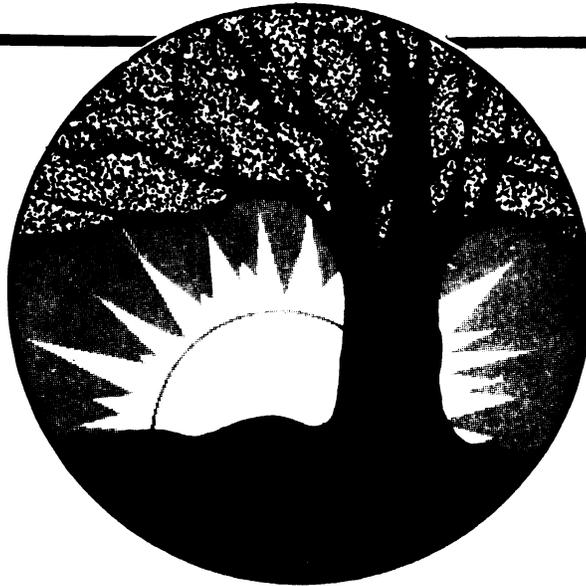


PERFORMANCE AUDIT

Department of Health
October 2008



John G. Morgan
Comptroller of the Treasury



State of Tennessee
Comptroller of the Treasury
Department of Audit
Division of State Audit

Arthur A. Hayes, Jr., CPA, JD, CFE
Director

Deborah V. Loveless, CPA, CGFM
Assistant Director

Diana L. Jones, CGFM
Audit Manager

Dean Agouridis, CGFM
In-Charge Auditor

Patrick Cooper, JD
Barbara Ragan
Ricky Ragan
Wesley M. Suddarth
Staff Auditors

Amy Brack
Editor

Comptroller of the Treasury, Division of State Audit
1500 James K. Polk Building, Nashville, TN 37243-0264
(615) 401-7897

Performance audits are available on-line at www.comptroller.state.tn.us/sa/reports/index.html.

For more information about the Comptroller of the Treasury, please visit our website at
www.comptroller.state.tn.us.



STATE OF TENNESSEE
COMPTROLLER OF THE TREASURY

State Capitol
Nashville, Tennessee 37243-0260
(615) 741-2501

John G. Morgan
Comptroller

October 16, 2008

The Honorable Ron Ramsey
Speaker of the Senate
The Honorable Jimmy Naifeh
Speaker of the House of Representatives
The Honorable Thelma M. Harper, Chair
Senate Committee on Government Operations
The Honorable Mike Kernell, Chair
House Committee on Government Operations
and
Members of the General Assembly
State Capitol
Nashville, Tennessee 37243

Ladies and Gentlemen:

Transmitted herewith is the performance audit of the Department of Health. This audit was conducted pursuant to the requirements of Section 4-29-111, *Tennessee Code Annotated*, the Tennessee Governmental Entity Review Law.

This report is intended to aid the Joint Government Operations Committee in its review to determine whether the department should be continued, restructured, or terminated.

Sincerely,

John G. Morgan
Comptroller of the Treasury

JGM/dlj
07-009

State of Tennessee

Audit Highlights

Comptroller of the Treasury

Division of State Audit

Performance Audit
Department of Health
October 2008

AUDIT OBJECTIVES

The objectives of the audit were to assess the efforts the Department of Health has made to reduce five major health problems in Tennessee, including developing and implementing appropriate outcome measures; to determine whether the department has developed and implemented an effective system to estimate or project demand for primary care services for patients it serves in local health clinics, including targeting the population to be served; to evaluate how the department ensures that emergency medical services workers it licenses meet continuing education requirements; to determine how the department assesses the need for, and recruits, medical professionals in areas of Tennessee underserved by such professionals; to determine how program directors monitor their contractors and whether this monitoring is regular in nature and meets the requirements set forth in department policies and procedures; to assess if the department's process for issuance of vital records has changed since the department's October 2003 performance audit; to evaluate the effectiveness of internal quality management system reviews of county health department operations relating to the accuracy and completeness of patient files and Patient Tracking and Billing Management Information System (PTBMIS) information; to determine if the Division of General Environmental Health is completing quality assessments of all its field and contract county offices on a regular and timely basis; to assess whether the department has adequate formal emergency response plans, developed in collaboration with other state and federal agencies, in the event of a bioterrorism attack or a pandemic flu outbreak; to determine the adequacy of department programs to ensure patient safety in hospitals and other health facilities; to determine what type of monitoring system the department has in place to ensure that all child deaths requiring child fatality reviews get such reviews; to evaluate whether the Department of Health meets federal Health Insurance Portability and Accountability Act (HIPAA) data privacy requirements regarding patients it serves (e.g., at its local health clinics); to summarize Title VI-related information for the department; and to recommend possible alternatives for legislative and administrative actions that might result in more efficient and effective operation of the department.

FINDINGS

The Department of Health Does Not Yet Have a Monitoring Program Using Outcome Measures to Assess Programs It Has Implemented to Reduce Major Health Problems

Auditors reviewed the Department of Health's efforts to reduce five major health problems: (1) cardiovascular disease, (2) diabetes, (3) HIV/AIDS, (4) infant mortality, and (5) obesity. The degree of severity of each of these problems is a major indicator of public health status. We were particularly interested in whether the department has outcome measures to assess whether its efforts (i.e., the programs it has implemented) to reduce these problems are successful. We determined that the department does not currently have outcome measures related to significantly reducing these five health problems, although it has taken an initial step through the Tennessee Heart Disease and Stroke Prevention and Care Plan (page 8).

The Department Needs to Improve Efforts to Recruit Health Professionals to Medically Underserved Areas of the State and to Monitor the Health Professionals Recruited

In an effort to alleviate problems with the poor distribution and shortage of health professionals in Tennessee, the General Assembly passed the Health Access Act, effective July 1, 1989. Although the Department of Health has made efforts to improve medical care in underserved areas, it (1) does not have a formal plan to recruit health professionals to underserved areas, and (2) does not adequately monitor the professionals it does recruit to ensure they meet grant obligations (page 15).

Collection and Reporting of Information on Children's Deaths, Pursuant to the Child Fatality Review and Prevention Act of 1995 and the Sudden, Unexplained Child Death Act, Needs Improvement

Auditors' review of the Child Fatality Review Program identified several areas of concern that hinder the Department of Health in ensuring that all child deaths have been reviewed as required and that the information needed to take action to reduce child deaths in Tennessee is available

timely and in sufficient detail. These areas are (1) collecting all child death reviews from local child fatality prevention teams in a timely manner and resolving data inconsistencies to ensure all required reviews are performed, (2) developing and implementing policies and procedures for the Child Fatality Review Program and rules and regulations related to the Sudden, Unexplained Child Death Act, and (3) improving the timeliness and content of the program's annual report. However, some of these issues (in particular the timeliness issues) are also affected by entities outside the department's and the local review teams' control (page 20).

Although the Office of Vital Records Has, in Practice, Made Efforts to Identify Applicants for Certified Copies of Vital Records, State Law and Departmental Rules Still Do Not Sufficiently Safeguard Access to Vital Records, Specifically Birth Certificates

Since 1993, when the Tennessee General Assembly passed legislation opening vital records and making them public, access to vital records has become an issue because of national security concerns and the increase in identity theft crimes. Of particular concern is the use of birth certificates in identity theft. This issue led to a finding in the Department of Health's October 2003 performance audit. Neither Tennessee state statutes nor Department of Health rules and regulations require applicants requesting certified copies of vital records to provide proof of their identity, a situation that has not changed since the 2003 audit. Beginning February 15, 2005, the Office of Vital Records began verifying identification of those requesting certified documents in person, by mail, or by phone, through a directive issued by the State Registrar. On April 1, 2005, the Office of Vital Records entered into a contract with VitalChek Network, Inc., to verify the identity of individuals who make their requests for vital records to the central Vital Records Office in Nashville and who are paying with credit or debit cards. However, there are still some weaknesses in the access safeguards, especially

regarding non-certified birth certificates (page 27).

Medical Information in the Department's Computer System Continues to Have Accuracy Problems Despite the Improvement in the Accuracy of Pharmacy Inventory Data

The department uses a computer system called PTBMIS (Patient Tracking and Billing Management Information System) to coordinate with local health departments. PTBMIS compiles some medical information, generates bills, tracks drug and vaccine supplies, and provides information for reports to the state and federal government. As part of the department's internal quality management system, regional staff conduct quality management reviews of county health department operations, including reviewing the accuracy and completeness of

patient files and PTBMIS information. The Department of Health's October 2003 performance audit reported that medical and pharmaceutical supply information in PTBMIS was often incomplete and/or inaccurate, based on errors identified by the department's on-site quality management reviewers. Our follow-up review found improvements, particularly in the accuracy of pharmaceutical supply information. However, Standard 22 of the department's Encounter Medical standards continues to be a problem for many county health departments. In evaluating Standard 22, the bureau monitor looks at the patient's medical record and then makes sure that the correct services and procedure codes (as detailed in the *PTBMIS Codes Manual*) are put into PTBMIS to match the medical record (page 31).

OBSERVATIONS AND COMMENTS

The audit also discusses the following issues: local health departments' transition to providing primary care; the Emergency Medical Services Division's lack of verification of continuing education documentation; emergency response plans; patient safety; protection of patient health data; the Division of General Environmental Health's quality assessments of its field offices and contract offices; and contract monitoring efforts (page 36).

ISSUES FOR LEGISLATIVE CONSIDERATION

The General Assembly may wish to consider amending Section 68-3-205, *Tennessee Code Annotated*, to restrict access to vital records and specifically require department personnel to request some type of documentation of identity (page 30).

Performance Audit Department of Health

TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION	1
Purpose and Authority for the Audit	1
Objectives of the Audit	1
Scope and Methodology of the Audit	2
Organization and Responsibilities	3
Revenues and Expenditures	6
FINDINGS AND RECOMMENDATIONS	8
1. The Department of Health does not yet have a monitoring program using outcome measures to assess programs it has implemented to reduce major health problems	8
2. The department needs to improve efforts to recruit health professionals to medically underserved areas of the state and to monitor the health professionals recruited	15
3. Collection and reporting of information on children’s deaths, pursuant to the Child Fatality Review and Prevention Act of 1995 and the Sudden, Unexplained Child Death Act, needs improvement	20
4. Although the Office of Vital Records has, in practice, made efforts to identify applicants for certified copies of vital records, state law and departmental rules still do not sufficiently safeguard access to vital records, specifically birth certificates	27
5. Medical information in the department’s computer system continues to have accuracy problems despite the improvement in the accuracy of pharmacy inventory data	31
OBSERVATIONS AND COMMENTS	36
Local Health Departments’ Transition to Providing Primary Care	36
The Emergency Medical Services Division’s Lack of Verification of Continuing Education Documentation	38
Emergency Response Plans	42
Patient Safety	45

TABLE OF CONTENTS (cont.)

	<u>Page</u>
Protection of Patient Health Data	46
Division of General Environmental Health's Quality Assessments of Its Field Offices and Contract Offices	47
Contract Monitoring Efforts	49
RECOMMENDATIONS	52
Legislative	52
Administrative	52
APPENDICES	55
<i>Healthy People 2010</i> Leading Health Indicators and Associated Objectives Progress in Tennessee and the United States	55
Description of Cardiovascular Disease	58
Description of Diabetes	68
Description of HIV/AIDS	74
Description of Infant Mortality	81
Description of Obesity	89
Department of Health Regions	93
<i>Tennessee Heart Disease and Stroke Prevention and Care Plan, Volume 2</i> Goals and Objectives	94
Membership of the State Child Fatality Prevention Team, As Required by Section 68-142-103, <i>Tennessee Code Annotated</i>	99
Membership of the Local Child Fatality Prevention Teams, As Required by Section 68-142-106, <i>Tennessee Code Annotated</i>	100
2004 Primary Care Health Resource Shortage Areas	101
Summary of the March 2004 Tennessee Office of Homeland Security's Training, Exercise, and Continuing Education Program	102
Title VI Information	106

Performance Audit Department of Health

INTRODUCTION

PURPOSE AND AUTHORITY FOR THE AUDIT

This performance audit of the Tennessee Department of Health was conducted pursuant to the Tennessee Governmental Entity Review Law, *Tennessee Code Annotated*, Title 4, Chapter 29. Under Section 4-29-229, the Tennessee Department of Health was scheduled to terminate June 30, 2008, and is currently in wind-down, pending legislative action. The Comptroller of the Treasury is authorized under Section 4-29-111 to conduct a limited program review audit of the department and to report the results to the Joint Government Operations Committee of the General Assembly. This performance audit is intended to aid the committee in determining whether the department should be continued, restructured, or terminated.

OBJECTIVES OF THE AUDIT

The objectives of the audit were

1. to assess the efforts the Department of Health has made to reduce the following major health problems in Tennessee, including developing and implementing appropriate outcome measures: cardiovascular disease, diabetes, HIV/AIDS, infant mortality, and obesity;
2. to determine whether the department has developed and implemented an effective system to estimate or project demand for primary care services for patients it serves in local health clinics, including targeting the population to be served;
3. to evaluate how the department ensures that emergency medical services workers it licenses meet continuing education requirements;
4. to determine how the department assesses the need for, and recruits, medical professionals in areas of Tennessee underserved by such professionals;
5. to determine how program directors monitor their contractors and whether this monitoring is regular in nature and meets the requirements set forth in department policies and procedures;
6. to assess if the department's process for issuance of vital records has changed since the department's October 2003 performance audit;
7. to evaluate the effectiveness of internal quality management system reviews of county health department operations relating to the accuracy and completeness of

- patient files and Patient Tracking and Billing Management Information System (PTBMIS) information;
8. to determine if the Division of General Environmental Health is completing quality assessments of all its field and contract county offices on a regular and timely basis;
 9. to assess whether the department has adequate formal emergency response plans, developed in collaboration with other state and federal agencies, in the event of a bioterrorism attack or a pandemic flu outbreak;
 10. to determine the adequacy of department programs to ensure patient safety in hospitals and other health facilities;
 11. to determine what type of monitoring system the department has in place to ensure that all child deaths requiring child fatality reviews get such reviews;
 12. to evaluate whether the Department of Health meets federal Health Insurance Portability and Accountability Act (HIPAA) data privacy requirements regarding patients it serves (e.g., at its local health clinics);
 13. to summarize Title VI-related information for the department; and
 14. to recommend possible alternatives for legislative and administrative actions that might result in more efficient and effective operation of the department.

SCOPE AND METHODOLOGY OF THE AUDIT

The activities and procedures of the Tennessee Department of Health were reviewed with a focus on procedures in effect during fieldwork (May 2007 to September 2007). The audit was conducted in accordance with the standards applicable to performance audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States. The methods include

1. review of applicable statutes and rules and regulations;
2. examination of the department's documents, files, policies, and procedures;
3. examination of prior performance audits, financial and compliance audit reports, and audit reports from other states;
4. review of online information from state and federal agencies; and
5. interviews with department staff and federal and other state agency staff who interact with the department.

ORGANIZATION AND RESPONSIBILITIES

The Tennessee Department of Health is responsible for protecting and improving the health of Tennesseans. The department is organized into offices and bureaus that report directly to the Commissioner of Health. (See the organization chart on page 4.) The Commissioner’s Office provides overall direction of the department’s operations, including supervision and coordination for health services and regulatory activities. Several offices assist the commissioner in this role, including the Offices of Communications; General Counsel; Human Resources; Information Technology Services; Internal Audit; Legislative Services; Patient Care Advocacy; Policy, Planning and Assessment; and Special Health Initiatives.

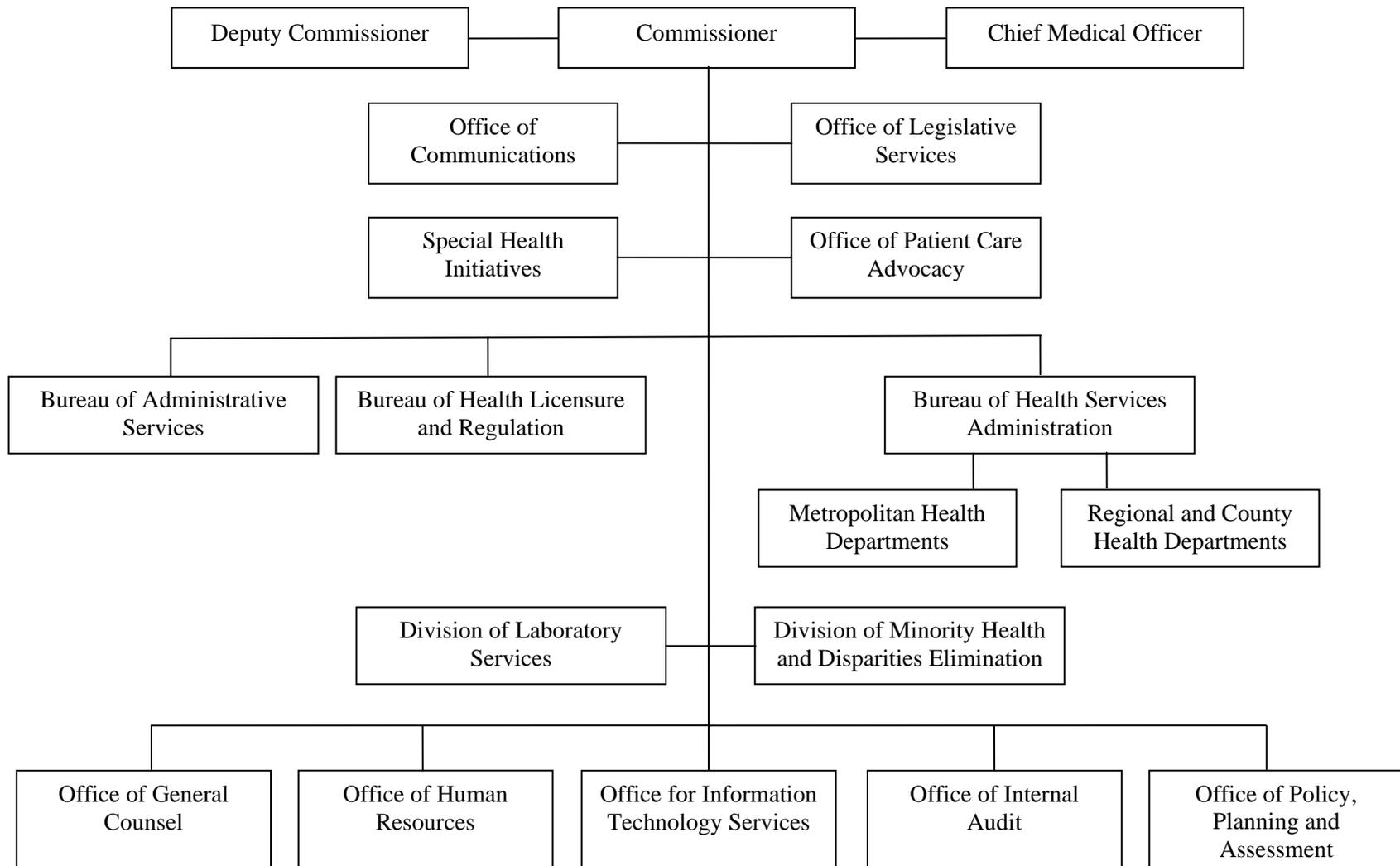
Department of Health Offices

Office	Role
Office of Communications	Responsible for the department’s internal and external communications and strategic planning, including promoting better health to citizens of Tennessee.
Office of General Counsel	Provides legal representation and advisory support services to the department.
Office of Human Resources	Administers and oversees all the personnel functions of the department.
Office for Information Technology Services	Provides information technology services to the department.
Office of Internal Audit	Independently appraises the efforts of the department’s bureaus and divisions to ensure their individual objectives are met and the mission of the department is achieved in an efficient and effective manner. Also acts as an avenue for reporting fraud, waste, and abuse within the department.
Office of Legislative Services	Serves as the “voice” of the department to the Tennessee General Assembly, including representing and promoting department policy, legislative agenda, and other interests to state legislators.
Office of Patient Care Advocacy	Provides assistance pertaining to long-term health care matters with the goal of providing guidance and help in seeking appropriate resources and services determined to be in the best interest of the patient.
Office of Policy, Planning and Assessment	Provides health statistics and information services to support the department’s operations.
Office of Special Health Initiatives	Ensures that the department develops and maintains efficient and effective health promotion partnerships with various agencies and offices within and external to state government.

Source: Department of Health.

The Department of Health’s main programs for implementing its mission are located in three bureaus and two divisions: the Bureau of Administrative Services, the Bureau of Health Licensure and Regulation, and the Bureau of Health Services Administration; and the Division of Laboratory Services and the Division of Minority Health and Disparities Elimination. The Bureau of Administrative Services provides administrative support to the various programs of the department through six units: Contract Review, Facilities Management and Capital Projects, Financial Management, Fiscal Services, Procurement and Property, and Support Services. Regarding the Bureau of Health Licensure and Regulation, only Emergency Medical Services is included in this audit. A review of this bureau’s other activities is included as part of the audits of the Health Related Boards and the Board for Licensing Health Care Facilities.

**Department of Health
Organization Chart
February 2008**



Source: Department of Health.

The Bureau of Health Services Administration is responsible for providing public health services (both primary care and prevention services) to the citizens and visitors of Tennessee through 89 rural and 6 metropolitan county health departments. These local health departments are overseen by the bureau's 13 regional health offices. The Bureau of Alcohol and Drug Abuse Services was moved by Executive Order to the Department of Mental Health and Developmental Disabilities in February 2007, and is therefore not included in this audit.

The Division of Laboratory Services provides analytical medical and environmental testing services for the department. In addition, the division assists other Tennessee laboratories in improving their laboratory services, and serves the entire state as a reference laboratory for difficult, unusual, or otherwise unavailable laboratory procedures. The Division of Minority Health and Disparities Elimination's mission is to "promote health policies, programs, and services designed to improve health and quality of life by preventing and controlling the disproportionate burden of disease, injury, and disability among racial and ethnic minority populations." The division is also responsible for Title VI enforcement.

Our focus in this audit was mainly on the operations of the Bureau of Health Services Administration. (See the organization chart of the bureau on page 7.) The bureau has several sections directly involved in providing public health services. (See description below.)

Bureau of Health Services Administration Sections

Section	Role
Breast and Cervical Cancer	Administers the statewide breast and cervical cancer screening program for older, uninsured, or underinsured women who meet the financial eligibility requirements. Women who need treatment for breast or cervical cancer or precancerous conditions receive these services through a special TennCare waiver program.
Child Nutrition and Wellness	Educates the public concerning child nutrition and wellness issues, and advocates initiatives to improve the nutrition and wellness of children.
Communicable and Environmental Disease Services	Works with staff in regional and local health departments to provide epidemiological services to protect citizens of Tennessee from infectious diseases.
Community Services	Endeavors to reduce premature death, disease, and disability through a combination of preventive programs, wellness initiatives, and chronic disease interventions.
General Environmental Health	Regulates, by permitting and inspecting, food service establishments, public swimming pools, hotels and motels, bed and breakfast establishments, organized campgrounds, tattoo parlors, and body piercing studios. Also, by letter of agreement, conducts inspections of childcare facilities, public school buildings, and state correctional institutions.
HIV/AIDS/STD	Prevents, treats, and/or controls the spread of HIV/AIDS and other sexually transmitted diseases.
Maternal and Child Health	Responsible for grant procurement, reporting, management, program design, standard setting, technical assistance, and quality monitoring for a large number of maternal and child health programs.
Medical Services	Responsible for a wide variety of programs and services directed toward supporting medical care delivery throughout the state. These programs include a quality management program, primary care services, and pharmacy services. Also responsible for the Tennessee Bioterrorism Hospital Preparedness Program.

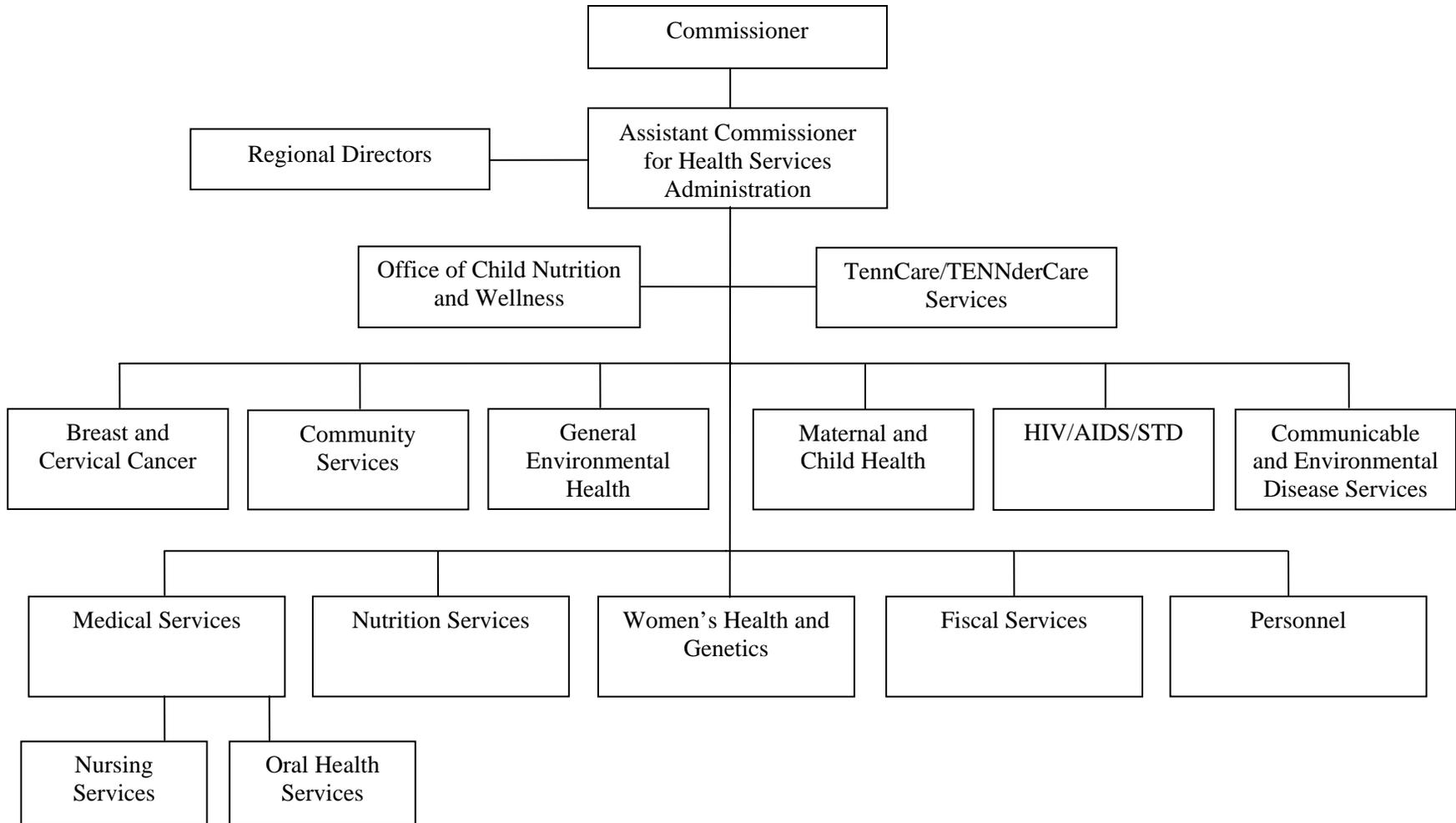
Nursing Services	Responsible for directing public health nursing services in the Department of Health.
Nutrition Services	Administers the statewide planning, implementing, training, and evaluation of multiple nutrition programs. These programs include the Special Supplemental Nutrition Program for Women, Infants and Children (WIC), the Commodity Supplemental Food Program, and the Community Nutrition Program.
Oral Health Services	Conducts dental health programs including programs that educate the public about optimal oral health, screen patients for dental disease, and treat indigent patients.
TennCare/TENNderCare Services	Performs community outreach to inform parents of TennCare-enrolled children about TENNderCare, a program administered by the Bureau of TennCare to provide well-child screenings to children and youth from birth to 21 years of age.
Women's Health and Genetics	Provides services for reproductive age women (e.g., family planning and prenatal care), newborn screening for various metabolic disorders, and newborn hearing screening.

Source: Department of Health.

REVENUES AND EXPENDITURES

During fiscal year 2007, the Department of Health had expenditures and revenues of \$491,227,200, of which \$218,539,800 was from the federal government. The major types of expenditures included Local Health Services (\$187,798,300), WIC Supplemental Foods (\$120,850,600), and Communicable and Environmental Disease Services (\$45,770,800). The department had 3,133 staff, as of August 2007.

**Department of Health
Bureau of Health Services Administration
Organization Chart
February 2008**



Source: Department of Health.

FINDINGS AND RECOMMENDATIONS

1. The Department of Health does not yet have a monitoring program using outcome measures to assess programs it has implemented to reduce major health problems

Finding

In January 2000, the U.S. Department of Health and Human Services initiated *Healthy People 2010*, a national health promotion and disease prevention program. This program succeeds a similar program called *Healthy People 2000*. The two main goals of *Healthy People 2010* are increasing the quality and number of years of healthy life and eliminating health disparities. *Healthy People 2010* has 467 objectives which serve as a “road map” to improve the health of all Americans during the first decade of the 21st Century. The program also has a limited set of objectives called Leading Health Indicators designed to help the public more easily understand health promotion and disease prevention. The ten indicators are supposed to motivate action to improve the health status of Americans. (See Appendix 1 for information on the progress Tennessee has made in meeting the targets for each of the Leading Health Indicators.) The chart below lists the ten Leading Health Indicators and their associated *Healthy People 2010* objectives.

Leading Health Indicator: Physical Activity
Objective 22-2: Percentage of adults engaging in at least moderate, regular physical activity – age adjusted
Objective 22-7: Percentage of students in grades 9 through 12 engaging in vigorous, physical activity
Leading Health Indicator: Overweight and Obesity
Objective 19-2: Percentage of adults 20 years and over who are obese – age adjusted
Objective 19-3c: Percentage of individuals aged 6 through 19 who are overweight or obese
Leading Health Indicator: Tobacco Use
Objective 27-1a: Percentage of adults who smoke cigarettes – age adjusted
Objective 27-2b: Percentage of students in grades 9 through 12 who smoked cigarettes in the past month
Leading Health Indicator: Substance Abuse
Objective 26-10a: Percentage of adolescents not using alcohol or drugs in the past 30 days
Objective 26-10c: Percentage of adults who used illicit drugs in the past month
Objective 26-11c: Percentage of adults engaging in binge drinking in the past month
Leading Health Indicator: Responsible Sexual Behavior
Objective 13-6a: Percentage of unmarried females aged 18 through 44 whose partners used condoms
Objective 13-6b: Percentage of males aged 18 through 44 using condoms
Objective 25-11a: Percentage of students in grades 9 through 12 who have never had intercourse

Objective 25-11b: Percentage of students in grades 9 through 12 who have had intercourse but not in the past three months
Leading Health Indicator: Mental Health
Objective 18-9b: Percentage of adults with recognized depression who have been treated for the depression
Leading Health Indicator: Injury and Violence
Objective 15-15a: Deaths from motor vehicle crashes, age adjusted per 100,000 individuals
Objective 15-32: Homicides, age adjusted per 100,000 individuals
Leading Health Indicator: Environmental Quality
Objective 8-1a: Percentage of persons exposed to ozone
Objective 27-10: Percentage of nonsmokers aged four and over exposed to environmental tobacco smoke – age adjusted
Leading Health Indicator: Immunization
Objective 14-24a: Percentage of children fully immunized, ages 19-35 months
Objective 14-24b: Percentage of adolescents fully immunized, ages 13-15 years
Objective 14-29a: Percentage of high-risk adults with current influenza vaccinations, noninstitutionalized ages 65 and over – age adjusted
Objective 14-29b: Percentage of high-risk adults who have ever received pneumococcal vaccinations, noninstitutionalized ages 65 and over – age adjusted
Leading Health Indicator: Access to Health Care
Objective 1-1: Percentage of persons under 65 with health insurance
Objective 1-4a: Percentage of persons with a source of ongoing care, all ages
Objective 16-6a: Percentage of pregnancies where prenatal care began in first trimester

We reviewed the Department of Health’s efforts to reduce five major health problems: (1) cardiovascular disease, (2) diabetes, (3) HIV/AIDS, (4) infant mortality, and (5) obesity. The degree of severity of each of these problems is a major indicator of public health status. We were particularly interested in whether the department has outcome measures to assess whether its efforts to reduce these problems are successful. (See page 10 for examples of such programs.) An outcome measure has at least one baseline measurement (the extent of the problem at a particular point in time, ideally in specific regions of the state and statewide) and future targets (an ideal reduced presence of the problem at future dates). We determined that the department does not currently have outcome measures related to significantly reducing these five health problems, although it has taken an initial step through the Tennessee Heart Disease and Stroke Prevention and Care Plan. The plan is described on page 11.

