 2012 hospitalizations of Bertie County residents in the region's hospitals for diagnoses in that category. There were 85 hospitalizations of Bertie County residents in ARHS region hospitals in 2012 with a diagnosis of septicemia.

Table 181. Inpatient Hospitalizations of Bertie County Residents for Septicemia, ARHS Region Hospitals (2012)

ICD-9 Code	Diagnosis	Number of Inpatient Hospitalizations			
		VBER	VCHO	VROA	AH
038	Septicemia	9	3	72	1

Source: Vidant Bertie Hospital, Vidant Chowan Hospital, Vidant Roanoke-Chowan Hospital and Albemarle Health

Table 182 presents data on the number of emergency department (ED) admissions of Bertie County residents to the four ARHS region hospitals in 2010-2012 associated with a diagnosis of septicemia. For the period from 2010-2012 there was a total of 166 ED visits to the region's four hospitals by Bertie County residents with a diagnosis of septicemia.

Table 182. Emergency Department Admissions of Bertie County Residents for Septicemia, ARHS Region Hospitals (2010-2012)

ICD-9 Code	Diagnosis	Number of ED Admissions			
		2010	2011	2012	Total
038	Septicemia	28	64	74	166

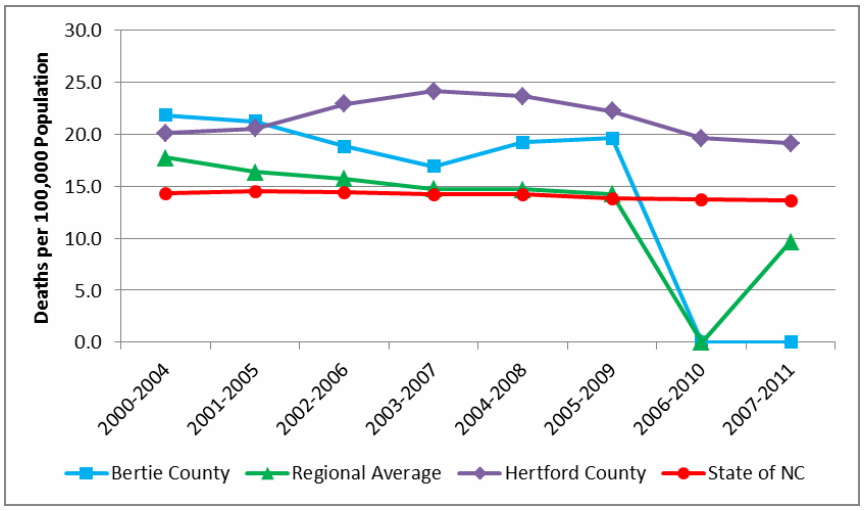
Source: Vidant Bertie Hospital, Vidant Chowan Hospital, Vidant Roanoke-Chowan Hospital and Albemarle Health

Septicemia Mortality Rate Trend

Figure 40 displays the septicemia mortality rate trend over time for each of the four jurisdictions being compared in this CHA.

- Hertford County had the highest septicemia mortality rate in every period cited except the first two, and the rate changed little over time.
- The septicemia mortality rate in Bertie County was higher than the comparable rates for the region and the state for all but the last two periods when the county rate was suppressed.
- The septicemia mortality rate for NC as a whole decreased 5% between 2000-2004 and 2007-2011.

Figure 40. Overall Septicemia Mortality Rate Trend
(Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Gender and Racial Disparities in Septicemia Mortality

Table 183 presents septicemia mortality data for the aggregate period 2007-2011, stratified by race and sex.

- Note that due to below-threshold numbers of septicemia disease deaths among stratified populations in Bertie County and elsewhere, mortality rates were suppressed for those groups.
- Statewide, the septicemia mortality rate was higher among males than among females, and higher among African American non-Hispanic persons than among white non-Hispanic persons.

Table 183. Race/Ethnicity-Specific and Sex-Specific Septicemia Mortality
(Single Five-Year Aggregate Period, 2007-2011)

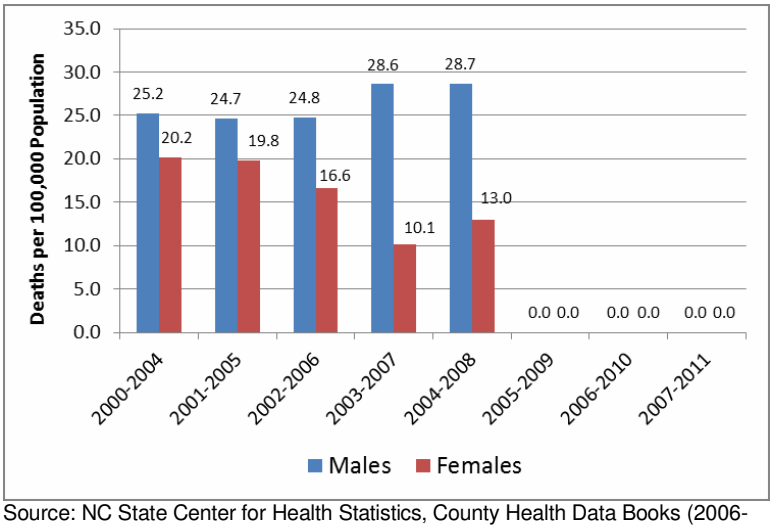
Location	Deaths, Number and Rate (Deaths per 100,000 Population)													
	White, Non-Hispanic		African American, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Male		Female		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Bertie County	7	N/A	10	N/A	0	N/A	0	N/A	11	N/A	6	N/A	17	N/A
Regional Average	9	N/A	5	N/A	0	N/A	0	N/A	7	N/A	7	N/A	14	9.7
Hertford County	8	N/A	20	26.3	0	N/A	0	N/A	15	N/A	13	N/A	28	19.1
State of NC	4,700	12.3	1,662	20.5	82	9.3	71	5.9	2,943	15.0	3,572	12.6	6,515	13.6

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race/Ethnicity Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Figure 41 depicts gender-stratified septicemia mortality rates in Bertie County for the aggregate periods 2000-2004 through 2007-2011.

- According to the graph, the septicemia mortality rate among Bertie County males appeared to be higher than the comparable rate among Bertie County females for all the time periods shown. However, it should be noted that all the gender-stratified septicemia mortality rates in the graph were either unstable or suppressed.

Figure 41. Sex-Specific Septicemia Mortality Rate Trend, Bertie County (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Because of below-threshold numbers of septicemia deaths in all stratified categories at the county level, the NC SCHS suppressed the associated mortality rates, so there is no race and sex-specific data to compare among counties or the region.

At the state level, the septicemia mortality rate generally was higher among males than among females in each racial group; among Hispanics, that pattern was reversed. Statewide, the septicemia mortality rate was highest among African American non-Hispanic males (24.0); followed by African American non-Hispanic females (18.4), white non-Hispanic males (13.5), white non-Hispanic females (11.4) and non-Hispanic males of other races (10.7). Septicemia mortality rates statewide were lowest among Hispanic males (4.9), Hispanic females (6.5), and non-Hispanic females of other races (8.2).

Pneumonia and Influenza

Pneumonia and influenza are diseases of the lungs. Pneumonia is an inflammation of the lungs caused by either bacteria or viruses. Bacterial pneumonia is the most common and serious form of pneumonia and among individuals with suppressed immune systems it may follow influenza or the common cold. Influenza (the "flu") is a contagious infection of the throat, mouth and lungs caused by an airborne virus (69).

Pneumonia/influenza was an unranked cause of death in Bertie County in 2007-2011 due to below-threshold numbers of deaths. It was ranked the eleventh leading cause of death in the ARHS region and Hertford County, and ninth statewide in that period (cited previously). It is being discussed here in this report on the basis of causing the next highest number of deaths in Bertie County after septicemia.

Pneumonia and Influenza Hospitalizations

Table 184 presents hospital discharge rate trend data. According to this data from NC SCHS, pneumonia and influenza has consistently generated a higher discharge rate in Bertie County than in the other jurisdictions.

Table 184. Pneumonia and Influenza Hospital Discharge Rate Trend (2005-2011)

Location	Rate (Discharges per 1,000 Population)						
	2005	2006	2007	2008	2009	2010	2011
Bertie County	5.3	4.8	4.2	4.2	4.3	3.6	4.5
Regional Average	4.1	3.5	2.6	3.0	2.9	2.7	2.8
Hertford County	5.3	4.1	4.1	3.6	2.5	3.3	3.3
State of NC	4.1	3.7	3.4	3.3	3.5	3.1	3.2

Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (2007-2013), Morbidity, Inpatient Hospital Utilization and Charges by Principal Diagnosis and County of Residence; http://www.schs.state.nc.us/SCHS/data/databook/.

According to NC SCHS, in 2011 there were 93 hospital admissions for pneumonia/influenza among Bertie County residents; this figure includes hospitalizations anywhere in NC (59).

The ICD-9 codes for pneumonia are 480-487 and the code for influenza is 488. Table 185 presents data on 2012 hospitalizations of Bertie County residents in the region's hospitals for diagnoses in those categories. There were 72 inpatient hospitalizations of Bertie County residents in ARHS region hospitals in 2012 with a diagnosis of pneumonia. There were no hospitalizations of Bertie County residents in 2012 associated with a diagnosis of influenza.

Table 185. Inpatient Hospitalizations of Bertie County Residents for Pneumonia and Influenza, ARHS Region Hospitals (2012)

ICD-9 Code	Diagnosis	Number of Inpatient Hospitalizations			
		VBER	VCHO	VROA	AH
480-487	Pneumonia	32	4	34	2
488	Influenza	0	0	0	0

Source: Vidant Bertie Hospital, Vidant Chowan Hospital, Vidant Roanoke-Chowan Hospital and Albemarle Health

Table 186 presents data on the number of emergency department (ED) admissions of Bertie County residents to the four ARHS region hospitals in 2010-2012 associated with a diagnosis of pneumonia or influenza. For the period from 2010-2012 there was a total of 605 ED visits to the region's four hospitals by Bertie County residents with a diagnosis of pneumonia, and 97 with a diagnosis of influenza.

Table 186. Emergency Department Admissions of Bertie County Residents for Pneumonia and Influenza, ARHS Region Hospitals (2010-2012)

ICD-9 Code	Diagnosis	Number of ED Admissions			
		2010	2011	2012	Total
480-487	Pneumonia	197	266	142	605
488	Influenza	4	91	2	97

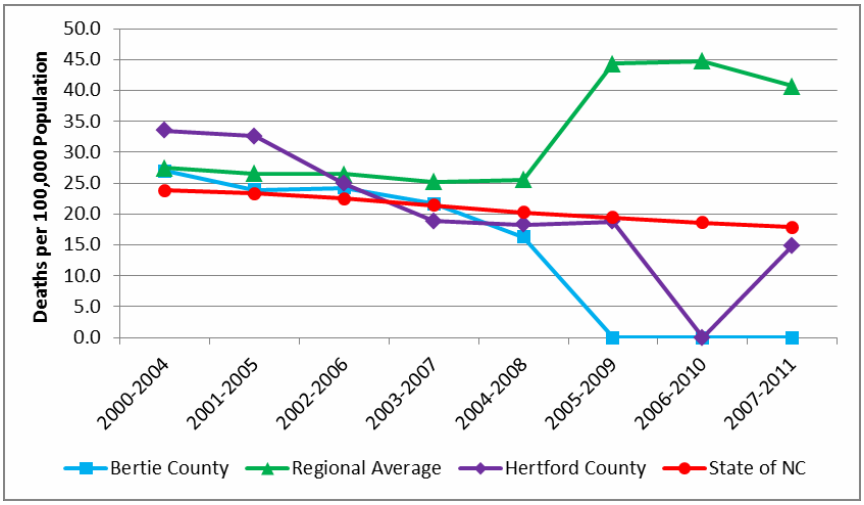
Source: Vidant Bertie Hospital, Vidant Chowan Hospital, Vidant Roanoke-Chowan Hospital and Albemarle Health

Pneumonia and Influenza Mortality Rate Trend

Figure 42 displays the pneumonia/influenza mortality rate trend over time for each of the four jurisdictions being compared in this CHA.

- The pneumonia/influenza mortality rate in Bertie County appeared to be falling (from 27.0 to 16.3, or 40%) until the last three rates were suppressed due to below-threshold numbers of deaths.
- Similarly, the pneumonia/influenza mortality rate in Hertford County seemed to be falling even more dramatically despite one suppressed data point. The decrease between the 2000-2004 rate (33.5) and the 2007-2001 rate (14.9) was 56%.
- Between the 2004-2008 and 2005-2009 aggregate periods the ARHS region experienced a large (73%) increase in the pneumonia/influenza mortality rate, from 25.6 to 44.4. While the increase stopped, the mortality rate in the region remained at the new, higher number.
- At the state level, the pneumonia/influenza mortality rate fell gradually to a current low 17.9.

Figure 42. Overall Pneumonia and Influenza Mortality Rate Trend (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Gender and Racial Disparities in Pneumonia and Influenza Mortality

Table 187 presents pneumonia/influenza mortality data for the aggregate period 2007-2011, stratified by race and sex.

- Due to below-threshold numbers of pneumonia/influenza deaths among stratified populations in Bertie County and elsewhere, mortality rates were suppressed for those groups, so no county-level comparisons are possible.
- At the state level the pneumonia/influenza mortality rate for African American non-Hispanic persons was slightly lower than the rate for white non-Hispanic persons.
- There appeared to be a gender difference in the pneumonia/influenza mortality rate in each jurisdiction with non-suppressed rates, with males suffering the higher rates.

Table 187. Race/Ethnicity-Specific and Sex-Specific Pneumonia and Influenza Mortality (Single Five-Year Aggregate Period, 2007-2011)

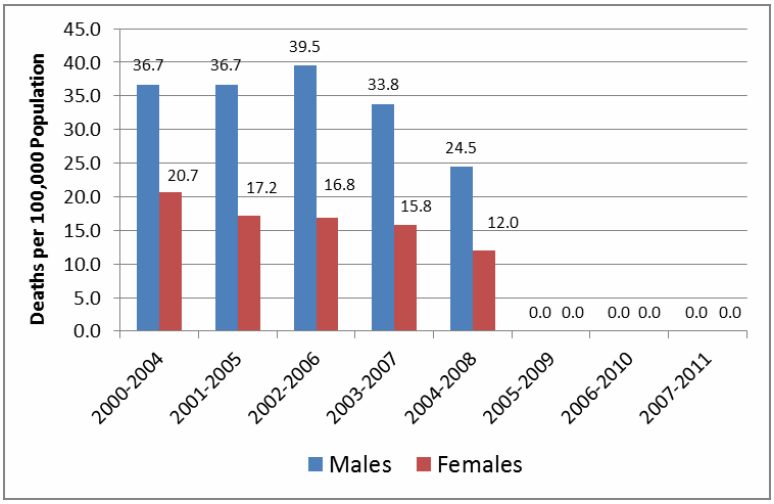
Location	Deaths, Number and Rate (Deaths per 100,000 Population)													
	White, Non-Hispanic		African American, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Male		Female		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Bertie County	8	N/A	7	N/A	0	N/A	1	N/A	9	N/A	7	N/A	16	N/A
Regional Average	21	49.9	8	N/A	0	N/A	0	N/A	13	56.7	16	47.9	30	40.7
Hertford County	11	N/A	11	N/A	0	N/A	0	N/A	8	N/A	14	N/A	22	14.9
State of NC	6,930	18.2	1,377	17.8	83	10.2	65	6.2	3,711	20.9	4,744	16.1	8,455	17.9

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race/Ethnicity Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Figure 43 depicts gender-stratified pneumonia/influenza mortality rates in Bertie County for the aggregate periods 2000-2004 through 2007-2011.

- It appeared that there has been a long-term gender difference in the pneumonia/influenza mortality rate in Bertie County. At times over the period cited below, the rate for males was twice the rate for females. It should be noted however, that all the rates for the period cited were either unstable or suppressed.

Figure 43. Sex-Specific Pneumonia and Influenza Mortality Rate Trend, Bertie County (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Because of below-threshold numbers of pneumonia/influenza deaths in all stratified categories at the county level, the NC SCHS suppressed the associated mortality rates, so there is no race and sex-specific data to compare among counties or the region.

At the state level, the pneumonia/influenza mortality rate generally was higher among males than among females in each racial group; among Hispanics, the gender-stratified rates were the same. Statewide, the pneumonia/influenza mortality rate was highest among African American non-Hispanic males (22.9); followed by white non-Hispanic males (20.9), white non-Hispanic females (16.6), African American non-Hispanic females (15.1) and non-Hispanic males of other races (10.5). Pneumonia/influenza mortality rates statewide were lowest among Hispanic males and Hispanic females (both 6.2), and non-Hispanic females of other races (9.9).

Suicide

Suicide was an unranked cause of death in Bertie County (and Hertford County) in 2007-2011 due to below-threshold numbers of deaths. It was ranked the tenth leading cause of death in the ARHS region and twelfth statewide in that period (cited previously). It is being discussed here in this report on the basis of causing the next highest number of deaths in Bertie County after pneumonia and influenza.

Suicide Hospitalizations

At the present time the NC SCHS does not track hospitalizations related to suicide or attempted suicide.

Hospitals do, however, track a diagnosis called Suicide Ideation, which is coded V62.84 in the ICD-9 system. There were no inpatient hospitalizations of Bertie County residents with that ICD-9 code at any of the four ARHS hospitals in 2012. There were, however, 47 emergency department visits by Bertie County residents coded for suicide ideation, which are listed in Table 188.

Table 188. Emergency Department Admissions of Bertie County Residents for Suicide Ideation, ARHS Region Hospitals (2010-2012)

ICD-9 Code	Diagnosis	Number of ED Admissions			
		2010	2011	2012	Total
V62.84	Suicide ideation	6	19	22	47

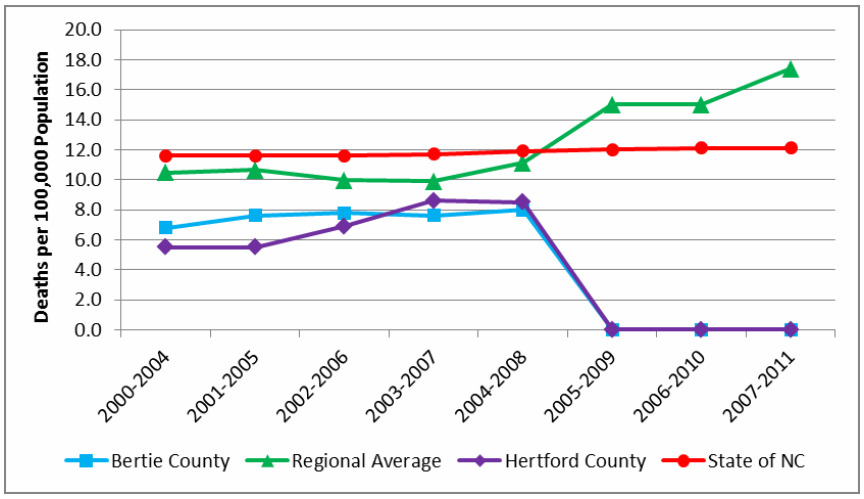
Source: Vidant Bertie Hospital, Vidant Chowan Hospital, Vidant Roanoke-Chowan Hospital and Albemarle Health

Suicide Mortality Rate Trend

Figure 44 displays the suicide mortality rate trend over time for each of the four jurisdictions being compared in this CHA.

