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## The Impact of Privatization of Primary Care Programs in Large County Health Departments in Florida

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The Impact of Privatization of Primary Care Programs  
in Large County Health Departments in Florida

by

Arlesia Lynn Brock

A dissertation submitted in partial fulfillment  
of the requirements for the degree of  
Doctor of Philosophy  
Department of Health Policy and Management  
College of Public Health  
University of South Florida

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## Dedication

This dissertation is dedicated to the memory of my father, Willie Brock.

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The Impact of Privatization of Primary Care Programs  
in Large County Health Departments in Florida

Arlesia Lynn Brock

ABSTRACT

Since the mid-1970's, top managers, politicians, and officials in both public and private institutions have promoted contracting-out services (privatization) as a means of increasing efficiency, flexibility, and quality. The privatization trend has occurred in many public sector organizations particularly in city services and prisons. Public health services are not immune to this trend. Today many county health departments have contracted the provision of public health services like women's health, primary care, and laboratory services. However, very few studies have analyzed the impact of these privatizations on cost, access, and health outcomes. Proponents favoring the private provision of these services argue that private providers are more efficient and can deliver these services at a lower cost. Also, because of better innovation, private providers can even improve quality. However, among opponents there is concern that a for-profit private provider might cut costs that adversely affects the quality of these services.

The purpose of this dissertation is to analyze the effects of the privatization of primary care services on cost, access, and health outcomes in nine large counties in the state of Florida. In a survey of county health departments conducted in 1999, 61 out of 67 counties had outsourced at least one service. Primary care was the second most

frequently privatized program. Women's health was the program most often privatized by counties. Using mixed models and logistic regression, a comparison was made between large counties that outsourced primary care services and counties that did not. Multiple years of data were obtained from federal and state sources for analysis. This study answers the following research questions: 1) What are the costs of primary care services provided by contracted service providers compared to services provided by the public health department? 2) Where primary care services have been privatized, what is the effect on access to care for the Medicaid and uninsured patients? 3) What is the effect of privatization on health outcomes in privatized and non-privatized counties?

## Preface

Many capable people desire the attainment of their objectives and dream of doing something that might positively affect their community. However, high aspirations can only be attained with the help others who believe in your dreams. I was fortunate to receive more than my share of inspiration and encouragement from others. I received much encouragement from my family, especially from my mother, Lillian Ponton Brock, science and health teacher who blazed educational trails ahead of me. My brothers, Gary and Darryl Brock, and their wives, Sandra and Sheila, were also supportive at crucial times. My nieces, Taylor and Kaylyn, and my nephew, Julian, provided recreational relief. My fiancé, Alaric (Ric) H. Mathis, backed his faith in this endeavor with resources as well as emotional support on a daily basis. (This was not a small feat on his part.) His resolute confidence in my ability to successfully complete the Ph.D. program energized me when I had run out of steam. And last but not least, Bee Frazier, my friend, who provided advice and comic relief when things seemed really dreary.

The completion of this dissertation was made possible with the assistance of the faculty and staff of the Department of Health Policy and Management at the University of South Florida College of Public Health. Each member of the dissertation committee went beyond minimally required contributions. Dr. Barbara Orban, volunteered useful tips and allowed me to work on a project during a directed study that resulted in my first publication entitled, "Public Health, Primary Care, and Privatization." Dr. James

Studnicki, offered encouragement and took the extra time to advise me on a successful National Research Service Award application. Dr. Yougui Wu, provided hours of input on complex statistical analyses. Dr. Ann Abbott, gave generous praise and encouragement as well as providing direction on making the dissertation the best that it could be. Dr. M. R. Francois, provided special encouragement and sacrifice to make the completion of this dissertation possible. Others who deserve acknowledgement for their assistance include: Dr. Stephen Luther, Dr. John Large, Dr. Etienne Pracht, Dr. Alan Sear, Dr. Laurence Branch and my fellow doctoral students who were willing to discuss my dissertation with me and offer helpful suggestions.

My deepest gratitude extends to God for my life and health and for all the wonderful people he sent to encourage and guide me throughout this process. Finally, I would like to thank the Florida Education Fund and the National Institutes of Health, for providing the financial resources to make my dream a reality. This dissertation project was funded by the National Institute of Child Health and Human Development under NRSA (#1 F31 HD046424-01).