**Examples of Public Health Programs
(By Major Health Problem)**

Major Health Problem: Cardiovascular Disease	
Program	Description
Tennessee Heart Disease and Stroke Prevention and Care Program	Seeks to lessen the burden of heart disease and stroke and improve the cardiovascular health of Tennesseans through changes in policy and environment. This program promotes heart healthy lifestyles and addresses individuals, targeted risk groups, and whole populations.
Major Health Problem: Diabetes	
Program	Description
Diabetes Prevention and Control Program	Focuses on the prevention of prediabetes, diabetes, and the prevention of further complications associated with diabetes in individuals already diagnosed. The program's goal is to reduce controllable risk factors for developing diabetes such as high blood pressure, high cholesterol, lack of activity, overweight, obesity, and poor nutrition.
Major Health Problem: HIV/AIDS	
Program	Description
HIV and STD Prevention Services	Focuses on the prevention of the spread of HIV/AIDS and other sexually transmitted diseases. The program's target populations for HIV prevention are HIV-positive persons, drug users, high risk heterosexuals, men having sex with men, and youth.
Ryan White	Provides medical care, medications, insurance assistance, and support services to low-income HIV-positive Tennessee residents.
Major Health Problem: Infant Mortality	
Program	Description
Healthy Start	Seeks, through intensive home visits, to reduce infant and child mortality, prevent child abuse and neglect, and promote family health. Families must be assessed to be at an elevated risk for child abuse or neglect in order to be eligible for the program. Services provided are assessments, screenings, child development education, parenting education, parenting support, and health support.
Perinatal Regionalization	The five Regional Perinatal Centers provide perinatal care for high-risk pregnant women and newborns if no other appropriate facility is available to manage significant high-risk conditions. Funding from the state (from the Bureau of TennCare) is used to provide consultation and referral for facilities and for health care providers within the respective perinatal region, professional education for staff of hospitals and for other health care providers within the region, and maternal-fetal and neonatal transport.
Prenatal Care	Local health department clinics offer two levels of prenatal care: (1) All local health department clinics offer basic prenatal care, which includes pregnancy testing, eligibility determination for TennCare, WIC, counseling, information, and referral for medical care. (2) Eleven counties provide comprehensive prenatal care with delivery by a private physician for mothers with no health insurance who do not qualify for TennCare. These counties were Bedford, Coffee, Dickson, Hamilton, Macon, Madison, Montgomery, Putnam, Rutherford, Sumner, and Wilson, as of August 2007.

Major Health Problem: Obesity	
Fruits and Veggies More Matters	Seeks to promote good health by increasing public awareness of the importance of eating a diet rich in fruits and vegetables every day, providing consumers with specific information about how to include more servings of fruits and vegetables into their daily routines, and increasing the availability of fruits and vegetables at home, school, work, and other places where food is served.
Office of Child Nutrition and Wellness	Educates the public concerning child nutrition and wellness issues and advocates initiatives to improve the nutrition and wellness of children, as required by the Child Nutrition & Wellness Act of 2006.
Special Supplemental Nutrition Program for Women, Infants and Children (WIC)	Provides supplemental foods, health care referral, and nutrition education for low-income pregnant, breastfeeding, and non-breastfeeding postpartum women and to infants and children who are found to be at nutritional risk. Obesity has been a specific focus of the program for several years.

Source: Department of Health.

It is important to note that socioeconomic barriers substantially beyond the Department of Health's control can reduce the effectiveness of public health improvement programs. According to the National Center for Health Statistics' report, *Health, United States, 2007*,

Children and adults in families with income below or near the federal poverty level have worse health than those with higher income. . . . Although in some cases illness can lead to poverty, more often poverty causes poor health by its connection with inadequate nutrition, substandard housing, exposure to environmental hazards, unhealthy lifestyles, and decreased access to and use of health care services.

However, the department cannot determine whether programs it has established to tackle major health problems are successful, or at least partially successful, without outcome measures.

Appendices 2 through 6 have brief descriptions of each of the five major health problems and maps indicating their prevalence in each Tennessee county or region. (See Appendix 7 for a description of these regions.) The maps do not differentiate the prevalence of a problem within different areas of a county (e.g., urban and rural areas).

Heart Disease and Stroke Prevention and Care Plan

The Department of Health, in collaboration with Tennessee State University, issued the *Tennessee Heart Disease and Stroke Prevention and Care Plan, Volume 2* in February 2008. (The department issued a related report, *The Burden of Heart Disease and Stroke in Tennessee*, in 2006.) According to the report, the purpose of the

Tennessee Heart Disease and Stroke Prevention and Care Plan is to provide health care personnel, community leaders, business organizations, school officials and individuals an accessible guide for action in order to reduce the prevalence of and mortality from heart disease and stroke among Tennesseans. The mission of this plan is to form partnerships with communities and with partner agencies in order

to reduce the burden of heart disease and stroke in Tennessee by building infrastructure, prevention and treatment of risk factors, treatment of disease and prevention of complications, and finally eliminating disparities in heart disease and stroke care in Tennessee.

The plan is designed to use a “socio-ecological model” to take into account “all levels of one’s environment including: 1) Individual; 2) Interpersonal; 3) Community; 4) Organizational; and 5) Public Policy.” The plan has five goals (see below). Each goal has several objectives with associated strategies to achieve these objectives. (See Appendix 8.)

Goal 1: Develop new resources and enhance the existing infrastructure by bringing groups together and by utilizing policy and environmental change factors.
Goal 2: Prevent the development of heart disease and stroke risk factors (i.e., diabetes, hypertension, high cholesterol, obesity, poor diet, lack of physical activity, and smoking/tobacco use).
Goal 3: Promote early and aggressive treatment of heart disease and stroke risk factors.
Goal 4: Ensure that all Tennesseans diagnosed with heart disease and stroke receive aggressive treatment to prevent the exacerbation of heart disease, subsequent events, associated complications, disabilities, and mortality.
Goal 5: Work toward the reduction and ultimate elimination of disparities in heart disease and stroke prevention, treatment, rehabilitation, and access to care.

Several of the Tennessee Heart Disease and Stroke Prevention and Care Plan’s objectives and strategies, especially those involving Goal 2, not only deal with preventing cardiovascular disease but also preventing the major health problems of diabetes and obesity. Therefore, successful implementation of this plan should reduce the incidence of these two problems. The plan provides for periodic evaluation of the implementation of the goals and objectives. However, the plan does not have outcome measures, although it is a good step toward creating such measures.

Recommendation

The commissioner should designate specific Bureau of Health Services Administration staff with the responsibility of developing and implementing outcome measures that are useful in assessing whether the programs it has implemented to combat major health problems are successful. Each outcome measure should have at least one baseline measurement (the extent of the problem at a particular point in time, ideally in specific regions of the state and statewide) and future targets (an ideal reduced presence of the problem at future dates). The department should consider using *Healthy People 2010* health targets when developing the outcome measures. The department should also consider using geographic information system (GIS)

technology to target services toward specific geographic locations (e.g., specific city neighborhoods or rural sections of a county) where a health problem is more pervasive.

Regular reporting on the progress in reaching each outcome measure's target is a critical component in the implementation of a system of outcome measures. The department should regularly assess whether to expand, change, or terminate a specific public health program and, if necessary, replace that program with an improved one, taking into consideration the results of the progress reports.

Management's Comment

We concur in part with Finding 1.

The following sections within the Bureau of Health Services (HSA) are responsible for development, implementation, and monitoring of programs related to the five (5) major health problems cited in Finding 1 of this audit:

Nutrition and Wellness Section - Cardiovascular Disease, Diabetes, Obesity
Maternal and Child Health/Women's Health Sections – Infant Mortality
Communicable and Environmental Disease Section – HIV/AIDS

Directors of each of the programs referenced on pages 10 and 11, in "Examples of Public Health Programs (By Major Health Problem)" are responsible for developing goals and measurable objectives for each program and conducting program monitoring.

Nutrition and Wellness Section

Outcome measures are a requirement of all Nutrition and Wellness programs including the Heart Disease and Stroke Prevention and Care Program, Diabetes Prevention and Control Program, Fruit and Veggies More Matters, Child Nutrition and Wellness, and the Special Supplemental Nutrition Program for Women, Infants and Children (WIC). These measures are included in the CDC (Center for Disease Control) federal grant funded applications, as well as the State Plans required by CDC within each program. The Special Supplemental Nutrition Program for Women, Infants and Children (WIC) funded by USDA (United States Department of Agriculture) requires a State Plan each year that includes measures designed to address the specific requirements of the Tennessee WIC program.

Maternal and Child Health/Women's Health Section

Healthy Start:

There is a lack of a monitoring program for Healthy Start. However, Healthy Start does have outcome measures that are monitored periodically by the Family Service worker (home visitor) and appropriate action taken at the local level. These outcome measures are included in the *Tennessee Healthy Start Procedures Manual*. There are child abuse indicators including the presence of child abuse and neglect; and whether the child remains in the home. There are

indicators that impact infant mortality including whether the subsequent pregnancy is delayed at least one year; and whether the mother received prenatal care during the first trimester. These indicators are recorded for each client. At the time of the audit, the indicators were not being consistently utilized on the state level to effect programmatic change.

Discussions began in July 2008 with the contract agencies providing Healthy Start services about specific measurements, reporting, and evaluation requirements that would be implemented in FY 2009-2010. Implementation of these processes should result in enhanced reporting requirements. Starting July 1, 2009, Healthy Start Program vendors will be asked to report quarterly on the aforementioned child abuse and infant mortality indicators. These reports will be summarized annually, and appropriate programmatic policy changes will be made.

Prenatal Care:

Leading Health Indicator: Access to Health Care

Healthy People Objective 16-6a: Percentage of pregnancies where prenatal care began in first trimester

Maternal and Child Health Block Grant National Performance Measure #18: Percent of infants born to pregnant women receiving prenatal care beginning in the first trimester.

Data on entry into prenatal care by trimester of care are tracked from the information provided on the birth certificates which are submitted to Vital Records/Health Statistics, Department of Health. The Bureau of Health Services tracks the statewide statistics for the Maternal and Child Health Block Grant; an application with all data is submitted on an annual basis. This national performance measure was established by the Bureau of Maternal and Child Health, Department of Health and Human Services, for all states in the nation for tracking outcomes related to entry into prenatal care in the first trimester. Performance measure data are available from 2001-2007. The national target is 90%, which corresponds to the Healthy People Objective. These data for Tennessee are also available annually by county and by race and are widely distributed.

Perinatal Regionalization:

Healthy People Objective 16-8: Increase the proportion of very low birth weight (VLBW) infants born at level III hospitals or subspecialty perinatal center. The data source for this objective is the Title V Reporting System, Maternal and Child Health Bureau (see below).

Maternal and Child Health Block Grant National Performance Measure #17: Percentage of very low birth weight babies delivered at facilities for high-risk deliveries and neonates.

Data on deliveries by type of facility are tracked from the information submitted to the Department's Vital Records system on birth certificates. These data are compiled on an annual basis for the state for submission of the Maternal and Child Health Block Grant application. This national performance measure was established by the Bureau of Maternal and Child Health, Department of Health and Human Services, for all states in the nation for tracking outcomes

related to very low birth weight deliveries. Performance measure data are available from 2001-2007. No national target was established.

Communicable and Environmental Disease Section

HIV/AIDS:

Outcome measures are a part of the Centers for Disease Control and Prevention (CDC) grants including the HIV Prevention Grant, the HIV testing grant, and the Comprehensive Sexually Transmitted Disease and Prevention Services Grant. There are also outcome measures that are a part of the quality assurance component of the Ryan White Grant funded by Health Resources Services Administration.

The measures are included in the CDC federal grant applications and the annual progress report for each grant and in the Ryan White grant application. There are also outcome measures for HIV/AIDS services in the Department's State Plan.

While the "State Plan for Public Health, November 2006" also addresses goals and objectives, including baseline data, for the majority of the programs listed on pages 10 and 11, some program objectives could be more clearly defined related to measuring meaningful outcomes. Section Directors, and other appropriate Bureau of Health Services staff, will assist program directors with reviewing current program goals, measurable outcomes, and baseline data in order to develop and implement clear, specific prioritized goals with measurable objectives taking into consideration *Healthy People 2010* health targets. The success of HSA programs will be regularly assessed to determine the need for revisions to existing goals and objectives.

2. The department needs to improve efforts to recruit health professionals to medically underserved areas of the state and to monitor the health professionals recruited

Finding

In an effort to alleviate problems with the poor distribution and shortage of health professionals in Tennessee, the General Assembly passed the Health Access Act, effective July 1, 1989. Although the Department of Health has made efforts to improve medical care in underserved areas, it (1) does not have a formal plan to recruit health professionals to underserved areas, and (2) does not adequately monitor the professionals it does recruit to ensure they meet grant obligations.

The Department Does Not Have a Formal Plan to Ensure Medically Underserved Areas Get the Health Professionals They Need

The Department of Health does not have a formal plan in place to address healthcare shortages in medically underserved areas. Resources are not targeted into areas that have the greatest need for health professionals. There are no goals to place specific types of health professionals into specific areas. The Community Systems program director stated that although the program designates underserved areas, such plans would be classified as recruitment, and that recruitment is beyond Community System's scope. The Primary Care Office does not make such plans either, its director saying a plan would come from "higher up." The Assistant Commissioner for the Bureau of Health Services Administration stated that recruitment is something the bureau would look at going forward, but that an operational plan does not currently exist.

One example of a program where such recruiting could be beneficial is the Health Access Program. This state-funded program provides Health Access Incentive Grants to individual health or dental care providers to encourage them to locate a full-time practice in a health resource shortage area, as designated by the Commissioner of Health. However, as of July 3, 2007, there were only three physicians who were still bound by the terms of having received a practice incentive grant. According to the Director of Health Access, the reason the number is so low is that Regional Health Councils, which receive funds under the Health Access program, prefer to spend the funds for Community Initiative Program projects, which have innovative models of health care services delivery in areas that lack basic health services (e.g., community outreach, including patient education programs). The Regional Health Councils are broad-based groups representative of local communities in terms of geography, race, sex, age, profession, and institutional factors. The councils are part of a Department of Health initiative to get local communities more involved in improving public health. All projects submitted by rural and/or metropolitan regions must have Regional Health Council recommendations to be considered for funding by the Commissioner of Health.

The Conrad 30 J-1 Visa Waiver Program is an example of a program where recruiting could be even more beneficial. Through this federal program, foreign physicians who have just completed graduate medical education in the United States under J-1 visas can get a waiver of the requirement that they return home after completing their education, if requested by a state or federal agency and if the physician agrees to practice in an underserved area, for a minimum of 40 hours per week, for a minimum of three years. The program enables each state (regardless of population size) to place up to 30 foreign physicians per year in that state's rural areas every federal fiscal year (October 1 to September 30). These physicians must provide primary, obstetric, or TennCare-related services. These physicians must be placed in a federally designated Health Professional Shortage Area (HPSA) or Medically Underserved Area (MUA). As of July 3, 2007, only six physicians had been placed in the state under the program during the 2006-2007 year. For the prior year, the total number was 12, according to the Director of Health Access. (Eleven of the 12 physicians were still in their placements, as of July 2008.)

The Director of Health Access stated that a lack of resources for direct recruitment is the biggest obstacle keeping Tennessee from getting more physicians in medically underserved areas

through the J-1 Visa Waiver Program. An official of the U.S. Department of Health and Human Services' Office of Rural Health Policy stated that it was "unfortunate" that Tennessee recruited so few physicians under the J-1 Visa Waiver program and that the recruitment effort in Tennessee could be inadequate. The Executive Director of the National Center for Rural Recruitment and Retention, a private, nonprofit HHS contractor, also stated that Tennessee lacked recruitment efforts. Both officials described North Carolina as an example of a state that does an excellent job of recruiting health professionals into rural areas.

According to staff in the North Carolina Office of Rural Health and Resource Development, they do not fill all of their 30 Conrad 30 J-1 Visa Waiver slots, but that is by choice. The state imposes tighter restrictions on recipients than required by the federal program. However, North Carolina also has other programs to place physicians in rural areas—the State Loan Repayment and the High Needs Service Bonus programs. The State Loan Repayment program pays up to \$70,000 to physicians for student loans in return for a four-year service commitment. The High Needs Service Bonus program is for physicians with little to no loan debt, and pays up to \$35,000 for a four-year commitment. To reach recruitment goals, the state has three full-time recruiters with two support staff.

Kentucky consistently fills all of its 30 Conrad 30 J-1 Visa Waiver slots, according to Kentucky's Director of Health Care Access. The State of Kentucky does not have a formal recruitment program, but the director attributes the success of the program to the initiative of providers in the state seeking physicians and obtaining waivers for them.

There are obstacles to getting physicians to serve in underserved areas that the Department of Health needs to overcome. For example, there has been a sharp decrease in physicians entering the country on J-1 Visa Waivers, and fewer physicians are going into primary care, according to the Executive Director of the National Center for Rural Recruitment and Retention. However, without an organized recruitment effort, including a plan with specific goals within specific timeframes (e.g., numbers of physicians recruited per year for specific underserved regions) and an initiative to encourage third-party participation (e.g., such as that by providers in Kentucky), the likelihood of getting more physicians in underserved areas is reduced.

Lack of Dental Care Rational Service Areas

In addition to the lack of a recruitment plan, the Tennessee Department of Health has not developed rational service areas for dental care. Rational service areas are geographic locations where residents would be expected to seek the majority of their care. Rational Service Areas are important because they are used in designating Health Resource Shortage Areas. The ratio of providers (adjusted for the time they spend providing the specific type of care) to relevant population is used to rank counties. The top 30 counties as ranked by this ratio are then designated Health Resource Shortage Areas for that type of care. Without rational service areas for dentists, the department cannot effectively target resources to alleviate dental shortages.

Physician Grantees Are Not Appropriately Monitored

The department does not adequately monitor Health Access Incentive Grant and Conrad 30 J-1 Visa Waiver recipients.

Health Access Grantees

There are two monitoring forms used for Health Access Incentive Grant recipients—the Monitoring and Evaluation Form and the Monitoring and Evaluation Patient Log. The forms are mailed to physicians, and they return the completed forms to the Office of Health Access. However, the information is completed by the physicians themselves, and the Health Access Program must trust that the information provided is accurate, since no other monitoring process is in place, according to the Director of Health Access. The director stated that the only way the Office of Health Access would know if a physician was not complying would be through complaints. However, intended beneficiaries of the program may be unaware that the physician is in the program, what the requirements of the program are, or who to contact to complain, and there are no complaint procedures in place in the event that a complaint is ever received. (The office has never received any complaints concerning Health Access Incentive Grant recipients, according to the director.)

Conrad 30 J-1 Visa Waiver Grantees

Conrad 30 J-1 Visa Waiver recipients are monitored through the use of the Monitoring and Evaluation Form only. Again, the Office of Health Access must trust that the information reported is accurate. Complaints are sometimes received regarding J-1 Visa Waiver physicians not meeting grant requirements, according to the Director of Health Access. If the physician is not able to provide a satisfactory response to the complaint, Health Access staff may conduct a site visit. The director stated that if the problem is still not resolved, it is reported to the federal level (i.e., the U.S. Citizenship and Immigration Services) for handling. As with the Health Access Incentive Grant program, there is not a formal complaint procedure in place for the Conrad 30 J-1 Visa Waiver program. However, according to the director, it is more likely that complaints would be received regarding the Visa Waiver recipients because the facility at which the waiver recipient works has participated in obtaining the waiver; therefore, facility staff are aware of the requirements of the program and the contact person for the program.

Community Initiative Grantees Are Monitored

The Office of Health Access does have a monitoring system for Community Initiative grants, a system that could serve as a model for developing a monitoring system for Health Access Incentive and J-1 Visa Waiver grant recipients. Community Initiative grants allow local underserved areas to initiate efforts to recruit health care providers and expand services in their communities. The monitoring system involves regular site visits guided by formal policies and procedures. The frequency of site visits is determined by a formal risk assessment process (which uses a risk assessment form for each contract) where contractors/grantees with greater risk of not adhering to contract requirements are visited more frequently. At the end of the site visit, the program monitor scores the contractor's performance using a range of one to five. A score of one means that the contractor has failed to meet contract objectives with no prospective

for improvement, necessitating the discontinuation of the contract. On the other hand, a score of five means that the project is exemplary and should be considered for replication elsewhere. This system could be modified to be used for the purposes of monitoring Health Access Incentive and J-1 Visa Waiver grants. Without formal monitoring and complaint-handling systems for Health Access Incentive Grant and Conrad 30 J-1 Visa Waiver recipients, the Department of Health cannot determine whether these recipients are adequately fulfilling their obligations to provide medical services in underserved areas.

Recommendation

The Department of Health should develop and implement a formal plan to recruit health professionals to medically underserved areas, including specific goals within specific timeframes (e.g., number of physicians recruited per year for specific underserved regions). Such a plan may include incentives for individual providers to recruit health professionals. The department should create rational service areas for dentists as part of this recruitment plan.

The department should develop and implement monitoring and complaint-handling systems to ensure that health professionals given grants to serve in underserved areas (e.g., Health Access Initiative and J-1 Visa Waiver grants) fulfill the terms of those grants. Any adoption of the Community Initiative grant monitoring system for this purpose should include reporting requirements. Specifically, a monitoring system should issue regular reports providing information including the number of site visits, the number of site visits with low scores (and corrective actions taken based on those low scores), and the number of grants suspended or revoked (and the reasons for the suspensions or revocations). In addition, the reports should include recommendations on improving the grantee selection process.

Management's Comment

We concur with Finding 2.

Historically, the Department of Health has relied on its annual recruitment fair for the recruitment and placement of health professionals in health resource shortage areas. However, current results have proved disappointing.

Currently, the Department of Health is exploring the option of developing an operational plan to support recruitment efforts which will direct health care providers to underserved areas. Areas of consideration include needs assessment, strategic planning, project implementation, monitoring, tracking, and quality assessment. This will entail the updating of the existing rational service areas (rational service areas are individual counties, groups of counties, or communities that have displayed certain obvious primary care, pediatric, or obstetrical care service patterns for residents of that county, community, and/or surrounding areas) and will include dentistry, external advocates, stakeholders, and members of special interest groups. These groups will develop and implement recruitment and retention efforts specific to health care providers.

Efforts will be made to enhance funding efforts by utilizing existing resources such as the TSAC Loan Forgiveness Scholarship Program, the Rural Partnership stipend program, and the National Health Service Corps program. Also, additional sources of funding will be sought for both the Practice Incentive Grants and the matching state funds necessary to reinstitute the State Loan Repayment Program.

Options are also being considered for the implementation of a monitoring program that will include the following activities: regular site visits, risk assessments, complaint administration, self-reporting requirements, and individual recipients' monitoring (which will include such factors as length of service and unique service commitment obligations of the recipient). These guidelines will apply to all grantees, including those qualifying for the J-1 Visa Waiver Program.

3. Collection and reporting of information on children's deaths, pursuant to the Child Fatality Review and Prevention Act of 1995 and the Sudden, Unexplained Child Death Act, needs improvement

Finding

The department's Child Fatality Review Program was created in response to the Child Fatality Review and Prevention Act of 1995 (Section 68-142-101 et seq., *Tennessee Code Annotated*). The primary purpose of the act is the evaluation of the incidences, including the causes, of child fatalities in Tennessee. The act created the state Child Fatality Prevention Team, which collects reports from local child fatality prevention teams (at least one per judicial district) that conduct reviews of all deaths of children 17 years of age or younger. The state team then analyzes and reports on child fatalities statewide. See Appendices 9 and 10 for information on the state and local teams and their membership. The Sudden, Unexplained Child Death Act of 2001 (Section 68-1-1101 et seq., *Tennessee Code Annotated*) further focused on the need to protect the health and welfare of the children of this state by collecting accurate data on the cause and manner of unexpected child deaths, and identifying those responsible for those deaths. This act specifically required that the Commissioner of Health promulgate rules and regulations regarding investigation and reporting of child deaths, and that a death investigation (coordinated by the county medical examiner) be performed in each case of a sudden, unexplained death of an infant under one year of age.

Auditors' review of the Child Fatality Review Program identified several areas of concern that hinder the Department of Health in ensuring that all child deaths have been reviewed as required and that the information needed to take action to reduce child deaths in Tennessee is available timely and in sufficient detail. These areas are (1) collecting all child death reviews from local child fatality prevention teams in a timely manner and resolving data inconsistencies to ensure all required reviews are performed; (2) developing and implementing policies and procedures for the Child Fatality Review Program and rules and regulations related to the Sudden, Unexplained Child Death Act; and (3) improving the timeliness and content of the

program's annual report. However, some of these issues (in particular the timeliness issues) are also affected by entities outside the control of the department, and the local review teams (see below).

Data on Child Deaths and Collection of Child Death Reviews

We conducted an evaluation of child death reviews for calendar years 2004 and 2005 in August 2007. In addition to finding delays in local teams' submission of child death reviews, our evaluation found conflicting information and discrepancies regarding the number of child deaths and reviews that had been (and should have been) submitted by the local teams. According to Child Fatality Review Program management, however, delays outside the local review teams' control, such as lengthy waits for vital information such as autopsy results, toxicology or other laboratory reports, or investigative reports from other agencies such as the Department of Children's Services, contributed to these problems. (This explanation appears reasonable, but auditors did not find reasons for specific delays noted in the files, and thus we were not able to assess the causes of late reviews.)

Department of Health summary records listed 1,095 children's deaths in 2004 and 1,119 such deaths in 2005. For calendar year 2005, 7.8% of reviews were still outstanding as of August 2007. At that time, the Public Health Program Director (who administers the Child Fatality Review Program) stated that she was in the process of collecting the missing 2005 reviews from the local teams. See Table 1 for a breakdown of judicial districts with significant reporting problems—7 of the 31 judicial districts (or parts of judicial districts reporting separately) had sent in less than 90% of their files to the department. For the 2004 calendar year, 9.6% of reviews were missing as of August 2007, despite more time having passed since the deaths. The Public Health Program Director stated that the missing reviews were likely never collected for 2004, but she provided no explanation for why they were missing. (She became the program director in January 2005.) We did not include calendar year 2006 in our evaluation because the information was incomplete. According to the Public Health Program Director, she was waiting on a cumulative list of deaths for calendar year 2006 from the Department of Health's Office of Policy, Planning and Assessment, which receives all state death certificates. The Child Fatality Review Program uses this list to determine whether all required child death review reports have been received from the local teams.

File Review

As part of our evaluation, we selected a random sample of 50 deaths for each of the two years to determine if reviews appeared complete based on submitted information. For 2004, five deaths chosen in the sample were missing reviews, while three deaths were out of state and thus would not be reviewed. For 2005, four deaths chosen in our sample were missing reviews, while two deaths were out of state. Of the remaining 42 files for 2004 and 44 files for 2005, all appeared complete.

Table 1
Child Fatality Review Program
Judicial Districts Sending in Less Than Ninety Percent of
Calendar Year 2005 Files as of August 2007

Judicial District	Number of Files Missing	Percentage of Files Missing
4	6 of 36 files	16.7%
2102*	3 of 15 files	20.0%
2202**	1 of 8 files	12.5%
24	10 of 28 files	35.7%
25	17 of 40 files	42.5%
26	9 of 38 files	23.7%
27	5 of 10 files	50.0%

* Judicial District 21 is split for reporting purposes into 2101 and 2102. Judicial District 2101 did not have any missing files.

** Judicial District 22 is split for reporting purposes into 2201 and 2202. Judicial District 2201 did not have any missing files.

Our file review also found a small number of child fatality reviews for both 2004 and 2005 that were not on the final lists of deaths provided by the program for those years. The department's summary records reported 1,095 deaths for 2004, while we found files for an additional four deaths in that year. For 2005, department summary records reported 1,119 deaths, while we found information for an additional five deaths. The Public Health Program Director could not provide us an explanation for the discrepancies. She stated that there were a few such unrecorded deaths each year.

Out-of-State Deaths

The Child Fatality Review Program does not review deaths of Tennessee children that have occurred out of state. These out-of-state deaths accounted for only 2.5 percent of total deaths in 2004, and 2.9 percent of total deaths in 2005, based on information available as of August 2007. However, the program does not consistently count these deaths in its records. We were given information by program staff that for 2005, of the 1,119 deaths, the program had received 1,031 reviews; 69 reviews were still pending, as of August 2007. The *CFR 2005 Data Sheets* showed that the balance of 19 deaths were either out of state (15 deaths) or were not given a description (4 deaths). However, we calculated 32 out-of-state deaths using the list of 2005 deaths provided by program staff. That list also showed 1,119 total deaths.

The Department of Health's ability to swiftly take measures to reduce child deaths in Tennessee is impeded without timely information on the causes of all such deaths. Without accurate annual cumulative lists of deaths from the Office of Policy, Planning and Assessment, the department cannot ensure that all deaths requiring fatality reviews get such reviews.

Policies and Procedures and Rules and Regulations

There are no formal policies and procedures for any part of the Child Fatality Review Program. The Public Health Program Director stated that the Department of Health works

directly from the statute itself. However, we believe that the lack of a written policy adversely affects the program's monitoring of the completion of child fatality reviews by local child fatality prevention teams. Reviews that have been received from the local teams are either marked off a list or the file is marked by department staff, depending on the staff member, according to the director. The department could document for a specific year how many files were missing (e.g., for deaths that occurred in calendar year 2005) but not which specific files were missing. Another consequence of the lack of written policies and procedures is the fact that the director of the program during our review lacked formal guidance when she became director and did not know how the program was run prior to her arrival in January 2005.

In addition, there are no rules and regulations implementing the Sudden, Unexplained Child Death Act, despite the fact that Section 68-1-1103, *Tennessee Code Annotated*, requires that the Commissioner of Health promulgate such rules. (The act went into effect in 2001.) Compliance with the rules of the Sudden, Unexplained Child Death Act is supposed to make county governments eligible for reimbursement, to the extent authorized by the rules, of the costs of any autopsy deemed necessary. Because there are no rules in place, county governments cannot be reimbursed under the act for autopsies they perform on children, according to State Medical Examiner staff. (The forensic pathologist who performs the autopsy is reimbursed a small portion, but that reimbursement is not related to the Sudden, Unexplained Child Death Act.) An investigation is mandatory, but an autopsy does not always have to be performed. Reimbursement is an important incentive offered to encourage complete investigations.