- The suicide mortality rates for Bertie and Hertford Counties depicted in the graph all were unstable or suppressed.
- The suicide mortality rate for the region displayed a prominent increase of 66%, rising from 10.5 in 2000-2004 to 17.4 in 2007-2011. However, since the regional rate represented an average of county rates many of which were themselves unstable, the regional rate likely was unstable as well.
- The state suicide rate was relatively stable at approximately 11.8 throughout the period cited.

Figure 44. Overall Suicide Mortality Rate Trend
(Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Gender and Racial Disparities in Suicide Mortality

Table 189 presents suicide mortality data for the aggregate period 2007-2011, stratified by race and sex.

- Note that due to below-threshold numbers of suicide deaths among stratified populations in Bertie County and elsewhere, mortality rates were suppressed for those groups.
- Statewide there appeared to be a gender-based difference in suicide mortality, with the rate for males over 3½ times the comparable rate for females.

Table 189. Race/Ethnicity-Specific and Sex-Specific Suicide Mortality
(Single Five-Year Aggregate Period, 2007-2011)

Location	Deaths, Number and Rate (Deaths per 100,000 Population)													
	White, Non-Hispanic		African American, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Male		Female		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Bertie County	7	N/A	3	N/A	0	N/A	0	N/A	10	N/A	0	N/A	10	N/A
Regional Average	9	18.7	1	N/A	0	N/A	0	N/A	8	N/A	2	N/A	10	17.4
Hertford County	3	N/A	2	N/A	0	N/A	1	N/A	5	N/A	1	N/A	6	N/A
State of NC	4,986	15.0	489	4.8	123	7.7	153	4.7	4,446	19.6	1,305	5.3	5,751	12.1

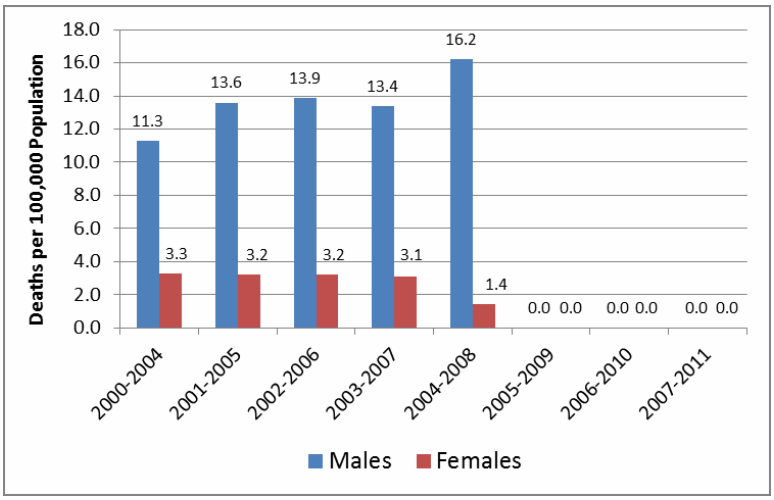
Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race/Ethnicity Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Figure 45 depicts gender-stratified suicide mortality rates in Bertie County for the aggregate periods 2000-2004 through 2007-2011.

- It appears that there was a strong gender difference in the suicide mortality rate in Bertie County. The graph demonstrates that the suicide rate among Bertie County males was several times the comparable mortality rate among Bertie County females. Although all the rates for both sexes were either unstable or suppressed due to below-threshold

numbers of deaths, this disproportionate-pattern of gender-based suicide mortality is common throughout NC.

Figure 45. Sex-Specific Suicide Mortality Rate Trend, Bertie County (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Because of below-threshold numbers of suicide deaths in all stratified categories at the county level, the NC SCHS suppressed the associated mortality rates, so there is no race and sex-specific data to compare among counties or the region.

At the state level, the suicide mortality rate was higher among males than among females in each racial group. Statewide, the suicide mortality rate was highest among white non-Hispanic males (23.9), followed by non-Hispanic males of other races (11.0), African American non-Hispanic males (8.9), Hispanic males (7.0) and white non-Hispanic females (6.8). Suicide mortality rates statewide were lowest among African American non-Hispanic females (1.4), Hispanic females (1.7) and non-Hispanic females of other races (4.7).

Acquired Immune Deficiency Syndrome (AIDS)

The human immune deficiency virus (HIV) is the virus that causes AIDS. HIV attacks the immune system by destroying CD4 positive (CD4+) T cells, a type of white blood cell that is vital to fighting off infection. The destruction of these cells leaves people infected with HIV vulnerable to other infections, diseases and other complications. The acquired immune deficiency syndrome (AIDS) is the final stage of HIV infection. A person infected with HIV is diagnosed with AIDS when he or she has one or more opportunistic infections, such as pneumonia or tuberculosis, and has a dangerously low number of CD4+ T cells (less than 200 cells per cubic millimeter of blood) (70).

AIDS was an unranked cause of death in Bertie County, Hertford County, and the ARHS region in 2007-2011 due to below-threshold numbers of deaths. It was ranked the fifteenth leading cause of death statewide in that period (cited previously). It is being discussed here in this report on the basis of causing the next highest number of deaths in Bertie County after suicide.

AIDS Hospitalizations

Table 190 presents hospital discharge rate trend data for AIDS. All the rates for Bertie County and most of the rates for the other counties were unstable or suppressed. Statewide, the AIDS hospital discharge was 0.2 for many years, but in 2011 decreased to 0.1.

Table 190. AIDS Hospital Discharge Rate Trend (2005-2011)

Location	Rate (Discharges per 1,000 Population)						
	2005	2006	2007	2008	2009	2010	2011
Bertie County	**0.4**	**0.1**	**0.3**	**0.1**	**0.1**	**0.2**	**0.2**
Regional Average	**0.4**	**0.3**	**0.2**	**0.2**	**0.2**	**0.1**	**0.1**
Hertford County	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	0.4	**0.1**
State of NC	0.2	0.2	0.2	0.2	0.2	0.2	0.1

Note: Bold type indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (2007-2013), Morbidity, Inpatient Hospital Utilization and Charges by Principal Diagnosis and County of Residence; http://www.schs.state.nc.us/SCHS/data/databook/.

According to NC SCHS, in 2011 there were four hospitalizations for HIV/AIDS among Bertie County residents; this figure includes hospitalizations anywhere in NC (59).

In the ICD-9 coding scheme, AIDS falls in the category Infectious and Parasitic Diseases, with the specific code of 042. According to data in Table 191, one resident of Bertie County was hospitalized with AIDS in an ARHS region hospital in 2012.

Table 191. Inpatient Hospitalizations of Bertie County Residents for AIDS, ARHS Region Hospitals (2012)

ICD-9 Code	Diagnosis	Number of Inpatient Hospitalizations			
		VBER	VCHO	VROA	AH
042	**Acquired immune deficiency syndrome**	0	0	0	1

Source: Vidant Bertie Hospital, Vidant Chowan Hospital, Vidant Roanoke-Chowan Hospital and Albemarle Health.

Table 192 presents data on the number of emergency department admissions of Bertie County residents to the four ARHS region hospitals in 2010-2012 associated with a diagnosis of AIDS. For the period from 2010-2012 there was a total of four ED visits to the region's four hospitals by Bertie County residents with a diagnosis of AIDS.

Table 192. Emergency Department Admissions of Bertie County Residents for AIDS, ARHS Region Hospitals (2010-2012)

ICD-9 Code	Diagnosis	Number of ED Admissions			
		2010	2011	2012	Total
042	Acquired immune deficiency syndrome	2	2	0	4

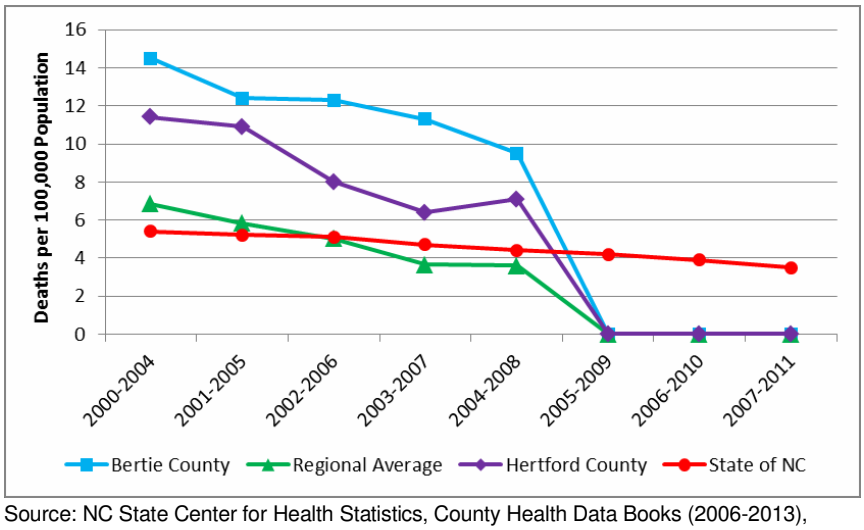
Source: Vidant Bertie Hospital, Vidant Chowan Hospital, Vidant Roanoke-Chowan Hospital and Albemarle Health

AIDS Mortality Rate Trend

Figure 46 displays the AIDS mortality rate trend over time for each of the four jurisdictions being compared in this CHA.

- The county- and regional level AIDS mortality rates for the entire period cited were unstable or suppressed. Despite the instability, it appeared that the AIDS mortality rate was decreasing in both counties and across the region.
- The AIDS mortality rate for NC as a whole decreased 35% (from 5.4 to 3.5) over the period cited.

Figure 46. Overall AIDS Mortality Rate Trend (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Gender and Racial Disparities in AIDS Mortality

Table 193 presents AIDS mortality data for the aggregate period 2007-2011, stratified by race and sex.

- Note that due to below-threshold numbers of AIDS deaths among all stratified populations at the county level, mortality rates were suppressed for those groups.
- Statewide, the AIDS mortality rate was higher among males than among females, and highest among African American non-Hispanic persons.

Table 193. Race/Ethnicity-Specific and Sex-Specific AIDS Mortality (Single Five-Year Aggregate Period, 2007-2011)

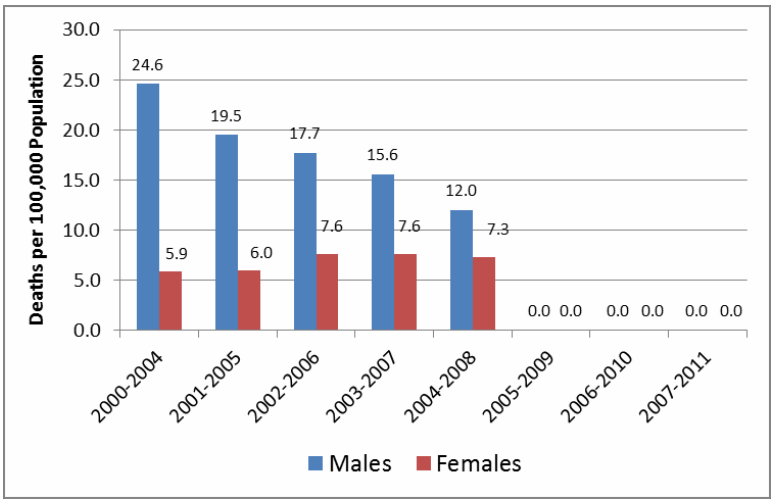
Location	Deaths, Number and Rate (Deaths per 100,000 Population)													
	White, Non-Hispanic		African American, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Male		Female		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Bertie County	1	N/A	9	N/A	0	N/A	0	N/A	7	N/A	3	N/A	10	N/A
Regional Average	1	N/A	3	N/A	0	N/A	0	N/A	3	N/A	1	N/A	4	N/A
Hertford County	1	N/A	8	N/A	0	N/A	0	N/A	6	N/A	3	N/A	9	N/A
State of NC	333	1.0	1,286	12.9	15	N/A	53	2.2	1,141	4.8	546	2.3	1,687	3.5

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race/Ethnicity Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Figure 47 depicts gender-stratified AIDS mortality rates in Bertie County for the aggregate periods 2000-2004 through 2007-2011.

- All the AIDS mortality rates shown in the graph were either unstable or suppressed, but the pattern of higher rates for males than for females is common. Noteworthy is the steady decrease in AIDS mortality among the county's males.

Figure 47. Sex-Specific AIDS Mortality Rate Trend, Bertie County (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Because of below-threshold numbers of AIDS deaths in all stratified categories at the county level, the NC SCHS suppressed the associated mortality rates, so there is no race and sex-specific data to compare among counties or the region.

At the state level, the AIDS mortality rate was highest among African American non-Hispanic males (18.2), followed by African American non-Hispanic females (8.7), Hispanic males (3.4), white non-Hispanic males (1.6) and white non-Hispanic females (0.4). AIDS mortality rates for the remaining three stratified racial and ethnic groups were suppressed due to below-threshold numbers of AIDS deaths.

Homicide

Homicide was an unranked cause of death in Bertie County, Hertford County, and the ARHS region in 2007-2011 due to below-threshold numbers of deaths. It was ranked the fourteenth leading cause of death statewide in that period (cited previously). It is being discussed here in this report on the basis of causing the next highest number of deaths in Bertie County after AIDS.

Homicide Hospitalizations

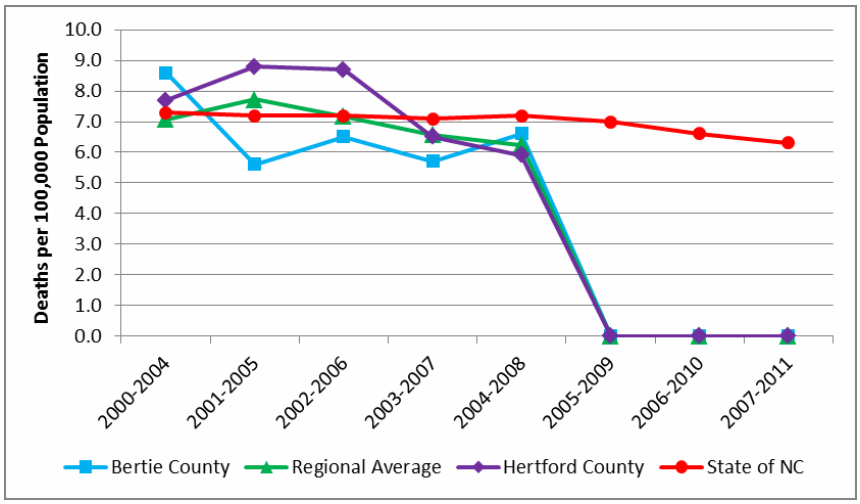
At the present time the NC SCHS does not track hospitalizations related to homicide or attempted homicide. There is an ICD-9 code descriptive of Homicidal Ideation (V62.85), and three Bertie County residents were admitted under that code to the emergency department(s) of ARHS area hospitals in the period 2010-2012.

Homicide Mortality Rate Trend

Figure 48 displays the homicide mortality rate trend over time for each of the four jurisdictions being compared in this CHA.

- The homicide mortality rate in Bertie County appeared to be lower than the comparable rates for the region and state during most of the period for which there are measured rates. It should be noted, however, that all the county-level homicide rates were either unstable or suppressed.
- At the state level, the homicide rate decreased 14% over the period cited.

Figure 48. Overall Homicide Mortality Rate Trend
(Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Gender and Racial Disparities in Homicide Mortality

Table 194 presents homicide mortality data for the period 2007-2011, stratified by race and sex.

- Note that due to below-threshold numbers of homicide deaths among stratified populations at the county level, all mortality rates were suppressed for those groups.
- Statewide, there appeared to be a gender-based difference in homicide mortality, with the rate for males over three times the comparable rate for females.

Table 194. Race/Ethnicity-Specific and Sex-Specific Homicide Mortality (Single Five-Year Aggregate Period, 2007-2011)

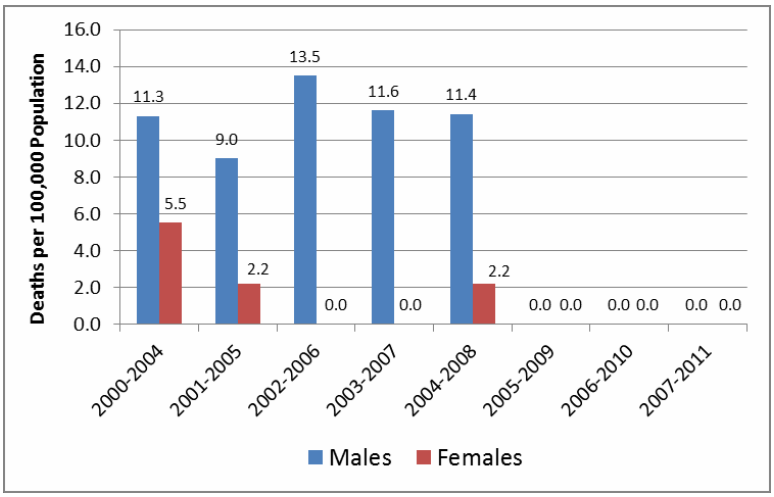
Location	Deaths, Number and Rate (Deaths per 100,000 Population)													
	White, Non-Hispanic		African American, Non-Hispanic		Other Races, Non-Hispanic		Hispanic		Male		Female		Overall	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Bertie County	2	N/A	4	N/A	0	N/A	0	N/A	3	N/A	3	N/A	6	N/A
Regional Average	1	N/A	2	N/A	0	N/A	0	N/A	2	N/A	2	N/A	4	N/A
Hertford County	2	N/A	5	N/A	0	N/A	1	N/A	7	N/A	1	N/A	8	N/A
State of NC	1,064	3.4	1,458	13.8	135	8.0	292	7.3	2,253	9.8	696	2.9	2,949	6.3

Note: The use of "n/a" in lieu of a numeral indicates a likely unstable rate based on a small (fewer than 20) number of cases.
Source: NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2011 Race/Ethnicity Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/.

Figure 49 depicts gender-stratified homicide mortality rates in Bertie County for the aggregate periods 2000-2004 through 2007-2011.

- Although all the rates for both sexes were either unstable or suppressed due to below-threshold numbers of events, the disproportional gender-based pattern of homicide mortality depicted in the graph—a mortality rate much higher among males—is common throughout NC.

Figure 49. Sex-Specific Homicide Mortality Rate Trend, Bertie County (Five-Year Aggregate Periods, 2000-2004 through 2007-2011)



Source: NC State Center for Health Statistics, County Health Data Books (2006-2013), Mortality, Race-Specific and Sex-Specific Age-Adjusted Death Rates by County; http://www.schs.state.nc.us/SCHS/data/databook/

.

Because of below-threshold numbers of homicide deaths in all stratified categories at the county level, the NC SCHS suppressed the associated mortality rates, so there is no race and sex-specific data to compare among counties or the region.