## THE INTRODUCTION

### Historical Context

In many ways public health is a largely modern concept, however its roots began in antiquity. The history of public health can be traced back over 4,000 years to the ancient Indian cities of Mohenjo-Daro and Harappa which first developed public sanitation. Throughout the history, major problems of health that humans faced have been concerned with community life -- the control of transmissible disease, the control and improvement of the physical environment (sanitation), the provision of medical care and the relief of disability and destitution. The relative emphasis placed on each of these problems has varied from time to time, but they have come to form the public health system as we know it today (Rosen, 1958). The development of public health in Florida followed much the same course with its beginnings in the control of infectious or communicable disease and gradually incorporating aspects of personal health care.

The establishment of the public health system in Florida occurred almost half a century after Florida became a State (Hardy and Pynchon, 1964). The State Board of Health was created in 1889 in response to a yellow fever epidemic in Jacksonville that killed over 400 and caused 40 percent of the population to flee the city. A previous attempt to create a state board of health was made in 1873, however the bill presented to the Legislature failed because the \$200 appropriation was thought to be an exorbitant amount of money. In 1885, the State Constitution was approved, which provided for the

State Board of Health and also authorized establishment of the county health departments. Although the constitution authorized the creation of health departments in each county and the State Health Officer saw a need to have a key individual for public health in each county, health units at the county level did not begin operation until 1930 because of a lack of available funds. In 1931, an important legislative action, the County Health Unit Enabling Act, spurred the creation of county health departments. Through this law, the administrative frame was created and in 1935 with the passage of Social Security legislation financial resources were available for the proliferation of county health departments throughout the state. Beginning in 1939, state funds were provided to support county health departments.

Between 1889 and 1921, the public health system in Florida consisted of the State Board of Health. The funding, appropriated through the state legislature, was unstable from year to year. In the early 1900's, the budget gradually expanded reaching a high of \$165,524 in 1916. These funds were aimed at treating malaria, hookworm and other infectious diseases. The public health program came under scrutiny for overexpansion as perceived by a new board appointed by the recently elected governor, Sidney J. Catts. In 1917, the board reduced the public health budget by 25 percent. The board quickly made changes "all upon the basis of economy, efficiency, or harmony." However, in 1918, maternal and child health were acknowledged as a distinctive component of public health. The Bureau of Child Welfare was established to provide services to expectant mothers and to encourage the construction of maternity hospitals. The examination of school children was also a major objective. Despite obvious needs and support of the

Board of Health and the Federation of Florida's Women's Clubs, the Bureau of Child Welfare was abolished in 1921.

In 1921, the Legislature reduced the State Board of Health's budget again by 50 percent. However, the effect on personal services was short lived. In 1921, the Federal Sheppard-Towner Act provided \$5,000 each year to states to improve maternal and child health. The U.S. Public Health Service Child Hygiene Unit visited Florida at the invitation of the State Board of Health and the Florida Federation of Women's Clubs. The U.S. Public Health Service made recommendations that led to the improvement of facilities for babies and mothers. The report also documented that of the 90,000 school children examined over 75 percent were suffering from some remedial or correctable defect. Indigent children received free treatment from local physicians. It was also during this time that the first cancer clinic was established in Jacksonville for the care of indigent patients. Radium treatment and physician services were contributed without cost.

In 1935, passage of the Federal Social Security Act marked the beginning of the great expansion of personal care programs. The infusion of funds created the opportunity for the State Board of Health to focus on expanding the local health departments to provide services in areas with populations over 300,000. In the year following the passage of the Social Security Act, the number of county health departments went from three to eight. Within two years this number had doubled to sixteen. This expansion was also aided substantially through Hill-Burton funds. From the time Federal funds became available under Social Security, the development of local health services was considered to have the highest priority.



During the 1940's, the state enacted the Emergency Maternity and Infant Care Program. By 1943, over 40,000 babies were born in Florida. Many of the babies' fathers were in the military which did not provide maternity medical or hospital care for the wives and infants. The Emergency Maternity and Infant Care Program provided these services. In 1944, there were 10,345 applications for hospital care. The rise in the number of military installations in Florida also led to a rise in Sexually Transmitted Infections. Health records from 1942 reported that five percent of white males and 40 percent of non-white males tested positive for syphilis which was the highest in the country. By 1943, the number of treatment clinics grew to 166, treating 33,601 cases of sexually transmitted infections.