Timeliness and Content of Annual Reports

Timeliness

Section 68-142-105, *Tennessee Code Annotated*, requires that the state Child Fatality Prevention Team "undertake annual statistical studies of the incidence and causes of child fatalities in this state." Because of delays in obtaining reviews from local teams, as well as delays in data entry and analysis, the Child Fatality Review annual report has been issued two years after the end of the reported year, according to the Public Health Program Director. At the time of our audit work, the last annual report had been issued in January 2007, containing data for calendar year 2004. The annual report for calendar year 2005 was issued in April 2008.

Furthermore, even when annual reports are issued, they are not always based on adequate information. By informal policy, 95 percent of reviews must be collected from the local teams before the state program's annual report is issued, according to the director. However, unless child fatality review files were lost after the report was issued, this number was not reached for 2004. As of August 2007, 9.6% of 2004 calendar year reviews had not been received by the state. For calendar year 2005, 7.8% of reviews were still outstanding as of August 2007.

The Child Death Review Program is in the final stages of moving from using an outside vendor to an internal electronic data entry and analysis system, in order to enter data and perform analysis, according to the Public Health Program Director. She stated that this new system is anticipated to decrease the time it takes to issue reports. Two years seems too long to issue an annual report after child deaths have occurred. The older the information becomes, the less

useful it is in determining causes and related trends in children's deaths in order to devise and implement preventive measures. In addition, the two-year delay does not give local child fatality prevention teams an incentive to complete reviews in a timely manner.

Content

Another concern is that Child Fatality Review Program annual reports do not include much local data. The annual reports provide county statistics for causes of death only for very broad categories (e.g., accidental, natural, homicide/suicide, and could not be determined). The annual reports provide more detailed information on cause of death (e.g., prematurity, inflicted injury) statewide. The county data for cause of death are only given in numbers, not rate per 100,000 (total deaths per county is given in rate per 100,000). (In some cases, specific county information may not be able to be provided because of confidentiality issues resulting from the small numbers of individuals involved.)

The report format was last changed in 2000. It is not known why the current format was chosen, according to the Public Health Program Director. The director was not able to give a reason why the reports did not break data down more specifically for regions, judicial districts, or counties. Specific types of deaths are likely more common in certain parts of the state than others, but this cannot be ascertained from the current annual report format. Lack of local information can impede the department's efforts to target resources to prevent specific types of child deaths in regions with high incidences of such deaths.

Recommendation

The Department of Health should review the operations of the Child Fatality Review Program to identify changes within the department's (and the local review teams') control that could improve the collection and reporting of information on children's deaths. To aid in this process (and possibly identify changes that need to be made by entities external to the program), the reasons that significantly delay submissions of child fatality reviews (e.g., delays waiting for an autopsy or laboratory reports) should be documented and tracked. The department should also consider additional or improved training of local teams to improve the process and its timeliness.

The Child Fatality Review Program should consistently treat out-of-state deaths as deaths local child fatality prevention teams do not have to review. In addition, the program should address the issue of fatalities missing from annual cumulative death lists with the Office of Policy, Planning and Assessment to ensure that all deaths for each calendar year are documented.

The Department of Health should develop and implement rules and regulations pertaining to the Sudden, Unexplained Child Death Act of 2001. The rules should address the process for county governments to be eligible for reimbursement related to autopsies performed under the Sudden, Unexplained Child Death Act. In addition, the department should develop policies and procedures regarding the implementation of statutory requirements of the Child Fatality Review and Prevention Act of 1995.

The Child Fatality Review Program should reduce (to the extent possible given external factors) the time it takes to publish its annual statistical report on children's deaths. The report should include more local or regional information on the major causes of children's deaths to assist the Department of Health in targeting resources to prevent such deaths.

The Child Fatality Review Program and the resulting reports need to be subject to a routine monitoring process that ensures errors or problems are regularly identified and corrected so that the data are accurate, reliable, and useful.

Management's Comment

We concur that collection and reporting of information on children's deaths, pursuant to the Child Fatality Review and Prevention Act of 1995 and the Sudden, Unexplained Child Death Act, needs improvement.

The auditors noted three areas of concern that hinder the Department of Health's collection and reporting of information on children's deaths in Tennessee.

- (1) Collecting all child death reviews from local child fatality prevention teams in a timely manner and resolving data inconsistencies to ensure all required reviews are performed.
- (2) Developing and implementing policies and procedures for the Child Fatality Review Program and rules and regulations related to the Sudden, Unexplained Child Death Act.
- (3) Improving the timeliness and content of the program's annual report.

The auditors also noted some of these issues (in particular the timeliness issues) were also affected by entities outside the control of the department and the local review teams.

(1) Collection of all child death reviews: As noted by the auditors, there are several external factors such as toxicology reports and when autopsies are performed, that are not controlled by the Department of Health's local team review process, but determine when reviews can be completed.

Before the local child fatality review teams can conduct a complete review, they must wait for all the supporting documentation to be provided, such as an autopsy report, birth and death certificate, medical historical documents, lab and toxicology results, and investigation reports. In general, autopsies can take from six weeks to six months before they are completed. If the death is suspicious, the autopsy is expected to be conducted by a pediatric forensic pathologist. Waiting to schedule a pathologist with this specialty prolongs the autopsy even longer than usual due to the fact that there are very few pediatric pathologists in Tennessee that are a part of the State Medical Examiner's Office. In addition, if the child died in the custody of the Department of Children's Services (DCS) or in a foster home, it may take longer than normal for the investigation process to be completed as DCS has a separate investigative process. In rural areas, autopsies may routinely take longer than six months depending on the death of the child. For example, Judicial District 3, located in the northeast section of the state, has a case where the

child's death occurred in February 2008. This case cannot be reviewed by the local team because the autopsy is still pending (now September 2008).

There are other documents which may be received weeks past the date of death and will create a delay in the review process; for example, the receipt of birth and death certificates. According to Vital Statistics, when anyone dies the death certificate on an average is completed within six weeks after the death depending on the facility handling the death. This process can take longer. One team waited approximately nine months because the facility was waiting for the physician to sign the death certificate. Lab and toxicology reports routinely take several weeks to months depending on the test ordered. Due to these delays that cannot be controlled by the DOH processes, there are cases in a "pending status" that will not get reviewed in the same year as the child's death due to outstanding medical documentation and information.

In the metropolitan areas, the labs are backed up many times, which creates an additional delay. Getting information from medical facilities may also hinder the timeliness of when reviews are conducted.

With respect to the data inconsistencies, in 2004 the teams went from a 2-page form to a 12-page form to decrease the amount of data inconsistencies and provide more details surrounding child fatalities consistent with national standards. Between 2004 and 2006, efforts were made to assure that all the teams were collecting standard data. In August 2005, the local team leaders decided which items on the national form were mandatory for the TN teams to complete and which items could be completed if the information was available. In 2006, the Department entered into an agreement with the National Center for Child Death Review to electronically manage the child fatality data for Tennessee. In 2006, the Child Death Data began to be entered into the Child Death Review Case Reporting System. In January 2008, the form and database were revised and updated. By January 2009, every Judicial District will enter data on its reviewed cases directly into the database, significantly reducing the lag time the Department was experiencing for reporting.

Starting January 1, 2009, the local team will be requested to place all pending cases in the electronic database with comments as to why the review is being delayed. This will be tracked quarterly and reasons recorded. In addition, the length of the delay will be documented as well.

(2) Development and implementation of rules, regulations, and policies related to the Child Fatality Review Program: Rules of the 2006 Sudden, Unexplained Child Death Act are being submitted to the Attorney General's office upon final completion of OGC review. These rules contain procedures for county governments to be eligible for reimbursement related to autopsies performed under this Act.

The provisions of the Child Fatality Review and Prevention Act of 1995 *do not require or authorize the promulgation of rules*. This statute is sufficiently detailed in scope to mitigate the necessity for further definition through rules. However, formal documentation of current processes for staff, including development of policies and procedures, will be completed by May 2009.

(3) Timeliness and content of the Program's annual report: To the extent possible given external factors, the Child Fatality Review Program will reduce the time it takes to publish its annual statistical report on children's deaths. In 2006, the Department entered into an agreement with the National Center for Child Death Review to electronically manage the child fatality data for Tennessee. To date there are 23 states that have signed a data use agreement with the National Center. In 2006, the Child Death Data began to be entered into the Child Death Review Case Reporting System. This was accomplished by the teams sending their review forms to the Department and the Department sending the forms to the University of Tennessee for data entry. Realizing this was creating more delay, the decision was made to progressively have each Judicial District enter its own child death data. On December 4, 2006, the majority of the Judicial District team leaders received training on how to use and enter data into the database. In January 2008, the form and database were revised and updated. By the end of 2008, all training in the remaining districts is expected to be completed. By January 2009, every Judicial District will enter data on its reviewed cases directly into the database, significantly reducing the lag time the Department was experiencing for reporting. The 2006 data report with 99.3% of the cases reviewed is expected to be officially approved by the State Child Fatality Review Team meeting on October 9, 2008. The report is projected to be delivered to the Tennessee General Assembly at the start of the 2009 session. The preliminary 2007 report with over 80% of cases reviewed will also be reviewed at the October meeting and is expected to be published in late 2009. It is expected to have the 2007 and 2008 reports published in 2009. The format of the 2008 report will be changed and will include much more detailed information about child deaths including a focus on the manner of death with supporting documentation presented in charts or graphs with bulleted comments making the report easier to read and understand. Thus the once 3-4 year gap between annual report year and year published has been dramatically reduced.

4. Although the Office of Vital Records has, in practice, made efforts to identify applicants for certified copies of vital records, state law and departmental rules still do not sufficiently safeguard access to vital records, specifically birth certificates

Finding

In 1993, the Tennessee General Assembly passed legislation (codified as Section 68-3-205[d][2][A], *Tennessee Code Annotated*) opening vital records and making them public. Since that time, access to vital records has become an issue because of national security concerns and the increase in identity theft crimes. This issue led to a finding in the Department of Health's October 2003 performance audit concerning the need to restrict public access to vital records. As noted in the 2003 audit, both the department and the U.S. Department of State were opposed to opening the state's vital records in 1993. In addition, the National Association of Public Health Statistics and Information Systems (NAPHSIS), an association of state vital records and public health statistics offices, opposed the opening and still does not support open access to vital records.

According to the 2003 audit, Tennessee was one of 14 states in 2000 with open records laws for birth certificates. This meant that in those 14 states, basically anyone could review or

obtain a copy of someone else's birth certificate as long as they knew the name and birth date of the person listed on the birth certificate. According to NAPHSIS, Tennessee was one of 12 states with open record laws for birth certificates, as of May 2007. Seventeen states had open death records, as of the same date, although four (including Tennessee) have restricted access to cause of death.

In the United States, there has been an increase in the fraudulent use of vital records (e.g., birth and death certificates). In September 2000, the Office of the Inspector General prepared a report on "Birth Certificate Fraud" for the U.S. Department of Health and Human Services. This report addresses birth certificate fraud and encourages changes in access to birth certificates, on both local and state levels. The Federal Trade Commission currently estimates that as many as 9 million Americans have their identities stolen each year.

Of particular concern is the use of birth certificates in identity theft. According to NAPHSIS' *White Paper on Recommendations for Improvements in Birth Certificates*, issued in May 2005, a birth certificate "breeds" all other types of identity documents (e.g., Social Security cards, school records, driver's licenses, passports, and employment records). In addition, a birth certificate proves U.S. citizenship. The 9/11 Commission report, issued in July 2004, specifically mentions the need to strengthen the policies and procedures surrounding the issuance of birth certificates. According to the report, at "many entry points to vulnerable facilities, including gates for boarding aircraft, sources of identification are the last opportunity to ensure that people are who they say they are and to check whether they are terrorists."

The NAPHSIS report referred to studies that categorized the inappropriate use of birth certificates into two basic types: (1) when a legitimate birth certificate is used by an imposter and (2) when a fraudulent birth certificate is used by an individual. These studies cite how easy birth certificates are to obtain and how difficult altered or counterfeit birth certificates are to detect. The NAPHSIS report emphasized the need for changing existing state practices to lessen the opportunities for fraud. Establishing the proper identity of those requesting birth certificates is also important because of delays in many states in matching death and birth records. Such a delay makes the identities of deceased persons easier to assume between the time the person dies and the time death and birth records are matched.

In Tennessee, copies of birth certificates can be obtained through a variety of methods. Birth certificates can be obtained in person or by mail from the Department of Health's central office, some local health departments, and via the Internet. Neither Tennessee state statutes nor Department of Health rules and regulations require applicants requesting certified copies of vital records to provide proof of their identity, a situation that has not changed since the 2003 audit.

Departmental rules only state, “The State Registrar or Local Registrar shall not issue a certified copy of a record until the applicant has provided sufficient information so that the record can be located. Whenever it shall be deemed necessary to establish an applicant’s right to a certified copy of a vital record, the State Registrar or Local Registrar may also require identification of the applicant or a sworn statement as to the identity of the applicant and the applicant’s relationship to the registrant.” The 2003 performance audit determined that staff did not ask for formal identification but had the option to do so if a question arose. We determined during our current review that staff now ask for identification with requests for certified copies of records, but not for verifications of information (i.e., non-certified copies) requested in person.

Intelligence Reform and Prevention of Terrorism Act of 2004

In December 2004, the U.S. Congress passed the Intelligence Reform and Terrorism Prevention Act. Part 7211 of this legislation gives guidelines on how states should treat requests for birth certificates to avoid their misuse. The Tennessee State Registrar participated in the development of recommendations, as required by the act for “State vital statistics offices,” that will be issued to states. According to the State Registrar, the U.S. Department of Health and Human Services had anticipated publishing an updated *Code of Federal Regulations* regarding this act in September 2007, and the regulations would have been open for a two-month comment period at that time. As of February 2008, the federal government had still not promulgated the regulations. The act also authorizes grants to states to assist them in matching birth and death records (e.g., through computerizing such records).

Current Practice

Certified

Beginning February 15, 2005, the Office of Vital Records began verifying identification of those requesting certified documents in person, by mail, or by phone, through a directive issued by the State Registrar. On April 1, 2005, the Office of Vital Records entered into a contract with VitalChek Network, Inc., to verify the identity of individuals making requests for vital records who are paying with credit or debit cards. The service matches a credit card or debit card number with a name, address, social security number, and other information to confirm an applicant’s identity. The VitalChek service is used only for requests made to the central Vital Records Office in Nashville; not at any county health department offices, however.

Although proof of identification is required for requests for certified copies of vital records, the relationship of the applicant to the person listed on the certificate is not *officially* verified through Vitalchek or other means. However, all applicants must state on the request form the reason for their request. Vital Records staff stated that certified copies of birth certificates are only available to the person the document refers to; their parents, children, or spouse; someone with power of attorney for the person’s affairs; or someone who can show that the certified copy is needed for professional duties or property rights (i.e., a will). However, as stated previously, there are no such formal requirements in statute or rules and regulations.

Non-certified

According to Vital Records staff, since requests for non-certified vital records are public record, employees do not check applicant identification if the request is made in person. (The Vitalchek service is only used to verify the identification of applicants who make their requests by mail or phone to the central Vital Records Office for a non-certified certificate.) However, in the case of birth certificates, non-certified copies can still be used for identity theft, according to NAPHSIS' Executive Director. He stated that a "person can obtain a non-certified copy of a birth record then use the information on the record to request a certified copy and then proceed to get the driver's license and or passport."

According to the State Registrar, her office has pushed for the open records law to be changed nearly every year since it was enacted. She expressed hope that the recommendations in the Intelligence Reform and Prevention of Terrorism Act would help close the records. Without a change in statute or official department rules, the practice of checking the identity of applicants for vital records could be challenged.

Recommendation

The General Assembly may wish to consider amending Section 68-3-205, *Tennessee Code Annotated*, to restrict access to vital records and specifically require department personnel to request some type of documentation of identity. Pending additional direction in the form of federal or state law changes, Office of Vital Records management should work with Department of Health legal counsel to ensure that there are consistent policies and procedures that appropriately protect access to vital records information, particularly information contained in birth certificates, to the extent possible given current statutory requirements.

Management's Comment

The Department's understanding of the Audit Report recommendation breaks the issue into two parts.

1. Where the recommendation reads "The General Assembly may wish to consider amending Section 68-3-205, *Tennessee Code Annotated*, to restrict access to vital records and specifically require department personnel to request some type of documentation of identity," the Department's reply is:

The Department concurs with the finding. The Office of Vital Records has worked to implement internal policies to maximize verification of the identity of requestors. Departmental regulations, however, draw their authority from the statute, and where the legislature has declared birth records to be public records, the Department does not have discretion to unilaterally restrict access.

The Department has anticipated proposing legislation to restrict the access to these records as soon as the U.S. Department of Health and Human Services (DHHS)

issues its much anticipated regulations. The Department Office of General Counsel (OGC) and Vital Records have been in communication with regard to such legislation and are prepared to act; however, amending the statute at this time could easily result in law inconsistent with DHHS's expectations, and therefore the more prudent course appears to be to await the lead of the Federal government on this issue, which we hope will be forthcoming in the near future.

2. Where the recommendation reads "Pending additional direction in the form of federal or state law changes, Office of Vital Records management should work with Department of Health legal counsel to ensure that there are consistent policies and procedures that appropriately protect access to vital records information, particularly information contained in birth certificates, to the extent possible given current statutory requirements," the Department's reply is:

The Vital Records Act, T.C.A. §68-3-101 et seq., provides the State Registrar with authority sufficient to prescribe procedures for the issuance of certified copies of birth certificates. Directly stated or implicit in the Act is the direction that all persons who conduct said issuance shall comply with the State Registrar's prescribed procedures.

In February 2005, the State Registrar prescribed procedures which directed that all persons who issue certified birth certificates shall verify the identity of the applicant and provided a listing of acceptable identity documents.

In accordance with the audit recommendation, the Department OGC has evaluated the Act and has determined it to provide sufficient legal authority to support the February 2005 State Registrar procedural directive.

5. Medical information in the department's computer system continues to have accuracy problems despite the improvement in the accuracy of pharmacy inventory data

Finding

The Department of Health's Bureau of Health Services Administration uses a computer system called PTBMIS (Patient Tracking and Billing Management Information System) to coordinate with local health departments. PTBMIS compiles some medical information, generates bills, tracks drug and vaccine supplies, and provides information for reports to the state and federal government. As part of the department's internal quality management system, regional staff conduct quality management reviews of county health department operations, including reviewing the accuracy and completeness of patient files and PTBMIS information.

The Department of Health's October 2003 performance audit reported that medical and pharmaceutical supply information in PTBMIS was often incomplete and/or inaccurate, based on errors identified by the department's on-site quality management reviewers. The types of problems described by reviewers included a service/procedure coded in PTBMIS to the wrong

program, a procedure coded in PTBMIS but not documented in the paper file, a service/procedure documented in the paper file but not coded in PTBMIS, the wrong diagnosis or procedure code in PTBMIS, test results not entered into PTBMIS, and financial information that was wrong or out-of-date. We conducted a follow-up review to determine if these problems have been resolved.

The Bureau of Health Services Administration’s *Quality Management Guidelines* list standards and performance indicators that bureau staff use to evaluate county health departments. The seven “Encounter Medical” standards measure whether pharmaceuticals and services provided to patients are properly documented. These standards are described in Table 2.

Table 2
Encounter Medical Standards
Quality Management Guidelines
Bureau of Health Services Administration

Standard	Description
18	Correct provider numbers are posted for this Date of Service (DOS)
19	Correct program codes are posted for this DOS
20	Correct diagnosis codes are posted for this DOS
21	Correct payor code is coded
22	Correct services and procedure codes are posted for this DOS per PTBMIS Codes Manual and American Medical Association Current Procedure Terminology (CPT)
23	Services and procedures billed for are documented in the medical record
24	Drugs dispensed to patients will be entered into the pharmacy module of PTBMIS by the end of business day

The current *Quality Management Guidelines* were amended in July 2007. According to the *Quality Management Guidelines* prior to July 2007 (issued in March 2007), at least 90 percent of records were expected to be in compliance with each of the standards. A plan of action was required to be filed in the event of a deficiency, but there was no formal deadline for submission of the plan to the bureau. Exceptions were pharmaceutical-related deficiencies which required an immediate verbal plan and a written plan within two days (see Standard 24). The July 2007 revision of the guidelines now specifically states that if compliance with a standard falls below 90 percent, a plan of action is required to be filed within 30 days. For Standard 23, the revised guidelines require a corrective plan of action if compliance is below 100 percent.

We reviewed statewide monitoring data relating to Encounter Medical standards for fiscal years 2005 and 2006, and the first half of fiscal year 2007 (data for the second half was not yet available). In addition, we reviewed fiscal year 2005 and 2006 monitoring data for seven county health departments: Hardin and Shelby Counties (West Tennessee); Davidson, Sumner, and Wilson Counties (Middle Tennessee); and Blount and Knox Counties (East Tennessee). Complete data for fiscal year 2007 was not available for these counties.

Statewide data from the first half of fiscal year 2007 showed all of the Encounter Medical standards compliant with the guidelines, i.e., measuring at 90 percent compliance or higher. Standard 22 fell right at 90 percent compliance and Standard 23 (now required to be 100 percent) fell at 94 percent. Data from fiscal year 2006 showed Standard 22 at 89 percent compliance and Standard 23 at 94 percent. The other five standards were at least in 90 percent compliance. For fiscal year 2005, compliance with Standard 22 was also at 89 percent and Standard 23 was again at 94 percent. Again, the other five standards were at least in 90 percent compliance.

We found the following instances of standards that were at or below expected compliance while examining monitoring data for Blount, Davidson, Hardin, Knox, Shelby, Sumner, and Wilson County health departments for fiscal years 2005 and 2006:

- For fiscal year 2006, Wilson County fell right at 90 percent for Standards 22 and 23, Blount County had 88 percent accuracy for Standard 22 and 80 percent for Standard 24, and Hardin County had 90 percent accuracy for Standard 22. Shelby County had 79 percent accuracy for Standard 22.
- For fiscal year 2005, Blount County had 88 percent accuracy for Standard 20 and 81 percent accuracy for Standard 22, and Davidson County had 86 percent accuracy for Standard 19. Hardin County had 88 percent accuracy for Standard 22 during one monitoring review and 80 percent for that standard during a second monitoring review.

We also evaluated the bureau's monitoring data to determine if the counties would have met the new 100 percent compliance requirement for Standard 23 effective July 2007, although the monitoring data only covered fiscal years 2005 and 2006. (None of the counties had failed the previous 90 percent compliance requirement.) (See Table 3.)

Based on the data, Standard 22 continues to be a problem for many county health departments. In evaluating Standard 22, the bureau monitor looks at the patient's medical record and then makes sure that the correct codes (as detailed in the *PTBMIS Codes Manual*) are put into PTBMIS to match the medical record. The bureau's Quality Management staff stated that these errors are often caused when a health department is busy and the nurse attempts to code from memory rather than consulting the manual. The staff also stated that plans of correction often suggest reinforcing proper procedure, more training, or creating code cheat-sheets for the most common codes used at a site.

Table 3
Compliance with Standard 23:
Services and Procedures Billed for Are Documented in the Medical Record
Quality Management Guidelines
Blount, Davidson, Hardin, Knox, Shelby, Sumner, and Wilson
County Health Departments

Fiscal Year 2006	
Counties Not Meeting 100 Percent Compliance*	Compliance (Percent)
Blount	91%
Shelby	99%
Sumner	96%
Wilson	90%
Fiscal Year 2005	
Counties Not Meeting 100 Percent Compliance*	Compliance (Percent)
Blount	91%
Davidson	99%
Hardin**	92%
Sumner	96%

* As indicated above, the 100 Percent compliance requirement for Standard 23 does not come into effect until fiscal year 2008.

** A second monitoring review for fiscal year 2005 determined 100 percent compliance.

Proper coding is essential to the operations of county health departments. The *PTBMIS Codes Manual* states,

By coding accurately, completely and consistently, providers perform an extremely critical role in public health. Overcoding constitutes fraud. Undercoding escalates cost per unit of service and patient charges. Inconsistent coding impedes comparing productivity, efficiency and service outcomes across providers and clinics.

Medical coding is a complex task. The *PTBMIS Codes Manual* is 225 pages, and language in the manual itself acknowledges that even it is not comprehensive, referring users to additional resources (e.g., the Centers for Medicare and Medicaid Services' Common Procedure Coding System and the American Medical Association's Current Procedure Terminology).

Accuracy of pharmaceutical supply information

The accuracy of pharmaceutical supply information is a priority for the Bureau of Health Services Administration. Pharmacy inventory can include narcotics and other medications prone to abuse. The importance of accurate pharmaceutical supply information is evidenced by the requirement for an immediate verbal plan of correction and a written plan in two working days when problems are found, as opposed to the general 30-day requirement.

In response to the 2003 performance audit, the bureau formed a committee to resolve pharmacy inventory problems. The result of the committee was the issuance of a new pharmacy inventory policy. The *Department of Health Pharmacy Policy*, issued in November 2003, requires that local health departments

conduct a physical inventory of all drugs at least semi-annually. All differences between perpetual inventory and physical count will be analyzed to determine if corrective action is indicated. These differences and corrective action will be forwarded to the Regional Director, Regional Pharmacist, Regional Nursing Director, and the County Director and County Nursing Supervisor of the county affected.

In addition to the policy, the Bureau of Health Services Administration has also recently implemented bar coding on medication and patient charts, according to the Director of Pharmacy.

The Quality Management standard related to the dispensing of drugs is Standard 24, “Drugs dispensed to patients will be entered into the pharmacy module of PTBMIS by the end of business day.” As discussed above, the only instance (in our review) of compliance with Standard 24 falling below 90 percent in fiscal years 2005 and 2006 was Blount County, where compliance with the standard fell to 80 percent in fiscal year 2006. The statewide data for the first half of fiscal year 2007 show a 97 percent compliance rate for Standard 24.

As with all medical coding, proper tracking of the pharmaceutical supply is vitally important. Since the 2003 audit, the Bureau of Health Services Administration has placed an emphasis on accuracy in this area with improved results. The bureau should continue this emphasis.

Recommendation

The Bureau of Health Services Administration should review supervision and training of local health department staff, to continue improving the documentation (paper and electronic) of services, medications, and other materials provided to patients. The bureau should emphasize 100 percent compliance by county health departments with Encounter Medical Standards of the *Quality Management Guidelines*.

Management’s Comment

We concur with Finding 5. We are confident that we are improving in each area cited in this finding. Our confidence is confirmed by our Fiscal Year 2007/08 Quality Improvement (QI) Record Review, including the review of encounter medical standards mentioned in this finding. The percentage of standards met by county health departments listed in this finding are all above 90%. The Bureau of Health Services Administration (HSA) will continue to emphasize increasing compliance percentages for encounter medical standards.

The QI findings reflect efforts made in the Bureau of Health Services Administration (HSA) to enable greater accuracy and to monitor encounters to ensure that mistakes will be quickly identified and corrected. HSA staff wrote and distributed statewide a MONITOR computer program that examines every encounter entered in the previous week for program, diagnosis code, and payor code accuracy. Incorrect entries are clearly identified and can be quickly corrected. Providers having difficulty with coding are identified and can be appropriately retrained.

The Patient Tracking and Billing Management Information System (PTBMIS) coding manual has been revised and updated to reflect current coding guidelines. A reformat of the manual has made it easier to update and distribute statewide in a timely manner.

The PTBMIS encounter form has been revised to include the most frequently used procedure and diagnosis codes. Having these codes pre-printed will save providers time, effort, and will make documentation easier.

On January 1, 2008, HSA implemented use of a statewide 'Public Health Nurse Orientation and Practice Manual' which emphasizes standardization of coding, proper documentation, including documentation in the medical chart and standardized orientation of new nursing service employees.

HSA is in the process of creating a standardized 'Public Health Office Assistant' orientation manual so that clerical staff will be consistently trained to enter correct coding on any encounter for which they provide service including necessary documentation.

HSA continues to support and encourage the use of bar coding of pharmaceuticals issued in the health departments and the use of scanners to ensure that drug entry into the system is both easier and more accurate.

OBSERVATIONS AND COMMENTS

The issues below did not warrant findings but are included in this report because of their effect on the citizens of Tennessee and the operations of the Department of Health.

LOCAL HEALTH DEPARTMENTS' TRANSITION TO PROVIDING PRIMARY CARE

Auditors' review of the Department of Health's provision of primary care services had two main purposes:

1. to determine the extent to which the local health departments have transitioned from agencies that provided preventive care, such as immunizations, to agencies that provide medical treatment; and

2. to determine if the Department of Health had implemented a system to measure unmet demand for primary care services (in health departments where the transition has occurred), such as a method to measure those turned away for service because of lack of capacity, and potential unmet primary care needs.

Based on our review, it appears that the department has significantly expanded its provision of primary care services at its local health departments. (See below for details.) In addition to providing primary care services through local health departments, the department has appropriate related policies and procedures through the *Primary Care Services Guideline*, issued in August 2007. The guideline states that primary care “includes outpatient management of non-critical acute episodic illness, chronic illness, and preventive health care,” and describes the department’s “Target Service Group” for primary care services as

- individuals ages 19 through 64 who are uninsured;
- patients with Medicare Part A only (hospital coverage only, not including age 65 or older who are eligible for Medicare Part B); and
- patients with commercial insurance who are uninsured for specified conditions.

In response to the Health Access Act of 1989, which was designed to alleviate health shortage areas for primary care, the Tennessee Department of Health divided the state into 85 rational service areas for primary care. Rational service areas are individual counties, groups of counties, or communities that have displayed certain obvious medical care service patterns for residents. Determining factors for delineating rational service areas include natural or artificial barriers (e.g., mountains, bad roads), migration patterns for care, the presence or absence of health manpower or facilities, patients’ payment capabilities, etc. From these 85 rational service areas, 30 counties are designated as Health Resource Shortage Areas by the Commissioner of Health, according to the *2005 Tennessee Health Access Plan Update* (the latest such plan, as of September 2007). These shortage areas lack adequate numbers of primary care providers, as indicated by high ratios of population to provider. (See Appendix 11 for rankings of counties based on these ratios.)

Chapter 474, Public Acts of 2005, authorized the Department of Health to initiate (through its county health departments) an expansion of primary care services to uninsured Tennesseans. According to the Department of Health’s Primary Care Director, the cuts in TennCare have greatly increased the need for primary care services across the state. The Cover Tennessee Program, which went into effect January 2007, is designed to provide insurance for the working uninsured across the state. While implementation of the Cover Tennessee program will help address needs, the program is not designed to meet one hundred percent of the demand for primary care in all areas of the state. This unmet need provided the impetus for the department to start offering primary care statewide through the Safety Net program in fall 2005, according to the director.