At the state level, the homicide mortality rate was highest among African American non-Hispanic males (23.9), followed by non-Hispanic males of other races (13.0), Hispanic males (11.6), African American non-Hispanic females (4.7) and white non-Hispanic males (4.5). Homicide mortality rates statewide were lowest among Hispanic females (2.0), followed by white non-Hispanic females (2.3) and non-Hispanic females of other races (3.4).

MORBIDITY

Morbidity refers generally to the current presence of injury, sickness or disease (and sometimes the symptoms and/or disability resulting from those conditions) in the living population. In this report, communicable disease (including sexually-transmitted infections), asthma, diabetes, obesity, oral health, and mental health conditions are the topics covered under morbidity.

The parameter most frequently used to describe the current extent of any condition of morbidity in a population is *prevalence*: the number of existing cases of a disease or health condition in a population at a defined point in time or during a period. Prevalence usually is expressed as a proportion, not a rate, and often represents an estimate rather than a direct count.

Communicable Disease

A communicable disease is a disease transmitted through direct contact with an infected individual or indirectly through a vector.

Sexually Transmitted Infections

The topic of communicable diseases includes sexually transmitted infections (STIs). The STIs of greatest regional interest are chlamydia and gonorrhea. HIV/AIDS is sometimes grouped with STIs, since sexual contact is one mode of HIV transmission. While AIDS, as the final stage of HIV infection, was discussed previously among the leading causes of death, HIV is discussed here as a communicable disease.

Chlamydia

Chlamydia is the most frequently reported bacterial STI in the US, with an estimated 2.8 million new cases reported in each year. Chlamydia cases frequently go undiagnosed and can cause serious problems in men and women, such as penile discharge and infertility respectively, as well as infections in newborn babies of infected mothers (71).

Table 195 presents incidence data (i.e., new cases diagnosed) on chlamydia infections.

- There is considerable variability in the annual incidence rates for chlamydia at the county level, which is not uncommon for an infectious disease (see also disclaimer, below).
- The chlamydia incidence rate in Bertie County was well above the comparable NC rate and regional average in every year cited.
- The NC Communicable Disease Branch provides the following disclaimer to this chlamydia incidence data:

  Note: chlamydia case reports represent persons who have a laboratory-confirmed Chlamydial infection. It is important to note that Chlamydial infection is often asymptomatic in both males and females and most cases are detected through screening. Changes in the number of reported cases may be due to changes in screening practices. The disease can cause serious complications in females and a number of screening programs are in place to detect infection in young women. There are no comparable screening programs for young men. For this reason, Chlamydia case reports are always highly biased with respect to gender. The North Carolina STD

Surveillance data system has undergone extensive changes since 2008 when North Carolina implemented North Carolina Electronic Disease Surveillance System (NC ESS). During this transition, Chlamydia morbidity counts for some counties may have been affected. Report totals for 2011 should be considered with this in mind. Reports are summarized by the date received in the Communicable Disease Surveillance Unit office rather than by date of diagnosis.

Table 195. Chlamydia Infection Incidence Trend (2007-2011)

Location	Incidence, All Ages, Number and Rate (New cases per 100,000 population)									
	2007		2008		2009		2010		2011	
	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate
Bertie County	102	524.1	174	893.9	137	708.2	158	742.4	175	822.3
Regional Average	62	313.1	80	385.1	93	446.8	88	405.3	96	436.4
Hertford County	101	433.9	157	672.2	189	811.8	194	786.4	221	895.9
State Total	30,612	337.7	37,885	409.7	43,734	466.2	42,167	442.2	53,854	564.8

Source: NC DHHS, Division of Public Health, Epidemiology Section, Communicable Disease Branch. Facts and Figures, Annual Reports. North Carolina 2011 HIV/STD Surveillance Report, Table 7; http://epi.publichealth.nc.gov/cd/stds/figures/std11rpt.pdf.

Gonorrhea

Gonorrhea is the second most commonly reported bacterial STI in the US. The highest rates of gonorrhea have been found in African Americans, people 20 to 24 years of age, and women, respectively. In women, gonorrhea can spread into the uterus and fallopian tubes, resulting in pelvic inflammatory disease (PID). PID affects more than one million women in the US every year and can cause tubal pregnancy and infertility in as many as 10 percent of infected women. In addition, some health researchers think gonorrhea adds to the risk of getting HIV infection (72).

Table 196 presents incidence data (i.e., new cases diagnosed) for gonorrhea infections.

- The Bertie County gonorrhea incidence rate was the highest among the four jurisdictions in every aggregate period except the last.

Table 196. Gonorrhea Infection Incidence Trend (Five-Year Aggregate Periods, 2002-2006 through 2006-2010)

Location	Incidence, All Ages, Number and Rate (New cases per 100,000 population)									
	2002-2006		2003-2007		2004-2008		2005-2009		2006-2010	
	# Cases	Rate	# Cases	Rate	# Cases	Rate	# Cases	Rate	# Cases	Rate
Bertie County	406	412.9	375	380.7	368	372.6	347	350.0	305	310.5
Regional Average	218	215.5	209	206.1	202	195.4	207	194.5	195	179.5
Hertford County	315	264.5	285	239.6	282	237.0	331	277.6	375	318.4
State of NC	77,948	182.0	79,244	181.9	79,172	178.4	78,778	174.2	77,867	168.9

Source: NC DHHS, Division of Public Health, Epidemiology Section, Communicable Disease Branch. Facts and Figures, Annual Reports. North Carolina 2011 HIV/STD Surveillance Report, Table 8; http://epi.publichealth.nc.gov/cd/stds/figures/std11rpt.pdf.

Table 197 presents the 2006-2010 racially/ethnically-stratified gonorrhea infection rates for the four jurisdictions.

- In every jurisdiction the highest gonorrhea incidence occurred among the African American non-Hispanic population, in which group the incidence rate was approximately 8 times the comparable rate among the white non-Hispanic population.
- Gonorrhea incidence rates for other stratified groups at the local level were unstable.
- Statewide the lowest gonorrhea incidence rates occurred among Hispanics and white non-Hispanic persons.

Table 197. Gonorrhea Infection Incidence Rate, Stratified by Race/Ethnicity (Single Five-Year Aggregate Period, 2006-2010)

Location	Incidence, All Ages, Number and Rate (New cases per 100,000 population)									
	Total		White, Non-Hispanic		African American, Non-Hispanic		Other, Non-Hispanic		Hispanic	
	# Cases	Rate	# Cases	Rate	# Cases	Rate	# Cases	Rate	# Cases	Rate
Bertie County	305	310.5	**17**	**49.1**	284	460.7	**1**	**169.8**	**3**	**219.0**
Regional Average	195	179.5	34	51.6	158	430.1	0	*39.2*	2	*178.7*
Hertford County	375	318.4	34	82.8	334	462.6	**1**	**51.4**	**6**	**233.4**
State Total	77,867	168.9	16,488	52.9	58,041	581.6	1,485	96.7	1,853	54.2

Note: Rates for 5-year aggregates appearing in **bold** type are based on fewer than 20 cases per five year period. Such rates are unstable and should be interpreted with caution.
Note: Regional arithmetic mean rates appearing in *italic* type include more than three unstable county rates. Such mean rates likely are unstable and should be interpreted with caution.
Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (2012). NC Resident Gonorrhea Cases and Rates per 100,000 Population (years and counties as noted): http://www.schs.state.nc.us/schs/data/databook/.

Human Immune Deficiency Virus (HIV)

From the standpoint of traditional incidence rates, the numbers of new HIV cases in small counties like Bertie County and its comparators tend to be low and yield extremely variable or suppressible rates. (For example, there were 13 new HIV cases in Bertie County in the three-year period from 2009-2011.) Instead, Table 198 approximates a *prevalence* estimate for each jurisdiction on the basis of how many persons are living with HIV on a particular date.

- As of December 31, 2011 there were 75 persons with HIV/AIDS living in Bertie County.

Table 198. HIV Prevalence: HIV and AIDS Cases Living as of December 31, 2011 (By County of Residence)

Location	Number of Living Cases
Bertie County	75
Regional Average	37
Hertford County	82
State of NC	26,168

Source: NC DHHS, Division of Public Health, Epidemiology Section, Communicable Disease Branch. Facts and Figures, Annual Reports. North Carolina 2011 HIV/STD Surveillance Report, Table 1; http://epi.publichealth.nc.gov/cd/stds/figures/std11rpt.pdf.

Other Communicable Diseases

Communicable diseases fall in the ICD-9 code category 001-139, Infectious and Parasitic Diseases. Table 199 presents a summary of 2012 inpatient hospitalizations of Bertie County residents in the four region hospitals for *selected diagnoses* of infectious and parasitic diseases.

- In 2012 there were 11 hospitalizations among Bertie County residents for diagnoses of infectious and parasitic diseases in *selected categories listed below*. The majority of the hospitalizations (7 of 11) were associated with intestinal infectious diseases.
- There was one hospitalization for whooping cough, a vaccine-preventable communicable disease.

Table 199. Inpatient Hospitalizations of Bertie County Residents for Infectious and Parasitic Diseases, ARHS Region Hospitals (2012)

ICD-9 Code	Diagnosis	2012 IP Hospitalizations				
		VBH	VCH	VRCH	AH	Total
001-009	**Intestinal Infectious Diseases**					
008.4	Other specified bacteria (incl. Staphylococcus)	0	7	0	0	7
009	Ill-defined intestinal infections	0	1	0	0	1
030-041	**Other bacterial diseases**					
033	Whooping cough	0	1	0	0	1
050-059	**Viral diseases generally accompanied by exanthem**					
053	Herpes zoster (incl. shingles)	0	1	0	0	1
070-079	**Other diseases due to viruses and chlamydiae**					
070	Viral hepatitis	0	1	0	0	1

Source: Vidant Bertie Hospital, Vidant Chowan Hospital, Vidant Roanoke-Chowan Hospital and Albemarle Health.

Table 200 lists a summary of emergency department visits to all four area hospitals by Bertie County residents with diagnoses of infectious and parasitic diseases *in selected categories*. Note that this list includes only common and familiar diagnoses; there are too many diagnoses in total to include them all. The period covered is 2010-2012.

- Among the 170 ED admissions for the intestinal infectious diseases listed, the most common diagnosis (153 cases) was non-specific viral enteritis.
- Among the 160 ED admissions for other bacterial diseases listed, the most common diagnosis (149 cases) was streptococcal sore throat.
- Among the 72 ED admissions for viral diseases generally accompanied by exanthema (rash) listed, the most common diagnosis (46 cases) was *Herpes zoster* (e.g., shingles).
- Among the 397 ED admissions for other diseases due to viruses and chlamydiae listed, the most common diagnosis by far (393 cases) was unspecified viral infection.
- Of the 147 ED admissions for mycoses (fungal infections) listed, 73 were diagnosed as dermatophytoses (i.e., fungal infections of the skin) and 74 were diagnosed as candidiasis (i.e., yeast infections).

Table 200. Emergency Department Admissions of Bertie County Residents for Infectious and Parasitic Diseases, ARHS Region Hospitals (2010-2012)

ICD-9 Code	Diagnosis	Emergency Department Visits		
		2010	2011	2012
001-009	**Intestinal Infectious Diseases**			
008.4	Other specified bacteria (incl. Staphylococcus)	1	1	7
008.6	Viral enteritis	0	0	2
008.8	Viral enteritis	51	48	54
009	Ill-defined intestinal infections	2	2	2
030-041	**Other bacterial diseases**			
033	Whooping cough	0	0	1
034.0	Streptococcal sore throat	63	44	42
034.1	Scarlet fever	0	3	1
041	Bacterial infections in conditions classified elsewhere	3	1	2
050-059	**Viral diseases generally accompanied by exanthem**			
052	Chickenpox	0	2	1
053	Herpes zoster (incl. shingles)	11	18	17
054	Herpes simplex	8	5	10
070-079	**Other diseases due to viruses and chlamydiae**			
070	Viral hepatitis	0	1	1
075	Infectious mononucleosis	0	0	2
079.99	Unspecified viral infection	178	119	96
080-088	**Rickettsiosis and other arthropod-borne diseases**			
082.0	Rocky Mountain spotted fever	0	2	0
090-099	**Syphilis and other venereal diseases**	1	1	3
110-118	**Mycoses**			
110	Dermatophytosis	24	32	17
112	Candidiasis	23	26	25
130-136	**Other infectious and parasitic diseases**			
133.0	Scabies	4	5	4

Source: Vidant Bertie Hospital, Vidant Chowan Hospital, Vidant Roanoke-Chowan Hospital and Albemarle Health.

Asthma

Asthma, a disease that affects the lungs, is one of the most common long-term diseases of children, but adults also can have asthma. Asthma causes wheezing, breathlessness, chest tightness, and coughing at night, early in the morning, or upon exertion. The symptoms result because the sides of the airways in the lungs swell and the airways shrink. Less air gets in and out of the lungs, and mucous naturally produced by the body further clogs the airways. In most cases, the cause of asthma is unknown (although there likely is a hereditary component), and there is no known cure. Asthma can be hard to diagnose (73).

Table 201 presents hospital discharge data for asthma, stratified by age, for the period 2008-2010. (At the present time this is the best measure of asthma prevalence available from NC SCHS.)

- All the county-level data exhibited considerable variability due to small and varying numbers of asthma cases and resulting unstable rates.
- At the state level, the discharge rate for youth (age 0-14) was from 32% to 54% higher than the discharge rate for all ages.

Table 201. NC Hospital Discharges with a Primary Diagnosis of Asthma, Numbers and Rates per 100,000 (2008-2010)

Location	Discharges, Number and Rate (Discharges per 100,000 Population)											
	2008				2009				2010			
	All Ages		Age 0-14		All Ages		Age 0-14		All Ages		Age 0-14	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Bertie County	28	139.5	**1**	**26.0**	54	268.5	**6**	**160.0**	46	216.1	**8**	**224.2**
Regional Average	25	123.0	5	128.2	22	108.4	4	85.4	22	117.2	5	131.7
Hertford County	20	84.2	**3**	**71.2**	21	87.5	**5**	**117.3**	13	52.7	**1**	**23.5**
State of NC	10,644	115.4	2,778	151.9	10,986	117.1	3,228	175.0	10,470	109.8	3,152	166.0

Note: Bold type indicates a likely unstable rate based on a small (fewer than 10) number of cases.
Source: NC State Center for Health Statistics, County-level Data, County Health Data Book (2010-2013), Morbidity, Asthma Hospital Discharges (Total and Age 10-14) per 100,000 Population (years and counties as noted); http://www.schs.state.nc.us/SCHS/data/databook.

In the ICD-9 system, asthma carries the code 493 and is classified within the broad category, Chronic Obstructive Pulmonary Disease and Allied Conditions (code range of 490-496). Table 202 presents data on 2012 inpatient hospitalizations of Bertie County residents for a diagnosis of asthma. There were 57 inpatient hospitalizations at the four ARHS hospitals for treatment of asthma among Bertie County residents in 2012.

Table 202. Inpatient Hospitalizations of Bertie County Residents for Asthma, ARHS Region Hospitals (2012)

ICD-9 Code	Diagnosis	Number of Inpatient Hospitalizations			
		VBER	VCHO	VROA	AH
493	**Asthma**	35	4	18	0

Source: Vidant Bertie Hospital, Vidant Chowan Hospital, Vidant Roanoke-Chowan Hospital and Albemarle Health

Table 203 presents data on the number of emergency department admissions of Bertie County residents to the four ARHS region hospitals in 2010-2012 for diagnoses associated with asthma. For the period from 2010-2012 there was a total of 656 ED visits to the region's four hospitals by Bertie County residents for treatment of asthma; this computes to an annual average of 219 visits.

Table 203. Emergency Department Admissions of Bertie County Residents for Asthma, ARHS Region Hospitals (2010-2012)

ICD-9 Code	Diagnosis	Number of ED Admissions		
		2010	2011	2012
493	**Asthma**	184	215	257

Source: Vidant Bertie Hospital, Vidant Chowan Hospital, Vidant Roanoke-Chowan Hospital and Albemarle Health

Diabetes

Diabetes mellitus, or simply, diabetes, is a group of diseases characterized by high blood glucose levels that result from defects in the body's ability to produce and/or use insulin. Diabetes can cause serious health complications including heart disease, blindness, kidney failure, and lower-extremity amputations. There are three major types of diabetes:

Type 1 diabetes results from the body's failure to produce insulin. This form was previously referred to as "insulin-dependent diabetes mellitus" or "juvenile diabetes". *Type 2 diabetes* results from insulin resistance, a condition in which cells fail to use insulin properly, sometimes combined with an absolute insulin deficiency. This form was previously referred to as "non-insulin-dependent diabetes mellitus" or "adult-onset diabetes". The third main form, *gestational diabetes,* occurs when pregnant women without a previous diagnosis of diabetes develop a high blood glucose level. Gestational diabetes is caused by the hormones of pregnancy or a shortage of insulin. Although this form of diabetes usually goes away after the baby is born, a woman who has had it is more likely to develop Type 2 diabetes later in life.

In recent years, medical professionals have begun to diagnose *prediabetes*, a condition in which blood glucose levels are higher than normal but not high enough for a diagnosis of diabetes. People with prediabetes are at increased risk for developing Type 2 diabetes and for heart disease and stroke (74).

As discussed previously in the mortality section of this report, diabetes was the 3rd leading cause of death in Bertie County for the 2007-2011 aggregate period, causing 76 deaths. However, diabetes is a chronic condition, and, as noted above can have multiple significant health effects on its sufferers long before it might cause death.

Table 204 presents estimates of the prevalence of diagnosed diabetes in adults age 20 and older in Bertie County and its local comparators (state-level data was not available).

- Hertford County had the highest prevalence of diagnosed diabetes in adults in 2005-2006 and Bertie County had the highest prevalence thereafter.
- The five-year average prevalence in Bertie County was 14.2%; the five-year average for the region was 11.4%, and the five-year average for Hertford County was 14.1%.
- In Bertie County the prevalence of diabetes increased 10% between 2005 and 2009; regionally the increase was 11%. In Hertford County diabetes prevalence *decreased* 5%.

Table 204. Adult Diagnosed Diabetes Prevalence Estimate Trend (Five Single Years, 2005 through 2009)

Location	Estimated Prevalence, Number and Percent (Age-adjusted)									
	2005		2006		2007		2008		2009	
	#	%	#	%	#	%	#	%	#	%
Bertie County	1,964	13.9	1,944	13.8	1,928	14.0	1,952	13.8	2,199	15.3
Regional Average	1,457	11.1	1,502	11.1	1,533	11.3	1,578	11.3	1,718	12.3
Hertford County	2,506	14.6	2,574	14.9	2,335	13.7	2,276	13.3	2,369	13.8
State Total	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Note: The prevalence of diagnosed diabetes and selected risk factors by county was estimated using data from CDC's Behavioral Risk Factor Surveillance System (BRFSS) and data from the U.S. Census Bureau's Population Estimates Program. Three years of data were used to improve the precision of the year-specific county-level estimates of diagnosed diabetes and selected risk factors.
Source: Centers for Disease Control and Prevention, Diabetes Data and Trends, *County Level Estimates of Diagnosed Diabetes - of Adults in North Carolina, 2005-2010;* http://apps.nccd.cdc.gov/ddtstrs/default.aspx.