There were new and urgent demands on the State Board of Health because of the changing demographics and exploding populations. There was mounting concern for providing adequately for hospitalization of the indigent. In 1954, the Florida Medical Association requested the Governor to appoint a special committee to study the growing problem of hospital care for the indigent in Florida. The committee recommended the establishment of a uniform system of hospitalization for acutely ill indigent patients with sharing of cost by the State and counties. The recommendation was enacted into law and an official program of hospitalization for the indigent began in 1956. The program was expanded in 1957 to include the categorically indigent, the indigent, and the medically indigent. The sudden arrival of 100,000 Cuban refugees on south Florida's shores in the early 1960's created more stress on Florida's public health system. Responsibility for their medical care was assigned to the State Board of Health and the Dade County Health

Department. A special hospitalization program was developed that provided both in and outpatient medical services to those in need.

In the 1960's, the Federal government passed Title XIX of the Social Security Act. This act, more popularly known as Medicaid, provided funding to support the financing of medical services to indigent populations. The late 1960's also marked the end of the State Board of Health. The revised and new state constitution abolished the State Board of Health and created the Division of Health within the Department of Health and Rehabilitative Services (DHRS). The DHRS was a consolidation of 25 health and social services agencies. The county health departments remained essentially unchanged in this process. However, in 1975, the Legislature passed the HRS Reorganization Act to decentralize and unify the provision of services. This mandate had tremendous impact on the existing public health organization as divisions within the agency were shifted or restructured.

Several social issues changed public health programs and the delivery of local health services between 1975 and 1988. Perhaps the most dramatic was precipitated by the legislature directing attention to the medical care needs of the indigent in the late 1970's. The Health Care Access Act of 1984 declared that access to health care was a right of every Floridian and directed the Department of Health and Rehabilitative Services to provide "sick care" where there was manifest need. The Indigent Health Care Act of 1984 expanded the philosophy of provision of medical care for the indigent through county health departments and provided funding. By 1988, primary care services were being provided in all 67 county health departments. During this time, twenty-five

percent of the local effort of health departments was devoted to the delivery of primary care services.

In the 1990's, the Legislature split the Department of Health and Rehabilitative Services into two separate agencies -- the Department of Health and the Department of Children and Families. As the Department of Health re-emerged as a separate agency, other changes were also occurring in the delivery of health services. In the 1990's, the Medicaid program witnessed a dramatic shift in the way that its populations were served. Managed care arrangements became the predominant service delivery mechanism, with managed care organizations assuming most of the Medicaid case load usually held by the health department. In addition to these market forces, the 1990's were characterized by governmental downsizing and budget cuts at all levels. These cuts compromised the ability of public health departments to provide all necessary services. As a result of the changes, public health and other governmental officials looked for more efficient ways to provide services. This dissertation will examine the changes in the delivery of primary care services in county health departments because of efforts to privatize these services. Privatization efforts are likely to continue and increase throughout the next decade.

### Defining Public Health

The precise definition of public health is debated even by professionals in the field. Webster's dictionary defines public health as an aspect of health services concerned with threats to the overall health of the population of a community based on population health analysis that generally includes infectious disease surveillance, infectious disease control, and promotion of healthy behaviors (health promotion) among

members of the community. Public health is defined in medical/clinical terms as the approach to medicine that is concerned with the health of the community as a whole. The Institute of Medicine defines the three core functions of public health as assessment, policy development, and assurance (IOM, 1988). The public health system strives to prevent epidemics; protect the environment, workplace, housing, food, and water; promote healthy behavior; monitor the health status of the community; respond to disasters; ensure the quality of medical care; provide high-risk persons with needed services; and provide leadership and research on health policy (CDC, 1991). Its mission is to fulfill society's interest in assuring conditions in which people can be healthy. The base of knowledge for public health comes from a variety of disciplines ranging from social sciences, to biological sciences and business. The notable public health achievements in the twentieth century according to the Centers for Disease Control are listed in Table 1.

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Table 1  
Ten Great Public Health Achievements -- United States, 1900-1999

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Vaccination	Vaccination has resulted in the eradication of smallpox; elimination of poliomyelitis in the Americas; and control of measles, rubella, tetanus, diphtheria, Haemophilus influenzae type b, and other infectious diseases in the United States and other parts of the world.
Motor-vehicle safety	Improvements in motor-vehicle safety have resulted from engineering efforts to make both vehicles and highways safer and from successful efforts to change personal behavior (e.g., increased use of safety belts, child safety seats, and motorcycle helmets and decreased drinking and driving). These efforts have contributed to large reductions in motor-vehicle-related deaths.