According to the *Primary Care Services Guideline*, prior to the expansion, 18 counties provided primary care. As of May 2007, there were 54 local health department clinics offering primary care services in 48 counties across the state. In addition, several counties have federally

funded health clinics (called Federally Qualified Health Centers [FQHCs] or Federally Qualified Health Center Look-Alikes) under contract with the Department of Health. The department pays these facilities for medical encounters for uninsured adults 19 to 64 years of age. There were 64 FQHCs and three FQHC Look-Alikes, as of September 2006. Unlike FQHCs, FQHC Look-Alikes do not receive Public Health Service Act Section 330 federal funding, but are eligible for cost-based reimbursement under Medicaid and Medicare and participate in the 340(b) Federal Drug Pricing Program. (See page 39 for a map of Safety Net primary care health centers, as of September 2006.)

Although the department has transitioned the local health departments' operations to providing primary care services, its strategy for dealing with primary care needs or potential needs across the state appears to be reactive to demand, instead of proactive. The department does not have a formal system to measure whether clients are turned away or otherwise discouraged from seeking primary care (e.g., very long waits at clinics despite having appointments), according to the Primary Care Director.

The director also stated that there are no formal plans in place by her office to anticipate future demand for primary care services across the state. Without systems in place to measure current and future demand for primary care at local health clinics, these health clinics cannot ensure that all clients or potential clients in their local service areas obtain adequate primary care services. In addition, without such systems the department cannot ensure that all Tennesseans without health insurance can get the care they need.

As part of its next stage in providing primary care services at local health departments, the Department of Health should develop and implement formal procedures to determine current and future demand for primary care services by uninsured Tennesseans at local health clinics. These procedures should include methods to assess demands for such services as an integral part of a health clinic's service delivery system. The department should take into consideration the ratio of population to primary care provider in each county or rational service area when determining whether primary care demand exceeds service supply.

THE EMERGENCY MEDICAL SERVICES DIVISION'S LACK OF VERIFICATION OF CONTINUING EDUCATION DOCUMENTATION

The Emergency Medical Services Division's major goal is to improve and promote quality emergency medical and medical transportation services, which includes licensing emergency medical service (EMS) personnel. Once licensed, an EMS licensee has two options when renewing his or her license every two years. (See below for descriptions of the different types of EMS licensees.) The EMS licensee can either take a renewal examination or submit documentation of meeting continuing education requirements, specifically the required number of Continuing Education Units (CEUs) for each renewal period (first responders can also renew by providing evidence of taking a refresher course of at least 16 hours). (See Table 4 for the continuing education requirements for the different types of EMS licensees.)

Tennessee Primary Care Safety Net Map

September 2006



- | | | | |
|---|--|----|--------------------------------------|
| □ | Federally Qualified Health Clinic (FQHC) | ⚙️ | Health Department Primary Care Sites |
| ▲ | Tennessee Rural Health Clinics | ★ | FQHC Look-Alike |
| + | Other Primary Care Clinics | ● | Faith-Based Health Clinics |
| | | ◆ | Community Mental Health Centers |

Office of Policy Planning & Assessment
Tennessee Department of Health

According to the division's *Emergency Medical Technician Skills Manual*, a CEU is a standard unit of measurement that quantifies continuing education and training activities while serving the diversity of providers, activities, and purposes in adult education. One CEU is equal to ten contact hours of participation in an organized continuing education experience under responsible sponsorship, capable direction, and qualified instruction. CEUs must be recorded on official and original transcripts, certificates, or letters issued by a continuing education agency. The following information must be included with each record: the individual's name, the course title, the date(s) attended, and the number of CEUs awarded.

Description of Emergency Medical Services Workers

Type of Emergency Medical Services Licensee	Description of Duties
Emergency Medical Technician	Performs initial patient survey, provides emergency care through careful assessment of the patient, and recognizes injuries and illness. Also gains knowledge of pre-existing medical conditions, previously prescribed medications, medical preference, and identification of the patient.
Emergency Medical Technician – Paramedic	Similar duties to Emergency Medical Technician but is licensed to practice advanced emergency medical care upon the order or under the supervision of a physician or authorized registered nurse.
First Responder	Has basic knowledge and skills necessary to provide emergency medical care to the sick and injured and may respond before licensed Basic or Advanced Life Support units arrive.
Emergency Medical Dispatcher	Via telephone helps to provide aid to the victim and control of the situation prior to the arrival of pre-hospital personnel. Adheres to approved, written instructions as closely as possible during telephone conversations with the victim. Calls necessary emergency response workers, as determined by conversations with the victim and protocol.

Table 4
Requirements for License Renewal
Emergency Medical Services Workers

Type of Emergency Medical Services Licensee	License Renewal Requirements
Emergency Medical Technician	2 Continuing Education Units or Examination
Emergency Medical Technician – Paramedic	3 Continuing Education Units or Examination
First Responder	1 Continuing Education Unit, Refresher Course or Examination
Emergency Medical Dispatcher	1 Continuing Education Unit or Examination

As required by policy, the division “audits” five percent of renewals every month for completeness. However, these “audits” do not verify that the documentation submitted by licensees is accurate. The division management stated that staff did not verify continuing education documentation submitted by renewing licensees; for example, by contacting the organizations conducting the training or by obtaining the documentation directly from the organizations themselves, instead of relying on the licensee. With improvements in technology and the latest software programs, there is a risk that continuing education documents could easily be falsified.

To determine the completeness of licensee files (i.e., whether renewals were up to date and renewal requirements had been met), we reviewed judgmental samples of renewal files of emergency medical technicians and emergency medical technician-paramedics renewing in fiscal years 2005 through 2007. (See Table 5.) Because of the nature of the Regulatory Board System (RBS) data, emergency medical technician and emergency medical technician-paramedic files were reviewed together, not separately.

Table 5
Emergency Medical Technician and Emergency Medical Technician-Paramedic
Continuing Education Documentation File Review

Fiscal Year	Total Files	Incomplete Files	Percent of Files Incomplete
2005	24	6	25%
2006	26	6	23%
2007*	20	9	45%

* Not all of fiscal year 2007 data may have been scanned into RBS.

We could not draw conclusions on the extent of completeness of fiscal year 2007 files because of delays in documentation being scanned into the RBS system. It often takes over six months for documents to be scanned, according to division management. We conducted the file review in July 2007. We found a total of 12 files incomplete with regard to license renewals for fiscal years 2005 and 2006. Of the 12 files, division management could only find complete documentation for 9 files (75 percent of the files) after we pointed out the problems. Some of this documentation had not yet been scanned. The three incomplete files involved fiscal year

2005 renewals. We also found nine incomplete files in our review of fiscal year 2007 renewals. Division management found complete documentation for all these files.

The division's *Emergency Medical Technician Skills Manual* cites the U.S. Department of Transportation's recognition that continuing education is key to ensuring and maintaining competency of emergency medical technicians and emergency medical technician-paramedics. Without a system for Emergency Medical Services Division staff to adequately verify continuing education documentation of all types of EMS licensees on a timely basis, there is increased likelihood of poorly trained or unqualified EMS personnel harming members of the public in life-threatening situations.

The Emergency Medical Services Division should consider verifying (to the source) continuing education documentation used for license renewals for all types of EMS personnel; i.e., the organization conducting the training should be contacted to verify the training took place for the specific licensee. This verification could involve audits of a sample of renewals on a consistent, regular basis but should, at a minimum, be performed when documentation submitted raises concerns regarding its authenticity or involves an unfamiliar training organization. The division might also work with the major training organizations to have certification statements sent directly to the division, which could then use those statements to verify training. The division should develop and implement guidelines to ensure that all such documentation is scanned or keyed. Department management should review processes for scanning and keying information into the RBS system, to ensure that information, such as continuing education documentation, is available in the system timely.

EMERGENCY RESPONSE PLANS

Auditors were interested in determining what efforts the Department of Health has made to effectively deal with two major threats that face the citizens of Tennessee: bioterrorism and pandemic flu. Described below are the results of our review of the department's planning in these two areas.

Bioterrorism

It appears that the staff of the Department of Health have made a good-faith effort to participate with other agencies in both preventing and preparing to respond to bioterrorist attacks. It appears that they have cooperated with state and federal agencies where needed. In addition, it appears that they have acted as an important part of preparing Tennessee to respond in the event of a bioterrorist attack.

The Governor established the Office of Homeland Security in April 2003, to coordinate security efforts within the state and with external agencies. In 2007, the Tennessee Office of Homeland Security was merged into the Tennessee Department of Safety. The office's *A Strategy for Tennessee* outlines the steps to achieve the highest level of protection for Tennessee from terrorism. The cornerstone is coordination: state, local, and federal agencies must work together.

The Office of Homeland Security, in partnership with local jurisdictions, established field offices in East, Middle, and West Tennessee to enhance coordination and communication across the state. Additionally, the office is adopting management measures to ensure Tennessee maximizes all funds across local, state, and federal levels. Although the Office of Homeland Security is primarily responsible for prevention of and response to terrorist attacks in Tennessee, other state departments, including the Tennessee Department of Health, assist in these efforts.

The Office of Homeland Security chairs the Homeland Security Council, which is composed of the leadership from key departments, agencies, and selected local jurisdiction leaders responsible for a coordinated homeland security effort. The Homeland Security Council is to monitor the implementation of the anti-terrorism strategy and report progress to the Governor on a regular basis. The Commissioner of the Tennessee Department of Health is a member of this council.

Potential threats are analyzed with the joint resources of the Department of Safety and its Office of Homeland Security, the Tennessee Bureau of Investigation, the Federal Bureau of Investigation, the Tennessee Military Department, the Department of Health, the Department of Agriculture, and other federal and local law enforcement agencies. The threat to Tennessee is likely to come in several forms, including chemical, biological, nuclear, radiological, and high explosive weapons. Departments are designated to lead efforts to counter threats based on their area of expertise. The Tennessee Department of Health is the lead agency for coordinating protection of the health of the state's citizens.

In the event a terrorist attack does occur within Tennessee, all agencies of state government will be alerted to preserve life and mitigate any further damage. The Tennessee Emergency Management Agency is the lead agency for response and recovery operations resulting from a terrorist attack. In addition to preserving life, all state agencies will focus efforts in the following areas:

- ensuring the rapid restoration of critical public information systems;
- coordinating efforts with federal, state, local, and volunteer agencies to provide medical, financial, and other assistance to victims of terrorist attacks; and
- coordinating the decontamination and removal of biological, chemical, radiological, nuclear, explosive, or other hazardous materials resulting from a terrorist attack.

In preparation for responding to a potential terrorist attack, the Office of Homeland Security, key members of the Homeland Security Council, and the state's 95 counties conducted homeland security needs assessments in conjunction with the U.S. Department of Homeland Security in spring and summer 2003. (The strategic plan states that based "on the assessment results, a resource plan is being developed to best address the State's strategy of providing key counter terrorism/emergency resources throughout the state." However, the needs assessment was based on a flawed methodology, and the cost for implementing the assessment's recommendations was prohibitive, according to the Tennessee Office of Homeland Security's Deputy Director. As a result, such a resource plan was not developed.)

Mutual aid agreements will be maintained with the states contiguous to Tennessee. The Governor's State Emergency Operations Center (SEOC) plays a critical role in the total information analysis, approval, and execution process. The SEOC will play a multi-functional role as the state's command and control center. The Tennessee Emergency Management Agency, the Tennessee Office of Homeland Security, and other appropriate state agencies will be responsible for establishing a location for an alternate SEOC and support for representatives to ensure continuity of state government in a short-duration emergency.

The Office of Homeland Security has on staff the State's Counter-Terrorism Training, Exercise, and Continuing Education Coordinator. The coordinator is responsible for developing a three- to five-year synchronized, comprehensive training plan that involves local, state, and federal entities. The Office of Homeland Security chairs a working group that helps ensure training and resources are adequate across the state. The group consists of representatives from key state departments and agencies, Emergency Management/Homeland Security regional offices, Homeland Security districts, and private sector representatives. This group will guide the planning process and leverage all exercise opportunities within the state, ensuring that a coordinated and fiscally sound focus is maintained. Exercises are critical to the state's strategy in order to measure readiness as well as the effectiveness and realism of training. The current training program is summarized in Appendix 12.

Department staff, including staff from Laboratory Services and the Communicable and Environmental Disease Section, both coordinate and participate in the training exercises. Department of Health staff stated that anti-bioterrorism training was more regional in nature (e.g., exercises conducted in the Memphis-Jackson area in June 2007) although the department and the state's 11 Homeland Security Districts (see Appendix 12) had conducted a three-year exercise ending in Summer 2007. Training has also involved professionals dealing directly with the public. For example, the department helped conduct nuclear and radiological response training for public health and hospital staff in June 2007. Tennessee is one of the better states for bioterrorism preparedness, according to interview comments by staff of the federal Centers for Disease Control and Prevention's Centers for Public Health Preparedness program.

Pandemic Flu

Based on the information provided in state and regional pandemic flu plans, along with apparent coordination between the Department of Health and other state agencies involved in disaster response, it appears that the department has made a good-faith effort to prepare for incidents of pandemic flu.

According to the Centers for Disease Control and Prevention's *Guidance Supplement for Pandemic Influenza*, federal money has been made available for states to develop responses to pandemic flu outbreaks. (All states receive base funding, with additional funding depending on population.) Funding Phase I, awarded March 8, 2006, provided \$100 million for states to identify gaps and strategies for improvement in their responses to pandemic flu. Funding Phase II made \$225 million available for states to develop pandemic influenza response plans and conduct exercises. Applications for Phase II funding were due August 31, 2006. In August 2007, the U.S. Department of Health and Human Services announced an additional \$75 million

in supplemental funds to strengthen states' capacity to respond to an outbreak. According to the CDC website, Tennessee's allocation was \$1,921,423 for Phase 1, \$4,399,671 for Phase II, and \$1,445,243 for the 2007 supplemental allocations.

The *Guidance Supplement* emphasizes that funding recipients should be fully prepared to respond to a pandemic influenza outbreak at the end of three budget years from the date of Phase I funding. For 2006-2007, funding recipients must address five Target Capabilities: Planning, Medical Surge, Mass Prophylaxis, Isolation and Quarantine, and Communications. These Target Capabilities are linked to larger CDC priorities: State and Local Pandemic Influenza Preparedness Assessments, a Pandemic Influenza Exercise Program, an Antiviral Drug Distribution Plan, and State Pandemic Influenza Preparedness Plans. Also, applications must prioritize the following Target Capabilities: Epidemiological Surveillance and Investigation, Public Health Laboratory Testing, Emergency Public Information and Warning, and Community Preparedness and Participation. The State Pandemic Influenza Preparedness Plan is linked to the Planning target capability. The required release date for these plans was February 1, 2007. Tennessee's plan is dated July 2006. As of June 2007, the interim progress report from the State of Tennessee's Pandemic Flu Response Plan was still being reviewed by the Centers for Disease Control and Prevention.

The guidance states that some of the funds provided should be used by states to supplement the Health Resources and Services Administration (HRSA) National Bioterrorism Hospital Preparedness Program (NBHPP), to help fulfill the requirements of the NBHPP Pandemic Flu Scenario. Public health has the ability to address Target Capabilities necessary to prevent, protect against, respond to, and recover from catastrophic events. The Centers for Disease Control and Prevention's Coordinating Office for Terrorism Preparedness and Emergency Response (COTPER) evaluates awardees' progress through drills and exercises.

The July 2006 Department of Health Pandemic Flu Plan identifies the Communicable and Environmental Disease Services office of the Tennessee Department of Health as the lead state agency for responding to Pandemic Flu outbreaks across the state. The state plan will be used to guide the development of regional plans. During our audit, we reviewed Tennessee's 13 regional plans: Sullivan County, Metropolitan Nashville, Memphis-Shelby County, Hamilton County, Knox County, Jackson-Madison County, Mid-Cumberland Region, Northeast Tennessee Region, Upper Cumberland Region, West Tennessee, Southeast Tennessee, South Central Tennessee, and East Tennessee. Based on our review, it appears that the regional plans adequately address the same topics mentioned in the statewide plan.

PATIENT SAFETY

We were interested in determining what programs the Department of Health has implemented to ensure patient safety in hospitals and other health facilities. Our focus was on any reviews of patient safety at specific health institutions. The primary system the department uses to determine patient safety is its Unusual Incident Reporting System (UIRS), an electronic self-reporting system used by health care facilities. According to the department's *Interpretive Guidelines for Reporting Unusual Events*, an unusual incident or event is

an unexpected occurrence or accident resulting in death, life-threatening or serious injury to a patient that is not related to a natural course of the patient's illness or underlying condition. An unusual event also includes an incident resulting in the abuse of a patient.

UIRS guidelines require that the health care facility self-report and take corrective actions to reduce the risk of such an incident occurring again. The department summarizes UIRS data in annual reports. We reviewed data on unusual events in nursing homes for calendar years 2004, 2005, and 2006. Most of these events were considered isolated in nature with little potential for harm to patients. Effective June 18, 2007, the Centers for Medicare and Medicaid Services (CMS) initiated a policy change instructing the department's Division of Health Care Facilities to investigate all unusual incidents violating federal levels of participation. The Division of Health Care Facilities licenses and inspects health care facilities, and investigates complaints made against such facilities. (Also see the May 2008 performance audit of the Board for Licensing Health Care Facilities for additional information regarding the Division of Health Care Facilities' regulatory activities and the effect the change in CMS policy had on the division's ability to investigate complaints timely.) The department should continue to review incidents that endanger patient safety and ensure that the health care facilities involved take appropriate corrective actions.

PROTECTION OF PATIENT HEALTH DATA

The federal Health Insurance Portability and Accountability Act (HIPAA) requires that patient health data be protected by health service providers. According to the Department of Health's *HIPAA Policies and Procedures Manual*,

Protected Health Information (PHI) means individually identifiable information relating to past, present or future physical or mental health or condition of an individual, provision of health care to an individual, or the past, present or future payment for health care provided to an individual.

Auditors' objective was to determine the Department of Health's actions to meet HIPAA data privacy requirements regarding patients it serves (e.g., at its local health clinics).

The department's *HIPAA Policies and Procedures Manual* provides instructions for staff in following the requirements of HIPAA. The policies include descriptions of administrative requirements for implementing HIPAA; client privacy rights; uses and disclosures of client information; administrative, technical, and physical safeguards of protected health information; and enforcement, sanctions, and penalties for violation of HIPAA requirements.

Based on the employees' job duties, supervisors assign employees access rights to protected health information. RACF IDs (i.e., computer system access authorization) must be obtained and approved through supervisors and upper management to receive access to protected health information. Data are also protected by using encryption software and other security

measures, such as firewalls and antivirus software, available through the Department of Finance and Administration's Office for Information Resources.

Employees working at the time HIPAA was implemented received training on HIPAA requirements. New employees are trained during orientation on HIPAA policies and procedures. All employees are required to sign a confidentiality statement that includes HIPAA.

According to the department's HIPAA Oversight Manager, most HIPAA-related complaints are filed with county health department staff, who forward the complaints to that region's HIPAA Coordinator. The Regional Coordinator forwards the complaint to the Oversight Manager, they discuss the complaint, and if they determine that a possible violation has occurred, the Regional Coordinator will conduct an investigation and submit a report to the Oversight Manager. Investigations identifying HIPAA violations are reported to the U.S. Department of Health and Human Services' Office of Civil Rights. The Oversight Manager may also receive complaints through a department telephone hotline, and she maintains a correspondence file for those applicable to possible violations by Department of Health staff. The correspondence file contains contact information and the disposition of the complaint. Disciplinary action is taken when an investigation determines a true HIPAA violation has occurred. Discipline may range from a written warning to termination. As of May 2007, according to the HIPAA Oversight Manager, there had been four complaints determined to be true HIPAA complaints against department staff. One resulted in an employee termination, and another resulted in a written warning. Another complaint was being reviewed by the Office of Civil Rights at that time.

Based on our review of department HIPAA policies and related complaint documentation, and interviews with the department's HIPAA oversight staff, the Department of Health appears to have implemented an appropriate system to safeguard private health information.

DIVISION OF GENERAL ENVIRONMENTAL HEALTH'S QUALITY ASSESSMENTS OF ITS FIELD OFFICES AND CONTRACT OFFICES

The department is responsible for inspections of several types of entities—food service establishments, hotels, organized camps, bed and breakfast establishments, public swimming pools, school plants, child care facilities, and tattoo and body-piercing establishments. Section 68-14-303(7)(C), *Tennessee Code Annotated*, authorizes the Commissioner of Health “to exercise oversight and evaluation of performance of the county health department or departments and terminate the agreement or contract for cause immediately.” The Division of General Environmental Health has a policy and process to perform quality assessment of the eight field offices and five contract county offices. (The department contracts with the governments of Davidson, Hamilton, Knox, Madison, and Shelby Counties to inspect entities in their counties.) In response to the department's October 2003 performance audit, which found that the Division of General Environmental Health should perform quality assessments of the field offices and contract county offices more frequently, the department stated that the division had made changes in order to meet its goal of performing four quality assessments per year, allowing for

the completion of an assessment in each field office and contract county office every three years. Auditors' review during the current audit determined that the department now appears to be completing quality assessments of all field and contract county offices on a regular and timely basis.

The division director stated that a schedule was prepared that allowed for all field and contract county offices to be assessed once every three years since calendar year 2004. (See Table 6 for the assessment schedule.) We reviewed all assessment reports completed for calendar years 2004 through 2007 and determined that all assessments were completed as scheduled.

Table 6
Quality Assessment Schedule

Field/Contract Office	Calendar Year	Completed? (Yes/No)
Jackson-Madison County Health Department	2004	Yes
Northeast Tennessee Field Office	2004	Yes
Southeast Tennessee Field Office	2004	Yes
Southwest Field Office	2004	Yes
Mid-Cumberland Field Office	2004	Yes
Chattanooga-Hamilton County Health Department	2004	Yes
East Tennessee Field Office	2005	Yes
Memphis and Shelby County Health Department	2005	Yes
Northwest Field Office	2005	Yes
South Central Field Office	2005	Yes
Davidson County Health Department	2006	Yes
Knox County Health Department	2006	Yes
Mid-Cumberland Field Office	2006	Yes
Upper Cumberland Field Office	2006	Yes
Chattanooga-Hamilton County Health Department	2007	Yes
Jackson-Madison County Health Department	2007	Yes
Southeast Tennessee Field Office	2007	Yes
Southwest Field Office	2007	Yes
Northeast Tennessee Field Office	2007	Yes
East Tennessee Field Office	2008	Scheduled for 2008
South Central Field Office	2008	Scheduled for 2008
Northwest Field Office	2008	Scheduled for 2008
Memphis and Shelby County Health Department	2008	Scheduled for 2008
Davidson County Health Department	2009	Scheduled for 2009
Knox County Health Department	2009	Scheduled for 2009
Mid-Cumberland Field Office	2009	Scheduled for 2009
Upper Cumberland Field Office	2009	Scheduled for 2009

However, the backup documentation, which includes the health inspections, has not been kept for 2004 or 2005. (The backup documentation for the four quality assessments completed in 2006 was available and was reviewed.) In addition, the Division of General Environmental Health does not have formal policies and procedures for conducting quality assessments of the field offices and contract county offices.

The Division of General Environmental Health should keep backup documentation of quality assessments for all current-year assessments and the last complete three-year quality assessment review cycle. The division should develop and implement formal policies and procedures for conducting quality assessments of the field offices and contract county offices.

CONTRACT MONITORING EFFORTS

The monitoring of vendor and subrecipient contracts is required by the Department of Finance and Administration's Policy 22, *Subrecipient Contract Monitoring*. According to the policy, a subrecipient "is a non-federal entity that expends state and/or federal funds received from the state to carry out a state and/or federal program. Subrecipients would also include state colleges and universities if they receive federal funds from a state department or agency." On the other hand, a vendor is "a dealer, distributor, merchant, or other seller providing goods or services that are required for the conduct of a Federal program. These goods or services may be for an organization's own use or for the use of beneficiaries of the Federal program." While this policy primarily deals with subrecipient contract monitoring, it also includes a statement regarding the monitoring of vendor contracts:

If the contractual relationship with the state meets the vendor criteria, then the state agency must ensure that the procurement, receipt, and payment for goods and services comply with laws, regulations, and the provisions of the contract.

In addition, the *Tennessee Department of Health 2007 Contract Monitoring Plan* sets forth guidelines for subrecipient and vendor contracts. The plan states:

- For subrecipient type contracts, the Department of Health has six full-time auditors located in its Office of Internal Audit and two staff persons in its Bureau of Alcohol and Drug Abuse Services whose responsibility it is to monitor those contracts. The Internal Auditors coordinate as necessary with staff located in the various bureaus in this endeavor.
- Oversight of vendor type contracts is conducted as necessary by internal audit.
- Additionally, all staff positions listed in Section II monitor and manage contracts as an ancillary responsibility of their job requirements.

(The Bureau of Alcohol and Drug Abuse Services was moved by Executive Order 44 to the Department of Mental Health and Developmental Disabilities in February 2007.) The plan has a Program Contract Management Review tool, which is a rough guide by which contracts can be monitored for various programs.

Contract Review

We reviewed eight active Department of Health contracts with the largest dollar amounts, as of April 2007, to assess department monitoring efforts. Specifically, we selected the two contracts with the largest dollar amounts in fiscal year 2006 in the following budget areas: Local

Health Services, Health Services Administration, Communicable and Environmental Disease Services, and Community and Medical Services. Table 7 summarizes the contracts we reviewed during fieldwork and whether they had been monitored by department staff in the past three fiscal years (fiscal years 2005 through 2007). Of the eight contracts, two contracts involved subrecipients, five involved vendors, while one was a delegated purchase authority (DPA). (DPAs involve purchasing specific services at specified rates and are not treated either as subrecipients or vendors.) We were also interested in determining the frequency of contract monitoring and whether there were formal policies and procedures guiding this monitoring. (See Table 8.)

**Table 7
Contracts Reviewed and Monitoring Activities**

Name	Service	Amount	Vendor/Subrecipient	Monitored
McKesson Health Solutions	Clinical Triage – TennCare disenrollees (a)	\$724,272	Vendor	Yes
Matthew Walker Comprehensive Health Center, Inc.	Primary Care to uninsured adults	\$631,700	Vendor	Yes
PathNet Esoteric Laboratory Institute	Cytology Screening Services (b)	\$3,873,680	Vendor	Yes
Vanderbilt University Medical Center	Poison Control Hotline and Education	\$554,800	Vendor	Yes
Delegated Purchase Authority	Breast and Cervical Cancer Services	\$2,400,000	NA	Yes
United Way of Metropolitan Nashville	HIV/AIDS Support Services	\$5,809,900	Subrecipient	Yes
Delegated Grant Authority	Bioterrorism Hospital Preparedness	\$9,150,000	Vendor	Yes
Delegated Grant Authority	Rural Local Health Services (c)	\$27,500,000	Subrecipient	Yes

Notes:

- a. This contract is used to fund assistance to TennCare disenrollees in getting medical services.
- b. This contract provides gynecological cytological services, including pap smears.
- c. The delegated grant authority is a series of grants that fund health services of rural county health clinics. Not included in the grants are the urban county health clinics in Davidson, Hamilton, Knox, Madison, Shelby, and Sullivan Counties.

Table 8
Contract Monitoring Frequency and Policies

Name	Required Frequency	Policies and Procedures
McKesson Health Solutions	Not Applicable	No
Matthew Walker Comprehensive Health Center, Inc.	Not Applicable	No
PathNet Esoteric Laboratory Institute	Not Applicable	No
Tennessee Poison Center	Triennially*	Yes
DPA – Breast and Cervical Cancer Services	No	Yes
United Way of Metropolitan Nashville	Annually	Policy 22
DGA – Hospital Preparedness	Semiannual*	No
DGA – Rural Health Departments	Annual Sample	Policy 22

* Frequency is informal (i.e., a required monitoring frequency is not mentioned in policies and procedures).

Of the eight contracts, all were monitored by department staff. However, only four of the contracts were for programs that had formal monitoring policies and procedures. The Office of Internal Audit should ensure that all Department of Health programs adopt and implement such policies and procedures. The policies and procedures should include a requirement for audit plans that ensure regular and frequent audits of major contracts. The policies and procedures should also require a risk assessment which determines whether a contract is considered “major” by assessing such factors as dollar amount, susceptibility to fraud, and significance to the public welfare.

RECOMMENDATIONS

LEGISLATIVE

This performance audit identified the following area in which the General Assembly may wish to consider statutory changes to improve the efficiency and effectiveness of the Department of Health's operations.

1. The General Assembly may wish to consider amending Section 68-3-205, *Tennessee Code Annotated*, to restrict access to vital records and specifically require department personnel to request some type of documentation of identity.

ADMINISTRATIVE

The Department of Health should address the following areas to improve the efficiency and effectiveness of its operations.

1. The commissioner should designate specific Bureau of Health Services Administration staff with the responsibility of developing and implementing outcome measures that are useful in assessing whether the programs it has implemented to combat major health problems are successful. Each outcome measure should have at least one baseline measurement (the extent of the problem at a particular point in time, ideally in specific regions of the state and statewide) and future targets (an ideal reduced presence of the problem at future dates). The department should consider using *Healthy People 2010* health targets when developing the outcome measures. The department should also consider using geographic information system (GIS) technology to target services toward specific geographic locations (e.g., specific city neighborhoods or rural sections of a county) where a health problem is more pervasive.
2. Regular reporting on the progress in reaching each outcome measure's target is a critical component in the implementation of a system of outcome measures. The department should regularly assess whether to expand, change, or terminate a specific public health program and, if necessary, replace that program with an improved one, taking into consideration the results of the progress reports.
3. The Department of Health should develop and implement a formal plan to recruit health professionals to medically underserved areas, including specific goals within specific timeframes (e.g., number of physicians recruited per year for specific underserved regions). Such a plan may include incentives for individual providers to recruit health professionals. The department should create rational service areas for dentists as part of this recruitment plan.

4. The department should develop and implement monitoring and complaint-handling systems to ensure that health professionals given grants to serve in underserved areas (e.g., Health Access Initiative and J-1 Visa Waiver grants) fulfill the terms of those grants. Any adoption of the Community Initiative grant monitoring system for this purpose should include reporting requirements. Specifically, a monitoring system should issue regular reports providing information including the number of site visits, the number of site visits with low scores (and corrective actions taken based on those low scores), and the number of grants suspended or revoked (and the reasons for the suspensions or revocations). In addition, the reports should include recommendations on improving the grantee selection process.
5. The Department of Health should review the operations of the Child Fatality Review Program to identify changes within the department's (and the local review teams') control that could improve the collection and reporting of information on children's deaths. To aid in this process (and possibly identify changes that need to be made by entities external to the program), the reasons that significantly delay submissions of child fatality reviews (e.g., delays waiting for an autopsy or laboratory reports) should be documented and tracked. The department should also consider additional or improved training of local teams to improve the process and its timeliness.
6. The Child Fatality Review Program should consistently treat out-of-state deaths as deaths local child fatality prevention teams do not have to review. In addition, the program should address the issue of fatalities missing from annual cumulative death lists with the Office of Policy, Planning and Assessment to ensure that all deaths for each calendar year are documented.
7. The Department of Health should develop and implement rules and regulations pertaining to the Sudden, Unexplained Child Death Act of 2001. The rules should address the process for county governments to be eligible for reimbursement related to autopsies performed under the Sudden, Unexplained Child Death Act. In addition, the department should develop policies and procedures regarding the implementation of statutory requirements of the Child Fatality Review and Prevention Act of 1995.
8. The Child Fatality Review Program should reduce (to the extent possible given external factors) the time it takes to publish its annual statistical report on children's deaths. The report should include more local or regional information on the major causes of children's deaths to assist the Department of Health in targeting resources to prevent such deaths.
9. The Child Fatality Review Program and the resulting reports need to be subject to a routine monitoring process that ensures errors or problems are regularly identified and corrected so that the data are accurate, reliable, and useful.
10. Pending additional direction in the form of federal or state law changes, Office of Vital Records management should work with Department of Health legal counsel to ensure that there are consistent policies and procedures that appropriately protect

access to vital records information, particularly information contained in birth certificates, to the extent possible given current statutory requirements.