As noted previously in the discussion of diabetes mortality, in 2012 there were 35 inpatient hospitalizations at area hospitals among Bertie County residents for diabetes, and from 2010-2012 there were 540 ED admissions associated with the diagnosis of diabetes.

Obesity

Obesity in Adults

Table 205 presents recent estimates of the prevalence of diagnosed obesity in adults age 20 and older in the three local jurisdictions being compared in this CHA. Comparable state-level data was not available.

- Hertford County had the highest prevalence of diagnosed obesity in adults in 2005 and Bertie County had the highest prevalence thereafter. No state-level data was available.
- The five-year average prevalence of adult obesity in Bertie County was 39.5%; in Hertford County the five-year average prevalence was 34.4%, and regionally the five-year average prevalence was 31.5%.
- It is noteworthy that the prevalence of diagnosed obesity in adults increased in all three jurisdictions over the period cited. In Bertie County, the estimated prevalence of diagnosed obesity in adults increased 10% between 2005 and 2009. The increase region-wide was 13% and in Hertford County the increase was 3%.

Table 205. Adult Diagnosed Obesity Prevalence Estimate Trend (Five Single Years, 2005 through 2009)

Location	Estimated Prevalence, Number and Percent (Age-adjusted)									
	2005		2006		2007		2008		2009	
	#	%	#	%	#	%	#	%	#	%
Bertie County	4,839	34.2	4,933	35.1	5,094	37.0	5,083	35.9	5,377	37.5
Regional Average	3,934	29.5	4,207	30.7	4,401	31.9	4,490	32.0	4,730	33.4
Hertford County	5,903	34.3	5,915	34.1	5,865	34.3	5,839	34.0	6,080	35.4
State Total	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Note: The prevalence of diagnosed diabetes and selected risk factors by county was estimated using data from CDC's Behavioral Risk Factor Surveillance System (BRFSS) and data from the U.S. Census Bureau's Population Estimates Program. Three years of data were used to improve the precision of the year-specific county-level estimates of diagnosed diabetes and selected risk factors.
Source: Centers for Disease Control and Prevention, Obesity Data and Trends, *County Level Estimates of Diagnosed Obesity - of Adults in North Carolina, 2005-2010;* http://apps.nccd.cdc.gov/ddtstrs/default.aspx.

Obesity in Children

The NC Healthy Weight Initiative, using the NC Nutrition and Physical Activity Surveillance System (NC NPASS), collects height and weight measurements from children seen in NC DPH-sponsored WIC and Child Health Clinics, as well as some school-based Health Centers (75). (It is important to note that this data is not necessarily representative of the county-wide population of children.) This data is used to calculate Body Mass Indices (BMIs) in order to gain some insight into the prevalence of childhood obesity. BMI is a calculation relating weight to height by the following formula:

BMI = (weight in kilograms) / (height in meters)

For children, a BMI in the 95th percentile or above is considered “obese” (formerly defined as “overweight”), while BMIs that are between the 85th and 94th percentiles are considered “overweight” (formerly defined as “at risk for overweight”).

Table 206 presents NC NPASS data for children ages 2-4 for the period 2007-2011.

- In Bertie County the percent of both overweight and obese 2-4 year olds decreased or remained the same every year after 2008. Between 2008 and 2011 the net decrease in obesity in this age group was 29%; the net decrease in overweight was 21%.
- Region-wide between 2008 and 2011 there was a net decrease of 3% in the prevalence of obesity and 2% decrease in the prevalence of overweight among 2-4 year olds in the program.
- At the state-level, there appeared to be a slight increase in the percent of children in the "obese" category, from 15.3% in 2007 to 15.7% in 2011, but the change may not be significant.

Table 206. Prevalence of Obesity and Overweight in Children, Ages 2-4, NC NPASS (2007-2011)

Location	Prevalence of Overweight and Obesity in Children Ages 2-4, by Percent									
	2007		2008		2009		2010		2011	
	Overweight	Obese	Overweight	Obese	Overweight	Obese	Overweight	Obese	Overweight	Obese
Bertie County	11.6	16.9	15.4	17.8	13.3	17.2	12.7	14.0	12.1	12.7
Regional Average	14.9	15.2	15.5	17.1	14.0	15.1	15.6	16.2	15.2	16.6
Hertford County	14.6	11.3	13.0	14.5	13.0	10.1	17.1	12.9	15.2	14.2
State of NC	15.7	15.3	16.3	15.4	15.8	15.4	16.1	15.6	16.2	15.7

Note: Figures denoted in **bold** type indicate percentages based on fewer than 10 cases.
Note: NC-NPASS data for children ages 2 to 4 are reflective of the population at 185% of the federal poverty level. Approximately 85 to 95% of the children included in the NC-NPASS sample for ages 2 to 4 are WIC participants. Since children are not eligible to participate in WIC once they become 5 years old, the sample size for NC-NPASS data received from the child health clinics was not adequate to calculate county-specific rates for children age 5 and older.
Source: Eat Smart, Move More, Data on Children and Youth in NC, North Carolina Nutrition and Physical Activity Surveillance System (NC-NPASS), NC-NPASS Data (2005-2011), counties and age groups as noted; http://www.eatsmartmovemorenc.com/Data/ChildAndYouthData.html.

Oral Health

Adult Oral Health

Counties are expected to use data from the annual Behavioral Risk Factor Surveillance System (BRFSS) survey to describe dental problems in the community. In NC, the BRFSS survey results are compiled on the county level only for large jurisdictions or metropolitan areas. Bertie County responses are combined among those of 40 other counties in an eastern NC region BRFSS data summary. Consequently, it is necessary to look elsewhere to adequately describe the dental needs of adults in Bertie County.

As noted in the Health Resources section of this report the ratio of dentists-to-population in Bertie County is very low, and there are only one or two dentists in the county that accept Medicaid and/or HealthChoice patients. With resources for dental care in such short supply, it might be expected that county residents would have some difficulty accessing needed dental care.

Sometimes an indicator of a dental care access problem is the frequency with which the local emergency department is used as a dental provider. The ICD-9 Codes 520-525, Diseases of Oral Cavity, Salivary Glands, and Jaws, include diagnoses typically associated with dentistry (e.g., dental caries, gingivitis, periodontitis, tooth loss, etc.). Table 207 lists ED visits to the region's four hospitals in 2010-2012 by Bertie County residents for conditions associated with this code category.

- For the three year period 2010-2012, Bertie County residents made a total of 383 visits (an annual average of 128 visits) to local EDs for attention to dental problems.

Table 207. Emergency Department Admissions of Bertie County Residents for Dental Conditions, ARHS Region Hospitals (2010-2012)

ICD-9 Code	Diagnosis	Number of ED Admissions		
		2010	2011	2012
520.6	Disturbance in tooth eruption	1	2	0
520.7	Teething syndrome	1	1	2
521.0	Dental caries	12	4	15
522	Diseases of pulp and periapical tissue	40	28	42
523	Gingival and periodontal disease	7	4	10
524	Dentofacial anomalies, including malocclusion	1	3	5
525	Other diseases of the teeth and supporting structure	55	67	83
Total		117	109	157

Source: Vidant Bertie Hospital, Vidant Chowan Hospital, Vidant Roanoke-Chowan Hospital and Albemarle Health

A search of the hospital databases revealed the following payers for the ED visits listed above:

- Self-pay covered an annual average of 50% of the ED visits listed
- Medicaid covered an annual average of 32% of those visits
- Medicare covered an annual average of 17% of those visits.

Note that those three payers covered almost all the ED visits for dental diagnoses.

Since cost of dental care can be daunting but is covered for Medicaid-eligible patients, it is interesting to examine the proportion of Medicaid clients who actually receive dental services. Table 208 presents dental service utilization figures for Medicaid clients for SFY2010.

- From this data it appears that Medicaid-eligible persons under the age of 21 in Bertie County receive dental services at a 34% higher proportion than Medicaid-eligible persons age 21 and older. The direction, if not the proportion, of difference is the same in the other three jurisdictions.

Table 208. Dental Service Utilization by Medicaid Recipients, by Age Group (SFY2010)

Location	SFY2010					
	<21 Years Old			21+ Years Old		
	# Eligible for Services	# Receiving Services	% Eligibles Receiving Services	# Eligible for Services	# Receiving Services	% Eligibles Receiving Services
Bertie County	3,189	1,239	38.9	2,895	840	29.0
Regional Average	2,256	773	34.6	1,716	464	26.5
Hertford County	3,686	1,498	40.6	3,158	873	27.6
State Total	1,113,692	541,210	48.6	679,139	214,786	31.6

Source: NC DHHS, NC Division of Medical Assistance, Statistics and Reports, County Specific Snapshots for NC Medicaid Services (2008 and 2011); http://www.ncdhhs.gov/dma/countyreports/index.htm.

Child Oral Health

Each year about 200,000 NC elementary school children participate in dental screenings, also called assessments. Public health dental hygienists screen for tooth decay and other disease conditions in individuals. The hygienists refer children who have dental problems and need dental care to public or private practice dental care professionals (76).

Table 209 presents partial summaries of the screenings conducted in SY2005-2006 through SY2008-2009.

- An average of 99.3% of kindergarteners, and 93.5% of fifth graders in Bertie County were screened over the period cited. Statewide, an average of 81.0% of kindergarteners and 76.8% of fifth graders were screened over the same period.
- An average of 30.3% of kindergarteners and 6.5% of fifth graders in Bertie County had untreated decay over the period cited. Statewide, an average of 18.8% of kindergarteners and 4.3% of fifth graders had untreated decay over the same period.

Table 209. Child Dental Screening Summary (SY2005-2006 through SY2008-2009)

Location	School Dental Screening Results															
	SY2005-2006				SY2006-2007				SY2007-2008				SY2008-2009			
	Kindergarten		5th Grade		Kindergarten		5th Grade		Kindergarten		5th Grade		Kindergarten		5th Grade	
	% Screened	% Untreated Decay	% Screened	% Untreated Decay	% Screened	% Untreated Decay	% Screened	% Untreated Decay	% Screened	% Untreated Decay	% Screened	% Untreated Decay	% Screened	% Untreated Decay	% Screened	% Untreated Decay
Bertie County	101.0	36.0	94.0	9.0	97.0	30.0	92.0	5.0	96.0	26.0	96.0	7.0	103.0	29.0	92.0	5.0
Regional Average	99.6	29.0	96.7	7.3	95.1	22.9	94.7	5.7	93.3	20.9	95.1	4.3	96.6	21.0	94.4	2.9
Hertford County	93.0	36.0	96.0	8.0	101.0	26.0	85.0	4.0	91.0	24.0	91.0	7.0	87.0	23.0	94.0	4.0
State of NC	82.0	21.0	76.0	5.0	78.0	19.0	81.0	4.0	81.0	18.0	73.0	4.0	83.0	17.0	77.0	4.0

Source: NC DHHS, Oral Health, References and Statistics, School Oral Health Assessments, NC County Level Oral Health Assessment Data by Year (years and counties as noted); http://www.ncdhhs.gov/dph/oralhealth/stats/MeasuringOralHealth.htm.

Mental Health

With the mental health system in the state—and Bertie County—still coping with system reform growing pains, mental health merits a closer look.

As previously noted in the Mental Health Services and Facilities section of this report, the unit of NC government responsible for overseeing mental health services is the Division of Mental Health, Developmental Disabilities and Substance Abuse Services (DMH/DD/SAS).

In 2001, the NC General Assembly passed the Mental Health System Reform Act, which ended the previous system by which quasi-independent local entities such as counties and regional agencies delivered mental health services by directly employing the care providers. The new law essentially privatized mental health services by requiring the governmental local management entities (LMEs) to contract with other public or private providers or provider groups to serve area residents in need of mental health services. The local counties and regions no longer directly controlled the provision of services, but instead were responsible for managing provider contracts (77).

The local management entity serving Bertie County (as well as the rest of the ARHS region) is East Carolina Behavioral Health (ECBH), which is headquartered in Greenville, NC.

One goal of mental health reform in NC was to refocus mental health, developmental disabilities and substance abuse care in the community instead of in state mental health facilities. The data below clearly illustrates how utilization of state-level services has diminished.

Mental Health Service Utilization

Table 210 presents an annual summary of the number of persons in each jurisdiction served by LMEs/Area Programs from 2005 through 2010.

- In Bertie County the number of persons served by mental health area programs fluctuated from year to year over the period cited, but fell 31% overall between 2005 and 2010. Corresponding decreases were 7% regionally, and 39% in Hertford County.
- Statewide, there was a decrease in number of persons served between 2007 and 2008, but the state totals have since recovered near to 2005 levels.

Table 210. Persons Served by Mental Health Area Programs/Local Management Entities (2005-2010)

Location	Number of Persons Served					
	2005	2006	2007	2008	2009	2010
Bertie County	1,357	1,206	1,294	1,152	1,317	936
Regional Average	758	724	730	730	733	706
Hertford County	1,738	1,543	1,575	1,535	1,697	1,060
State of NC	337,676	322,397	315,338	306,907	309,155	332,796

Note: The figures in the table represent all clients of a community-based Area Program for mental health, developmental disabilities, and drug and alcohol abuse active at the beginning of the state fiscal year plus all admissions during the year. Also included are persons served in three regional mental health facilities. Multiple admissions of the same client are counted multiple times. County of residence is reported at the time of admission. State figures include clients reported to reside out-of-state and sometimes contains individuals of Unknown County of residence.
Source: Log Into North Carolina (LINC) Database, Topic Group Vital Statistics and Health (Data Item 519); http://data.osbm.state.nc/pls/linc/dyn_linc_main.show.

Since mental health reform in NC, only the most seriously ill mental health patients qualify for treatment at state psychiatric hospitals. The individual must be assessed as meeting the diagnostic criteria for (1) acute schizophrenia and/or other psychotic disorders, (2) acute mood disorders or (3) the combination of both, with or without medical and/or physical complications that are within the parameters of what the state hospital can manage (78).

At the present time, there are three state-operated psychiatric hospitals in NC: Broughton Hospital (Morganton), Central Regional Hospital (Butner), and Cherry Hospital (Goldsboro).

Table 211 presents a summary of the number of persons in each jurisdiction served in NC State Psychiatric Hospitals for the period from 2005 through 2010.

- The number of persons served in state psychiatric hospitals decreased in every jurisdiction over the period cited. In Bertie County, the net decrease from 2005 to 2010 was 63%; in Hertford County the net decrease was 65%, and statewide it was 61%.

Table 211. Persons Served in NC State Psychiatric Hospitals (2005-2010)

Location	Number of Persons Served					
	2005	2006	2007	2008	2009	2010
Bertie County	41	61	54	23	13	15
Regional Average	41	39	33	18	13	9
Hertford County	34	43	32	23	12	12
State of NC	18,435	18,292	18,498	14,643	9,643	7,188

Note: Sometimes referred to as "episodes of care", these counts reflect the total number of persons who were active (or the resident population) at the start of the state fiscal year plus the total of first admissions, readmissions, and transfers-in which occurred during the fiscal year at the three state alcohol and drug treatment centers. Excluded are visiting patients and outpatients. Multiple admissions of the same client are counted multiple times. County of residence is reported at the time of admission. North Carolina data include clients reported to reside out-of-state.
Source: Log Into North Carolina (LINC) Database, Topic Group Vital Statistics and Health (Data Item 519); http://data.osbm.state.nc/pls/linc/dyn_linc_main.show.

Table 212 presents ED admissions of Bertie County residents to the four ARHS region hospitals relative to ICD-9 Codes 290-319, Mental, Behavioral and Neurodevelopmental Disorders for the period 2010-2012. Of specific interest in this case are the numbers of admissions for mental health diagnoses excluding dementias, which were covered in the discussion of Alzheimer's disease in the mortality section of this report. The period covered is 2010-2012.

- In the period cited there was a total of 982 ED visits by Bertie County residents to area EDs with complaints diagnosed as mental or behavioral disorders. The total computes to an annual average of 327 ED visits. Note that the diagnoses listed are only *some* of those included in the entire category.
- The most commonly diagnosed mental health problem among this patient group was anxiety, dissociative or somatoform disorders, which represented 26% of all the visits listed in the table.

Table 212. Emergency Department Admissions of Bertie County Residents for Mental, Behavioral and Neurodevelopmental Disorders, ARHS Region Hospitals (2010-2012)

ICD-9 Code	Diagnosis	Number of ED Admissions			
		2010	2011	2012	Total
290-319	**Mental, Behavioral and Neurodevelopmental Disorders**				
291	Alcohol-induced mental disorders	0	2	2	4
292	Drug-induced mental disorders	6	5	2	13
295	Schizophrenic disorders	57	87	43	187
296	Episodic mood disorders (including bipolar disorder)	57	46	68	171
298	Other nonorganic and unspecified mood disorders	22	17	15	54
300	Anxiety, dissociative and somatoform disorders	85	85	88	258
303	Alcohol dependence syndrome	2	4	5	11
304	Drug dependency	2	5	9	16
305	Non-dependent abuse of drugs	35	68	65	168
311	Depressive disorder, not elsewhere classified	45	27	28	100
Total		311	346	325	982

Developmental Disabilities Service Utilization

According to NC MH/DD/SAS, *developmental disability* means a severe, chronic disability of a person which:

a. is attributable to a mental or physical impairment or combination of mental and physical impairments;
b. is manifested before the person attains age 22, unless the disability is caused by a traumatic head injury and is manifested after age 22;
c. is likely to continue indefinitely;
d. results in substantial functional limitations in three or more of the following areas of major life activity: self-care, receptive and expressive language, capacity for independent living, learning, mobility, self-direction and economic self-sufficiency; and
e. reflects the person's need for a combination and sequence of special interdisciplinary, or generic care, treatment, or other services which are of a lifelong or extended duration and are individually planned and coordinated; or
f. when applied to children from birth through four years of age, may be evidenced as a developmental delay (79).

The NC Council on Developmental Disabilities estimated that as of January, 2011 there were over 167,000 persons in NC with a developmental disability (80).

Although community care is preferred where available, the state currently operates three facilities serving the developmentally disabled: Caswell Developmental Center (Kinston), Murdoch Developmental Center (Butner), and J. Iverson Riddle Developmental Center (Morganton).

Table 213 presents a summary of the persons in each jurisdiction served in NC State Developmental Centers for the period from 2005 through 2010.

- The numbers of persons in the three local jurisdictions served in state developmental centers were small and variable, and demonstrated no definitive pattern.
- At the state level, the number of persons served decreased by 37% between 2005 and 2010.

Table 213. Persons Served in NC State Developmental Centers (2005-2010)

Location	Number of Persons Served					
	2005	2006	2007	2008	2009	2010
Bertie County	11	11	0	3	13	12
Regional Average	6	6	1	1	6	6
Hertford County	5	3	0	1	6	4
State of NC	2,172	1,690	1,713	1,409	1,404	1,375

Source: NC Division of Mental Health, Developmental Disabilities and Substance Abuse Services, Statistics and Publications, Reports and Publications, Statistical Reports, Developmental Centers (FY2005-FY2010); http://www.ncdhhs.gov/mhddsas/statspublications/reports/index.htm#statisticalreports.