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Table 1, Continued

Ten Great Public Health Achievements -- United States, 1900-1999

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Safer workplaces	Work-related health problems, such as coal workers' pneumoconiosis (black lung), and silicosis -- common at the beginning of the century -- have come under better control. Severe injuries and deaths related to mining, manufacturing, construction, and transportation also have decreased; since 1980, safer workplaces have resulted in a reduction of approximately 40% in the rate of fatal occupational injuries.
Control of infectious diseases	Control of infectious diseases has resulted from clean water and improved sanitation. Infections such as typhoid and cholera transmitted by contaminated water, a major cause of illness and death early in the 20th century, have been reduced dramatically by improved sanitation. In addition, the discovery of antimicrobial therapy has been critical to successful public health efforts to control infections such as tuberculosis and sexually transmitted diseases (STDs).
Decline in deaths from coronary heart disease and stroke	Decline in deaths from coronary heart disease and stroke have resulted from risk-factor modification, such as smoking cessation and blood pressure control coupled with improved access to early detection and better treatment. Since 1972, death rates for coronary heart disease have decreased 51%.
Safer and healthier foods	Since 1900, safer and healthier foods have resulted from decreases in microbial contamination and increases in nutritional content. Identifying essential micronutrients and establishing food-fortification programs have almost eliminated major nutritional deficiency diseases such as rickets, goiter, and pellagra in the United States.
Healthier mothers and babies	Healthier mothers and babies have resulted from better hygiene and nutrition, availability of antibiotics, greater access to health care, and technologic advances in maternal and neonatal medicine. Since 1900, infant mortality has decreased 90%, and maternal mortality has decreased 99%.
Family planning	Access to family planning and contraceptive services has altered social and economic roles of women. Family planning has provided health benefits such as smaller family size and longer interval between the birth of children; increased opportunities for preconceptional counseling and screening; fewer infant, child, and maternal deaths; and the use of barrier contraceptives to prevent pregnancy and transmission of human immunodeficiency virus and other STDs.

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Table 1, Continued

Ten Great Public Health Achievements -- United States, 1900-1999

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Fluoridation of drinking water	Fluoridation of drinking water began in 1945 and presently reaches an estimated 144 million persons in the United States. Fluoridation safely and inexpensively benefits both children and adults by effectively preventing tooth decay, regardless of socioeconomic status or access to care. Fluoridation has played an important role in the reductions in tooth decay (40%- 70% in children) and of tooth loss in adults (40%-60%).
Recognition of tobacco use as a health hazard	Recognition of tobacco use as a health hazard and subsequent public health anti- smoking campaigns have resulted in changes in social norms to prevent initiation of tobacco use, promote cessation of use, and reduce exposure to environmental tobacco smoke. Since the 1964 Surgeon General's report on the health risks of smoking, the prevalence of smoking among adults has decreased, and millions of smoking related deaths have been prevented.

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From the U.S. Centers for Disease Control

Public health functions are carried out by all levels of government but the most visible activity occurs in the 3,000 county, city, and other municipal health department throughout the country. Staffs range from more than a thousand in large jurisdictions to one public health nurse or sanitarian in the least populated areas (Wall, 1998).

#### Defining Primary Care

Since its introduction in 1961, the term primary care has been defined in various ways, often using one or more categories to describe what primary care is or who provides it. These categories include: the care provided by clinicians in certain areas such as family medicine, pediatrics, obstetrics and gynecology; a set of activities whose functions define the boundaries of primary care such as curing or alleviating common illnesses and disabilities; a level of care or a setting -- an entry point to a system that includes secondary and tertiary care; a set of attributes, as in the 1978 IOM definition—

care that is accessible, comprehensive, coordinated, continuous, and accountable; and finally a strategy for organizing the health care system as a whole—such as community-oriented primary care, which gives priority to and allocates resources to community-based health care (IOM, 1996). The definition used by Barbara Starfield, a well known researcher in the area of primary care incorporates many of these categories. She defines primary care as that level of the health service system that provides entry into the system for all new needs and problems, provides person focused (not disease-oriented) care over time provides care for all but very uncommon or unusual conditions, and coordinates or integrates care provided else where or by others (Starfield, 1998).