11. The Bureau of Health Services Administration should review supervision and training of local health department staff, to continue improving the documentation (paper and electronic) of services, medications, and other materials provided to patients. The bureau should emphasize 100 percent compliance by county health departments with Encounter Medical Standards of the *Quality Management Guidelines*.

Appendix 1
Healthy People 2010 Leading Health Indicators and Associated Objectives
Progress in Tennessee and the United States
Calendar Years 2004 Through 2006

Leading Health Indicator: Physical Activity						
Objective 22-2: Percentage of adults engaging in at least moderate, regular physical activity – age adjusted						
Tennessee			United States			Healthy People 2010 Target
2004	2005	2006	2004	2005	2006	
NA*	36%**	NA*	30%	30%	31%	50%
Objective 22-7: Percentage of students in grades 9 through 12 engaging in vigorous, physical activity						
Tennessee			United States			Healthy People 2010 Target
2004	2005	2006	2004	2005	2006	
NA*	62%	NA*	NA*	64%	NA*	85%

Leading Health Indicator: Overweight and Obesity						
Objective 19-2: Percentage of adults 20 years and over who are obese – age adjusted						
Tennessee			United States			Healthy People 2010 Target
2004	2005	2006	2004	2005	2006	
28%**	29%**	30%**	NA*	NA*	33%	15%
Objective 19-3c: Percentage of individuals aged 6 through 19 who are overweight or obese						
Tennessee			United States			Healthy People 2010 Target
2004	2005	2006	2004	2005	2006	
NA*	NA*	NA*	NA*	NA*	17%	5%

Leading Health Indicator: Tobacco Use						
Objective 27-1a: Percentage of adults who smoke cigarettes – age adjusted						
Tennessee			United States			Healthy People 2010 Target
2004	2005	2006	2004	2005	2006	
26%**	27%**	23%**	21%	21%	21%	12%
Objective 27-2b: Percentage of students in grades 9 through 12 who smoked cigarettes in the past month						
Tennessee			United States			Healthy People 2010 Target
2004	2005	2006	2004	2005	2006	
NA*	26%	NA*	NA*	23%	NA*	16%

Leading Health Indicator: Substance Abuse						
Objective 26-10a: Percentage of adolescents not using alcohol or drugs in the past 30 days						
Tennessee			United States			Healthy People 2010 Target
2004	2005	2006	2004	2005	2006	
NA*	NA*	NA*	78.3%	79.3%	79.4%	91%
Objective 26-10c: Percentage of adults who used illicit drugs in the past month						
Tennessee			United States			Healthy People 2010 Target
2004	2005	2006	2004	2005	2006	
6.6%	7.8%	NA*	7.6%	7.9%	8.1%	3.2%

Objective 26-11c: Percentage of adults engaging in binge drinking in the past month						
Tennessee			United States			Healthy People 2010 Target
2004	2005	2006	2004	2005	2006	
8.3%	8.6%	8.5%	15.1%	14.4%	15.4%	13.4%

Leading Health Indicator: Responsible Sexual Behavior						
Objective 13-6a: Percentage of unmarried females aged 18 through 44 whose partners used condoms						
Tennessee			United States			Healthy People 2010 Target
2004	2005	2006	2004	2005	2006	
NA*	NA*	NA*	NA*	NA*	NA*	50%
Objective 13-6b: Percentage of males aged 18 through 44 using condoms						
Tennessee			United States			Healthy People 2010 Target
2004	2005	2006	2004	2005	2006	
NA*	NA*	NA*	NA*	NA*	NA*	54%
Objective 25-11a: Percentage of students in grades 9 through 12 who have never had intercourse						
Tennessee			United States			Healthy People 2010 Target
2004	2005	2006	2004	2005	2006	
NA*	45%	NA*	NA*	53%	NA*	56%
Objective 25-11b: Percentage of students in grades 9 through 12 who have had intercourse but not in the past three months						
Tennessee			United States			Healthy People 2010 Target
2004	2005	2006	2004	2005	2006	
NA*	16%	NA*	NA*	27%	NA*	30%

Leading Health Indicator: Mental Health						
Objective 18-9b: Percentage of adults with recognized depression who had been treated for the depression						
Tennessee			United States			Healthy People 2010 Target
2004	2005	2006	2004	2005	2006	
NA*	NA*	NA*	NA*	NA*	NA*	64%

Leading Health Indicator: Injury and Violence						
Objective 15-15a: Deaths from motor vehicle crashes, age adjusted per 100,000 individuals						
Tennessee			United States			Healthy People 2010 Target
2004	2005	2006	2004	2005	2006	
22.6	21.6	22.6	14.7	14.5	NA*	8.0
Objective 15-32: Homicides, age adjusted per 100,000 individuals						
Tennessee			United States			Healthy People 2010 Target
2004	2005	2006	2004	2005	2006	
7.0	8.3	8.0	5.9	6.1	NA*	2.8

Leading Health Indicator: Environmental Quality						
Objective 8-1a: Percentage of persons exposed to ozone						
Tennessee			United States			Healthy People 2010 Target
2004	2005	2006	2004	2005	2006	
59%	59%	57%	39%	NA*	NA*	0%

Objective 27-10: Percentage of nonsmokers aged four and over exposed to environmental tobacco smoke – age adjusted						
Tennessee			United States			Healthy People 2010 Target
2004	2005	2006	2004	2005	2006	
NA*	NA*	NA*	NA*	NA*	NA*	

Leading Health Indicator: Immunization						
Objective 14-24a: Percentage of children fully immunized, ages 19-35 months						
Tennessee			United States			Healthy People 2010 Target
2004	2005	2006	2004	2005	2006	
82%	83%	82%	81%	81%	81%	
Objective 14-24b: Percentage of adolescents fully immunized, ages 13-15 years						
Tennessee			United States			Healthy People 2010 Target
2004	2005	2006	2004	2005	2006	
NA*	NA*	NA*	NA*	NA*	NA*	
Objective 14-29a: Percentage of high-risk adults with current influenza vaccinations, noninstitutionalized ages 65 and over – age adjusted						
Tennessee			United States			Healthy People 2010 Target
2004	2005	2006	2004	2005	2006	
67%**	62%**	70%**	65%	60%	64%	
Objective 14-29b: Percentage of high-risk adults who have ever received pneumococcal vaccinations, noninstitutionalized ages 65 and over – age adjusted						
Tennessee			United States			Healthy People 2010 Target
2004	2005	2006	2004	2005	2006	
65%**	64%**	66%**	57%	56%	57%	

Leading Health Indicator: Access to Health Care						
Objective 1-1: Percentage of persons under 65 with health insurance						
Tennessee			United States			Healthy People 2010 Target
2004	2005	2006	2004	2005	2006	
86%**	84%**	85%**	84%	84%	83%	
Objective 1-4a: Percentage of persons with a source of ongoing care, all ages						
Tennessee			United States			Healthy People 2010 Target
2004	2005	2006	2004	2005	2006	
NA*	NA*	NA*	87%	87%	86%	
Objective 16-6a: Percentage of pregnancies where prenatal care began in first trimester						
Tennessee			United States			Healthy People 2010 Target
2004	2005	2006	2004	2005	2006	
71%	69%	72%	84%***	NA*	NA*	

* Data not available.

** State data were obtained through a different method than federal data and thus may not be comparable with federal data.

*** Excludes data for Idaho, Florida, Kentucky, New Hampshire, New York (not including New York City), Pennsylvania, South Carolina, Tennessee, and Washington.

Source: Department of Health and the federal Centers for Disease Control and Prevention.

Appendix 2

Description of Cardiovascular Disease

Cardiovascular disease is the group of diseases affecting the heart and blood vessels. Heart disease and stroke, the first and third leading causes of death in the United States, are the main causes of cardiovascular disease death, according to the federal Centers for Disease Control and Prevention (CDC). Heart disease is a broad term referring to many more specific heart conditions, according to the CDC. Coronary heart disease is the most common such condition, which can lead to a heart attack. According to the CDC, coronary heart disease

occurs when the coronary arteries, that supply blood to the heart muscle, become hardened and narrowed due to the plaque buildup. The plaque buildup and the narrowing and hardening of the arteries is called atherosclerosis. Plaques are a mixture of fatty substances including cholesterol and other lipids.

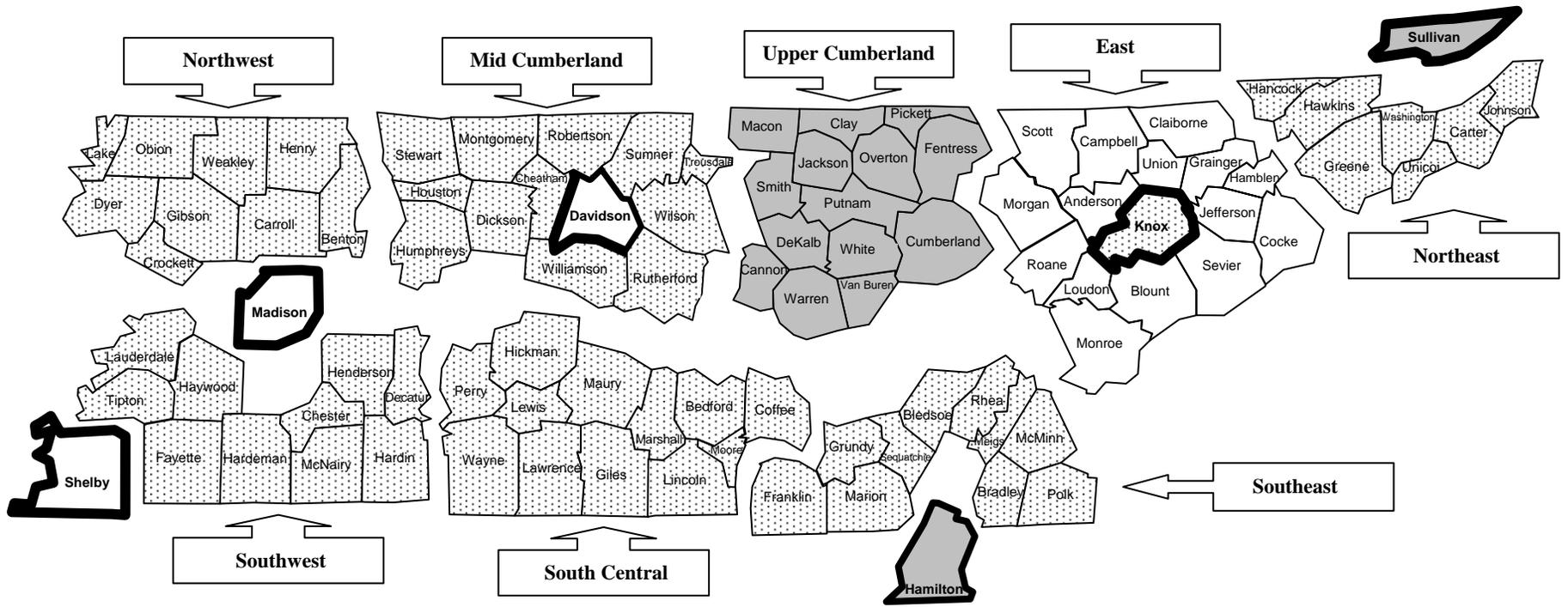
Angina, the most common symptom of coronary heart disease, can also develop because of plaque buildup. Angina happens when the heart does not receive enough oxygen-rich blood, causing chest pain or discomfort. A stroke (cerebrovascular disease) results when the blood supply to part of the brain is blocked or when a blood vessel in the brain bursts, causing damage to a part of the brain, according to the CDC. A stroke is sometimes referred to as a “brain attack.”

Heart disease and stroke are major causes of disability. According to the CDC, the two types of cardiovascular disease

are among the nation’s leading causes of death and major causes of disability, projected to cost more than \$351 billion in 2003. In the next two decades, these conditions can be expected to increase sharply as this country’s “baby boom” generation ages. The current disease burden, recent trends, and growing disparities among certain populations reinforce this projection.

The causes of heart disease and stroke are similar. Causes include high blood cholesterol, high blood pressure, diabetes, smoking, excessive use of alcohol, poor diet (e.g., high in salt and saturated fats), excessive weight, and lack of physical activity. Genetics (i.e., a family history of cardiovascular disease) also play a role in some individuals. Below are maps indicating the extent of the cardiovascular disease problem in Tennessee in different geographical areas and among different population groups.

**Department of Health Regions
 Respondents Told by Health Professionals That
 They Had Coronary Heart Disease or Angina
 Calendar Year 2006**



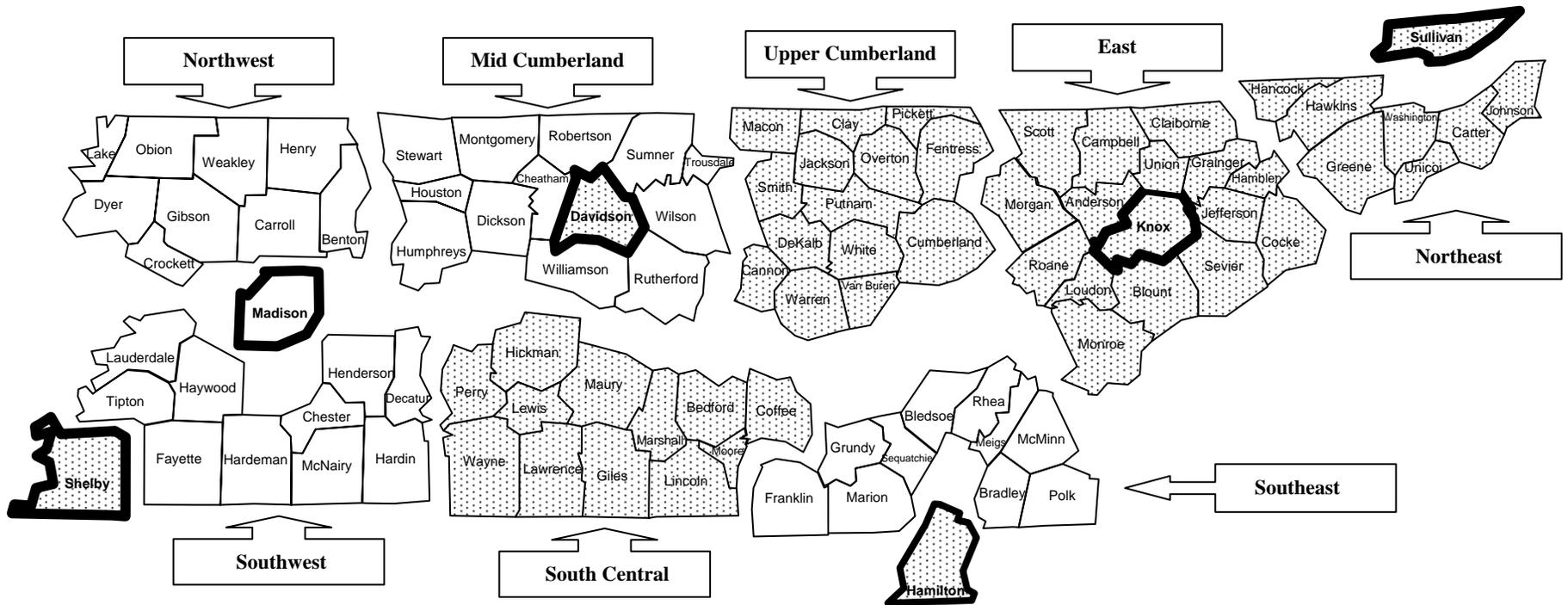
Affirmative Response Rate (Weighted Percentage)

- 1 – 3 Percent
- 4 – 6 Percent
- 7 – 8 Percent

Tennessee Average: 5.0 Percent

Source: Department of Health (Behavioral Risk Factor Surveillance System).

**Department of Health Regions
 Respondents Told by Health Professionals That
 They Had a Heart Attack
 Calendar Year 2006**



Affirmative Response Rate (Weighted Percentage)

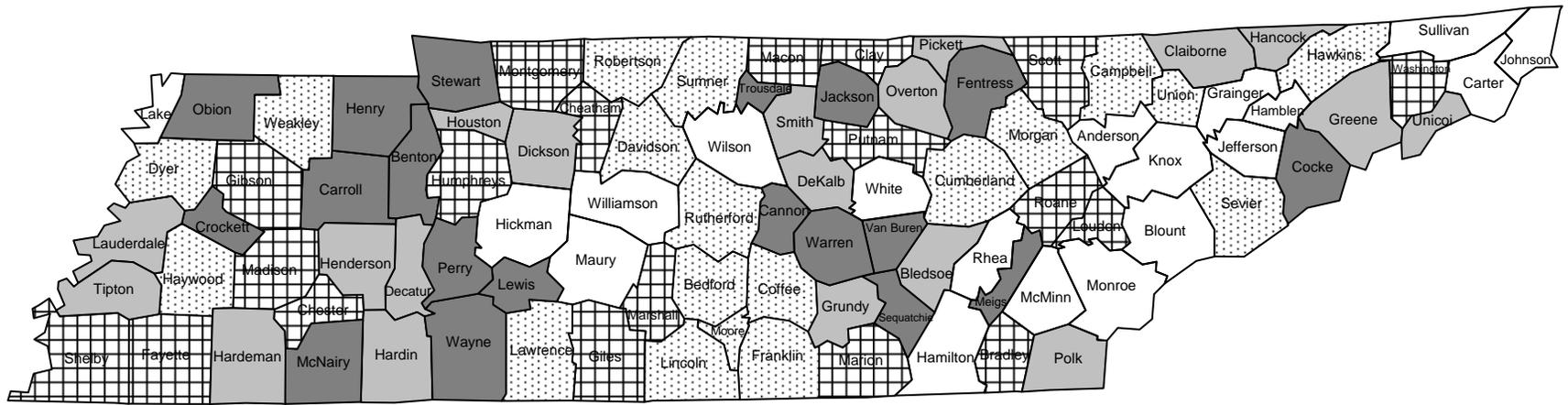
□ 1 – 5 Percent

▨ 6 – 8 Percent

Tennessee Average: 5.9 Percent

Source: Department of Health (Behavioral Risk Factor Surveillance System).

Tennessee Heart Disease Deaths by County Calendar Year 2005



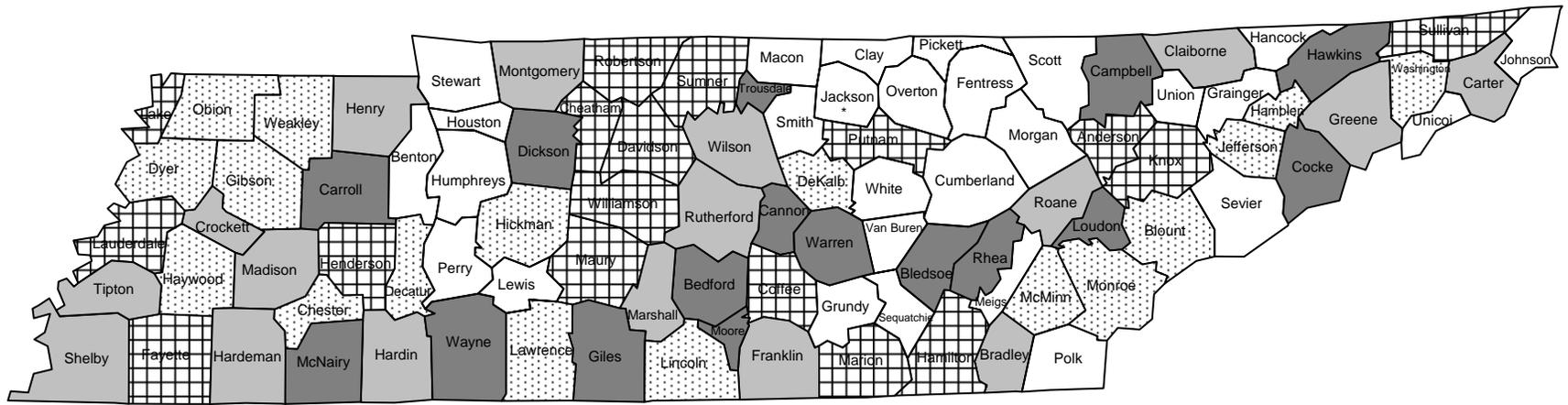
Age-Adjusted Death Rate per 100,000 Residents

- 159.1 – 232.3 per 100,000
- 232.4 – 248.9 per 100,000
- 249.0 – 271.6 per 100,000
- 271.7 – 311.9 per 100,000
- 312.0 – 440.3 per 100,000

Tennessee Average: 247.8 per 100,000

Source: Department of Health.

Tennessee Heart Disease Deaths by County for Blacks Calendar Year 2005



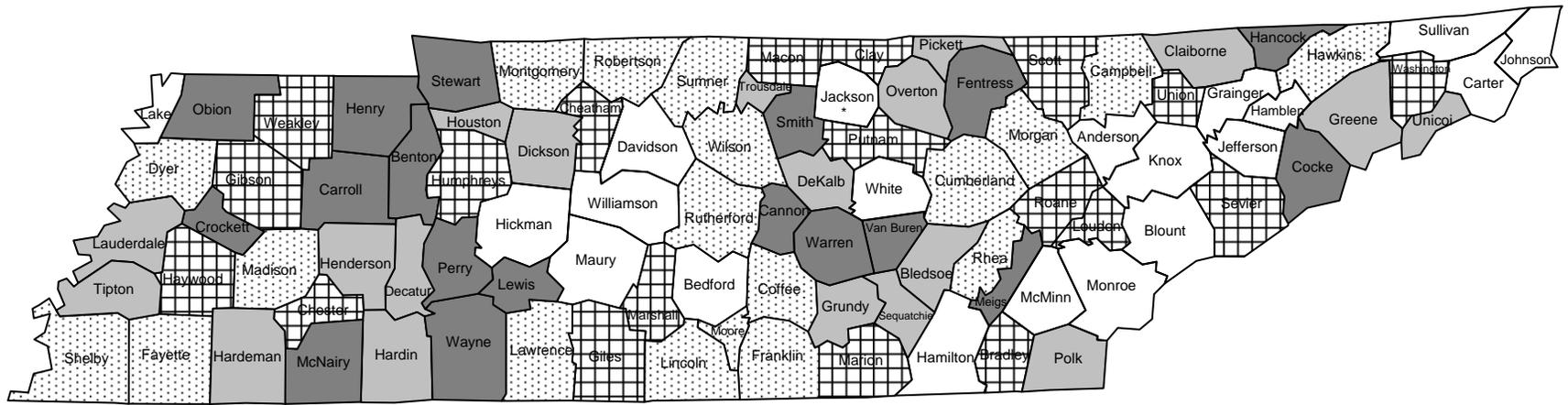
Age-Adjusted Death Rate per 100,000 Residents

- * Population size too small to reveal rate because of confidentiality restrictions
- No deaths
- 62.0 – 236.7 per 100,000
- 236.8 – 309.8 per 100,000
- 309.9 – 393.5 per 100,000
- 393.6 – 3098.1 per 100,000

Tennessee Average: 311.4 per 100,000

Source: Department of Health.

Tennessee
Heart Disease Deaths by County for Whites
Calendar Year 2005



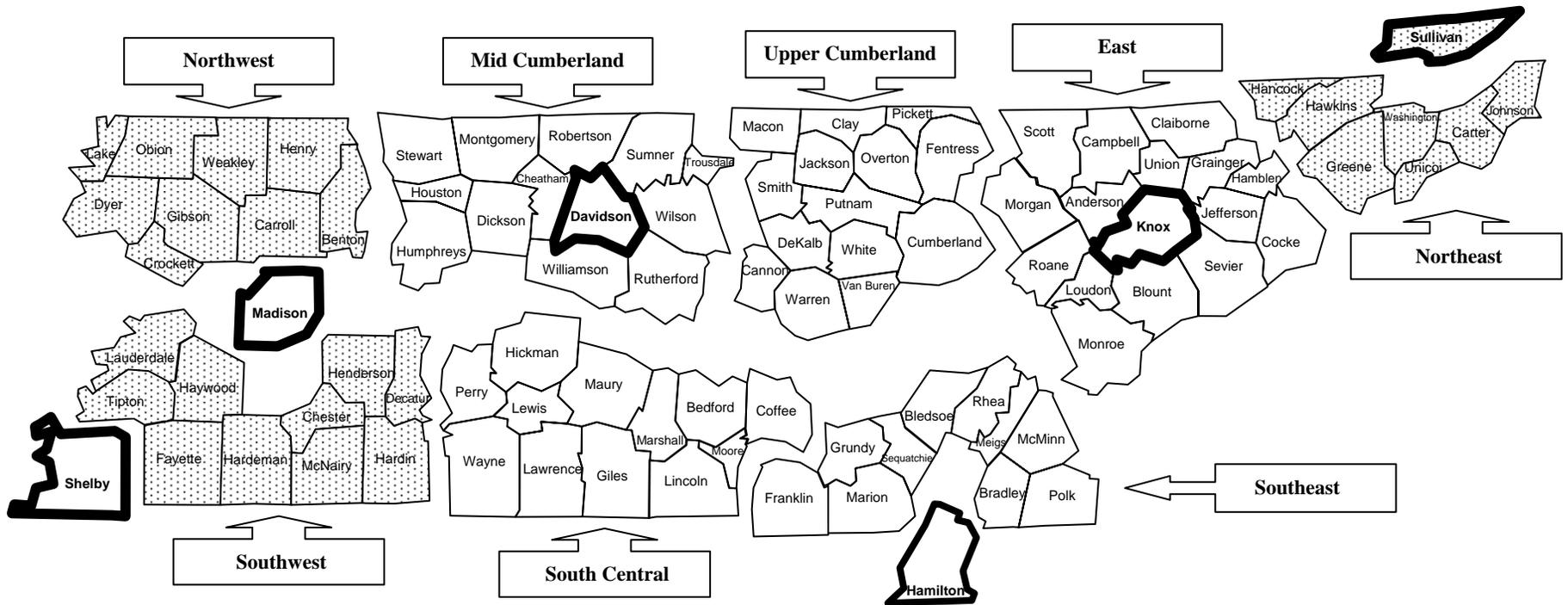
Age-Adjusted Death Rate per 100,000 Residents

- * Population size too small to reveal rate because of confidentiality restrictions
- 160.2 – 219.7 per 100,000
- 219.8 – 243.5 per 100,000
- 243.6 – 274.6 per 100,000
- 274.7 – 308.8 per 100,000
- 308.9 – 442.8 per 100,000

Tennessee Average: 239.8 per 100,000

Source: Department of Health.

**Department of Health Regions
 Respondents Told by Health Professionals That
 They Had a Stroke
 Calendar Year 2006**



Affirmative Response Rate (Weighted Percentage)

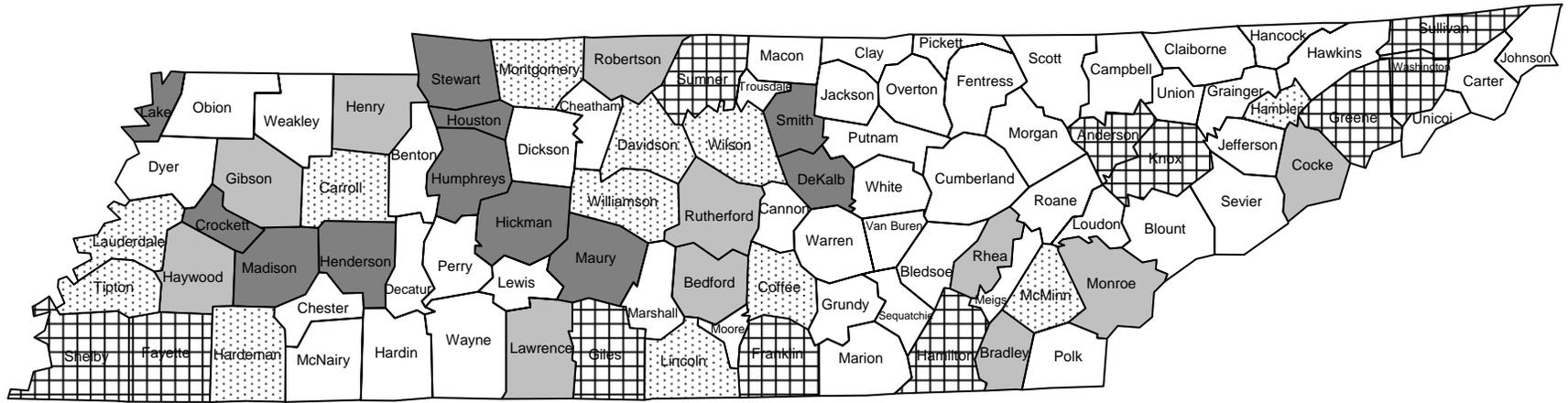
□ 1 – 3 Percent

▤ 4 – 6 Percent

Tennessee Average: 3.2 Percent

Source: Department of Health (Behavioral Risk Factor Surveillance System).

Tennessee
Cerebrovascular Disease Deaths by County for Blacks
Calendar Year 2005



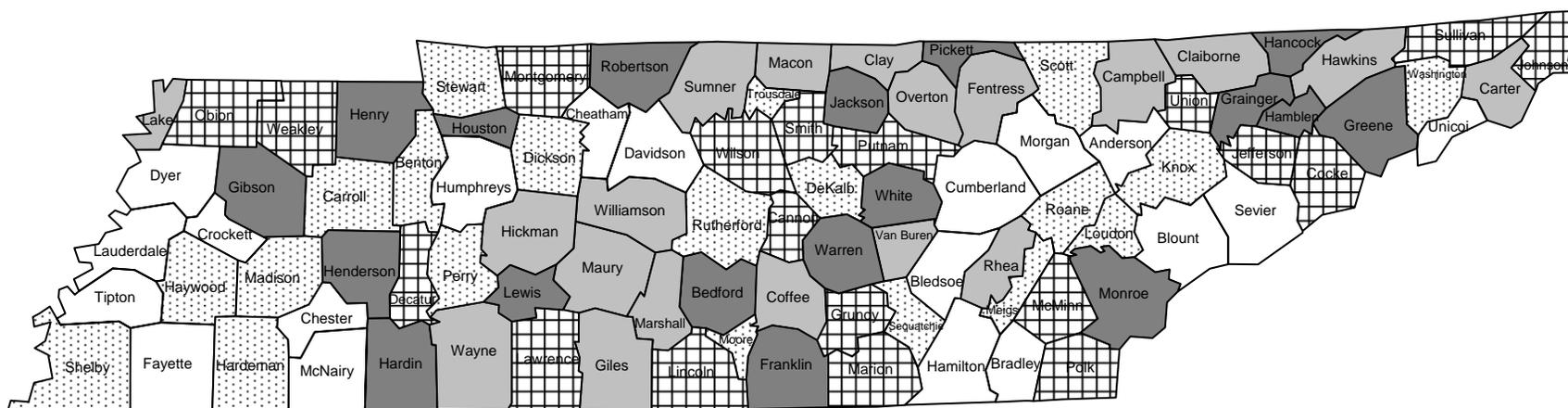
Age-Adjusted Death Rate per 100,000 Residents

- No deaths
- 16.2 – 66.3 per 100,000
- 66.4 – 95.6 per 100,000
- 95.7 – 136.2 per 100,000
- 136.3 – 695.1 per 100,000

Tennessee Average: 80.7 per 100,000

Source: Department of Health.