Substance Abuse Service Utilization

Alcohol and Drugs

There are three state-operated residential alcohol and drug abuse treatment centers (ADATC): the Julian F. Keith ADATC (Black Mountain), the R.J. Blackley ADATC (Butner), and the Walter B. Jones ADATC (Greenville).

Table 214 presents a summary of the persons in each jurisdiction served in NC State ADATC for the period from 2005 through 2010.

- The numbers of persons in the three local jurisdictions served in state alcohol and drug abuse treatment centers were small and variable, and demonstrated no definitive pattern.
- At the state level, the number of persons served increased by 20% between 2005 and 2010.

Table 214. Persons Served in NC Alcohol and Drug Abuse Treatment Centers (2005-2010)

Location	Number of Persons Served					
	2005	2006	2007	2008	2009	2010
Bertie County	6	7	6	15	8	13
Regional Average	11	14	9	19	21	13
Hertford County	6	4	5	7	18	17
State of NC	3,732	4,003	3,733	4,284	4,812	4,483

Sometimes referred to as "episodes of care", these counts reflect the total number of persons who were active (or the resident population) at the start of the state fiscal year plus the total of first admissions, readmissions, and transfers-in which occurred during the fiscal year at the three state alcohol and drug treatment centers. Excluded are visiting patients and outpatients. Multiple admissions of the same client are counted multiple times. County of residence is reported at the time of admission. North Carolina data include clients reported to reside out-of-state.
Source: Log Into North Carolina (LINC) Database, Topic Group Vital Statistics and Health (Data Item 518); http://data.osbm.state.nc/pls/linc/dyn_linc_main.show.

Table 212, cited previously, presented 2010-2012 ED admissions of Bertie County residents for certain mental and behavioral health diagnoses. Of specific interest here are the numbers of admissions for alcohol- and drug-related diagnoses.

- In the period cited, there were four total admissions under ICD-9 Code 291, Alcohol-induced mental disorders, and 13 total admissions under ICD-9 Code 292, Drug-induced mental disorders.
- There also were 11 total admissions under ICD-9 Code 303, Alcohol dependence syndrome, and 16 total admissions under ICD-9 Code 304, Drug dependency.
- There were 168 total admissions under ICD-9 Code 305, Non-dependent abuse of drugs.

Substance Use and Abuse among Youth

Tobacco

While there is no Bertie County-specific data on youth tobacco use there is regional data through a youth tobacco survey conducted annually through the NC DPH Tobacco Prevention and Control Branch. Bertie County is included among the 37 counties in the Branch's Eastern/Coastal Region (Region 1).

Table 215 presents results of the 2011 NC Youth Tobacco Survey conducted among middle school and high school students in Region 1.

- The data reveal that nearly 20% of current sixth-graders reported having ever used tobacco products, and the "ever" use of smoking products rose by grade.
- Current use of any kind of tobacco products was nearly 5% among sixth-graders and rose by grade throughout middle and high school.
- Higher proportions of middle-school students than high school students reported first using cigarettes before age 11 and the younger the middle school student, the higher the proportion.

- An average of nearly 70% of students overall reported media/advertising influence regarding tobacco, but an average of only 41% overall reported exposure to anti-tobacco education in school in the past year.
- An average of 61% of middle school students who were current smokers reported that they wanted to quit smoking cigarettes; among high school students who were current smokers an average of 43% reported they wanted to quit.

Table 215. North Carolina Youth Tobacco Survey Results, Region 1 (2011)

Topic/Behavior	Percent Response, by Grade						
	6	7	8	9	10	11	12
Ever used tobacco products, any kind	19.6	31.5	35.5	47.4	54.9	51.8	65.3
Currently use tobacco products, any kind	4.8	9.6	14.6	16.3	22.6	27.3	35.0
First used cigarettes before age 11	71.0	34.2	27.8	29.1	19.5	10.4	14.7
Report media/advertising influence regarding tobacco	70.1	70.1	72.6	70.7	68.4	73.6	68.5
Report exposure to anti-tobacco education in school in past year	48.1	48.2	44.5	51.3	40.2	26.8	26.4
Current smokers who want to stop smoking cigarettes	83.5	46.7	53.4	29.8	40.8	48.6	52.3

Source: Detailed Summary Tables-Eastern/Coastal Region (Region 1), NC Youth Tobacco Survey, 2011, Middle School and High School Tables. NC Department of Health and Human Services, Surveillance and Evaluation Team, Tobacco Prevention and Control Branch.

CHAPTER FIVE: ENVIRONMENTAL DATA

AIR QUALITY

Air Quality Index

Nationally, outdoor air quality monitoring is the responsibility of the Environmental Protection Agency (EPA). In NC, the agency responsible for monitoring air quality is the Division of Air Quality (DAQ) in the NC Department of Environment and Natural Resources (NC DENR).

The impact of air pollutants in the environment is described on the basis of emissions, exposure, and health risks. A useful measure that combines these three parameters is the EPA's Air Quality Index (AQI). The EPA monitors and catalogues AQI measurements at the county level, but not in all counties. There is no AQI monitoring station in or near Bertie County.

Toxic Releases

Over 4 billion pounds of toxic chemicals are released into the nation's environment each year. The US Toxic Releases Inventory (TRI) program, created in 1986 as part of the Emergency Planning and Community Right to Know Act, is the tool the EPA uses to track these releases. Approximately 20,000 industrial facilities are required to report estimates of their environmental releases and waste generation annually to the TRI program office. These reports do not cover all toxic chemicals, and they omit pollution from motor vehicles and small businesses (81).

Table 216 lists the TRI chemicals released in Bertie County in 2011 and the facilities responsible for releasing them.

- Bertie County ranked seventh out of 86 counties in NC subject to toxic releases.
- The chemicals released in the largest quantity (over 2 million pounds) were nitrate compounds, released as production-related waste from the Lewiston Processing Plant in Lewiston-Woodville. This facility's business is rendering and meat byproduct processing.
- Other TRI compounds released in Bertie County were the organic chemicals methanol, n-hexane and chloroform, all production-related wastes released by Avoca, Inc. in Merry Hill. This facility's business is manufacturing flavoring syrup and concentrate.

Table 216. Facilities Releasing TRI Chemicals, Bertie County (2011)

Location	Total On- and Off-Site Disposal or Other Releases, In Pounds	County Rank (of 86 reporting) for Total Releases	Compounds Released in Greatest Quantity	Quantity Released, In Pounds	Releasing Facility	Facility Location
Bertie County	2,777,030	7	Nitrate compounds	2,528,732	Lewiston Processing Plant	Lewiston Woodville
			Methanol	137,068	Avoca Inc.	Merry Hill
			n-Hexane	104,694	Avoca Inc.	Merry Hill
			Chloroform	6,537	Avoca Inc.	Merry Hill

Source: *TRI Release Reports: Chemical Reports, 2011.* Retrieved on November 6, 2012 from US EPA TRI Explorer, Release Reports, Chemical Reports website: http://iaspub.epa.gov/triexplorer/tri_release.chemical.

WATER QUALITY

Drinking Water Systems

The EPA is responsible for monitoring the safety of drinking water and water system violations of the federal Safe Drinking Water Act (SDWA). The EPA's Safe Drinking Water Information System (SDWIS) contains information about public water systems and their violations of EPA's drinking water regulations, as reported to EPA by the states. These regulations establish maximum contaminant levels, treatment techniques, and monitoring and reporting requirements to ensure that water systems provide safe water to their customers (82).

As of July 21, 2012, SDWIS listed eight active water systems in Bertie County. All were *community water systems* that together served 17,128 people. A community water system is one that serves at least 15 service connections used by year-round residents or regularly serves 25 year-round residents. This category includes municipalities, subdivisions and mobile home parks.

SDWIS also listed one non-transient, non-community water system in Bertie County that served a total of 2,000 people. These are water systems that serve the same people, but not year-round (e.g. schools that have their own water system). The non-transient, non-community water system is located at Perdue Farms, Inc.

The EPA records in SDWIS violations of drinking water standards reported to it by states. It records violations as either *health-based* (contaminants exceeding safety standards or water not properly treated) or *monitoring- or reporting-based* (system failed to complete all samples or sample in a timely manner, or had another non-health related violation).

Table 217 lists the active water systems in Bertie County as of July 12, 2012. The table also includes any *health-based* violations for the period from 2000 through 2011.

- All the water systems rely on groundwater sources.
- The recorded health violations were for exceedances for coliforms, and occurred well in the past.

Table 217. Active Water Systems in Bertie County (As of July 12, 2012)

Type of Water System	Total Population Served	Primary Water Source Type	Health Violations 2000-2011
Community Water Systems			
Aulander, Town of	1,438	Groundwater	None
Bertie County Regional Water	10,742	Groundwater	None
Clearwater Valley Water Association	66	Groundwater	None
Lewiston-Woodville, Town of	826	Purchased groundwater	MCL monthly TRC for Coliforms (2008)
Powellsville, Town of	784	Groundwater	MCL monthly TRC for Coliforms (2007)
Roxobel, Town of	406	Groundwater	None
South Windsor Water Association	433	Purchased groundwater	None
Windsor, Town of	2,433	Groundwater	None
Total	**17,128**		
Non-Transient, Non-Community Water Systems			
Perdue Farms Incorporated	2,000	Groundwater	None
Total	**2,000**		

Source: *Safe Drinking Water Search for the State of North Carolina*. Retrieved on November 6, 2012 from US EPA Envirofacts Safe Drinking Water Information System (SDWIS) website: http://www.epa.gov/enviro/facts/sdwis/search.html.

The On-site Water Protection program of the ARHS/Bertie County Health Department's Environmental Health Division assures safe ground water to protect the public from illness caused by unsafe water. On the drinking water side, the agency's responsibility covers only private drinking water wells, not community water systems. Table 218 summarizes ARHS/Bertie County Health Department activities related to wells and well testing for 2008 through 2010 as catalogued by the state's Environmental Health Section.

Table 218. Bertie County Department of Public Health On-Site Water Protection Activities: Well Water 2008-2010

Activity	2008	2009	2010
Well Sites Evaluated	18	8	10
Well Site Consultative Visits	39	43	30
Well Construction Permits Issued			
New	1	3	1
Repair	1	6	4
Bacteriological Samples Collected	26	40	38
Other Samples Collected	5	14	7

Source: NC DHHS, Environmental Health Section, On-Site Water Protection Branch, County Program Reviews and Activity Reports. County Activity Totals, 2008, 2009, 2010; http://ehs.ncpublichealth.com/osww_new/new1/progimprovteam.htm.

Wastewater Systems

Municipalities operate jurisdiction-wide wastewater treatment systems. It appears that Bertie County does not operate a wastewater treatment system, but two towns, Windsor and Aulander, do, according to NC DENR (83).

Town of Windsor Central Wastewater System

The following description of the sewage treatment capabilities of the Town of Windsor were extracted from a 2009 planning document (84).

Windsor maintains an extended aeration sewage treatment plant with a design capacity of 1.15 mgd. In 2009, the sewer system had 1,250 customers in town, 200 customers out of town, and one bulk customer. The bulk customer was the Town of Askewville; the Town of Windsor treats all sewage from Askewville.

In 2009 the flow in the system was approximately 526,000 gpd, 45.7% of the system's capacity. The Town has a NPDES permit to discharge treated wastewater into Broad Branch, a tributary of the Cashie River. The Town submitted a renewal application for this permit in May 2007, which was approved on November 1, 2007. The permit was set to expire on May 31, 2012, and since has been renewed until 2016.

There were no private package treatment plants operating within the town in 2009. At that time, there were no plans to expand the town's sewage system. According to the Bertie County Environmental Health Director, there were no septic tank failures within the Town's corporate limits or occurrences of fecal coliform leaving the WWTP as a result of storm water runoff.

Details describing the central wastewater system of the Town of Aulander were not available in the public domain.

The ARHS/Bertie County Health Department's On-site Water Protection program also is responsible for activities associated with subsurface sewage collection, treatment, and disposal, with a focus on private septic systems, not municipal sewage systems. Table 219 summarizes ARHS/Bertie County Health Department activities related to septic systems for 2008 through 2010 as catalogued by the state's On-Site Water Protection Branch.

Table 219. Bertie County Department of Public Health On-Site Water Protection Activities: Septic Systems 2008-2010

Activity	2008	2009	2010
Site Visits (all OSWW Field Activities not listed below)	187	141	138
Sites Evaluated (or Re-evaluated)	2	N/A	N/A
Operation Permits Issued	85	56	73
Improvement Permits Issued - Repair or replace malfunctioning system	3	1	1
Construction Authorizations			
New, Revision or Relocation	55	29	53
Repair/Replacement of Malfunctioning System	30	34	30
Sewage Complaints Investigated	20	18	11

Source: NC DHHS, Environmental Health Section, On-Site Water Protection Branch, County Program Reviews and Activity Reports. County Activity Totals, 2008, 2009, 2010; http://ehs.ncpublichealth.com/osww_new/new1/progimprovteam.htm.

NPDES Permits

Water pollution degrades surface waters making them unsafe for drinking, fishing, swimming, and other activities. As authorized by the Clean Water Act, the National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating point sources that discharge pollutants into US waters. Point sources are discrete conveyances such as pipes or man-made ditches. Individual homes that are connected to a municipal system, use a septic system, or do not have a surface discharge do not need an NPDES permit; however, industrial, municipal, and other facilities must obtain permits if their discharges go directly to surface waters.

Table 220 lists the NPDES-permitted dischargers in Bertie County and the destinations and permitted volumes of their discharges. One of the three permitted dischargers is a private, commercial enterprise; the remaining two are wastewater treatment plants operated by town governments. This table presents a conundrum, since in one place the state lists a permitted WWTP discharger in Aulander but not in Lewiston-Woodville, and this source lists a NPDES permitted discharge from a plant in Lewiston-Woodville, not Aulander.

Table 220. National Pollutant Discharge Elimination System (NPDES) Permitted Dischargers, Bertie County (November, 2012)

Owner	Facility	Type	Discharge Destination	Permitted Flow (Gal/Day)
Perdue Grain and Oilseed, LLC	Lewiston Mill	Industrial Process & Commercial	Roanoke River	5,000,000
Town of Windsor	Windsor WWTP	Wastewater Treatment Plant, Municipal, Large	Cashie River	1,150,000
Town of Lewiston-Woodville	Lewiston-Woodville WWTP	Wastewater Treatment Plant, Municipal, <1MGD	Cashie River	150,000

Source: NC Department of Environment and Natural Resources, Division of Water Quality, Surface Water. NPDES Wastewater Permitting and Compliance Program. Permit Info, List of Active Individual Permits as of 11/1/12; http://portal.ncdenr.org/web/wq/swp/ps/npdes/.

SOLID WASTE

Solid Waste Disposal

Table 221 presents figures summarizing tonnage of solid waste disposed in Bertie County, the ARHS region, Hertford County, and NC for the period FY2006-07 through FY2010-11.

- In FY2010-11, Bertie County managed 23,257 tons of municipal solid waste (MSW) for a rate of 1.09 tons per capita. This tonnage represented an increase of 27% from the per capita rate for FY1991-92 (the period customarily used for the base rate).
- As a regional average, the per capita rate of waste disposed in FY2010-11 fell by 1% from the rate for the base year.
- The per capita rate in Hertford County increased 87% between the base year and FY2010-11.
- During the same FY2010-11 period the overall state per capita solid waste management rate was 8% less than the FY1991-92 base per capita rate.
- Note that with the exception of Hertford County in FY2009-10, the number of MSW tons disposed decreased from year to year in all of the jurisdictions over the period cited *until* FY2010-11.

Table 221. Solid Waste Disposal
FY2006-07 through FY2010-11

Location	MSW Tons Managed 1991-1992	MSW Tons Disposed					Base Year Per Capita (1991-1992)	Per Capita Rate 2010-2011	% Change Base Year to 2010-2011
		2006-07	2007-08	2008-09	2009-2010	2010-2011			
Bertie County	17,371.98	22,230.46	19,016.57	17,089.96	15,136.25	23,257.59	0.86	1.09	27.0
Regional Total	90,272.93	132,603.30	129,121.09	117,803.40	112,837.00	116,918.14	n/a	n/a	n/a
Regional Average	12,896.13	18,943.33	18,445.87	16,829.06	16,119.57	16,702.59	0.78	0.77	-1.0
Hertford County	14,288.00	47,108.89	35,705.84	21,629.74	24,754.68	26,992.02	0.63	1.09	73.0
State of NC	7,257,428.09	11,837,103.91	11,284,712.33	9,910,030.73	9,395,457.19	9,467,044.71	1.07	0.99	-8.0

Source: NC Department of Environment and Natural Resources, Division of Waste Management, Solid Waste Program, NC Solid Waste Management Annual Report, Fiscal Years 2008-2009, 2009-2010, 2010-11;
http://wastenot.enr.state.nc.us/swhome/AR08_09/AR08_09.pdf.

Table 222 presents the FY2010-11 County Waste Disposal Report for Bertie County.

- The majority of Bertie County's solid waste stays inside the county, since Bertie County is home to a large regional landfill, the East Carolina Regional Landfill.

Table 222. County Waste Disposal Report, Bertie County
(FY2010-11)

Location	Facility Name	Facility Type	Tons Received	Tons Transferred
Bertie County	C&D Landfill Inc.	Construction & Demolition Landfill	20.45	0.00
	East Carolina Regional Landfill	Municipal Solid Waste Landfill	23,235.00	0.00
	Waste Industries Blk. Creek Road Transfer Station	Municipal Solid Waste Transfer Station	2.29	2.14

Source: NC Department of Environment and Natural Resources, Division of Waste Management, Solid Waste Section. Solid Waste Management Annual Reports, FY2010-2011; County Waste Disposal Report Fiscal Year 2010-2011.
http://portal.ncdenr.org/c/document_library/get_file?p_l_id=4649434&folderId=4667253&name=DLFE-38490.pdf.

Table 223 describes the capacities of all the landfills in the ARHS counties, including Bertie County.

- Based on current fiscal year tons, the estimated remaining "life" capacity of the East Carolina Regional Landfill was 21.54 years from FY2010-11.
- According to this data, the Pasquotank County Landfill has about reached capacity.

Table 223. Capacity, ARHS Region Landfills (FY2010-11)

Location	Facility Name	Open Date	Volume Overall	Volume Overall Remaining	Volume Overall Remaining in Tons	Volume Overall Remaining in Years (Fiscal Year Tons)
Bertie	East Carolina Regional Landfill	8/6/93	24,200,000	14,445,905	11,955,903	21.54
Pasquotank County	Pasquotank County Landfill	4/1/96	730,700	67,560	19,008	2.52

Source: NC Department of Environment and Natural Resources, Division of Waste Management, Solid Waste Section. Solid Waste Management Annual Reports, FY2010-2011; Landfill Capacity Report Fiscal Year 2010-2011. http://portal.ncdenr.org/c/document_library/get_file?p_l_id=4649434&folderId=4667253&name=DLFE-41641.pdf.