When the term primary care first appeared, the health care system was organized in discreet hierarchical levels. In most industrial countries such as the United Kingdom or Canada, primary care formed the basis for the provision of all health care services (Franks et al, 1993, Clancy, et al, 1998). These countries conform most closely to the IOM definition where primary care is first-contact, longitudinal care that is comprehensive and person-centered rather than disease specific. In the United States, primary care reflects the pluralistic nature of our society. There is no clearly defined mode of primary care provision (Franks et al, Clancy et al). For over 25 years, primary care delivery has consisted of overlapping contributions in a variety of settings from at least three types of generalist physicians (general internists, general pediatricians, and family physicians), nurse practitioners, and specialists (Franks et al, 1993). However, many sub-specialists such as geriatricians have defined themselves as primary care physicians (PCPs) and report that they deliver primary care consistent with the Institute of Medicine definition (IOM, 1996). The participation of multiple parties in the primary

care field evolved after the establishment of family medicine as a specialty in 1969 (Clancy and Cooper, 1998). The patchwork of provisional modes results in little identifiable system accountability.

The complexity of the health care system also adds to the elusiveness of a satisfactory definition of primary care – one that is not idealized, too vague, or prone to too many exceptions. It is essential to distinguish three aspects that are confounded in many definitions of primary care: the patient’s perspective; the practitioners of primary care; and attributes such as coordination, accessibility, comprehensiveness, and continuity that may contribute to the content and quality of primary care (Franks et al, 1993).

In 1978, Mendenhall developed an instrument for classifying patient services based on physician responses to questions about patient encounters. Based on the responses to these questions, encounters were characterized as first, episodic, principal, consultation, or specialized. This classification system provided some differentiation among the six physician groups examined. Two later studies, Aiken and Spiegel examined three different definitions of primary care provider. In 1983, Weiner and Starfield used encounter data from patients to measure comprehensiveness, accessibility, longitudinal care and family-centeredness. Rosenblatt et al used diagnostic clusters to develop a definition for primary care. In 1995, Rosenblatt defined primary care as a non-referred ambulatory visit for one of the top 20 diagnostic clusters of the 120 that were found to be mutually exclusive. In 1997, the Institute of Medicine revised their definition of primary care. In a report issued during 1997, the Institute of Medicine defined primary care as the provision of integrated, accessible health care services by clinicians who are



accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practicing in the context of family and community.

The elements of the definition are further defined. Integrated is intended to encompass the following: comprehensiveness, implying first-contact care both for any of the patient's health problems and through the patient's life cycle; coordination, including the rational selection of health services; and continuity, referring to care with time. Accessible refers to the ease with which a patient can initiate an interaction with a clinician, including efforts to eliminate barriers posed by geography and culture. Health care services refers to an array of services that promote, maintain or restore health. This definition was operationalized using multiple-year data from the National Ambulatory Care Survey (Franks, 1997).

### Defining Privatization

Privatization is defined as the transfer of responsibility for services from governmental agencies to private providers. Privatization actually has many forms that fall along a continuum. These forms range from contracting out to franchise agreements. The Public Health Foundation developed a broad working definition of privatization applied specifically to public health. According to this definition, "privatization encompasses those activities/services for which the state or local health department has reached a formal decision to withdraw from or contract out for provision of a public health service in whole or in part, and a non-governmental entity has taken over responsibility for provision of that service. This may include development of formal

partnerships with the private sector to offer public health activities/services not previously provided by the health department (PHF, 1999).” This working definition encompasses the most frequent types of privatization - contracting and changes in ownership.

The effectiveness of these two methods of privatization has been addressed by economists since the 1930s and 1940s. According to economist Andrei Shleifer (1998), changes in ownership from public to private is generally preferred when incentives to contain costs are strong and there are opportunities to innovate (improve quality). Contracting should be used when the government knows exactly what it wants the producer to make and the contract can be enforced. Public ownership is preferred to private when opportunities for cost reductions that lead to non-contractible deterioration of quality are significant; innovation is relatively unimportant; competition is weak and consumer choice is ineffective; and reputational mechanisms are weak. Changes in ownership (divestiture) occur most frequently with public hospitals. This dissertation will focus on contracting of services because contracting is used most frequently to outsource public health services. Contracts are also developed between the county health department and local entities for the provision of services.