Tennessee Cerebrovascular Disease Deaths by County for Whites Calendar Year 2005



Age-Adjusted Death Rate per 100,000 Residents

- 29.1 – 48.3 per 100,000
- 48.4 – 59.1 per 100,000
- 59.2 – 65.9 per 100,000
- 66.0 – 74.9 per 100,000
- 75.0 – 132.1 per 100,000

Tennessee Average: 59.0 per 100,000

Source: Department of Health.

Appendix 3

Description of Diabetes

Diabetes is a chronic disease where the body cannot effectively make or use the hormone insulin, resulting in elevated blood sugar or glucose. Cells use insulin, made in the pancreas, to help them process blood glucose, broken down from food, into energy. Thus, people with diabetes have difficulties converting food into energy.

There are three main types of diabetes: type 1, type 2, and gestational diabetes. Type 1 diabetes used to be called juvenile-onset diabetes or insulin-dependent diabetes mellitus (IDDM). According to the federal Centers for Disease Control and Prevention (CDC),

Type 1 diabetes develops when the body's immune system destroys pancreatic beta cells, the only cells in the body that make the hormone insulin that regulates blood glucose. To survive, people with type 1 diabetes must have insulin delivered by injection or a pump. This form of diabetes usually strikes children and young adults, although disease onset can occur at any age. Type 1 diabetes accounts for 5% to 10% of all diagnosed cases of diabetes. Risk factors for type 1 diabetes may be autoimmune, genetic, or environmental. There is no known way to prevent type 1 diabetes.

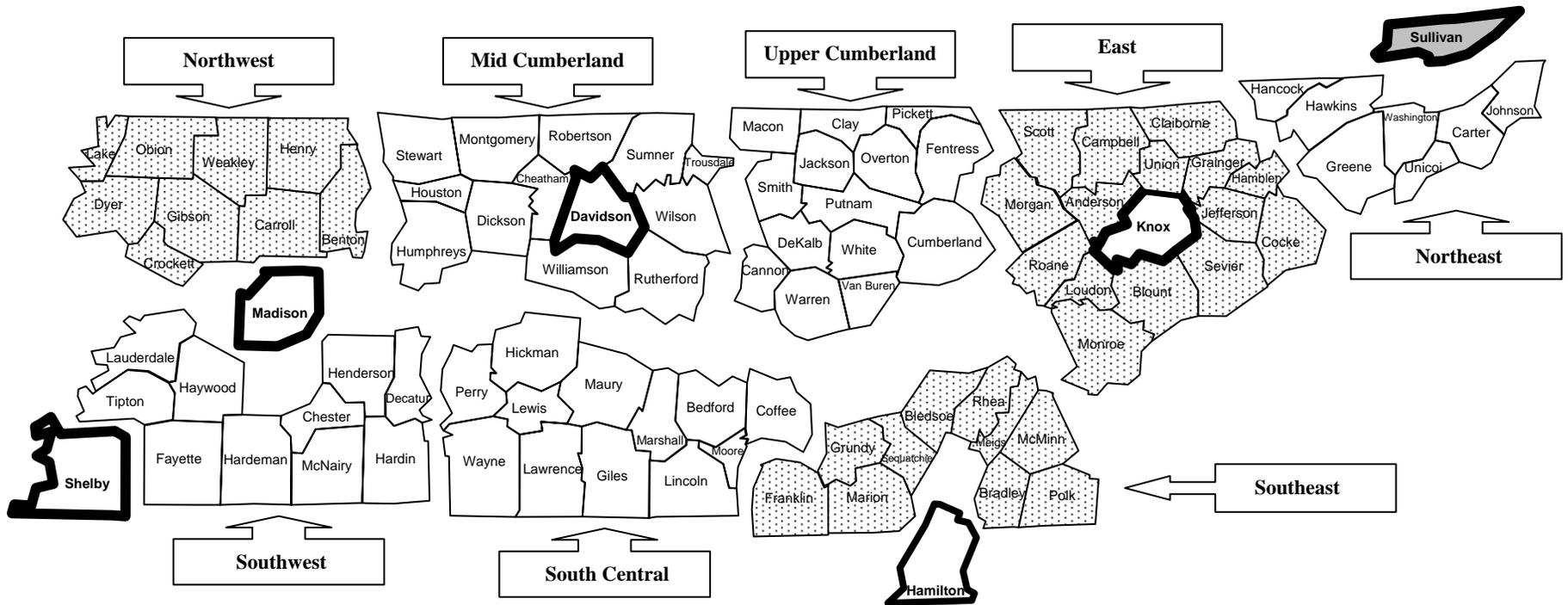
However, the vast majority of diabetes cases, 90% to 95%, are type 2. Type 2 diabetes used to be called adult-onset diabetes or non-insulin-dependent diabetes mellitus (NIDDM). According to the CDC, type 2 diabetes

usually begins as insulin resistance, a disorder in which the cells do not use insulin properly. As the need for insulin rises, the pancreas gradually loses its ability to produce it. Type 2 diabetes is associated with older age, obesity, family history of diabetes, history of gestational diabetes, impaired glucose metabolism, physical inactivity, and race/ethnicity. African Americans, Hispanic/Latino Americans, American Indians, and some Asian Americans and Native Hawaiians or Other Pacific Islanders are at particularly high risk for type 2 diabetes and its complications. Clinically-based reports and regional studies suggest that type 2 diabetes in children and adolescents, although still rare, is being diagnosed more frequently, particularly in American Indians, African Americans, and Hispanic/Latino Americans.

Gestational diabetes, a type of glucose intolerance diagnosed in some pregnant women, is the least frequent of the three types of diabetes. Gestational diabetes occurs in 2% to 5% of pregnancies but disappears after giving birth, according to the American Diabetes Association. However, women who have had this type of diabetes have a 20% to 50% chance of getting type 2 diabetes five to ten years after giving birth. Gestational diabetes occurs more frequently among African Americans, Hispanic/Latino Americans, and American Indians, according to the CDC. These groups have rates of gestational diabetes two to four times that of non-Hispanic whites. This type of diabetes is also more common among obese women, older women, and women with family histories of diabetes.

The CDC estimated that there were 20.8 million diabetes cases in calendar year 2005. The consequences of having diabetes are several and, if the diabetes is uncontrolled, can be severe. These complications include blindness, kidney failure, heart disease, and amputations, according to the American Medical Association (AMA). Premature death can also result. The chances of an individual getting the most common diabetes, type 2, can be reduced by appropriate lifestyle activities, including following an appropriate diet (e.g., smaller portions, low fat foods, fruits and vegetables, and moderate alcohol intake) and moderate physical activity, such as walking 2½ hours a week, according to the CDC. Below are maps indicating the extent of the diabetes problem in Tennessee in different geographical areas and among different population groups.

**Department of Health Regions
 Respondents Told by Health Professionals That
 They Had Diabetes
 Calendar Year 2006**



Affirmative Response Rate (Weighted Percentage)

□ 1 – 10 Percent

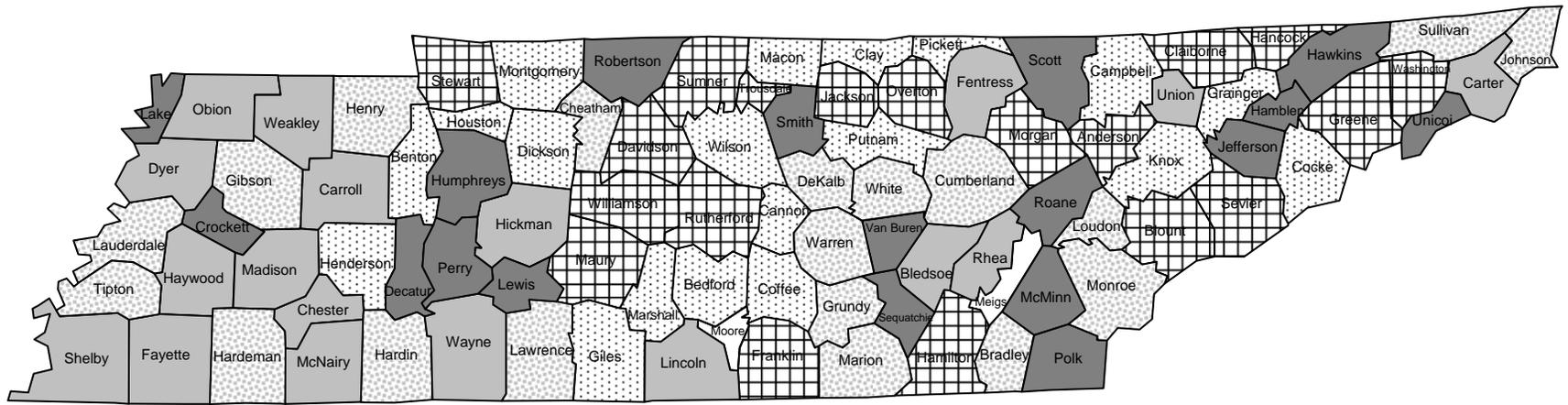
▤ 11– 20 Percent

■ 21 or Greater Percent

Source: Department of Health (Behavioral Risk Factor Surveillance System).

Tennessee Average: 10.7 Percent

Tennessee Diabetes Mellitus Deaths by County Calendar Year 2005



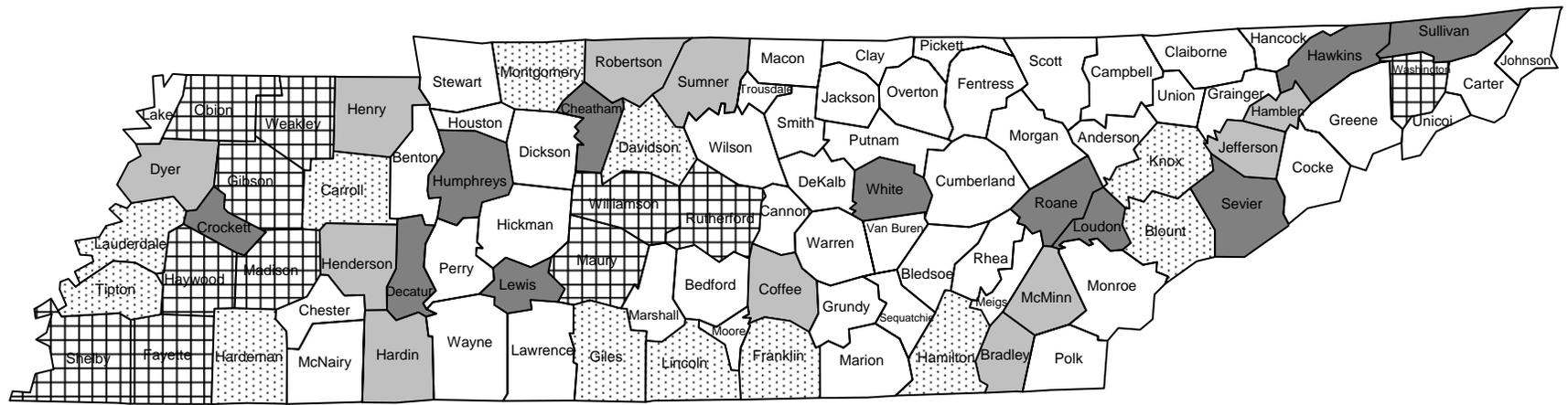
Age-Adjusted Death Rate per 100,000 Residents

- No deaths
- 7.7 – 22.8 per 100,000
- 22.9 – 28.1 per 100,000
- 28.2 – 35.3 per 100,000
- 35.4 – 42.9 per 100,000
- 43.0 – 70.9 per 100,000

Tennessee Average: 30.3 per 100,000

Source: Department of Health.

Tennessee
Diabetes Mellitus Deaths by County for Blacks
Calendar Year 2005



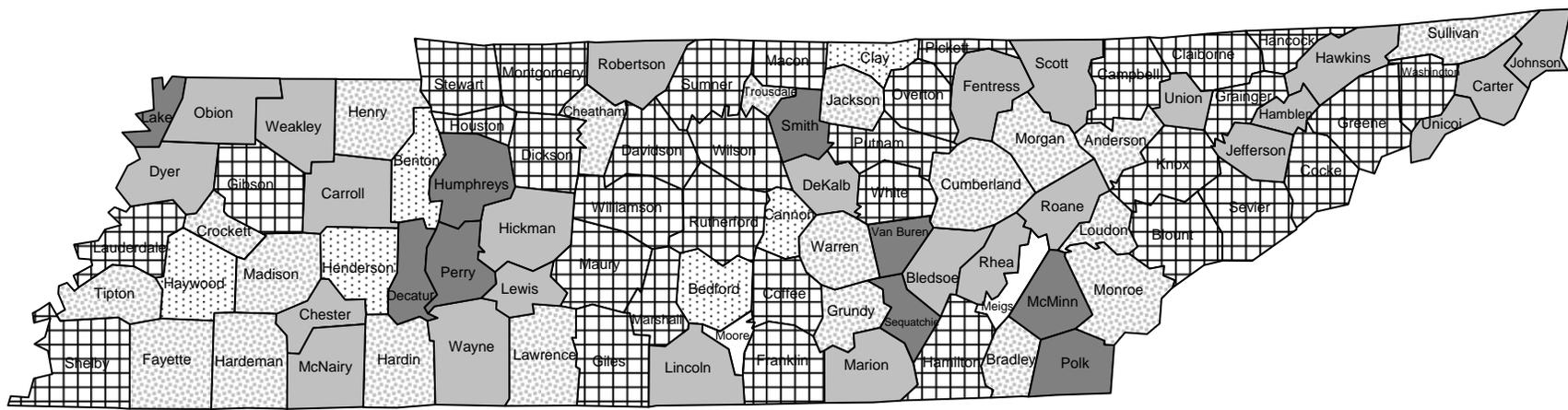
Age-Adjusted Death Rate per 100,000 Residents

- No deaths
- 19.9 – 49.9 per 100,000
- 50.0 – 84.1 per 100,000
- 84.2 – 146.7 per 100,000
- 146.8 – 421.2 per 100,000

Tennessee Average: 58.0 per 100,000

Source: Department of Health.

Tennessee
Diabetes Mellitus Deaths by County for Whites
Calendar Year 2005



Age-Adjusted Death Rate per 100,000 Residents

- No deaths
- 7.8 – 15.4 per 100,000
- 15.5 – 25.6 per 100,000
- 25.7 – 34.8 per 100,000
- 34.9 – 47.3 per 100,000
- 47.4 – 67.7 per 100,000

Tennessee Average: 26.7 per 100,000

Source: Department of Health.

Appendix 4

Description of HIV/AIDS

The Human Immunodeficiency Virus (HIV) causes Acquired Immunodeficiency Syndrome (AIDS). Unlike most viruses, HIV attacks the immune system. Specifically, HIV destroys a type of white blood cell, T cell or CD4 cell, that the immune system requires to fight disease. Death results when the immune system is so compromised it cannot fight disease. According to the federal Centers for Disease Control and Prevention (CDC),

AIDS is the final stage of HIV infection. It can take years for a person infected with HIV, even without treatment, to reach this stage. Having AIDS means that the virus has weakened the immune system to the point at which the body has a difficult time fighting infections. When someone has one or more of these infections and a low number of T cells, he or she has AIDS. HIV is primarily found in the blood, semen, or vaginal fluid of an infected person.

HIV cannot be transmitted from one person to another through casual contact. According to the CDC,

HIV is a fragile virus. It cannot live for very long outside the body. As a result, the virus **is not transmitted** through day-to-day activities such as shaking hands, hugging, or a casual kiss. You cannot become infected from a toilet seat, drinking fountain, doorknob, dishes, drinking glasses, food, or pets. You also cannot get HIV from mosquitoes.

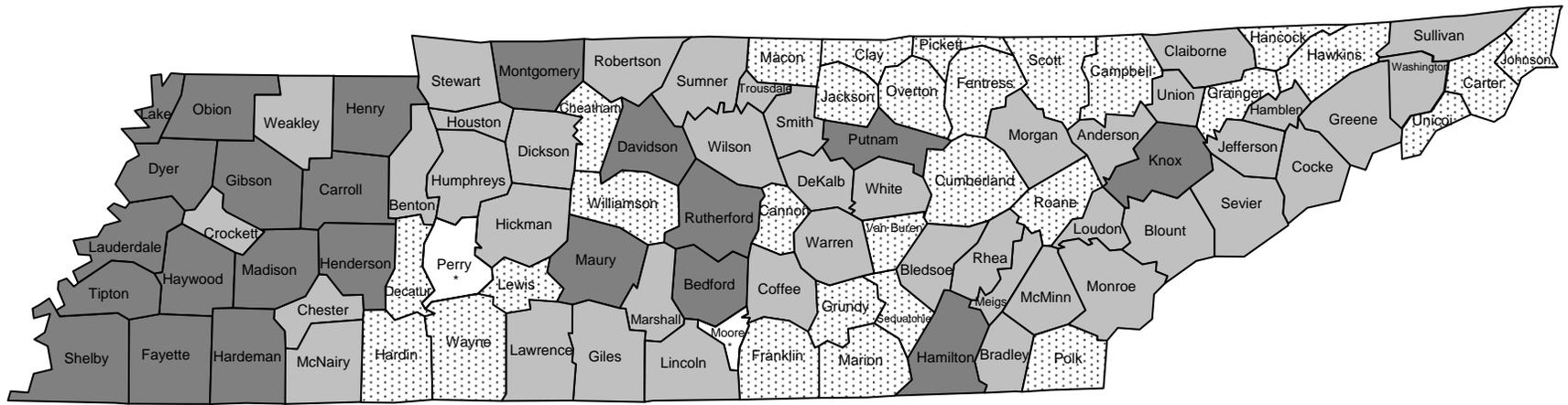
There are three main ways HIV can be transmitted from person to person: (1) sex, (2) the sharing of needles and syringes, and (3) exposure before or during birth or by breast feeding, if the mother is infected. Avoiding risky behaviors such as having unprotected sex and sharing needles is the only way to prevent HIV infection as there is no vaccine for the virus. One factor that may increase an individual's chances of getting infected is if that individual is already infected by another sexually transmitted disease such as chlamydia, gonorrhea, or syphilis.

The CDC estimated that one million people were living with HIV/AIDS in calendar year 2007 in the United States, about a quarter of whom did not know they were infected. Individuals newly infected with HIV have averaged 40,000 a year nationally since the early 1990s. Men who have sex with men (MSM) accounted for approximately 53 percent of all new HIV/AIDS cases in 2005. Another group that is seriously affected by HIV/AIDS is African Americans. According to the CDC,

Of all racial and ethnic groups in the United States, HIV and AIDS have hit African Americans the hardest. The reasons are not directly related to race or ethnicity, but rather to some of the barriers faced by many African Americans. These barriers can include poverty (being poor), sexually transmitted diseases, and stigma (negative attitudes, beliefs, and actions directed at people living with HIV/AIDS or directed at people who do things that might put them at risk for HIV).

The CDC estimated that although only 13 percent of the U.S. population, African Americans accounted for half of the individuals infected with HIV in calendar year 2005. Below are maps indicating the extent of the HIV/AIDS problem in Tennessee in different geographical areas. (The Department of Health was not able to provide information by racial group for each county because of confidentiality issues resulting from small numbers of HIV-infected individuals.) Included are maps indicating the extent of chlamydia, gonorrhea, and syphilis infections, as these infections make individuals more susceptible to HIV/AIDS.

**Tennessee
Chlamydia Infection Rates by County
Calendar Year 2006**



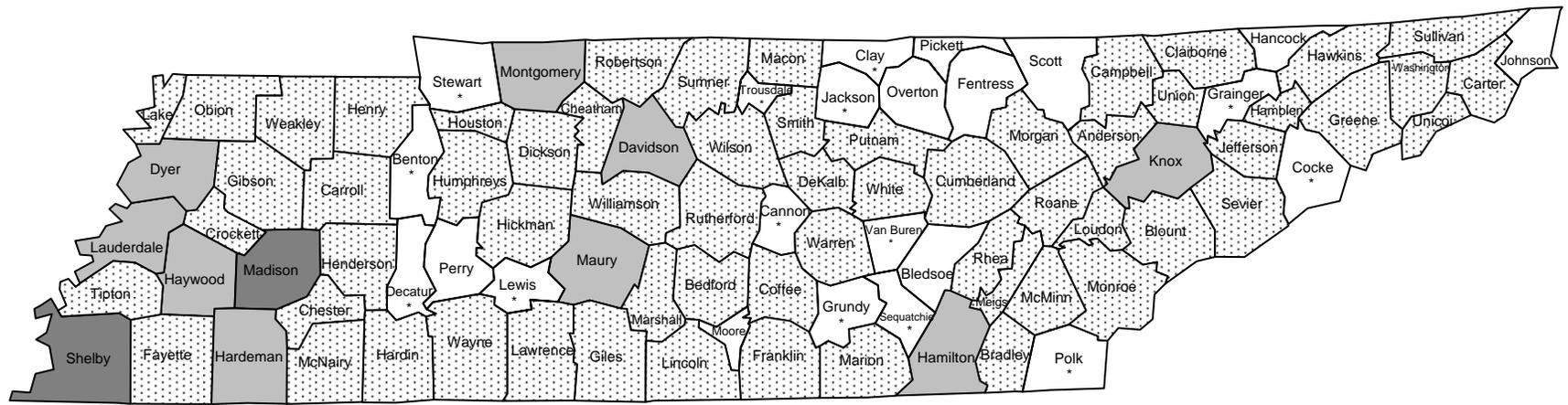
Infection Rate per 100,000 Residents

- * Population size too small to reveal rate because of confidentiality restrictions
- 1 – 150 per 100,000
- 151 – 300 per 100,000
- 301 or greater per 100,000

Tennessee Average: 422 per 100,000

Source: Department of Health.

Tennessee Gonorrhea Infection Rates by County Calendar Year 2006



Infection Rate per 100,000 Residents

- * Population size too small to reveal rate because of confidentiality restrictions
- No infections
- 1 – 150 per 100,000
- 151 – 300 per 100,000
- 301 or greater per 100,000

Source: Department of Health.

Tennessee Average: 161 per 100,000

Appendix 5 Description of Infant Mortality

Infant mortality is measured using the infant mortality rate, which is the rate at which babies in a given population die before their first birthday. The rate specifically indicates the number of babies less than one year old dying per 1,000 live births. The infant mortality rate nationwide has been reduced dramatically in the last 70 years. In 1933, the U.S. infant mortality rate was 58.1 deaths per 1,000 live births; in 2004, the number had dropped to 6.7 deaths per 1,000 live births (the last available national figures, as of January 2008, according to the federal Centers for Disease Control and Prevention). In comparison, Tennessee had an infant mortality rate of 8.6 deaths per 1,000 live births in 2004.

Not only does Tennessee have a higher infant mortality rate, but there are also big differences between the infant mortality rates of whites and African Americans in the state. In 2005, the state's white infant mortality rate was 7.1 deaths per 1,000 live births while the rate for African Americans was 15.3 deaths per 1,000 live births. (The infant mortality rate for that year for all children was 8.8 deaths per 1,000 live births.) For calendar years 2002 through 2004, according to the Centers for Disease Control and Prevention, Tennessee ranked 48th among states in infant mortality (i.e., only two states had higher infant mortality rates).

States With the Lowest and Highest Infant Mortality Calendar Years 2002 Through 2004

States With the Lowest Infant Mortality		States With the Highest Infant Mortality	
State	Deaths per 1,000 Live Births	State	Deaths per 1,000 Live Births
1. Vermont	4.68	41. Maryland, Michigan	8.09
2. Massachusetts	4.80	42. North Carolina	8.35
3. Minnesota	4.85	43. Arkansas	8.47
4. New Hampshire	4.93	44. Georgia	8.65
5. Maine	5.01	45. Alabama	8.82
6. California	5.25	46. Delaware	8.88
7. Utah	5.26	47. South Carolina	8.98
8. Iowa	5.36	48. Tennessee	9.05
9. Oregon	5.59	49. Louisiana	9.95
10. New Jersey	5.62	50. Mississippi	10.32

Source: Federal Centers for Disease Control and Prevention.

However, high infant mortality is also a national and international problem. The Central Intelligence Agency, in *The World Factbook*, estimated that in 2007, of 221 countries, the United States ranked 180th highest in infant mortality, with a rate of 6.4 deaths per 1,000 live births. In other words, 41 countries reviewed had a lower infant mortality rate than the United States. Singapore had the lowest infant mortality rate, estimated at 2.3 deaths per 1,000 live births. (See the table on the following page for the rates in the ten countries with the lowest estimated infant mortality.)

Countries With the Lowest Estimated Infant Mortality Rates

Country	Estimated Rate for Calendar Year 2007 (Deaths per 1,000 Live Births)
1. Singapore	2.30
2. Sweden	2.76
3. Japan	2.80
4. Hong Kong	2.94
5. Iceland	3.27
6. France	3.41
7. Finland	3.52
8. Norway	3.64
9. Malta	3.82
10. Czech Republic	3.86

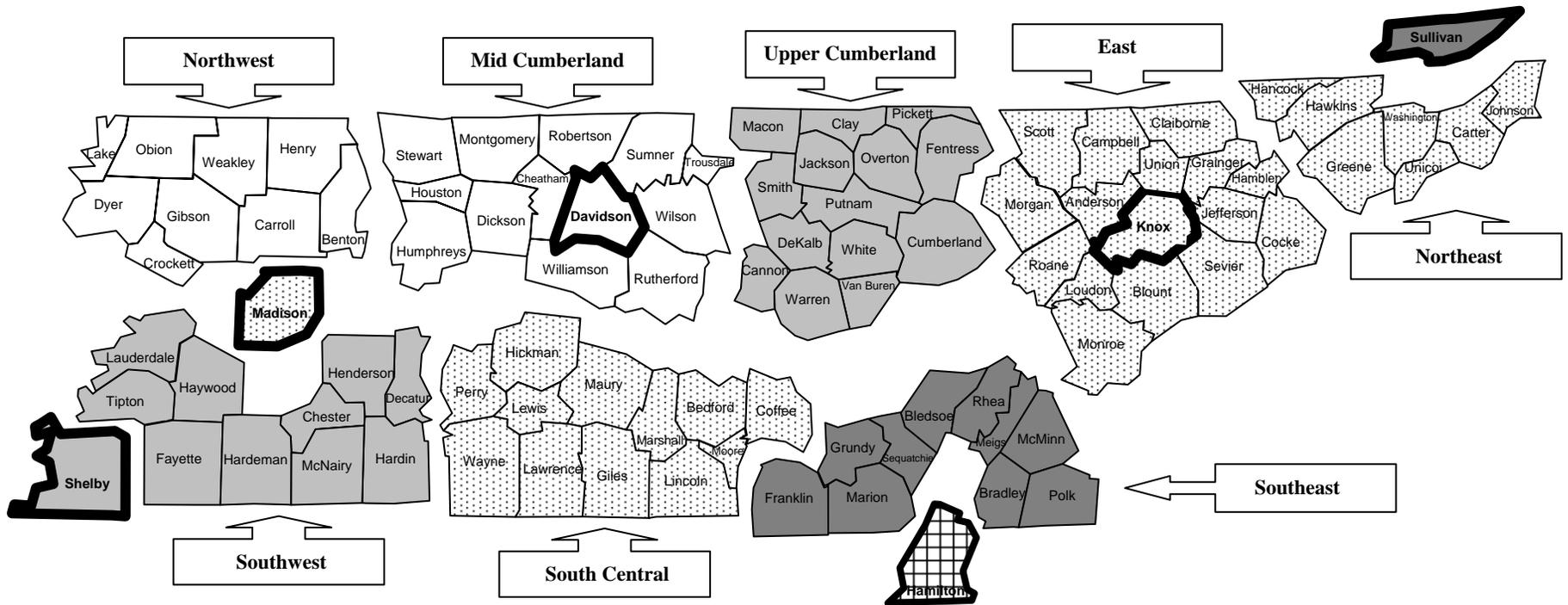
Source: *The World Factbook*, Central Intelligence Agency.

One of the best ways to reduce infant mortality is early and continuous prenatal care, according to the U.S. Department of Health and Human Services (HHS). According to HHS, such care

helps identify conditions and behavior that can result in low birthweight babies, such as smoking, drug and alcohol abuse, inadequate weight gain during pregnancy and repeat pregnancy in six months or less. Babies born to mothers who received no prenatal care are three times more likely to be born at low birth weight, and five times more likely to die, than those whose mothers received prenatal care.

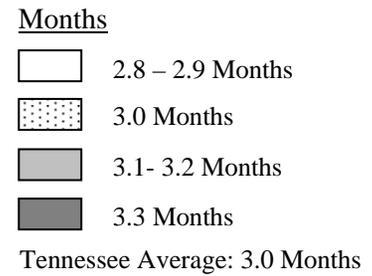
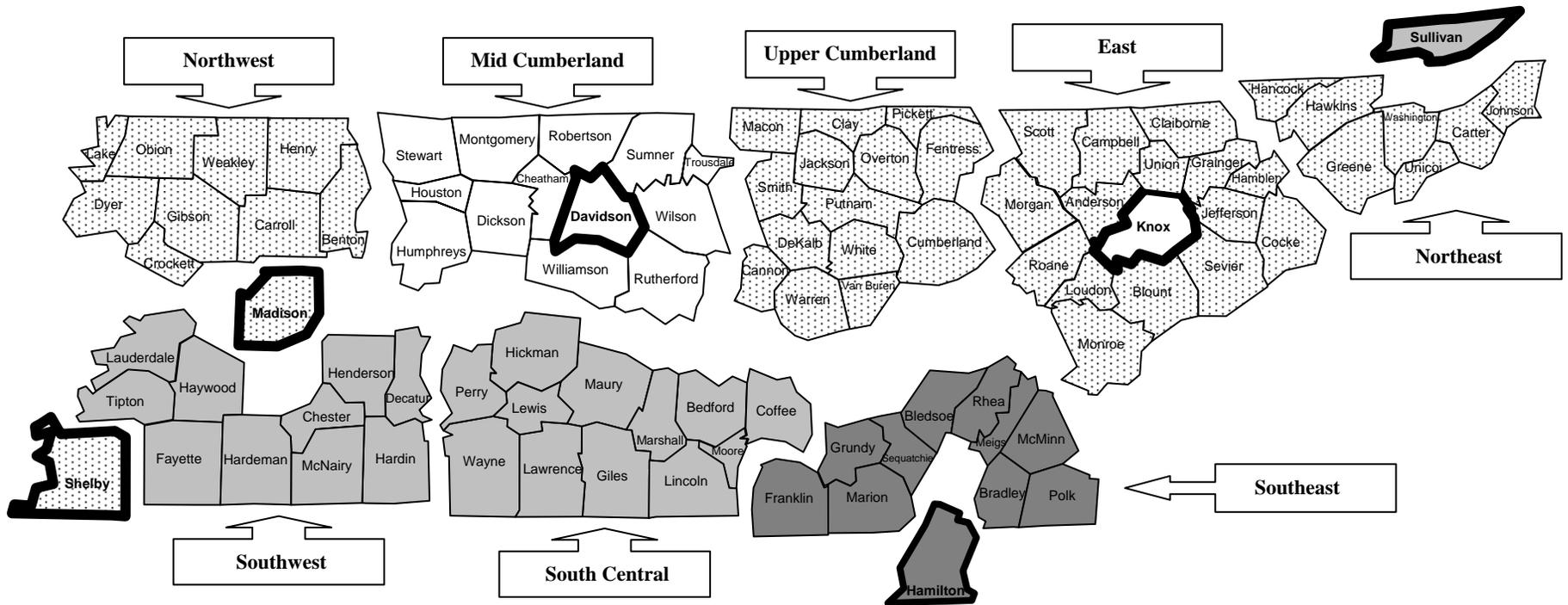
Below are maps indicating when prenatal care starts, on average, in different geographical areas and among different population groups in Tennessee. Also included are maps indicating the extent of the infant mortality problem in Tennessee in different geographical areas and among different population groups.