East Carolina Regional Landfill

The East Carolina Regional Landfill, located in Aulander (Bertie County) is one of fewer than 10 regional landfills statewide. An EPA-regulated facility, it serves all of northeastern NC. It has been in operation for more than a decade, and in that time has acquired a history of violations for non-compliance with Clean Air Act standards (85). Most of those violations have had to do with control of gases released during the natural waste digestion process.

The company (the landfill is operated by Republic Services, Inc.) maintains a landfill gas collection and control system with gas-fired candlestick-type flares. Landfill gas typically is 60% methane; most of the remainder usually is carbon dioxide. Approximately 1% of landfill gas may be composed of nitrogen, oxygen, water vapor, hydrogen sulfide, and other contaminants, depending on the substrate being digested (86). Landfill gas control systems exist to assure the safety, system integrity, gas destruction and odor control of the landfill. As material continues to be deposited in the landfill over time, increasing amounts of landfill gas is generated, requiring additional control capacity as part of the permitting process. The operator of the landfill appears to acknowledge this need (87).

Convenience Centers

Bertie County maintains five convenience centers for waste collection: one at the landfill site in Aulander, one in Lewiston-Woodville, one in Colerain, and two in Windsor. Information about these centers in the public domain does not include a description of the kinds of materials accepted, or whether or not recycling is part of the service (88).

Hazardous Waste Generation

The EPA maintains a database that catalogs generators, transporters, and other handlers of hazardous wastes. The data, located in the Resource Conservation and Recovery Act Information (RCRAInfo) database, is accessed via EPA Envirofacts. Table 224 lists the hazardous waste generators in Bertie County. One of the generators listed, Avoca, Inc., is also among the Bertie County facilities releasing TRI chemicals, cited previously.

Table 224. Hazardous Waste Generators, Bertie County (Accessed April, 2013)

Location	Generator Name	Location	Type of Business (NAICS Code/Description)	Type of Generator
Bertie County	Avoca, Inc.	Merry Hill	Manufacturing (cigarettes, pharmaceutical preparations, flavoring syrup and concentrate)	Large Quantity
	Bill Clough Ford Inc.	Windsor	Car Dealer	Small Quantity
	Lewiston Processing Plant (Purdue Farms Inc.)	Lewiston	Poultry Slaughtering and Processing	Small Quantity

Source: US EPA, Envirofacts, RCRAInfo, Search; http://www.epa.gov/enviro/facts/rcrainfo/search.html.

LEAD

Lead is a highly toxic natural metal found in the environment in soil, dust, air, and water. Historically it was used for many years in common household products such as paint, batteries, makeup, and ceramics, as an additive to gasoline, and as an ingredient in pesticides. Currently, it is used in lead-acid batteries, fishing weights, marine paint, lead shot, bullets, and in the manufacture of some plastics. Recently, the electronics industry is using more lead in magnetic imaging equipment, transistors, night vision equipment, and energy generation (89).

People can get lead in their body if they put their hands or other objects covered with lead dust in their mouths, ingest paint chips, soil, or water that contains lead, or breathe in lead dust, especially during renovations that disturb painted surfaces. Children are at greatest risk.

The Children's Environmental Health Branch of DENR, via its Lead Poisoning Prevention Program, catalogues data on the results of blood lead level monitoring among children. Table 225 presents blood lead monitoring data for 2006-2010.

The data for Ages 1 and 2 are routine screening results; the data for Ages 6 Months to 6 Years represents children who have been tested because a lead poisoning hazard had been identified in their residential housing unit or their child-occupied facility (e.g., daycare facility). All results at the county level likely are unstable due to small numbers of positive cases.

Table 225. Blood Lead Assessment Results (2006-2010)

Location	Year	Ages 1 and 2					Ages 6 Months to 6 Years		
		Target Population	No. Tested	% Tested	No. ≥ 10µg/dL	% ≥ 10µg/dL	No. Tested	Confirmed 10-19 µg/dL	Confirmed ≥20 µg/dL
Bertie County	2006	461	301	65.3	**2**	**0.7**	439	N/A	N/A
	2007	479	337	70.4	**3**	**0.9**	453	N/A	N/A
	2008	482	325	67.4	**4**	**1.2**	422	**1**	N/A
	2009	491	328	66.8	**2**	**0.6**	415	N/A	N/A
	2010	486	346	71.2	**1**	**0.3**	438	**1**	**1**
Hertford County	2006	636	417	65.6	**1**	**0.2**	488	**1**	N/A
	2007	630	412	65.4	**1**	**0.2**	474	**1**	N/A
	2008	598	394	65.9	**3**	**0.8**	445	N/A	N/A
	2009	627	403	64.3	**1**	**0.2**	476	N/A	N/A
	2010	634	427	67.4	**1**	**0.2**	518	N/A	N/A
State of NC	2006	242,813	103,899	42.8	867	0.8	135,595	255	38
	2007	250,686	112,556	44.9	706	0.6	143,972	232	38
	2008	258,532	121,023	46.8	654	0.5	152,222	181	36
	2009	261,644	129,395	49.5	583	0.5	160,713	143	38
	2010	257,543	132,014	51.3	519	0.4	162,060	146	24

Source: NC DHHS, Division of Public Health, Environmental Health Section, Lead Surveillance Data, 2006-2010, Lead Surveillance Tables; http://deh.enr.state.nc.us/Children_Health/Lead/Surveillance_Data_Tables/surveillance_data_tables.html.

FOOD-, WATER-, AND VECTOR-BORNE HAZARDS

Food-, Water-, and Vector-Borne Diseases

A number of human diseases and syndromes are caused or exacerbated by microbial contaminants or by animal vectors in the natural environment. Several of these conditions are among the illnesses that must be reported to health authorities. A number of food-, water-, and vector- borne diseases are of increasing importance because they are either rare but becoming more prevalent, or spreading in geographic range, or becoming more difficult to treat. Among these diseases are Shiga toxin producing *E. coli*, salmonellosis, Lyme disease, West Nile virus infection, Eastern equine encephalitis, and rabies.

The Communicable Disease section of this report listed diagnoses of some of these diseases gathered when Bertie County residents presented at the emergency departments of the four hospitals in the region (Table 200).

Table 226 summarizes cases of food-, water-, and vector-borne disease statewide in the period 2009-2012.

- The most common food-, water-, and vector-borne disease statewide is salmonellosis, followed by campylobacter infection and Rocky Mountain spotted fever (spotted fever rickettsiosis).

Table 226. Food-, Water-, and Vector-Borne Diseases, North Carolina (2009-2012)

Disease/Organism	Number of Cases			
	2009	2010	2011	2012[1]
Campylobacter infection	587	851	909	857
Cryptosporidiosis	160	94	115	88
E. Coli O157:H7 (or other STEC)	112	97	155	79
Ehrlichiosis	31	130	96	99
Encephalitis California Group (Lacrosse)	169	22	24	18
Hepatitis A	41	48	30	20
Listeriosis	27	22	21	9
Lyme Disease	252	89	75	71
Rocky Mountain Spotted Fever	325	292	305	431
Salmonellosis	1,806	2,352	2,516	1,612
Shigellosis	358	253	225	104

[1] 2012 data includes January-September 2012 only
Source: NC DHHS, Epidemiology Branch, Communicable Disease Section, Facts and Figures, NC Communicable Disease Reports, 2009, 2010, 2011, 2012; http://epi.publichealth.nc.gov/cd/figures.html.

Vector Control

Bacterial, viral and parasitic diseases that are transmitted by mosquitoes, ticks and fleas are collectively called *vector-borne diseases* (the insects and arthropods are the *vectors* that carry the diseases). Although the term vector can also apply to other carriers of disease—such as mammals that can transmit rabies or rodents that can transmit hantavirus—those diseases are generally called *zoonotic* (animal-borne) diseases.

The most common vector-borne diseases found in North Carolina are carried by ticks and mosquitoes. The tick-borne illnesses most often seen in the state are Rocky Mountain Spotted Fever, ehrlichiosis, Lyme disease and Southern Tick-Associated Rash Illness (STARI). The most frequent mosquito-borne illnesses, or "arboviruses," in North Carolina include LaCrosse encephalitis, West Nile virus and Eastern equine encephalitis (90).

One way to prevent or limit the transmission of vector-borne illnesses is to control the vectors of the disease. In the case of mosquitoes, that is usually accomplished by improving cultural practices (e.g., emptying temporary water reservoirs like puddles, flowerpots and bird feeders or by people covering their skin or applying insect repellent when outdoors). In extreme cases, communities may sometimes resort to large-scale aerial spraying to destroy the insect or interfere with its reproductive cycle. Spraying initiatives can be controversial, however, since the typically broadcast application of the pesticide is non-selective and can affect humans and pets.

Rabies, a vector-borne disease, can be controlled among pets by having dogs and cats properly vaccinated. While pets can be protected that way, there is no practical way to control rabies in the wild, where it actually is more common. Table 227 lists the total number of rabies cases detected in the seven counties of the ARHS region over the period from 2005-2012. First of all, rabies is not common in the region, with only 40 cases identified region-wide in eight years. For comparison, there were 28 cases in Guilford County in 2012 alone. Secondly, rabies is more common in animals other than cats, dogs or bats. Of the 40 total rabies cases in the region between 2005 and 2012, the most common host was raccoons (21 cases); six cases were cats and one was a dog. Statewide in 2012 48% of all rabies cases were in raccoons.

Table 227. Animal Rabies Cases, ARHS Counties (2005-2012)

Location	Total Number of Animal Rabies Cases							
	2005	2006	2007	2008	2009	2010	2011	2012
Bertie County	0	0	0	0	2	1	0	1
Camden County	0	0	1	0	0	0	0	0
Chowan County	0	0	0	0	1	3	0	0
Currituck County	0	0	1	2	1	0	0	0
Gates County	1	2	0	2	0	0	0	1
Pasquotank County	1	0	1	2	5	3	0	0
Perquimans County	1	3	0	1	1	3	0	0
Regional Total	*3*	*5*	*3*	*7*	*10*	*10*	*0*	*2*

Source: NC Division of Public Health, Epidemiology. Rabies. Facts and Figures. Rabies by County, Tables by Year. http://epi.publichealth.nc.gov/cd/rabies/figures.html.

Animal Control in Bertie County

The Bertie County Animal Control office (joint with Litter Control), where the public can report animal nuisances, lists a PO Box in Windsor; the office is on-call 24-hours a day (91).

Animal Shelters in Bertie County

The county-controlled Bertie County Animal Shelter is located in Windsor. It is staffed by volunteers from the Bertie County Humane Society, an affiliate of Roanoke-Chowan Humane Society, Inc. Adoption fees are $10 and all animals must be spayed or neutered. Adopted pets and their new owners and homes are inspected after adoption to insure the pet is being cared for properly. Any pet that is not being cared for properly or has not been surgically sterilized within the allotted time must be returned to Bertie County Humane Society without any refund/return of payment (92).

BUILT ENVIRONMENT

The term *built environment* refers to the human-made surroundings that provide the setting for human activity, ranging in scale from buildings and parks or green space to neighborhoods and cities. As often used the term also includes supporting infrastructure for those settings, such as the water supply, or the energy grid. In recent years, public health research has expanded the definition of built environment to include healthy food access, community gardens, recreational facilities, and the ease of getting around on foot or on bicycle.

Access to Grocery Stores and Farmers' Markets

Table 228 presents data on the availability of grocery stores.

- The number of grocery stores in Bertie County decreased from nine to six between 2007 and 2009.
- Approximately 743 Bertie County households (~9%) have no car and therefore low access to grocery stores.

Table 228. Availability of Grocery Stores, ARHS Region (2007 and 2009; 2010)

Location	Grocery Stores						2010			
	2007		2009		% Change (2007-2009)		Households with no car and low access		Low Income & Low Access	
	#	# per 1,000 Population	#	# per 1,000 Population	#	# per 1,000 Population	#	%	#	%
Bertie County	9	0.470	6	0.320	-33.33	-32.93	743	8.89	1,010	4.75
Camden County	1	0.110	1	0.110	0.00	-3.11	48	1.32	98	0.99
Chowan County	5	0.340	5	0.340	0.00	-0.31	274	4.52	1,093	7.40
Currituck County	9	0.380	9	0.380	0.00	-1.43	186	2.10	649	2.76
Gates County	0	0.000	2	0.170	null	0.00	183	3.92	2	0.02
Pasquotank County	12	0.300	8	0.200	-33.33	-34.54	667	4.46	3,707	9.12
Perquimans County	3	0.250	2	0.160	-33.33	-34.84	249	4.44	72	0.54
Regional Total	39	n/a	33	n/a	n/a	n/a	2,349	n/a	6,632	n/a
Regional Average	6	n/a	5	n/a	n/a	n/a	336	n/a	947	n/a

Source: *Grocery Stores.* U.S. Department of Agriculture Economic Research Service, Your Food Environment Atlas website: http://ers.usda.gov/FoodAtlas/.

Table 229 presents data on the availability of farmers' markets.

- Despite the rural, agrarian nature of much of the ARHS region, there are very few farmers' markets anywhere in the region: two in 2009 and three in 2012, none of which was in Bertie County.,

Table 229. Availability of Farmers' Markets, ARHS Region (2009 and 2012)

Location	Farmers' Markets					
	2009		2012		% Change (2009-2012)	
	# Markets	# Markets per 1,000 Population	# Markets	# Markets per 1,000 Population	# Markets	# Markets per 1,000 Population
Bertie County	0	0.000	0	0.000	0.0	0.0
Camden County	0	0.000	0	0.000	0.0	0.0
Chowan County	1	0.070	2	0.140	1.0	99.98
Currituck County	0	0.000	0	0.000	0.0	0.0
Gates County	0	0.000	0	0.000	0.0	0.0
Pasquotank County	1	0.030	1	0.030	0.0	2.17
Perquimans County	0	0.000	0	0.000	0.0	0.0
Regional Total	2	n/a	3	n/a	1.0	n/a

Source: *Farmers' Markets.* U.S. Department of Agriculture Economic Research Service, Your Food Environment Atlas website: http://ers.usda.gov/FoodAtlas/.

Access to Fast Food Restaurants

Table 230 presents data on the availability of fast food restaurants.

- There was an average of 11 fast food restaurants in each county of the ARHS region in both 2007 and 2009.
- Bertie County had six fast food restaurants in 2007 and seven in 2009. In 2009 there were more fast food restaurants in the county than grocery stores.

Table 230. Availability of Fast Food Restaurants, ARHS Region (2007 and 2009)

Location	Fast Food Restaurants					
	2007		2009		% Change (2007-2009)	
	#	# per 1,000 Population	#	# per 1,000 Population	#	# per 1,000 Population
Bertie County	6	0.310	7	0.370	16.7	17.4
Camden County	2	0.220	3	0.310	50.0	45.3
Chowan County	10	0.680	11	0.750	10.0	9.7
Currituck County	24	1.010	22	0.910	-8.3	-9.6
Gates County	1	0.090	1	0.090	0.0	-0.3
Pasquotank County	31	0.760	27	0.650	-12.9	-14.5
Perquimans County	3	0.250	3	0.240	0.0	-2.3
Regional Total	77	n/a	74	n/a	n/a	n/a
Regional Average	11	n/a	11	n/a	n/a	n/a

Source: *Fast Food Restaurants.* U.S. Department of Agriculture Economic Research Service, Your Food Environment Atlas website: http://ers.usda.gov/FoodAtlas/.

Access to Recreational Facilities

Table 231 presents data on the availability of recreational and fitness facilities.

- There were two recreation and fitness facilities in Bertie County in 2007 and one in 2009. A more recent listing of recreational facilities was provided earlier in this document.

Table 231. Availability of Recreation and Fitness Facilities, ARHS Region (2007 and 2009)

Location	Recreation and Fitness Facilities					
	2007		2009		% Change (2007-2009)	
	#	# per 1,000 Population	#	# per 1,000 Population	#	# per 1,000 Population
Bertie County	2	0.110	1	0.060	-50	-49.7
Camden County	0	0.000	0	0.000	0	0.0
Chowan County	1	0.070	1	0.070	0	-0.3
Currituck County	3	0	2	0	-33	-34.3
Gates County	0	0.000	0	0.000	0	0.0
Pasquotank County	2	0.050	5	0.130	150.0	145.5
Perquimans County	1	0.090	1	0.080	0.0	-2.3
Regional Total	9	n/a	10	n/a	n/a	n/a

Source: *Physical Activity Levels and Outlets.* U.S. Department of Agriculture Economic Research Service, Your Food Environment Atlas website: http://ers.usda.gov/FoodAtlas

CHAPTER SIX: COMMUNITY INPUT

COMMUNITY HEALTH SURVEY METHODOLOGY

Interview locations were randomly selected using a modified two-stage cluster sampling methodology. The survey methodology is an adaptation of the Rapid Needs Assessment (RNA) developed by the World Health Organization (WHO) and the Centers for Disease Control and Prevention (CDC) for surveying populations after natural disasters. The WHO/CDC RNA approach was modified to utilize mobile GIS software, handheld computers and GPS receivers.

For the Albemarle Community Health Assessment, the assessment area includes seven counties and estimates need to be reported for each county so a stratified two-stage cluster sampling method was employed. Statistical power analysis suggested that 80 surveys per county would yield acceptable precision of estimates. Census blocks were selected as the type of geographic cluster for the first stage of the two-stage sample. To ensure sufficient households for second stage sampling, only census blocks with at least ten households were included in the sampling frame. The sample was selected utilizing a toolbox in the ESRI ArcMap GIS software called the Community Assessment for Public Health Emergency Response (CASPER) Toolkit, developed by the CDC. The sample selected included four households in each of 20 census blocks in each of seven counties, for a total of 560 surveys. Sampling was conducted with replacement so blocks had the chance of being selected twice. In these instances, eight households per block were selected for interviews instead of four.

To complete data collection in the field, survey teams generally consisted of two persons: one to read the survey questions and one to enter the responses into a handheld computer for data entry and analysis with Epi Info 7 software. Training sessions on data collection and navigation using handheld GPS were provided for survey teams on; October 16, 2012 in Pasquotank County, October 29, 2012 in Gates County, November 1, 2012 in Currituck County, November 7, 2012 in Perquimans County, November 8, 2012 in Chowan County, and November 12, 2012 in Bertie County. For the seven county region, surveys were conducted from October 16, 2012 through February 2013.

Survey teams were comprised of health department and hospital staff, as well as volunteers recruited from each of the seven assessment counties. Survey protocol followed procedures established for RNAs and Community Health Assessments whereby surveys were conducted during work hours and early evening hours, as well as some Saturdays. When target households resulted in refusals or not-at-homes, survey teams proceeded on to the next household on their route and within the designated survey cluster.

Survey responses were analyzed using Epi Info 7 software developed by the CDC. Complex sampling frequencies, tables, and means procedures were used to generate weighted frequencies and their corresponding 95% confidence intervals. The survey weights, based on census block population size, were implemented to account for the 2-stage cluster sampling methodology used in selecting households for interview. A total of 560 surveys were analyzed.