In response to the Indigent Health Care Act of 1984, the county health departments were required to provide services through annual contracts with the local county government. The contract details how public health services are delivered in local jurisdictions. Included in these annual contracts are the projected amounts of revenues by source and a detailed plan of the number of clients, services, staff positions, and expenditures. Expenditures consist of state and county contributions for the program

provided by the local county health department. Non-categorical funds are also included and assigned to specific programs. Non-categorical funds are revenue provided by the Florida Legislature that is not appropriated for a specific service. Non-categorical revenue is particularly critical at the local level because of its ability to be redirected to areas of greatest need such as disease outbreaks or other threats to public health. Several large counties contract with private providers for primary care services for clients of the health department.

### Summary

This introduction provides the context for the development of primary care and its relationship to public health services. The history of the Florida Department of Health is used as a framework to show how public health services and primary care became intertwined. The chapter also includes definitions of the key items -- public health, primary care and privatization. The next chapter, entitled Statement of the Problem, will identify the theoretical framework and research questions for this study. A comprehensive review of the literature will be presented in chapter three. The fourth chapter – The Research Design, will provide details of the research methodological approach and study plan. The fifth chapter will include a thorough analysis of data and results. The final chapter will offer conclusions, implications, and recommendations for further study.

## THE STATEMENT OF THE PROBLEM

### The Need for the Study

Health care continues to be very expensive despite the introduction of managed care, downsizing, and restructuring. As the number of medical and pharmaceutical technologies increase so does the responsibility, demand, and price tag for services. Particularly vulnerable to increases in health care costs are the public health departments. These agencies provide numerous population-based programs and activities, while targeting individuals who cannot afford to pay for services. An emphasis on cost containment has influenced reform efforts in the provision of government services.

Three fundamental trends in health care finance and organization have affected the provision of care over the last decade. These trends include: expanding managed care models, mergers and/or conversion of public hospitals to private or non-profit hospitals, and outsourcing or privatizing public health department services. This study will focus on privatizing of public health department services.

### Statement of the Problem

Since the 1960's, the public health department has been the provider of last resort for disadvantaged families and communities. Historically, health departments provided population-based public health services, such as sanitation, while the private sector provided medical care services. However, when Medicaid was introduced in 1965,

public health departments began to shift more of their attention to providing care for the chronically ill, disabled, and poor (Wall, 1998; PHF, 1999).

In the 1990's, managed care arrangements became the predominant service delivery mechanism. This cost containment method caused a dramatic shift in the way populations were served in the Medicaid program (Dandoy, 1994). While cost containment and preventive care methods used by managed care organizations have definite advantages, the private provider networks have not shown that they have the capacity, infrastructure, or quality assurance mechanisms to assure access to needed services for disadvantaged populations (PHF, 1999). This is relevant for areas where there are large numbers of individuals lacking health insurance or with populations that contain large numbers of undocumented immigrants. Since Medicaid dollars diverted to private managed care organizations would no longer support the health department in providing services to these clients (Lipson and Naierman, 1996), access problems may be created and health disparities in these communities would be exacerbated.

In addition to the changing market forces in the health delivery system over the past decade, governmental downsizing and budget cuts have also had a significant impact on health departments (PHF, 1999; Wall, 1998). These cuts have compromised the ability of the local health department to provide essential public health services. As a result policymakers are exploring strategies to provide services more efficiently. Privatization is one strategy that is being explored as a potential community-based approach for assuring the delivery of public health services.

In 1993, the Council of State Governments conducted a comprehensive landmark study on privatization activities. The findings stated that almost 50 percent of

governmental health care agencies had privatized some aspect of their operations. In 1996, the Centers for Disease Control did an environmental scan of state health departments with the intention of building on the 1993 study. The CDC study focused specifically on public health. Seventy percent of those surveyed reported increases in privatization activities. In 1998, the Florida Association of County Health Officials recommended a survey of Florida county health departments to determine which services were previously and currently privatized and which models were used for privatization. This study, completed in 2000, reported that five of the nine largest county health departments had privatized primary care programs. This finding was similar to that of the 1993 Council of State governments study. However, in 2001, Keane, Marx, and Ricci conducted a national survey of local health departments which found that three quarters of the local health departments had privatized some public health services. These studies provide useful background information on privatization but more research is needed to understand the privatization trend and its impact on public health.

### Research Questions

This dissertation will focus on the impact of privatization on the delivery of primary care services in large counties (population greater than 500,000) in Florida. The following research questions will be examined:

1. What are the costs of primary care services provided by contracted service providers relative to services provided by the by public health department?
2. Where primary care services have been privatized, what is the effect on access to care for the Medicaid and uninsured patients?