**Department of Health Regions
Average Month Prenatal Care Began for Blacks
Calendar Year 2006**



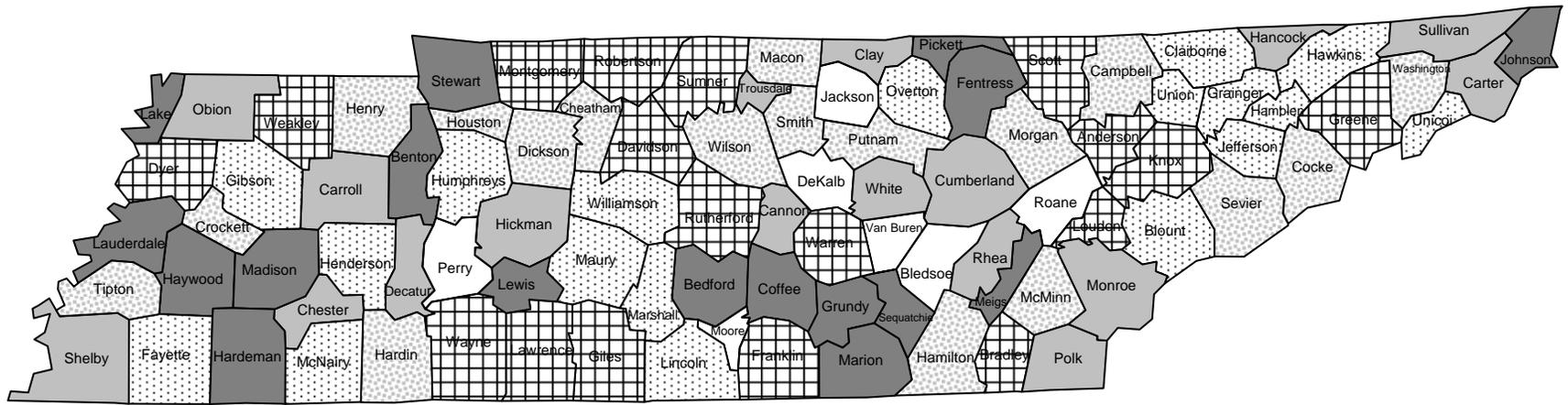
Source: Department of Health.

**Department of Health Regions
Average Month Prenatal Care Began for Whites
Calendar Year 2006**



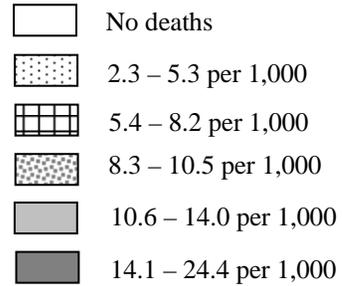
Source: Department of Health.

Tennessee Infant Mortality by County Calendar Year 2005



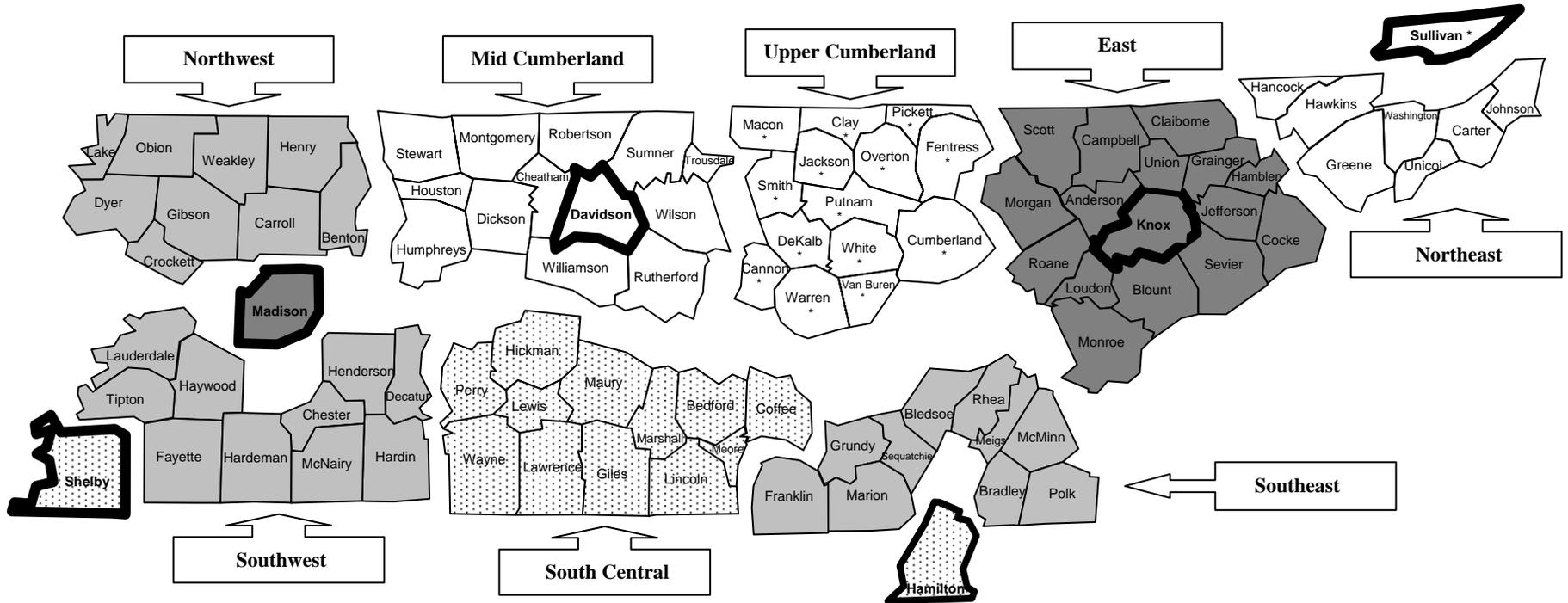
Source: Department of Health.

Rate per 1,000 Live Births



Tennessee Average: 8.8 per 1,000

**Department of Health Regions
 Infant Mortality for Blacks
 Calendar Year 2005**



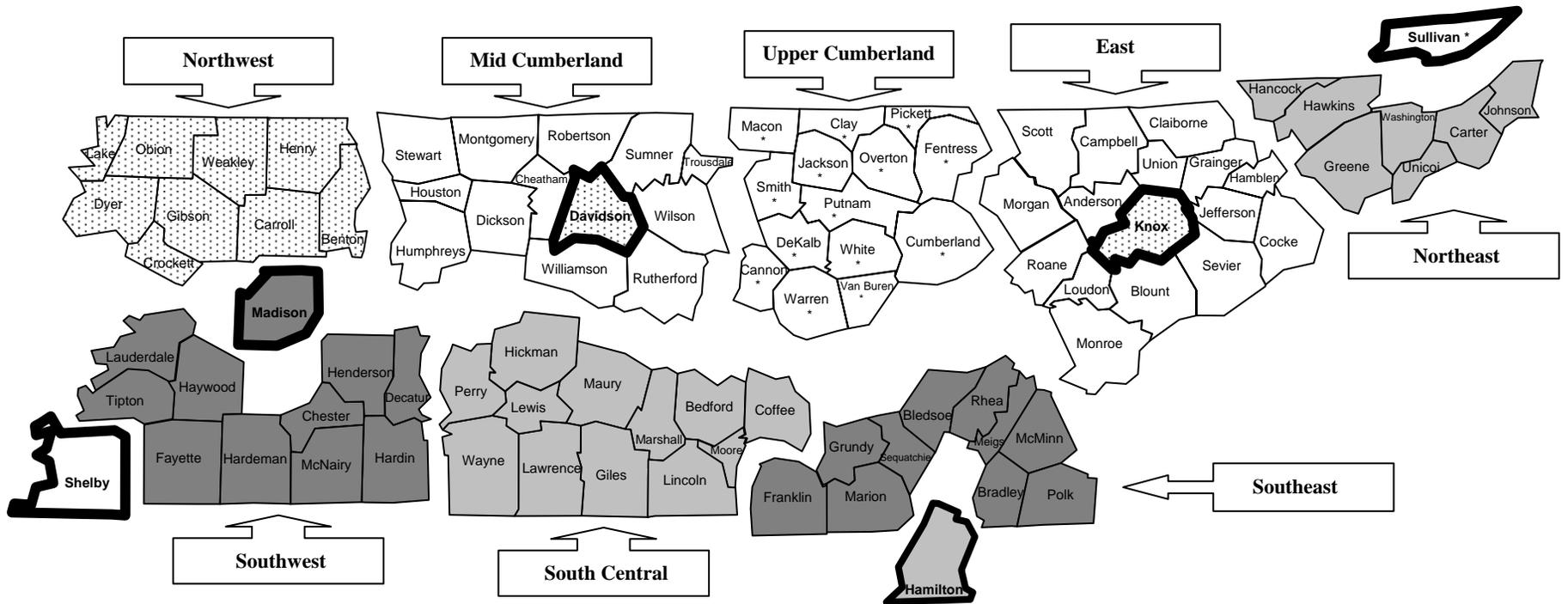
Rate per 1,000 Live Births

- * Population size too small to reveal rate because of confidentiality restrictions
- 11.9 – 13.5 per 1,000
- ▨ 13.6 – 15.5 per 1,000
- 15.6 – 17.4 per 1,000
- 17.5 – 26.5 per 1,000

Source: Department of Health.

Tennessee Average: 15.3 per 1,000 Live Births

**Department of Health Regions
 Infant Mortality for Whites
 Calendar Year 2005**



Rate per 1,000 Live Births

- * Population size too small to reveal rate because of confidentiality restrictions
- 5.5 – 5.9 per 1,000
- ▤ 6.0 – 7.4 per 1,000
- 7.5 – 8.8 per 1,000
- 8.9 – 11.3 per 1,000

Source: Department of Health.

Tennessee Average: 7.1 per 1,000 Live Births

Appendix 6 Description of Obesity

The federal Centers for Disease Control and Prevention (CDC) defines obesity as the state where an individual has “a body mass index (BMI) of greater than or equal to 30.” BMI, an indicator of body fat, is calculated using a formula where an individual’s weight is divided by height. The table below shows the relationship between BMI and weight status. The relationship shown in the table is valid for adults 20 years and older of both sexes, but not younger individuals. For younger people, BMI interpretations are age- and sex- specific.

**Relationship Between Body Mass Index (BMI) and Weight
(Adults 20 Years and Older)**

BMI	Weight Status
Below 18.5	Underweight
18.5 – 24.9	Normal
25.0 – 29.9	Overweight
30.0 and Above	Obese

Source: Federal Centers for Disease Control and Prevention.

Dr. Richard Carmona, U.S. Surgeon General from 2002 to 2006, called obesity the greatest public health threat. More Americans are killed annually by health problems caused by obesity “than AIDS, all cancers and all accidents combined,” according to the AMA. In addition, obesity is causing health problems in children “that were unthinkable 20 years ago,” according to the AMA. An individual’s risk of acquiring several types of diseases and health conditions increases by being overweight or obese. According to the CDC, these diseases and health conditions include

- hypertension (high blood pressure);
- dyslipidemia (for example, high total cholesterol or high levels of triglycerides);
- type 2 diabetes;
- coronary heart disease;
- stroke;
- gallbladder disease;
- osteoarthritis;
- sleep apnea (a sleep disorder where sleep is temporarily interrupted) and respiratory problems; and
- some cancers (endometrial, breast, and colon).

The prevalence of overweight and obese individuals has increased dramatically nationwide since the mid-‘70s, according to the CDC. The change is demonstrated in two National Health and Nutrition Examination surveys conducted approximately two decades apart by the CDC’s National Center for Health Statistics.

**National Health and Nutrition Examination Surveys
Overweight and Obese Individuals
Calendar Years 1976 Through 1980 and 2003 Through 2004**

	Calendar Years Covered By Survey	
	1976 - 1980	2003-2004
Percentage of adults 20 to 74 years old who are overweight or obese	47.1%	66.2%
Percentage of adults 20 to 74 years old who are obese	15.0%	32.9%
Percentage of children 6 to 11 years old who are overweight	6.5%	18.8%
Percentage of children and adolescents 12 to 19 years old who are overweight	5.0%	17.4%

Source: National Center for Health Statistics.

For most individuals, becoming overweight or obese results when energy (i.e., food) exceeds energy expenditure (i.e., physical activity). According to the AMA,

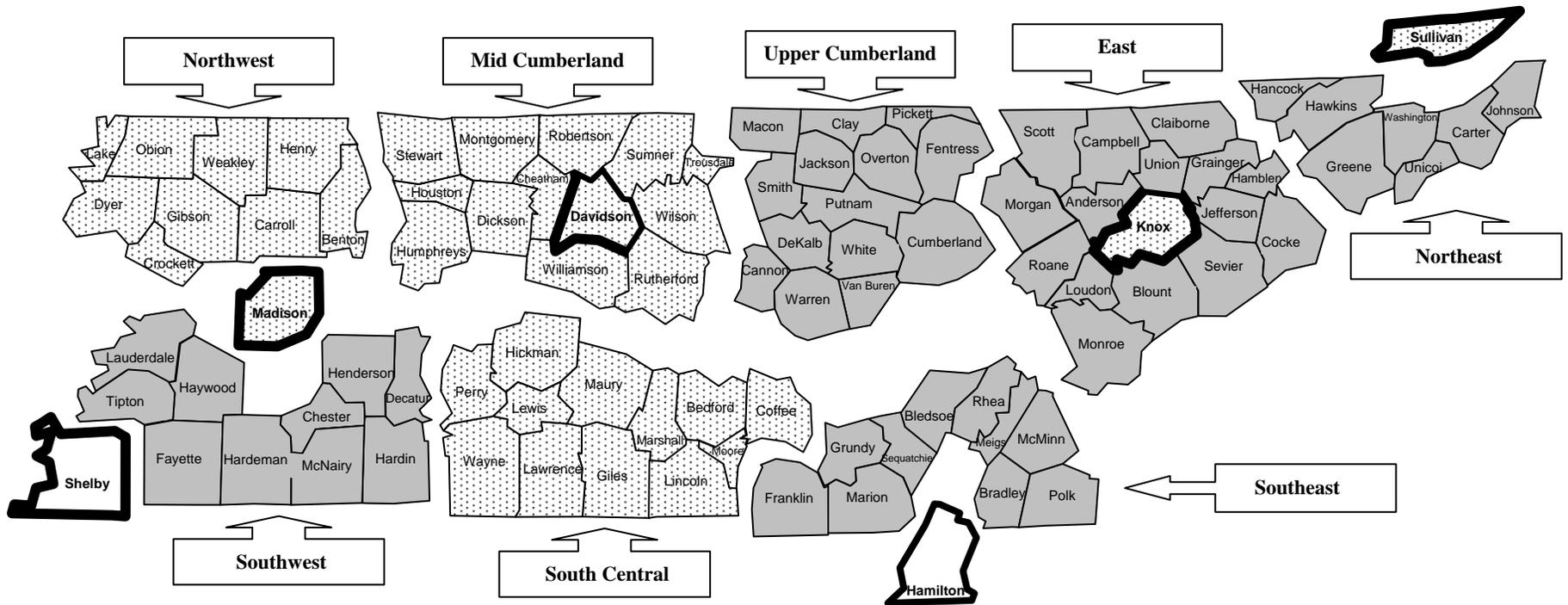
Increasing evidence suggests that obesity is not a simple problem of willpower or self control, but rather a complex disorder involving appetite regulation and energy metabolism that is associated with a variety of comorbid [illnesses or conditions occurring simultaneously] conditions. For most people, overweight or obesity results when energy intake exceeds energy expenditure for an extended period of time. Some individuals may become overweight or obese partly because they have a genetic or biological predisposition to readily gain weight when they are exposed to unhealthy diets and lifestyles.

Thus, the main solution to stopping or preventing obesity is a combination of a balanced diet and regular physical activity. Unfortunately, an individual's ability to obtain and maintain a healthy weight is difficult in today's circumstances. According to the AMA, having a healthy weight

is compromised by our culture, which supports sedentary lifestyles and easy access to an abundance of calorie-dense, high-fat foods. Many people do not integrate physical activity into their busy lives.

The Department of Health does not have data on the prevalence of obesity in Tennessee at the regional or county level. We have substituted for such data using the prevalence of high cholesterol and high blood pressure in different geographical areas in the maps below, as these health conditions are closely related to obesity (inactivity and poor diet can also cause both conditions, although there can be genetic causes).

**Department of Health Regions
 Respondents Told by Health Professionals That
 They Had High Cholesterol
 Calendar Year 2005**



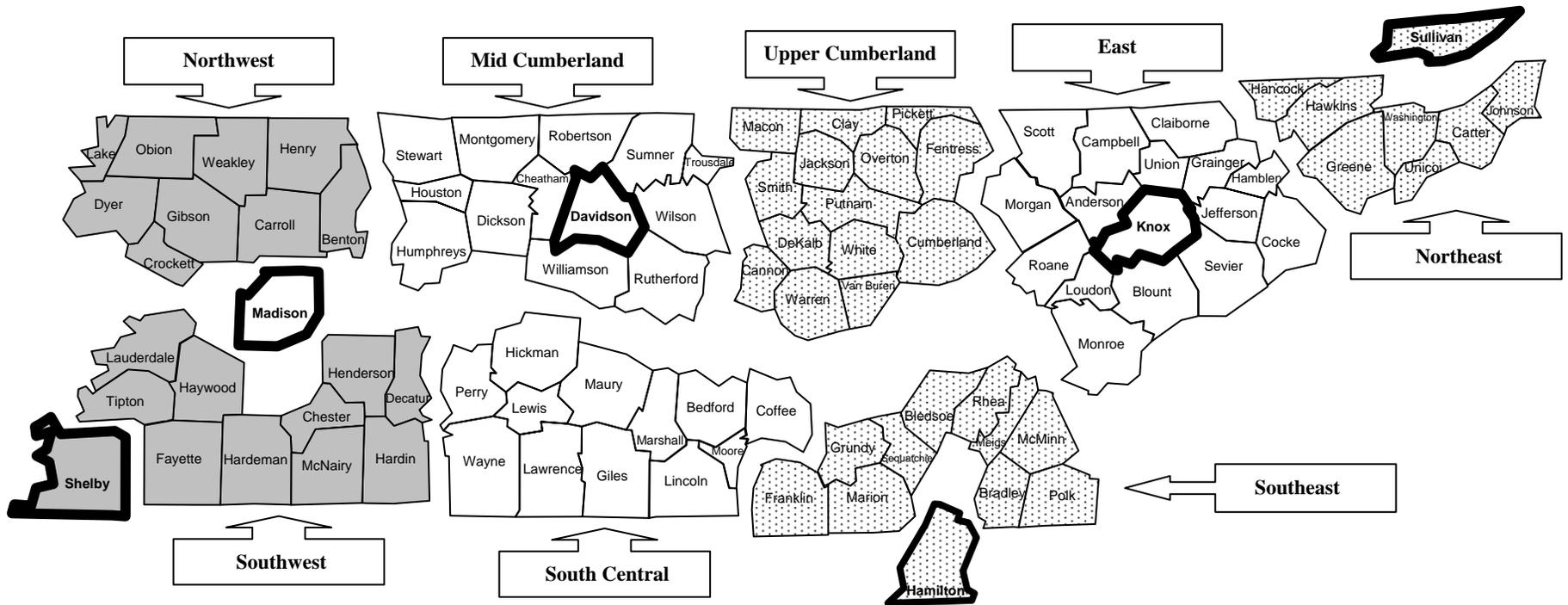
Affirmative Response Rate (Weighted Percentage)

- 25 – 30 Percent
- 31 – 35 Percent
- 36 or Greater Percent

Tennessee Average: 32.9 Percent

Source: Department of Health (Behavioral Risk Factor Surveillance System).

**Department of Health Regions
 Respondents Told by Health Professionals That
 They Had High Blood Pressure
 Calendar Year 2005**



Affirmative Response Rate (Weighted Percentage)

- 25 – 30 Percent
- 31 – 35 Percent
- 36 or Greater Percent

Tennessee Average: 30.2 Percent

Source: Department of Health (Behavioral Risk Factor Surveillance System).

Appendix 7
Department of Health Regions
(Counties listed within each region)

East

Anderson
Blount
Campbell
Claiborne
Cocke
Grainger
Hamblen
Jefferson
Loudon
Monroe
Morgan
Roane
Scott
Sevier
Union

Mid-Cumberland

Cheatham
Dickson
Houston
Humphreys
Montgomery
Robertson
Rutherford
Stewart
Sumner
Trousdale
Williamson
Wilson

Northeast

Carter
Greene
Hancock
Hawkins
Johnson
Unicoi
Washington

Northwest

Benton
Carroll
Crockett
Dyer
Gibson
Henry
Lake
Obion
Weakley

South Central

Bedford
Coffee
Giles
Hickman
Lawrence
Lewis
Lincoln
Marshall
Maury
Moore
Perry
Wayne

Southeast

Bledsoe
Bradley
Franklin
Grundy
Marion
McMinn
Meigs
Polk
Rhea
Sequatchie

Southwest

Chester
Decatur
Fayette
Hardeman
Hardin
Haywood
Henderson
Lauderdale
McNairy
Tipton

Upper Cumberland

Cannon
Clay
Cumberland
DeKalb
Fentress
Jackson
Macon
Overton
Pickett
Putnam
Smith
Van Buren
Warren
White

Tennessee Metro Regions

Davidson County
Hamilton County
Knox County
Madison County
Shelby County
Sullivan County

Source: Department of Health.

Appendix 8
Tennessee Heart Disease and Stroke Prevention and Care Plan, Volume 2
Goals and Objectives
February 2008

Goal 1: Develop new resources and enhance the existing infrastructure by bringing groups together and by utilizing policy and environmental change factors.	
Objective: Develop and enhance the existing capacity and resources of health care providers in order to build leadership and improve health care infrastructure conducive to heart disease and stroke.	
Setting	Strategy Examples
Health Care (12 strategies)	Identify key leaders to spearhead the steering committee who will, among other things, develop a strategic plan to assess infrastructure at major health care settings, gather information on best-practice models on assessment and identification of health care capacity/resources, and form a committee to design an assessment tool and conduct the actual assessment.
	Analyze the extent of the application of the available evidence-based guidelines (EBG) in health care settings.
	Develop and implement a training module to enhance the knowledge base of heart disease and stroke care practitioners to promptly and effectively treat heart disease and stroke.
Objective: Develop and enhance existing community resources in order to build leadership and improve infrastructure conducive to heart disease and stroke prevention.	
Setting	Strategy Examples
Community (12 strategies)	Recruit and engage community-level gatekeepers in order to motivate and involve communities to initiate local heart disease and stroke prevention measures.
	Support public agencies promoting heart disease and stroke prevention and care legislative efforts.
	Work with elected officials to promote increased funding and support resources for improving the heart health of Tennesseans.
Objective: Identify the existing Heart Disease and Stroke Prevention Program infrastructure at work sites and bring those programs together to form new partnerships.	
Setting	Strategy Examples
Work Site (13 strategies)	Collect information and gather data on the existing top 10 work site wellness programs.
	Partner with and support community agencies advocating heart disease and stroke prevention activities at work sites.
	Develop a strategic plan to develop and implement work site heart disease and stroke prevention programs.
Objective: Identify the existing Heart Disease and Stroke Prevention Program infrastructure in schools and bring those programs together to form new partnerships.	
Setting	Strategy Examples
School (13 strategies)	Form a heart disease and stroke prevention steering committee to develop and promote physical activity programs at schools.
	Conduct an assessment of existing physical education and other physical activity programs at schools in Tennessee.
	Develop a strategic plan to develop and implement school physical activity programs.

Goal 2: Prevent the development of heart disease and stroke risk factors (i.e., diabetes, hypertension, high cholesterol, obesity, poor diet, lack of physical activity and smoking/tobacco use).	
Objective: Enhance and increase the capacity of and develop partnerships with health care agencies to promote the prevention of heart disease and stroke risk factors.	
Setting	Strategy Examples
Health Care (24 strategies)	Gather information on best practices related to heart disease and stroke risk factors prevention, and heart disease and stroke gold standard prevention models.
	Provide health care providers with regular updates on diabetes, hypertension and cholesterol measurement guidelines.
	Promote the policy change that all provider visits should result in culturally appropriate smoking cessation counseling, dietary counseling, and recommendations for increasing physical activity.
	Educate and provide Tennessee-specific data on smoking and tobacco use to health care agencies.
Objective: Develop new collaborations and enhance existing partnerships between community groups and agencies to work toward the prevention of heart disease and stroke risk factors.	
Setting	Strategy Examples
Community (36 strategies)	Gather information on best practices and risk factor prevention programs for communities.
	Collect all the available resources on diabetes, hypertension and cholesterol control, and make it available for community use.
	Identify and market best-practice models supporting healthy food choices and weight self-management.
	Support public agencies advocating tobacco control and smoking cessation, especially targeting onset of smoking by youth.
Objective: Educate employees and encourage work site outreach activities that promote heart disease and stroke risk factors prevention.	
Setting	Strategy Examples
Work Site (25 strategies)	Identify the 30 largest employers in Tennessee and employers with high priority populations to promote work site Heart Disease and Stroke Prevention Program activities.
	Work with businesses to provide regular on-site diabetes, cholesterol and blood pressure screenings.
	Work with work site administrators to develop and promote work site employee wellness programs.
	Work with employers to enforce and promote no smoking policies at work sites.
Objective: Promote healthy lifestyles in school-age children to prevent the early development of heart disease and stroke risk factors.	
Setting	Strategy Examples
School (12 strategies)	Conduct a survey of school health and physical education programs and activities conducive to heart disease and stroke risk factors reduction in school-age children.
	Develop a list of activities that would support healthy lifestyles among school-age children and market it to school Physical Education policy makers in the Department of Education.
	Educate school food services staff about providing healthy food choices to grades 9-12 students.

Goal 3: Promote early and aggressive treatment of heart disease and stroke risk factors.	
Objective: Promote and expand partnerships with health care providers to promote early and aggressive treatment of heart disease and stroke risk factors.	
Setting	Strategy Examples
Health Care (12 strategies)	Partner with other community agencies working toward early and prompt treatment of heart disease and stroke risk factors.
	Select the best possible standards/guidelines for treatment of heart disease and stroke risk factors.
	Develop a plan to market and disseminate the recommended guidelines to health care providers.
Objective: Promote the awareness of the importance of early detection, treatment and management of heart disease and stroke risk factors among Tennesseans.	
Setting	Strategy Examples
Community (11 strategies)	Partner with and support other agencies promoting early and proper treatment of heart disease and stroke risk factors.
	Develop a directory of heart disease and stroke risk factors screening and treatment options available in the community.
	Conduct media campaigns on the importance of early detection, treatment and management of heart disease and stroke risk factors.
Objective: Partner with employers to promote and sponsor heart disease and stroke risk factors treatment for their employees.	
Setting	Strategy Examples
Work Site (9 strategies)	Work with employers to provide incentives to employees with heart disease and stroke risk factors to maintain compliance with treatment and follow-up care.
	Do a cost analysis on the benefit of extending employee care to include coverage for heart disease and stroke risk factors versus expenses associated with the complications of heart disease and stroke.
	Work with employers to extend health care benefits for risk factors treatment not only for the employee, but also for family members.
Objective: Promote the development and inclusion of curricula in professional health schools on early and aggressive treatment of heart disease and stroke risk factors.	
Setting	Strategy Examples
School (8 strategies)	Identify and assess existing health-related curricula conducive to training for heart disease and stroke risk factors.
	Work with professional and vocational health care schools to include heart disease and stroke as a component of clinical training.
	Recommend to health care training and educational institutions to include evidence-based approaches for treating heart disease and stroke risk factors.

Goal 4: Ensure that all Tennesseans diagnosed with heart disease and stroke receive aggressive treatment to prevent the exacerbation of heart disease, subsequent events, associated complications, disabilities and mortality.	
Objective: Improve the awareness of early recognition of signs and symptoms of heart disease and stroke among Tennesseans.	
Setting	Strategy Examples
Various (15 strategies)	Develop and promote early signs and symptoms recognition training programs for medical professionals and provide regular updates.
	Develop and promote early signs and symptoms recognition trainings for Emergency Medical Services (EMS) staff in order to improve standards of care for heart attack and

	stroke patients in transit to the emergency room (ER).
	Develop and provide trainings to 9-1-1 dispatch staff on early recognition and to reduce the response time.
Objective: Promote the early use of 9-1-1 to access prompt emergency care for heart attacks and strokes in Tennessee.	
Setting	Strategy Examples
Various (8 strategies)	Conduct an assessment of the availability and quality of 9-1-1 services in all counties of Tennessee.
	Market the availability of services like LifeLine to community members unable to afford full-service telephone connection.
	Work with health care providers to routinely provide information to their patients/clients on the importance of early use of 9-1-1 for heart and stroke emergencies.
Objective: Promote the early use of Cardiopulmonary Resuscitation (CPR) and Automatic External Defibrillators (AEDs) by professionals and the public.	
Setting	Strategy Examples
Various (9 strategies)	Work with employers to develop and implement CPR and Automated External Defibrillator (AED) training programs for their employees.
	Work with work sites on installing AEDs and including CPR training in their regular employee training.
	Work with work sites and businesses to develop an AED and emergency response plan for heart attack and stroke emergencies.
Objective: Promote proper and early access to heart disease and stroke treatment in Tennessee.	
Setting	Strategy Examples
Various (15 strategies)	Assess the 9-1-1 coverage in Tennessee and develop a map representing emergency care coverage.
	Work with 9-1-1 centers to assist the staff with proper training on early recognition of multi-lingual heart disease and stroke emergency key words.
	Work with community agencies promoting 9-1-1 coverage for all counties in Tennessee.

Goal 5: Work toward the reduction and ultimate elimination of disparities in heart disease and stroke prevention, treatment, rehabilitation, and access to care.	
Objective: Address health disparities in the manner that care is provided.	
Setting	Strategy Examples
Health Care (14 strategies)	Conduct specific heart disease and stroke cost studies for disparity and priority populations within all three grand divisions.
	Work toward the development of public policies for heart disease and stroke-specific access to treatment for disparity and priority populations.
	Work with partners and other community agencies to reduce adverse outcomes among disparity populations from heart disease and stroke (length of inpatient hospital stay, disability, mortality).
Objective: Work toward collaborations and partnerships between community groups and agencies for heart disease and stroke prevention, awareness, and modification of risk behaviors.	
Setting	Strategy Examples
Community (5 strategies)	Work toward increasing the knowledge, attitudes, and behaviors (physical activity, diet, smoking) among disparity sub-groups, e.g., rural, African-American females in Upper East Tennessee.
	Strategically represent (over sample, if necessary) priority populations, e.g., Hispanic, rural, Appalachian, and African-American, to permit stable monitoring of heart disease

	and stroke risk factors.
	Work with other agencies to modify or promote existing heart disease and stroke prevention educational material for disparity populations.
Objective: Address disparities in heart disease and stroke risks and outcomes through work sites.	
Setting	Strategy Examples
Work Site (3 strategies)	Work toward increasing the knowledge, attitudes and behaviors about exercise, diet and smoking in high-risk disparity sub-groups, i.e., rural, African-American females in Upper East Tennessee.
	Address health disparities in stroke and heart disease risks and outcomes through work site promotion of wellness programs.
	Target high-risk individuals, sub-groups and the unemployed concerning lifestyles, risk factors, healthy behaviors, disease management options, symptom recognition, and service options.
Objective: Work toward the elimination of disparities for heart disease and stroke through school education.	
Setting	Strategy Examples
School (7 strategies)	Strive to reach all Tennessee children with educational messages regarding heart disease and stroke risks, and high rates for the state in comparison to national rates.
	Educate school-age children about the signs and symptoms of stroke and heart disease, e.g., for their parents and grandparents, emphasizing the variations in risk by age, race, gender, and the merits of rapid medical action.
	Promote nutritional policies in schools to reduce unhealthy factors, e.g., smoking pits, vending machines on campus, etc.