The survey instrument and results are provided in the Appendix to this document. Spanish surveys were available for the Hispanic population. An instruction card in Spanish was handed to any Spanish speaking resident explaining the survey and that an interpreter would be available to conduct the survey via phone if preferred. An area on the instruction card was provided for the resident to write their name and phone number.

STAKEHOLDER SURVEY OVERVIEW

The 2013 ARHS Community Health Needs Assessment process also included gathering input from formal and informal leaders of the community in order to learn from them about the needs of the individuals they serve and to better understand the health status of the region's communities as a whole.

A description of the methodology used to collect leaders' opinions, as well as a summary of the stakeholder survey results, are presented in the Appendix to this document.

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ALBEMARLE REGIONAL HEALTH SERVICES
Partners in Public Health

Bertie County

Hello, I am_____and this is_____representing the Bertie County Health Department. (Show badges.) You are being asked to participate in a health survey for our county because your address was randomly selected. The purpose of this survey is to learn more about the health and quality of life in Bertie County, North Carolina. The Bertie County Health Department, Three Rivers Healthy Carolinians and Vidant Bertie Hospital will use the results of this survey to help develop plans for addressing the major health and community issues in Bertie County. All the information you give us will be completely confidential and will not be linked to you in any way.

The survey is completely voluntary. All of your answers are confidential. It should take no longer than 30 minutes to complete. If you don't live here at this house, please tell me now.

Would you be willing to participate?

If they want to confirm this survey is legitimate, please ask them to call the Health Department:

- *Bertie Health Dept. → 252-794-5322*

Additionally, the numbers for the local law enforcement are provided here:

- *Bertie County Sheriff's Office → 252-794-5330*

The purpose of this survey is to learn more about health and quality of life in the Albemarle Region of North Carolina. The local health departments of Albemarle Regional Health Services, Albemarle Health, Vidant Bertie Hospital, Vidant Chowan Hospital, Gates Partners for Health, Healthy Carolinians of the Albemarle, and Three Rivers Healthy Carolinians will use the results of this survey and other information to help develop plans for addressing the health problems of the region and its seven constituent counties: Pasquotank, Perquimans, Camden, Chowan, Currituck, Bertie, and Gates. Thank you for taking the time to complete this Community Health Survey. **If you have already completed this survey, or if you don't live in Bertie County, please STOP here.**

Your answers on this survey will not be linked to you in any way.

PART 1: Quality of Life Statements

The first part of this survey is about the quality of life in Bertie County. After I read the statement, please tell me whether you strongly disagree, disagree, agree, or strongly agree with it. Handheld will have a refused to answer/no response option for all questions in the survey.

Quality of Life Statements	Strongly Disagree	Disagree	Agree	Strongly Agree
Question 1 **There is a good health care system in Bertie County.** (Think about health care options, access, cost, availability, quality, etc.)	**9.1%**	**15.3%**	**58.2%**	**12.8%**
Question 2 **Bertie County is a good place to raise children.** (Think about the availability and quality of schools, child care, after school programs, places to play, etc.)	**9.9%**	**19.6%**	**46.2%**	**19.5%**
Question 3 **Bertie County is a good place to grow old.** (Think about elder-friendly housing, access/ways to get to medical services, elder day care, social support for the elderly living alone, meals on wheels, etc.)	**4.5%**	**13.4%**	**58.8%**	**21.9%**
Question 4 **There are plenty of ways to earn a living in Bertie County.** (Think about job options and quality of jobs, job training/higher education opportunities, etc.)	**27.7%**	**45.1%**	**23.3%**	**0.7%**
Question 5 **Bertie County is a safe place to live.** (Think about safety at home, in the workplace, in schools, at playgrounds, parks, shopping centers, etc.)	**4.8%**	**15.0%**	**65.6%**	**12.1%**
Question 6 **There is plenty of support for individuals and families during times of stress and need in Bertie County.** (Examples include neighbors, support groups, faith community outreach, agencies, organizations, etc.)	**6.2%**	**16.6%**	**61.1%**	**10.7%**
Question 7 **Bertie County has clean air.**	**4.8%**	**9.6%**	**73.4%**	**12.3%**
Question 8 **Bertie County has clean water.**	**11.7%**	**11.4%**	**69.1%**	**7.9%**

PART 2: County Health, Behavioral, and Social Problems

The next three questions will ask your opinion about the most important health, behavioral and social problems, and community issues in Bertie County.

SHOW QUESTION PICK LIST

Question 9

This next question is about health problems that have the largest impact on the community as a whole. (Problems that you think have the greatest overall effect on health in the community.) Please look at this list of health problems and choose 5 of the most important health problems in Bertie County. Remember this is your opinion and your choices will not be linked to you in any way. If you do not see a health problem you consider one of the most important, please let me know and I will add it in. I can also read these out loud as you think about them. **Top three responses bolded:**

a. Obesity/Overweight
b. Infant Death
c. Asthma
d. Cancer
e. Diabetes
f. Heart Disease
g. Stroke
h. Alzheimer'
i. Motor Vehicle Accidents
j. Tobacco Use
k. Child Care/Parenting
l. Elder Care
m. Aging Problems (vision/hearing loss, arthritis, etc.)
n. Caring for Family Members with Special Needs/ Disabilities
o. Teen Pregnancy and Sexually Transmitted Diseases, including HIV/AIDS
p. Infectious/Contagious Diseases (TB, pneumonia, etc.)
q. Substance Abuse (ex: drugs and alcohol)
r. Suicide
s. Mental Health (depression, anxiety, mood disorders)
t. Domestic Violence
u. Crime
v. Rape/ Sexual Abuse
w. Gun Related Injuries
x. Other:_____
y. None

Question 10

This next question is about unhealthy behaviors that some individuals do that have the largest impact on the community as a whole. (Unhealthy behaviors that you think have the greatest overall effect on health and safety in the community.) Please look at this list of unhealthy behaviors and choose 5 of the unhealthiest behaviors among Bertie County residents. Remember this is your opinion and your choices will not be linked to you in any way. If you do not see an unhealthy behavior that you consider one of the most important, please let me know and I will add it in. I can also read these out loud as you think about them. Top three responses bolded:

a. Poor eating habits
b. Lack of Exercise
c. Going to a dentist for check-ups
d. Going to the doctor for yearly check-ups and screenings
e. Taking prescription medications
f. Receiving Prenatal Care
g. Getting flu shots and other vaccines
h. Preparing for an emergency/disaster
i. Using child safety seats
j. Using seat belts
k. Driving Safely
l. Driving Under the Influence
m. Smoking
n. Breathing Secondhand Smoke
o. Child care/ parenting
p. Having unsafe sex
q. Substance Abuse (ex: drugs and alcohol)
r. Suicide
s. Mental Health (depression, anxiety, mood disorders)
t. Domestic Violence
u. Crime
v. Rape/ Sexual Abuse
w. Gun Related Injuries
x. Other: _____
y. None

Question 11

Using this list, choose the <u>five</u> (5) most important "community social issues" in Bertie County. (Social issues that you think have the greatest overall effect on the quality of life in the community.) Remember this is your opinion and your choices will not be linked to you in any way. If you do not see an unhealthy behavior that you consider one of the most important, please let me know and I will add it in. I can also read these out loud as you think about them. Top three responses bolded:

a. Access to prescription drugs
b. Disaster preparedness/bioterrorism
c. Homelessness
d. Inadequate/unaffordable housing
e. Lack of affordable health insurance/health care
f. Lack of education/dropping out of school
g. Lack of healthy food choices
h. Lack of mental health services
i. Lack of services for people with cultural or language differences
j. Lack of recreational facilities
k. Lack of health care providers
l. Lack of transportation options
m. Neglect and abuse (of a child, a spouse, the elderly, etc.)
n. Pollution (air, water, land)
o. Poverty
p. Racism
q. Underemployment/lack of well-paying jobs
r. Violent crime (rape, murder, assault, etc.)
s. Other: _____
t. None:

PART 3: Community Service Problems and Issues

Question 12

This next question is about community-wide issues that have the largest impact on the overall quality of life in Bertie County. Please look at this list and choose 5 of the following services needing the most improvement in your neighborhood or county. Remember this is your opinion and your choices will not be linked to you in any way. If there is a service that you think needs improvement that is not on this list, please let me know and I will write it in. If you would like, I can read these out loud as you think about them. Top three responses bolded:

a. **Animal control**
b. Availability of child care
c. Availability of elder care
d. Services for disabled people
e. **More affordable health services**
f. Inadequate/unaffordable housing
g. **Lack of health care providers**
What kind? _____
h. Culturally appropriate health services
i. Counseling/ mental health/ support groups
j. Availability of healthy food choices
k. Lack of/inadequate health insurance
l. Availability of recreational facilities (parks, trails, community centers)
m. Availability of healthy family activities
n. Availability of positive teen activities
o. Transportation options
p. Availability of employment
q. Higher paying employment
r. Un-safe, un-maintained roads
s. Other: _____
t. None

PART 4: Personal Health

The following questions ask about <u>your own personal health</u>. Remember, this survey will not be linked to you in any way.

Question 13

How would you rate your own personal health? Mean**: <u>Good</u>**

___Excellent ___Very Good ___Good ___Fair ___Poor

Question 14

Do you currently have any of the following kinds of health insurance or health care coverage? *(Choose all answers that apply.)*

<u>24.7%</u> Health insurance *my* employer provides
<u>12.6%</u> Health insurance *my spouse's* employer provides
<u>0.0%</u> Health insurance *my school* provides
<u>4.9%</u> Health insurance *my parent or my parent's* employer provides
<u>5.1%</u> Health insurance I bought for myself
<u>6.0%</u> Medicaid
<u>40.6%</u> Medicare
<u>6.9%</u> Veteran's Administration benefits
<u>9.0%</u> Other: _____

15.1% I currently do not have any kind of health insurance or health care coverage

Question 15

During the past 12 months, was there any time that you did not have any health insurance or health care coverage?

19.5% Yes **79.4%** No 0% Don't Know 1.1% No Response

Question 16

What type of medical provider(s) do you visit when you are sick?
(Choose all answers that apply.)

66.0%	Doctor's office	0%	Company nurse	1.4%	Veterans Related
10.7%	Health department	2.7%	Community or Rural Health Center		
4.7%	Hospital clinic	2.4%	Urgent Care Center	2.4%	Hospital
31.4%	Hospital emergency room	7.2%	Other: _____	0.5%	None/Don't go
2.4%	Student Health Services	4.1%	No Response	1.4%	Home Remedies
0.6%	OTC Medications	0.8%	Primary Care		

Question 17

In what cities are the medical providers you visit located?
(Choose all answers that apply.)

22.9%	Ahoskie	0%	Franklin	0%	Suffolk
0%	Chesapeake	0%	Gatesville	0%	Virginia Beach
0%	Dare County	12.2%	Greenville	1.7%	Williamston
7.1%	Edenton	0%	Hertford	**49.5%**	Windsor
4.2%	Elizabeth City	2.0%	Norfolk	31.7%	Other:
0%	No Response	8.4%	Aulander	4.6%	Lewiston
7.1%	Colerain	0.5%	Duke Apex	2.4%	Durham
4.1%	Fayetteville	1.4%	Powellsville	2.4%	Raleigh
0.9%	Rich Square	0.2%	Woodland	0%	No Response

Question 18

Where do you usually get advice on your health?
(Choose all answers that apply.)

71.4%	Doctor's office	2.4%	Urgent Care Center
0%	Health department	9.2%	Family
3.3%	Hospital clinic	1.1%	Friends
11.3%	Hospital emergency room	0%	Media (television, news, radio, magazine)
0%	Student Health Services	7.6%	Internet or other computer-based info
0.2%	Company nurse	3.7%	Other: _____
0.7%	Pharmacy	0.6%	Community or Rural Health Center
0.5%	Self	0.5%	No Response

Question 19

About how long has it been since you last visited a doctor for a routine ("well") medical checkup? ***Do not include times you visited the doctor because you were sick or pregnant.***

77.7% Within the past 12 months
15.2% 1-2 years ago
2.1% 3-5 years ago
4.0% More than 5 years ago
0% I have never had a routine or "well" medical checkup
0% No Response

Question 20

About how long has it been since you last visited a dentist for a routine ("well") dental checkup? ***Do not include times you visited the dentist because of a toothache or other emergency.***

51.3% Within the past 12 months
15.8% 1-2 years ago
15.7% 3-5 years ago
13.4% More than 5 years ago
1.3% I have never had a routine or "well" dental checkup
0% No Response

Question 21

If one of your friends or family members needed counseling for a mental health, substance abuse, or developmental disability problem, whom would you suggest they go see?
(Choose only one answer.)

0% Children's Developmental Services Agency/Developmental Evaluation Center
10.8% Counselor or Therapist in private practice
32.3% Doctor
0.3% Emergency Room
0.8% Employee Assistance Program
29.4% Local Mental Health Facility
3.8% Minister/Pastor
0.7% School Counselor
1.3% Vocational Rehabilitation/Independent Living
16.5% I don't know
1.9% Other: _____
0.9% No Response

Question 22

How would you rate your day-to-day level of stress?

24.9% High **37.5%** Moderate 36.5% Low 0% No Response

Question 23

In the past 12 months, how often would you say you were worried or stressed about having enough money to pay your rent/mortgage?

13.3% Always 5.1% Usually 15.2% Sometimes 24.6% Rarely **40.7%** Never

Question 24

On how many of the past 7 days did you drink alcohol of any kind? (Beer, Wine, Spirits)

11.0%	1 day	0%	6 days
1.7%	2 days	9.4%	7 Days
2.4%	3 days	20.5%	I didn't drink alcohol on any of the past 7 days
0%	4 days	**53.8%**	I never drink alcohol
0%	5 days	0%	No Response

Question 25

During that same 7-day period, how many times did you have five (5) or more alcoholic drinks (Beer, Wine, Spirits) in a single day?

13.7%	0 times	0%	4 times
8.5%	1 time	2.4%	7 times
0%	2 times	0%	No Response
0%	3 times		

Question 26

Do you smoke cigarettes?

22.9% Yes
51.1% I have never smoked cigarettes
24.9% I used to smoke but have quit
0% No Response

Question 27

How many cigarettes do you smoke per day?
(Choose only one answer.)

9.2% Less than half a pack per day
13.7% Between half a pack and one (1) pack per day
0% More than one (1) pack a day
0% Two (2) packs a day

Question 28

Are you regularly exposed to second-hand smoke from others who smoke?

40.3% Yes **58.7%** No 0% No Response

Question 29

If you answered yes to Q 28, where are you regularly exposed to secondhand smoke?
(Choose all answers that apply.)

2.9%	Public Places	25.5%	Car
28.7%	Home	0%	Hospital
0.4%	Workplaces	0%	School (public, community college, university)
0.8%	Auto garage	3.2%	Other: _____
2.4%	Spouse	0%	No Response

Question 30

How often do you currently use smokeless tobacco (chewing tobacco, snuff, Snus®, "dip")?

88.5% Not at all 6.5% On some days 3.3% Every day 0.6%No Response

Question 31

Are you in support of establishing all county property including public parks and recreational facilities as smoke free?

80.1% Yes 17.2% No 1.6% Don't Know 0% No Response

Question 32

During the past 7 days, other than your regular job, how often did you engage in physical activity for at least a half-an-hour?

28.2% None
8.5% Less than once a week
9.3% Once a week
22.0% 2-3 times a week
4.5% 4-6 times a week
26.4% Daily

Question 33

If you answered "none" to Q 31, why don't you engage in physical activity?
(Choose all answers that apply.)

0.9% My job is physical or hard labor
8.1% I don't have enough time for physical activity
3.3% I'm too tired for physical activity
6.9% I have a health condition that limits my physical activity
4.1% I don't have a place to exercise
0% Weather limits my physical activity
0% Physical activity costs too much (equipment, shoes, gym expense)
3.0% Physical activity is not important to me
0% Other: _____
2.4% No Response

Question 34

Which of the following physical activity resources would you utilize?
(Choose all answers that apply.)

14.8% Park/Playground
7.3% School
31.1% Church
14.4% Community Center
21.9% Senior Center
22.9% Parks & Recreation Facility
22.2% Gyms
36.7% Walking Trail
17.9% Nature Trail
11.7% Bike Trail
8.0% Canoeing
6.2% Kayaking
17.4% Walkable Communities – i.e. areas measured, deemed safe to walk, etc.
11.7% No Response

Question 35

Do you know of any schools that allow the public to use their recreational facilities after hours?

28.5% Yes **61.2%** No 9.2% No Response

Question 36

How often do you visit county parks and recreation facilities?

0.6% Daily
7.9% Weekly
4.3% Monthly
19.5% Occasionally
22.7% Rarely
35.3% Never
0% No Response

Question 37

What are the top reasons you do not visit or do not visit regularly?
(Choose all answers that apply.)

0% No lighting
0% No bathrooms
0% Unclean
6.7% Unsafe
0% No drinking fountains
0.7% Not handicap accessible
0% Lack of shade
0% Lack of children's play equipment
0% Lack of fields or courts for sports
2.4% Lack of walking paths/tracks

0% Lack of biking paths
0% Lack of trashcans/pet waste disposal
1.4% Lack of transportation
0.8% Cost
38.0% Nothing offered of interest to me
30.1% Other: _____
6.6% No Response

Question 38

Not counting juice, how many servings of fruit do you consume in an average day?

0%	None	2.7%	5 servings
36.1%	1 serving	0.5%	7 servings
28.6%	2 servings	5.0%	Don't know
8.0%	3 servings	10.7%	No response
6.3%	4 servings		

Question 39

Not counting potatoes and salad, how many servings of vegetables do you consume in an average day?

0%	None	3.5%	5 servings
35.0%	1 serving	0%	6 servings
38.3%	2 servings	0%	8 servings
10.9%	3 servings	1.7%	Don't know
8.4%	4 servings	1.1%	No response

Question 40

Are you within 10 miles of a grocery store, convenience store, or dollar store?

87.0% Yes 12.0% No 0% Don't Know 0% No Response

Question 41

Are fresh fruits and vegetables readily available at these stores?

78.0% Yes 7.6% No 1.3% Don't know 0% No Response

Question 42

Are you within ten miles of a farmers market or roadside, produce stand?

44.8% Yes 40.4% No 13.7% Don't know 0% No Response

Question 43

If yes, during the months open how often do you visits?

1.8% Daily
7.6% Weekly
5.5% Monthly

8.6% Occasionally
2.5% Rarely
18.8% Never

Question44

What are the primary reasons you do not visit or do not visit regularly?
(Choose all answers that apply.)

0.8% Lack of transportation
0% Too expensive
0% I do not eat fruits and vegetables
0% I do not know the locations and hours of operation
4.6% I am working during hours of operation
0% Does not accept EBT or WIC
2.1% I have my own garden
0.5% Laziness
1.1% No Partner
3.8% Other:_____
13.9% No response

Question 45

On average, how many meals a week do you eat out?

Mean: **1.7** Meals eaten out each week

Question 46

Have you ever been told by a doctor, nurse, or other health professional that you have any of the following?

Asthma	5.8%	Yes	**94.2%**	No
Depression	22.8%	Yes	**77.2%**	No
Diabetes	23.3%	Yes	**76.7%**	No
High blood pressure	46.7%	Yes	**53.3%**	No
High cholesterol	49.7%	Yes	**50.3%**	No
Mental Illness	5.9%	Yes	**94.1%**	No
Overweight/obesity	30.5%	Yes	**69.5%**	No
Heart Disease	11.8%	Yes	**88.2%**	No
Cancer	8.5%	Yes	**91.5%**	No
No response	14.3%	Yes	**85.7%**	No

Question 47

What year were you born? Mean Age 58.6

Age Groups:

0% <=18	19.2% >58-68
2.6% >18-28	15.6% >68-78
7.7% >28-38	8.4% >78-88
5.0% >38-48	0.3% >88-98
41.1% >48-58	

Question 48

Are you male or female? 33.5% Male **64.8%** Female 1.7% No Response

MEN'S HEALTH QUESTIONS. Answer the following two questions only if you are a man age 40 or older. *(If you are a man, but younger than age 40, skip to question 59. If you are a woman, skip to question 52.)*

Question 49

Do you get an annual prostate exam?

21.2% Yes **9.1%** No 0% No Response

Question 50

If you answered no to Q 49, what was the main reason you did not get an annual prostate exam? *(Choose only one answer.)*

- 0% Lack of Information (Didn't know about/Couldn't locate information about it).
- 0% Cost (Too expensive or provider wouldn't accept my insurance).
- 1.4% Service Not Available (It took too long to get an appointment; you didn't meet the eligibility requirements; provider wasn't taking new patients or enrollees; had inconvenient location or hours of operation).
- 0% Language or Cultural Barrier (This service was not sensitive to my language or cultural needs).
- 0% Lack of Transportation (Don't have access to an automobile or public transportation; don't know anyone who could give me a ride).
- **3.7%** Instructed by a health professional that an annual prostate exam was not necessary.
- 2.6% Other
- 1.1% Don't know
- 0% No Response

Question 51

How long has it been since your last prostate exam?

- **14.1%** Within the past 12 months
- 6.1% 1-2 years ago
- 0.9% 3-5 years ago
- 2.5% More than 5 years ago
- 2.8% I don't know/don't remember
- 2.4% I have never had a prostate exam
- 1.1% No response

WOMEN'S HEALTH QUESTIONS. Answer the following four (4) questions only if you are a woman.

Question 52

If you are age 40 or older, do you get a mammogram annually?

30.1% Yes 28.9% No 0.6% Under age 40 0% No Answer

Question 53

If you answered no to Q 52, what was the main reason you did not get an annual mammogram?
(Choose only one answer.)

0%	Lack of Information (Didn't know about/Couldn't locate information about it)
8.9%	Cost (Too expensive or provider wouldn't accept my insurance)
0%	Service Not Available (It took too long to get an appointment; you didn't meet the eligibility requirements; provider wasn't taking new patients or enrollees; had inconvenient location or hours of operation)
0%	Language or Cultural Barrier (This service was not sensitive to my language or cultural needs)
0%	Lack of Transportation (I don't have access to an automobile or public transportation; I don't know anyone who could give me a ride.)
1.3%	Instructed by a health professional that an annual mammogram was not necessary
13.4%	Other
5.0%	Don't know
0%	No Response

Question 54

How long has it been since your last mammogram?

26.0%	Within the past 12 months
19.5%	1-2 years ago
5.8%	3-5 years ago
2.9%	More than 5 years ago
0%	I don't know/don't remember
5.3%	I have never had a mammogram
0%	No Response

Question 55

Do you get a Pap test at least every 1-3 years? **41.0%** Yes 24.2% No 0.3% No response

Question 56

If you answered no to Q 55, why don't you get a pap test at least every 1-3 years?
(Choose only one answer.)

1.8%	Lack of Information (Didn't know about/Couldn't locate information about it).
4.8%	Cost (Too expensive or provider wouldn't accept my insurance).
0%	Service Not Available (It took too long to get an appointment; you didn't meet the eligibility requirements; provider wasn't taking new patients or enrollees; had inconvenient location or hours of operation).
0%	Language or Cultural Barrier (This service was not sensitive to my language or cultural needs).
0%	Lack of Transportation (I don't have access to an automobile or public transportation; I don't know anyone who could give me a ride).
6.3%	Instructed by a health professional that a pap test every 1-3 years was not necessary
9.8%	Other
1.0%	Don't know
0.6%	No response

Question 57

How long has it been since your last Pap test?

28.0% Within the past 12 months
12.3% 1-2 years ago
9.4% 3-5 years ago
6.2% More than 5 years ago
1.2% I don't know/don't remember
8.0% I have never had a pap test
0% No Response

Question 58

FOR MEN AND WOMEN: If you are a man or woman age 50 or older, have you ever had a test or exam for colon cancer?

55.7% Yes 28.7% No 1.0% Under age 50 0% No Response

PART 5: Adolescent Behavior (ages 9-17)

Question 59

Do you have children between the ages of 9 and 17 for which you are the caretaker? (Includes step-children, grandchildren, or other relatives.)

12.6% Yes **85.7%** No 0% No response

Question 60

Which of the following health topics do you think your child (ren) needs more information about? *(Read list. Allow time for a yes or no following each item. Choose all answers that apply.)*

7.4%	Nutrition	7.4%	Gang violence
8.5%	Physical Activity	9.8%	Reckless driving/speeding
1.9%	Sex	1.6%	Eating disorder (e.g. anorexia or bulimia)
3.0%	Tobacco	5.7%	Mental Health issues (depression, anxiety)
6.0%	Asthma Mgmt	5.7%	Suicide Prevention
6.0%	Diabetes Mgmt	1.9%	Substance Abuse (alcohol/drugs)
8.5%	Overweight/Obesity	3.3%	STDs including HIV
10.1%	First Aid/CPR	1.1%	Other: _____ Job: 1.1%

0% My child does not need information on any of the above topics

PART 6: Emergency Preparedness

The next seven questions ask about how prepared you and your household are for an emergency.

Question 61

Does your household have working smoke and carbon monoxide detectors?
(Choose only one answer.)

52.4% Yes, smoke detectors only
1.9% Yes, carbon monoxide detectors only
32.7% Yes, both
11.6% No
0.3% Don't know
1.1% No response

Question 62

Does your household have a Family Emergency Plan?

54.7% Yes 43.9% No 0.3% Don't know 1.1% No response

Question 63

Are there members of your family with special needs (homebound, bedridden, handicapped, etc.) who will need additional assistance in the event of an emergency, large-scale disaster, or evacuation?

21.9% Yes **77.0%** No 0% No Response

Question 64

Does your household have a basic emergency supply kit? If yes, how many days do you have a supply for? These kits can include; water and non-perishable food, any necessary prescriptions, battery powered or hand crank weather radio, first aid supplies, flashlight, and batteries, etc.

45.8% No
18.7% 3 days
24.2% 1 Week
1.1% No Response
6.4% 2 weeks
3.8% More than 2 weeks
0% Don't know

Question 65

What would be your main way of getting information from authorities in a large-scale disaster or emergency?

58.1% Television
14.3% Radio
0.2% Internet
0% Print media (ex: newspaper)
3.2% Cell phone
6.9% Neighbors
4.1% Scanner
1.8% County Reverse 911/Emergency Alert Phone System
5.8% Text message (emergency alert system)
2.4% Telephone
0% Social networking site (i.e. Facebook)
1.5% Don't know
0% No Response
10.3% Other: _____

Question 66

If public authorities announced a mandatory evacuation from your neighborhood or community due to a large-scale disaster or emergency, would you evacuate?

89.3% Yes 2.1% No 7.5% Don't know 0% No Response

Question 67

What would be the main reason you might not evacuate if asked to do so?
(Choose only one answer.)

0% Lack of transportation
2.9% Lack of trust in public officials
4.3% Concern about leaving property behind
0.5% Concern about personal safety
1.8% Concern about family safety
0.7% Concern about leaving pets
2.4% Concern about traffic jams and inability to get out
0.3% Can't afford to evacuate (gas, hotel stay, eating out)
8.6% Other: _____
19.9% Don't know
5.4% No response

PART 7: Demographics

Please answer this next set of questions so we can see how different types of people feel about local health issues.

Question 68

Do you work or go to school outside of Bertie County?

11.5% Yes **87.4%** No 0% No Response

Question 69

What is your race or ethnicity? *(Choose only one answer.)*

65.3% African American/Black	32.1% Caucasian/White
0% Asian/Pacific Islander	0% Native American
0.6% Hispanic/Latino	0.8% Other: _____
0.8% African America/Native American	0% No Response

Question 70

What is your marital status?

49.6% Married	4.4% Separated	14.0% Never married
13.6% Widowed	12.5% Divorced	0.8% Other: _____
0.8% Single		

Question 71

What is the highest education level you have completed? *(Choose only one answer.)*

4.3% Less than 9th grade
17.0% 9th-12th grade, no diploma
27.4% High school graduate (or GED/equivalent)
22.2% Associate's Degree or Vocational Training
17.1% Some college (no degree)
6.7% Bachelor's degree
4.2% Graduate or professional degree
0% Other: _____

Question 72

What is your employment status? *(Choose all answers that apply.)*

21.0% Employed full-time
0% Employed part-time
8.3% Unemployed
45.7% Retired
9.2% Disabled; unable to work
5.6% Student
7.4% Homemaker

Question 73

What was your total household income last year, before taxes? (*This is the total income, before taxes, earned by all people over the age of 15 living in your house.*)

33.7% Less than $20,000
9.4% $20,000 to $29,999
8.8% $30,000 to $49,999
15.0% $50,000 to $74,999
7.9% $75,000 to $100,000
2.9% Over $100,000
7.2% No response
14.0% Don't know

Question 74

How many individuals live in your household? Mean**: 2.4**

Question 75

Do you have access to the internet?

61.6% Yes 37.3% No 0% No Response 0% Don't Know

THE END!

Thank you very much for completing the Community Health Survey!

Bertie County Stakeholder Survey Results

Conducting stakeholder surveys is an important part of the Community Health Assessment (CHA) process and ensures that we engage formal and informal leaders of the community in learning and understanding the needs of individuals, as well as the health status of our communities as a whole. Stakeholder surveys were included in our 2013 CHA process in addition to the Community Health Opinion surveys. This process helps identify and evaluate health issues in each respective county.

Stakeholder surveys were referred to as key informant interviews in our 2010 CHAs. The CHA Leadership Team decided to conduct these surveys via Survey Monkey as opposed to conducting a phone interview as used in the 2010 process in hopes to increase participation. Self-administered surveys can be completed at the convenience of the respondent, and provides anonymity that allows people to be honest without fear of judgment.

Stakeholders were identified by members of our Healthy Carolinians Partnerships and CHA Leadership Team. Potential participant representation included agencies and organizations in key sectors of the community such as; local health and human services, business, education, law enforcement, local hospitals, civic groups including churches, and government. An invitation to participate was sent by e-mail to fourteen stakeholders and seven completed a survey in the month of February 2013. Some participants work in several counties (regional); their responses are included in each county they listed.

Survey data was initially recorded in narrative form in Microsoft Word. Themes in the data were identified and representative quotes were drawn from the data to illustrate the themes. All participating stakeholders were assured that their responses would not be associated with them as an individual, or any organization being represented. Therefore, responses are grouped by question and are in no particular order. Some quotes may have been altered slightly to preserve confidentiality. These responses are strictly the opinion of the participants; they have not been researched for accuracy.

Survey Questions and Responses:

1. Describe the services your agency provides for county residents and describe the residents who currently are most likely to use your services.

-Provides food and grocery items to more than 130 501c3 and faith based partners that help hungry men, women, and children; serving primarily low-income, disabled, and working poor from all demographics.

-Provide local government consulting; serving cities, town, and counties

-Provides public health services; serving mostly females ages 14-50 and a few young males for family planning services, Child Health Clinic serves children ages 2 months to teenagers, STD clinic serves both

young males and females ages 16-30s, Adult Health Clinic serves families ages 20s-60s. Majority of clients are African American.

-Provides parenting support, child care subsidies, coaching/assistance to child care providers; serving parents (generally mothers) of children under age six, parents of children with special needs, parents of children in child care programs, low income families seeking support to pay for children care, racial make-up generally reflect the counties where people live.

-I am not in a service organization

-Power, trash pickup, water, all infrastructures; serving all city residents and some county residents

-Provides patient services and education; cancer knows no barriers among age, race, gender, or socio-economic status.

2. In the past 5 years, have there been any changes in the composition of the people who use your services, if so please describe.

-The composition of people seeking emergency food has grown by 48% over the past five years due to the poor economic climate.

-Yes, serving a few more Hispanics

3. What do you think are the barriers residents encounter in accessing your services?

-Transportation is a barrier for rural NENC residents followed by access. Emergency food programs tend to serve when people are traditionally working.

-Stigma that our services are for poverty clients; some transportation issues

-Sometimes our services are limited due to the amount of funding we have; sometimes people simply don't know about our services

-Lack of wealth – they are poor

-A community-based volunteer health organization. There is only one staff person to serve our county and this individual is also responsible for several other counties. Since we do not have an office in our community, it is difficult to inform people of the services available and have them be aware of where their fundraising efforts go. Also, because of the lack of media in our county, it is difficult to disseminate information in a prudent and timely manner.

4. What does your agency do to try to meet the special needs of people who use your services (e.g. language/cultural issues, cost, transportation, etc)?

-Provides Road to Recovery transportation services and/or gas vouchers for travel to and from treatment; wigs and make-up, etc are also made available free of charge to cancer patients; information is also made available in Spanish

-Usually deal with elected officials boards, so not an issue

-Except for some trainings all of our services are free of charge; we provide some services in-home/on-site so there are no transportation costs; we provide child care and meals at some events to make attendance easier for families; we do not have funds to have a dedicated bilingual person

-Have different locations where they can access services – weatherize homes, etc.

-Access the language line as needed for non-English speaking clients; two nightly immunization clinics are each month

-In 2008, we launched a mobile food pantry program to enable more people in rural areas to have greater access to food. The program has been tremendously successful. This program model has been the springboard to provide value added services to the recipients by partnering with the local health department, Cooperative Extension Service and social services.

5. Is there anything else you would like to share about your organization?

-We are always looking for opportunities to collaborate with community

6. What services/programs are needed that are not currently available?

-We need a shelter for the homeless; we need job training services; we need a public transportation system that runs a specific route to major areas; we need a real farmers market to provide greater access to healthy fruits and vegetables

-Referral resources for financial assistance for colonoscopy

-More parenting; more services to support health and nutrition of young children; drop-in child care

-More educational training availability; more health related programs taught in our high school and throughout our community; college support system

-Shopping facilities: clothing and grocery. Increase in number of beds at hospital seems to be becoming an issue, might be a season issue, however. Dr. Attkisson, Windsor dentist, is nearing the age of retirement; it might be helpful to him for someone to call on him to offer assistance or arrangements.

-Dental services; outreach into other areas of the county beyond the county seat of Windsor with county funded programs and services

7. Overall, what would you consider to be the county's greatest strength?

-The university and community college system seem to be focusing on the future success of NENC and its residents.

-Our natural resources and abundance of outdoor, water and land features; good healthcare facilities and services

-People

-Natural resources; clean environment; intergovernmental cooperation; the willingness of the citizens to assist one another

-Location and great people

-The resilience of its citizens

8. What do you feel are the major challenges faced by the county?

-I think limited funding or budget crisis cause people to think that any improvement is impossible to achieve

-Education improvement; diversification of jobs; poverty

-Financial; no insurance for kids/adults; unemployment; no transportation services except ICPTA; lack of citizen's perspective for preventive services and wellness education

-Poverty/few high paying jobs; lack of recognition that there may be solutions for family concerns; poor schools

-Economic development; educational advancement for our high school graduates; retraining programs for unemployed individuals; apathy of youth; exodus of our youth following high school graduation and college graduation; funding for current and new programs for our citizens

-Lack of jobs

-Economic growth and the drain on the county's financial resources caused by the demand for social services programs

9. Looking specifically at health, what do you think are the most important health problems/health concerns in the county?

-In a word "OBESITY"

-Increase in cancer; lack of affordable transportation for most of the elderly

-Hypertension and stroke (early medical care at local hospitals after a stroke to help decrease long term effects); cancers and lack of interest for preventive screenings; diabetes management and preventive health prior to diagnosis; healthy eating habits; young and old exercise

-Childhood and adult obesity

-Accessibility to our present caregivers (waiting two weeks or more for appointment when you are sick and constantly being told to go to the emergency room for service when it is not an emergency); insufficient quantity of caregivers; transportation to/from health services for many of our citizens, especially seniors and the indigent

-Obesity; lack of primary care doctors

-Cancer and diabetes

10. What factors do you believe are causing these health problems or concerns?

-1 in 5 residents lives at or below the poverty level. Having limited financial resources creates the perfect storm. They buy filling foods high in carbohydrates and sugar, and low in nutritional value because that is what they can afford. The problem we have in this region is that there is a limited supply of jobs that pay a living wage and provide health insurance which equates to a better quality of life.

-Unknown

-Lack of concern until an acute problem occurs; access to physical education programs and interventions; diet and lifestyle

-High cost of healthy foods

-Lack of training for office staff; lack of interest in the individual's needs; insufficient number of workers to meet the needs of individuals; inability to attract long term caregivers to the community because of location; educational services for the families of the caregivers

-Poverty; lack of education

-Lack of preventive measures and lack of early detection due to underinsured individuals

11. What do you think could be done to solve or overcome these health problems or concerns?

-Education and jobs

-More research

-Supervised community exercise and sporting events year long (utilize the school gyms by the community) to include education; medical providers to reinforce preventive services at each visit; promote good eating/exercise habits in school starting in kindergarten through 12th (PE required all grades); provide sports for all children, not just varsity levels

-More farmers markets

-"People skills" training for the office staff of the healthcare providers; improve the educational resources we have and secure expansion of educational programs in place currently

-Provide jobs

-Better access to health care for all individuals regardless of income

12. Please rate the following statements:

	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
There is a good healthcare system in the county	**1**	**5**		**1**	
The county is a good place to raise children.	**1**	**3**	**1**	**2**	
The county is a good place to grow old.	**2**	**2**	**2**	**1**	
There are plenty of ways to earn a living in the county.		**1**		**2**	**4**
The county is a safe place to live.		**5**	**1**	**1**	
There is plenty of support for individuals and families during times of stress and need in the county.		**4**		**3**	
The county has clean air.	**2**	**5**			
The county has clean water.	**2**	**4**	**1**		

Numbers represent the number of responses for each statement.

13. Additional thoughts or comments:

-Keep asking for feedback from the community

-We live in an economically deprived area which greatly influences the economical and educational assets of our citizens. It affects the ability of our service providers to meet the needs of our citizens and the availability of the services. It is a vicious circle which prohibits the influx of new opportunities because of the lack of funds and trained personnel cannot support prosperous new enterprises. This county is trapped by the lack of economic development which could provide prosperity for the citizens and promote a greater level of cultural and economic resources. Without economic development little advancement of service for our citizens will occur as they cannot be sustained.