Appendix 9
Membership of the State Child Fatality Prevention Team
As Required by Section 68-142-103, *Tennessee Code Annotated*

The state team shall be composed as provided below. Any ex officio member, other than the commissioner of health, may designate an agency representative to serve in such person's place. Members of the state team shall be as follows:

- The commissioner of health, who shall chair the state team;
- The attorney general and reporter;
- The commissioner of children's services;
- The director of the Tennessee bureau of investigation;
- A physician nominated by the state chapter of the American Medical Association;
- A physician to be appointed by the commissioner of health who is credentialed in forensic pathology, preferably with experience in pediatric forensic pathology;
- The commissioner of mental health and developmental disabilities;
- A member of the judiciary selected from a list submitted by the chief justice of the Tennessee supreme court;
- The executive director of the commission on children and youth;
- The president of the state professional society on the abuse of children;
- A team coordinator, to be appointed by the commissioner of health;
- The chair of the select committee on children and youth;
- Two (2) members of the house of representatives to be appointed by the speaker of the house of representatives, at least one (1) of whom shall be a member of the health and human resources committee; and
- Two (2) senators to be appointed by the speaker of the senate, at least one (1) of whom shall be a member of the general welfare, health and human resources committee.

Appendix 10
Membership of the Local Child Fatality Prevention Teams
As Required by Section 68-142-106, *Tennessee Code Annotated*

There shall be a minimum of one local team in each judicial district. Each local team shall include the following statutory members or their designees:

- A supervisor of social services in the department of children’s services within the area served by the team;
- The regional health officer in the department of health in the area served by the team, who shall serve as interim chair pending the election by the local team;
- A medical examiner who provides services in the area served by the team;
- A prosecuting attorney appointed by the district attorney general;
- An employee of the local education agency, to be appointed by the director of schools; and
- The interim chair of the local team shall appoint the following members to the local team:
 - a. A local law enforcement officer;
 - b. A mental health professional;
 - c. A pediatrician or family practice physician;
 - d. An emergency medical service provider or firefighter; and
 - e. A representative from a juvenile court.
- Each local child fatality team may include representatives of public and nonpublic agencies in the community that provide services to children and their families.
- The local team may include non-statutory members to assist them in carrying out their duties.

Appendix 11
2004 Primary Care Health Resource Shortage Areas

**Counties in Rational Service Areas Designated as
Primary Care Health Resource Shortage Areas**

County	Primary Care Shortage Area Rank	Population to Provider Ratio
Cheatham	1	5,525
Hawkins	2	4,769
Dickson	3	4,227
Lewis*	4	3,893
Perry*	4	3,893
Henderson	6	3,763
Jackson	7	3,659
Trousdale	8	3,598
Sequatchie	9	3,434
Haywood	10	3,422
Union	11	3,406
Meigs	12	3,403
Hickman	13	3,348
Lauderdale	14	3,310
Tipton	15	2,964
Cannon	16	2,955
Marshall	17	2,951
Lake	18	2,946
Bledsoe*	19	2,941
Rhea*	19	2,941
Grainger	21	2,839
Roane	22	2,789
Loudon	23	2,755
Houston*	24	2,727
Stewart*	24	2,727
Morgan	26	2,714
Grundy	27	2,664
Hardeman	28	2,637
Hardin	29	2,629
Hancock	30	2,627

Counties with the Lowest Need for Extra Primary Care Providers

County	Primary Care Shortage Area Rank	Population to Provider Ratio
Carter*	90	1,356
Unicoi*	90	1,356
Washington*	90	1,356
Anderson	93	1,270
Sullivan	94	1,151
Madison	95	1,112

* Part of the same rational service area.

Appendix 12

Summary of the March 2004 Tennessee Office of Homeland Security's Training, Exercise, and Continuing Education Program

There are 11 Homeland Security Districts: Northwest, North Central, Greater Nashville, Upper Cumberland, First Tennessee, East Tennessee, Southeast Tennessee, South Central Tennessee (two districts), Southwest Tennessee, and Memphis Area. These 11 areas were developed to provide mutual support to each other to respond to Chemical, Biological, Radiological, Nuclear, and High Explosive (CBRNE) terrorist attacks.

The training program identifies the government agencies that serve as Administrative Lead Agencies for various aspects of counter-terrorism operations:

- The Governor's Office of Homeland Security will coordinate the comprehensive statewide homeland security effort.
- The Military Department/Tennessee Emergency Management Agency is the lead for the planning of preparedness, mitigation, response and recovery, and continuity of government operations resulting from terrorist attack within the state.
- The Department of Safety is the lead agency for coordinating protection of physical infrastructure and citizens.
- The Office for Information Resources is the lead agency for coordinating protection of Information Systems.
- The Department of Agriculture is the lead organization for coordinating protection of the state's agricultural infrastructure and food supply.
- The Department of Environment and Conservation is the lead agency for advising communities and law enforcement agencies on the protection of the state's water and hazardous waste management.
- **The Department of Health is the lead agency for coordinating protection of health of the state's citizens.**

The federal Office for Domestic Preparedness (ODP) developed the State Assistance Plan after review of the state strategy. The focus of this plan is assistance at the county and city level. This plan allocates resources, training slots, course offerings, direct exercise support and technical assistance based on the formula grant program.

The plan outlines exercise responsibilities for the Department of Homeland Security/Office for Domestic Preparedness, the Tennessee Office of Homeland Security, the

Tennessee Department of the Military, state departments and agencies, Homeland Security districts, and local jurisdictions.

The Department of Homeland Security/Office for Domestic Preparedness has the following duties:

- Provide grant funds to the states for equipment acquisition and exercises.
- Provide guidance and a toolkit to help state and local governments conduct threat, vulnerability, and needs assessments and for the development and implementation of their Statewide Domestic Preparedness Strategies.
- Develop and deliver a comprehensive program of homeland security training.
- Provide direct support for the development of state and local exercises.
- Develop and maintain a compendium of homeland security lessons learned.
- Develop standard measurements of performance to assist state and local jurisdictions in assessing performance.

The duties of the Tennessee Office of Homeland Security are:

- Prepare a State Homeland Security Strategy for approval by the Governor.
- Appoint state exercise and training points of contact to work with ODP and the Jurisdictional Assessment Regions Within the State.
- Sponsor a yearly Homeland Security Exercise and Evaluation Plan (HSEEP) Exercise Planning Workshop, as described in the Yearly Maintenance and Update Section of this plan.
- Develop and implement a State Homeland Security Exercise and Evaluation Plan.
- Assist Districts in the design, conduct, and evaluation of state and local exercises in accordance with the principles and guidance defined in the HSEEP manuals.
- Ensure that After Action Reports (AARs) and Improvement Plans are prepared and submitted to ODP and homeland security districts.
- Establish a mechanism for tracking implementation of the Improvement Plans.
- Incorporate lessons learned and prevention and response needs identified through exercises into the strategy process.

- Provide exercise schedule to ODP for incorporation in the Central Scheduling and Information Desk.

The Tennessee Department of the Military has the following duties:

- Provide Homeland Security Grant Program Administrative support.
- In conjunction with the Governor's Office of Homeland Security, conduct risk, vulnerability, and needs assessments of each selected jurisdiction using the ODP Assessment and Strategy Development Tool Kit.
- Identify and prioritize jurisdictions within the state for participation in the program and receipt of resources.
- Administer equipment and exercise grants.
- Establish a plan to evaluate the effectiveness of the state strategy in improving its ability to prevent or respond to a terrorism incident.
- Coordinate the development and acceptance of the SAP.
- Distribute homeland security funding as determined by the Governor's Homeland Security Council.
- Provide reports of program progress and use of homeland security funds.
- Serve as point of contact for department/agency specific grant funding.
- Assign exercise point of contact to coordinate exercise activity at the quarterly state-level working-group meeting.

State departments and agencies will do the following:

- Serve as point of contact for department/agency specific grant funding.
- Assign exercise point of contact to coordinate exercise activity at the quarterly state level working group meeting.

Homeland Security districts will:

- Coordinate terrorism preparedness activities with the state SAA, Office of Homeland Security, Military Department/TEMA.
- Identify goals and objectives within their assigned communities, based on the risk, vulnerability, needs assessments, and lessons learned.

- In conjunction with the Governor’s Office of Homeland Security and state agencies, design and conduct exercises that conform to this plan, the state strategy, and the HSEEP.
- Prepare an improvement plan that addresses recommendations in the exercise After-Action Report to enhance preparedness.

And finally, those local jurisdictions chosen to receive exercise support will, in conjunction with the state Exercise Committee:

- Ensure that they have developed and updated their Homeland Security plans and procedures.
- Ensure that Homeland Security professionals in their jurisdiction are adequately trained and equipped.
- Provide the district and state exercise coordinators, the ODP exercise manager, and exercise support contractors access to information and personnel to aid in exercise design, development, conduct, and evaluation.
- Provide input to the After-Action and Improvement process for exercises.

Part two of the plan is the Tennessee Three Year Exercise Program. This section outlines the exercise program goals, exercise methodology, a discussion of the exercise timeline, and the four planning conferences: initial, midterm, master scenario events list conference, and the final planning conference.

Exercises will be developed using a “building block” approach. In other words, as planning and training increase in complexity, response capability increases proportionally. Planning and training are initially comprised of seminars and workshops but progress through the stages of tabletop exercises, drills, games, functional exercises, and full-scale exercises. According to the model, full response capability is achieved once full-scale exercises are being practiced.

Appendix 13
Title VI Information

All programs or activities receiving federal financial assistance are prohibited by Title VI of the Civil Rights Act of 1964 from discriminating against participants or clients on the basis of race, color, or national origin. In response to a request from members of the Government Operations Committee, we compiled information concerning federal financial assistance received by the Tennessee Department of Health, and the department's efforts to comply with Title VI requirements. The results of the information gathered are summarized below.

According to the Tennessee Department of Health Budget by Program, for fiscal year 2007, the department was to receive \$273,194,600 in federal assistance, broken down as follows:

Program	Amount
Executive Administration	\$917,600
Administrative Services	\$1,163,500
Office of Health Licensure & Regulation	\$6,535,400
Emergency Medical Services	\$754,300
Laboratory Services	\$3,034,800
Policy Planning & Assessment	\$2,006,900
Alcohol and Drug Services	\$42,524,000
Health Services Administration	\$1,493,000
Maternal and Child Health	\$8,539,600
Communicable Disease Control	\$40,302,700
Population Based Services	\$16,588,000
WIC Supplemental Foods	\$84,215,300
Local Health Services	\$65,119,500

The Tennessee Department of Health submitted its FY 2007-2008 *Title VI Compliance Plan and Implementation Manual* to the Office of the Comptroller of the Treasury, Division of State Audit, as required by Section 4-21-901, *Tennessee Code Annotated*.

The Tennessee Department of Health's Title VI Coordinator and regional coordinators are responsible for helping to regulate compliance and implementation programs for Title VI by working closely with the Title VI Coordinating Committee. The committee is responsible for coordination, implementation, and compliance of the Tennessee Department of Health Title VI programs. The committee is composed of four community representatives and staff members from the department, for a total of 16 members. The committee has nine minority members.

The Tennessee Department of Health ensures that all staff members are aware of Title VI requirements to deliver services and benefits without discrimination to anyone. Central office staff and regional coordinators attend periodic workshops and seminars on civil rights, cultural diversity, and Title VI laws. Title VI information is distributed to all new employees. This information is distributed during "New Employee Orientation" conducted by staff in the respective bureau. In-service training concerning Title VI is provided by the regional coordinator on a yearly basis to all new county and local health department employees. The department's

non-discrimination policy is distributed and posted in a conspicuous place within all departmental facilities.

All recipients/contractors receive information about Title VI in the contract language when contracts are signed. Annually, the Title VI assurance and compliance form and sub-recipient compliance plan form are mailed to contractors for completion and signature. Internal Audit and program staff provide orientation sessions in the eight regions of the state to sub-recipients detailing grant requirements including those related to Title VI. Many sub-recipients are given videos to train their staff. The department provides complimentary brochures, posters, complaint forms, and form holders (all materials are in both English and Spanish).

During fiscal year 2008, the Department of Health will start implementing a new contract tracking system, CATS (Contract Administrative Tracking System) throughout the department. The new system will require every kind of contract that comes through the Tennessee Department of Health to be cleared for Title VI compliance before the contract is awarded; the Title VI Compliance Questionnaire (form PH 3436) will be sent with every contract. The system will also notify the Title VI Office three months before the two-year compliance renewal date expires for each contract.

Regional staff in the Bureau of Health Services Administration perform Quality Assurance audits, which include reviews of Title VI compliance. Each region has a Title VI coordinator to monitor health department sites for Title VI compliance and record any problems found by site staff or the Quality Assurance team. Internal Audit is responsible for auditing both health department sites and sub-recipients for compliance with Title VI requirements. The department has contracted to provide monitoring of Tennessee's nursing homes to assure compliance with admission requirements. Any complaints involving Title VI are logged with the Title VI Director. Corrective actions or plans for corrective actions taken are also recorded with the Title VI Director.

Complaints alleging violations of Title VI may be filed directly with the Department of Health Office of Title VI. Complaints can also be filed in county health departments, the regional offices, or even with the U.S. Department of Health and Human Services. The Title VI coordinators process, review, and investigate all Title VI complaints received, in accordance with grievance/complaint procedures. Complaints may also be received through the Comptroller's Hotline. The information received through the calls may be investigated by the Comptroller of the Treasury or may be referred by the Comptroller to the Department of Health Title VI Coordinator. If the complaint is forwarded to the Title VI Coordinator, a written report of the investigation is then sent back to the Comptroller's Office, noting the outcome of the investigation. The Department of Health received seven complaints of discrimination during fiscal year 2007. All complaints were reported, investigated, and processed in a timely manner.

Regarding the ethnicity of contractors during fiscal year 2007, the department provided the following summary information:

**Tennessee Department of Health Contracts
Fiscal Year 2007**

Not Registered	Government	Small Business	Not Minority or Disadvantaged	African American	Asian American	Female	Delegated
1	305	29	317	9	1	21	33

The department does not collect data on the percentage of minority clients served by health departments. A summary of the department employees' title, gender, and ethnicity is included below. As of August 2007, the department had 3,133 staff, of whom 79% were female and 21% were male. Seventeen percent of the department's staff were minorities—nearly 15% were Black.

**Staff of the Department of Health by Title, Gender, and Ethnicity
As of August 2007**

<i>Title</i>	Gender		Ethnicity					
	Male	Female	Asian	Black	Hispanic	Indian	White	Other
Account Clerk	2	6	0	2	0	0	6	0
Accounting Manager	0	2	0	0	1	0	1	0
Accounting Technician 1	3	12	1	0	0	0	14	0
Accounting Technician 2	0	4	1	1	0	0	2	0
Accountant 2	2	4	0	1	0	0	5	0
Accountant 3	4	12	1	2	0	0	12	1
Assistant Commissioner 2	0	2	0	1	0	0	1	0
Administrative Director Regulatory Board 1	0	3	0	0	0	0	3	0
Administrative Manager Regulatory Board	0	2	0	1	0	0	1	0
Administrative Assistant Regulatory Board 1	0	8	0	2	0	0	6	0
Administrative Assistant Regulatory Board 2	2	15	0	4	0	0	13	0
Administrative Assistant Regulatory Board 3	1	2	0	0	0	0	3	0
Administrative Assistant 1	2	44	0	11	0	0	35	0
Administrative Assistant 2	0	2	0	0	0	0	2	0
Administrative Services Assistant 2	2	57	0	17	0	0	42	0
Administrative Services Assistant 3	5	70	0	15	1	1	58	0
Administrative Services Assistant 4	10	36	0	12	0	0	34	0
Administrative Services Assistant 5	8	12	0	0	0	0	20	0
Administrative Services Manager	3	7	0	0	0	0	10	0
Administrative Secretary	2	27	0	7	0	0	22	0

<i>Title</i>	Gender		Ethnicity					
	Male	Female	Asian	Black	Hispanic	Indian	White	Other
Attorney 3	4	11	0	4	0	0	11	0
Attorney 4	1	1	0	0	0	0	2	0
Audiologist 1	0	1	0	0	0	0	1	0
Audiologist 2	0	1	0	0	0	0	1	0
Audit Director 3	1	0	0	0	0	0	1	0
Auditor 2	4	1	0	0	0	0	5	0
Auditor 3	5	1	0	1	0	0	5	0
Auditor 4	2	1	0	0	0	0	3	0
Budget Analysis Director 1	1	0	0	0	0	0	1	0
Biologist 3	4	2	0	1	0	0	5	0
Biologist 4	1	0	0	0	0	0	1	0
Board Member	94	89	2	36	0	0	143	2
Cancer Registrar	1	8	0	1	0	0	8	0
Chemist 2	10	7	3	2	1	0	10	1
Chemist 3	3	4	2	1	0	0	4	0
Chemist 4	4	2	0	0	0	0	6	0
Clerk 2	4	18	0	10	0	0	12	0
Clerk 2 - NE	0	1	0	0	0	0	1	0
Clerk 3	8	33	0	10	0	0	31	0
Clerk Typist	0	1	0	0	0	0	1	0
Community Health Council Coordinator 1	4	31	0	6	0	0	29	0
Community Health Council Coordinator 2	3	7	0	1	0	0	9	0
Commissioner 2	0	1	0	0	0	0	1	0
Counseling Assistant	0	11	0	0	0	0	11	0
Custodial Worker 1	2	1	0	1	0	0	2	0
Custodial Worker Supervisor 1	1	0	0	0	0	0	1	0
Data Entry Operator	1	5	0	1	0	0	5	0
Database Administrator 2	4	1	0	0	0	0	5	0
Database Administrator 3	2	0	0	0	0	0	2	0
Database Administrator 4	1	0	1	0	0	0	0	0
Dental Assistant 1	0	1	0	0	0	0	1	0
Dental Assistant 2	1	12	0	1	0	0	12	0
Dentist	14	6	1	3	1	0	15	0
Dental Board Director	1	1	0	0	0	0	2	0
Dental Hygienist - Health Services	0	37	0	2	0	1	34	0
Deputy Commissioner 2	0	2	0	1	0	0	1	0
Dietetics Consultant	0	3	0	0	0	0	3	0
Data Processing Operator 2	0	1	0	1	0	0	0	0
Data Processing Operator Supervisor	0	1	0	1	0	0	0	0
Distributed Computer Operator 2	0	2	1	0	0	0	1	0
Distributed Computer Operator 3	1	1	0	0	0	0	2	0
Emergency Medical Services Consultant 1	4	2	0	0	0	0	6	0

<i>Title</i>	Gender		Ethnicity					
	Male	Female	Asian	Black	Hispanic	Indian	White	Other
Emergency Medical Services Consultant 2	3	1	0	0	0	0	4	0
Emergency Medical Services Director	1	0	0	0	0	0	1	0
Environmental Health Field Office Manager	3	0	0	0	0	0	3	0
Environmental Health Program Manager 1	1	1	0	0	0	0	2	0
Environmental Health Program Manager 2	1	0	0	0	0	0	1	0
Environmental Health Program Director	1	0	0	0	0	0	1	0
Environmental Health Specialist 3	54	17	0	3	0	1	66	1
Environmental Health Specialist 4	20	1	0	1	0	0	20	0
Environmental Health Specialist 5	2	1	0	1	0	0	2	0
Environmental Health Specialist 6	5	0	0	0	0	0	5	0
Epidemiologist	15	20	2	4	1	0	28	0
Executive Administrative Assistant 2	1	4	0	1	0	0	4	0
Executive Administrative Assistant 3	3	4	0	2	0	0	5	0
Executive Secretary 1	0	4	0	1	0	0	3	0
Facilities Construction Director	1	0	0	0	0	0	1	0
Facilities Construction Specialist 3	4	0	1	0	0	0	3	0
Fire Safety Specialist 1	7	1	0	1	1	0	6	0
Fire Safety Specialist 2	1	2	0	0	0	0	3	0
Fire Safety Supervisor	1	0	0	1	0	0	0	0
Fiscal Director 1	3	0	0	0	0	0	2	1
Fiscal Director 2	1	1	0	0	0	0	2	0
Fiscal Director 3	0	1	0	0	0	0	1	0
General Counsel 4	0	1	0	1	0	0	0	0
Graphic Designer 1	1	0	0	0	0	0	1	0
Health Facilities Surveyor	2	0	0	0	0	0	2	0
Health Planner 3	2	1	0	0	0	0	3	0
Health Regional Emergency Response Coordinator 1	2	5	0	0	0	0	7	0
Health Regional Emergency Response Coordinator 2	5	3	0	0	0	0	8	0
Health Statistics Information Manager	0	2	0	1	0	0	1	0
Health Facilities Survey Manager	2	1	0	1	0	0	2	0
Health Facilities Program Manager 1	0	4	0	1	0	0	3	0
Health Resources Analyst 2	0	5	0	2	0	0	3	0
Health Resources Analyst 3	0	2	0	1	0	0	1	0
Health Resources Director 3	0	1	0	1	0	0	0	0
Health Resource Manager 1	0	1	0	0	0	0	1	0
Health Resources Manager 2	0	1	0	1	0	0	0	0
Health Resources Technician 2	0	1	0	0	0	0	1	0

<i>Title</i>	Gender		Ethnicity					
	Male	Female	Asian	Black	Hispanic	Indian	White	Other
Health Resources Technician 3	0	2	0	1	0	0	1	0
Health Resources Transaction Supervisor	0	1	0	0	0	0	1	0
Health Related Boards Investigations Director	0	1	0	0	0	0	1	0
Health Services Program Manager	1	1	0	0	0	0	2	0
Information Resources Support Specialist 2	5	3	0	3	0	0	3	2
Information Resources Support Specialist 3	20	13	0	5	1	0	27	0
Information Resources Support Specialist 4	14	7	1	3	0	0	17	0
Information Resources Support Specialist 5	8	6	0	2	0	0	12	0
Information Systems Specialist 4	1	2	0	1	0	0	2	0
Information Systems Analyst 3	1	0	0	0	0	0	1	0
Information Systems Analyst 4	1	1	0	0	0	0	1	1
Information Systems Analyst Supervisor	1	2	0	2	0	0	1	0
Information Systems Consultant	1	0	0	0	0	0	1	0
Information Systems Director 3	1	0	0	0	0	0	1	0
Information Systems Manager 1	4	0	0	0	0	0	4	0
Information Systems Manager 2	1	0	0	0	0	0	1	0
Information Systems Manager 3	1	1	0	1	0	0	1	0
Laboratory Aide	0	1	0	0	0	0	0	1
Laboratory Supervisor 1	1	1	1	0	0	0	0	0
Laboratory Supervisor 1 Certified	0	2	0	0	0	0	1	0
Laboratory Supervisor 2 Certified	0	0	0	1	0	0	1	0
Laboratory Supervisor 3 Certified	2	0	0	0	0	0	2	0
Laboratory Technician 1	0	2	0	2	0	0	0	0
Laboratory Technician 2	2	14	0	4	0	0	12	0
Legal Assistant	2	9	0	4	0	0	7	0
Legal Services Director	0	1	0	1	0	0	0	0
Licensing Technician	7	21	0	17	0	0	10	1
Licensed Practical Nurse 2	1	10	0	1	0	0	10	0
Licensed Practical Nurse 3	0	8	0	0	0	0	8	0
Managed Care Program Manager 1	1	0	0	0	0	0	1	0
Managed Care Operator	3	19	1	13	1	0	7	0
Managed Care Specialist 3	1	1	0	0	0	0	2	0
Managed Care Technician	0	2	0	1	0	0	1	0
Medical Board Director	0	1	0	0	0	0	1	0
Medical Consultant	1	0	0	0	0	0	1	0
Medical Records Assistant	0	3	0	2	0	0	1	0
Medical Social Services Specialist	0	1	0	1	0	0	0	0
Medical Social Worker 2	1	3	0	0	0	0	4	0
Medical Technologist Consultant 1	1	3	0	1	0	0	3	0

<i>Title</i>	Gender		Ethnicity					
	Male	Female	Asian	Black	Hispanic	Indian	White	Other
Medical Technologist Consultant 2	0	3	0	0	0	0	3	0
Media Program Director	0	1	0	1	0	0	0	0
Microbiologist 2 Certified	14	30	1	7	0	0	34	2
Microbiologist 3 Certified	4	9	0	2	0	0	11	0
Microbiologist 4 Certified	1	8	0	1	0	0	8	0
Mainframe Computer Operator 2	0	1	0	0	0	0	1	0
Molecular Biologist	0	1	0	0	0	0	1	0
Network Technical Specialist 3	8	0	0	1	0	0	7	0
Nurse Assistant 2	1	134	1	36	3	0	95	0
Nurse Practitioner	5	71	0	2	2	0	72	0
Nursing Board Director	0	1	0	0	0	0	1	0
Nutrition Educator	1	28	0	1	0	0	28	0
Nutritionist 1	0	5	0	0	0	0	5	0
Nutritionist 2	0	19	2	0	0	0	17	0
Nutritionist 3	0	10	1	0	0	0	9	0
Nutritionist 4	0	5	0	1	0	0	4	0
Office Automation Specialist	1	5	1	0	0	0	5	0
Office Supervisor 2	0	2	0	0	0	0	2	0
Office Supervisor 3	0	2	0	0	0	0	2	0
Program Monitor 3	0	1	0	0	0	0	1	0
Public Health Administrator 1	0	3	0	0	0	0	3	0
Public Health Administrator 2	2	4	0	1	0	0	5	0
Public Health County Director 1	1	0	0	0	0	0	1	0
Public Health County Director 2	0	2	0	0	0	0	2	0
Public Health County Director 3	12	21	0	2	0	0	31	0
Public Health Educator 2	4	31	0	12	1	0	22	0
Public Health Educator 3	2	6	0	3	1	0	4	0
Public Health Laboratories Director	1	0	0	0	0	0	1	0
Public Health Office Assistant	1	280	2	24	4	0	251	0
Public Health Office Supervisor 1	0	41	0	1	0	0	40	0
Public Health Office Supervisor 2	0	22	0	3	0	0	19	0
Public Health Office Supervisor 3	0	13	0	0	0	0	13	0
Public Health Program Director 1	9	24	2	10	0	0	21	0
Public Health Program Director 2	6	12	0	4	0	0	14	0
Public Health Program Director 3	1	8	0	3	0	0	6	0
Public Health Regional Assistant Director	0	5	0	0	0	0	5	0
Public Health Regional Director	5	3	0	0	0	0	8	0
Public Health Representative 2	7	20	0	4	0	0	23	0
Public Health Representative 3	4	5	0	0	0	0	9	0
Public Health Representative 4	1	0	0	1	0	0	0	0
Pharmacy Technician	0	8	0	0	0	0	8	0
Pharmacist 2	9	6	0	0	0	0	15	0
Public Health Nursing Consultant 1	5	85	0	5	0	0	85	0

Title	Gender		Ethnicity					
	Male	Female	Asian	Black	Hispanic	Indian	White	Other
Public Health Nursing Consultant 2	1	41	1	6	0	0	35	0
Public Health Nursing Consultant Manager	1	6	0	0	0	0	7	0
Public Health Nursing Director	0	1	0	0	0	0	1	0
Physician	40	23	4	9	1	0	48	1
Planning Analyst 5	1	0	0	0	0	0	1	0
Programmer/Analyst 2	2	0	0	1	0	0	1	0
Programmer/Analyst 3	8	2	1	1	0	0	8	0
Programmer Analyst 4	5	1	1	3	0	0	2	0
Programmer/Analyst Supervisor	1	0	0	1	0	0	0	0
Procurement Officer 1	3	7	0	3	0	0	7	0
Procurement Officer 2	0	4	0	1	0	0	3	0
Radio Systems Analyst	1	0	0	0	0	0	1	0
Regulatory Boards Investigator	1	2	0	0	0	0	3	0
Regulatory Boards Investigator Supervisor	0	1	0	0	0	0	1	0
Registered Nurse – Expanded Skills	0	17	0	1	0	0	16	0
Registered Nurse - 2	1	251	0	14	2	0	236	0
Registered Nurse - 3	2	96	1	4	1	0	92	0
Registered Nurse - 4	0	74	0	2	0	0	72	0
Registered Nurse - 5	0	8	0	0	1	0	7	0
Secretary	0	45	0	8	1	0	36	0
Social Services Specialist 2	0	5	0	1	0	0	4	0
Social Counselor 3	2	26	0	3	1	0	24	0
Social Counselor Supervisor	0	5	0	1	0	0	4	0
Social Worker 2	0	6	1	4	0	0	1	0
Statistical Analyst 2	1	1	1	1	0	0	0	0
Statistical Analyst 3	3	0	1	0	0	0	2	0
Statistical Analyst 4	6	4	2	2	0	0	5	1
Statistical Analyst Supervisor	5	2	0	0	1	0	6	0
Statistical Clerk	1	0	0	0	0	0	1	0
Statistical Programmer Specialist 2	6	2	0	1	0	0	6	1
Statistical Research Specialist	0	1	0	0	0	0	1	0
Statistician 2	0	4	0	1	0	0	3	0
Statistician 3	0	2	0	1	0	0	1	0
Storekeeper 1	2	1	0	2	0	0	1	0
Storekeeper 3	2	0	0	0	0	0	2	0
Stores Clerk	1	0	0	1	0	0	0	0
Systems Programmer 2	2	0	0	0	0	0	2	0
Tandem Mass Spectrometry Manager	0	1	0	1	0	0	0	0
Telephone Operator 1	0	1	0	0	0	0	1	0
Vehicle Operator	1	0	0	0	0	0	1	0
Veterinary Board Director	0	1	0	0	0	0	1	0

<i>Title</i>	Gender		Ethnicity					
	Male	Female	Asian	Black	Hispanic	Indian	White	Other
Veterinarian Staff	2	0	0	0	0	0	2	0
Vital Records Field Representative	0	3	0	0	0	0	3	0
Vital Records Information Assistant	0	15	0	3	0	0	12	0
Vital Records Manager	0	3	0	0	0	0	3	0
Vital Records Supervisor	0	5	0	4	0	0	1	0
Website Developer 1	1	0	0	0	0	0	1	0
Website Developer 2	0	1	0	0	0	0	1	0
Word Processing Operator 1	0	2	0	1	0	0	1	0
Word Processing Operator 2	0	1	0	0	0	0	1	0
Totals	664	2469	42	456	27	3	2589	16