3. What is the effect of privatization on health outcomes in privatized and non-privatized counties?

### Study Hypotheses

Based on the research questions listed above, the following study hypotheses have been developed.

1. Hypothesis One: Contracting primary care to private providers reduces the costs of providing services when compared to providing these services within the county health department.

2. Hypothesis Two: In counties where primary care programs have been privatized, potential access to primary care services will be significantly greater than in non-privatized areas.

3. Hypothesis Three: In counties where primary care programs have been privatized, health outcomes on primary care sensitive indicators (i.e. post neonatal mortality) will be significantly better when compared to non-privatized areas.

These hypotheses are based on two economic frameworks most commonly used in discussions on privatization -- market theory and public choice theory. According to market theory, private providers can produce goods or services more efficiently because of competition. And public choice theory proposes that government is inherently inefficient because it creates the natural characteristics of a monopoly. Over time, programs will grow larger because the incentive structures work against the public at large while serving those with concentrated interests in increasing public expenditures. These theories will be discussed in greater detail in the literature review section of this study.

## Delimitations and Limitations

All studies have inherent delimitations and limitations. Delimitations describe the populations to which generalizations may be safely made. The generalizability of the study will be a function of the subject sample and the analysis employed. Delimit literally means to define the limits inherent to the use of a particular construct or population. Limitations refer to limiting conditions or restrictive weaknesses. There are times when all factors cannot be controlled as part of a study design, or when the optimal number of observations simply cannot be made because of problems involving ethics and feasibility.

A delimitation of this study is that only counties with large populations were used because they were more likely to privatize services. Secondly, by choosing counties of similar size, characteristics affected by county size could be controlled (i.e. county expenditures, availability of providers, morbidity or mortality rates, etc.). The findings of this study can be generalized to larger or more populated counties.

There were several limitations in this study. First, the study used different units of analysis (program level, zip code level, county level) for measuring the three dimensions (cost, access, and health outcomes) because of the availability of data from some sources. Secondly, health outcomes could not be directly measured for Department of Health clients. Performance indicators used by the Department of Health were used as proxy measures. Performance indicators for all primary care programs used in the cost analysis were not available. Some health status indicators used for evaluating primary care at population levels were assigned to other funding sources and therefore not



selected for analysis. For example STD's are funded through communicable disease programs.

### Specific Aims

The specific aims of the research study are to:

1. Examine the effect of privatization on the cost of providing primary care services to Medicaid and uninsured populations.
2. Examine the association between privatization and access to care.
3. Examine the association between privatization and health outcomes.
4. Contribute to the understanding of how alternative service delivery of primary care affects the health status of the general population.

### Summary

In this chapter, the need for this study was addressed. The study will add to the literature specifically by providing empirical analysis of privatization of public health programs using three dimensions of effect measurement. This chapter also explained the conceptual framework, presented research questions and hypotheses, and provided specific aims. The next chapter will provide a comprehensive review of the literature on privatization of government services.

## THE LITERATURE REVIEW

### Overview

Few public policy topics have drawn more attention or been more controversial than privatizing public services (Starr, 1998). For many years, government officials, policy analysts, economists, and others have struggled to determine the appropriate balance between government and the private sector. What are the tasks that should be performed by public agencies? Which tasks are best performed by the private sector? What role should government play in regulating or reimbursing functions best implemented by the private sector? The purpose of this chapter is to take a thorough look at privatization. Privatization will be examined as a means of service delivery for local and state governments. Specific examples of privatization of governmental services in the state of Florida are discussed. The chapter also examines privatization in the public health system. Finally, the chapter concludes with a discussion of the outcomes (cost, access, and health status of the population) used to measure the impact of privatization of primary care programs in selected county health departments in Florida.

### Privatization

Privatization is the shifting of a function, either in whole or in part, from the public sector to the private sector (Butler, 1991; Bluestein, 1996). Increasingly, privatization is being examined by government officials as a strategy for improving public policy. These officials believe that through a combination of changing ownership, introducing competition from the private sector, and allowing consumer choice through

vouchers and other approaches they may be able to achieve some public purpose more effectively and efficiently. The provision of services by the public sector is a complex issue affected by complicated factors (Finley, 1989). A form of privatization that works effectively in one situation may not work effectively in another (Butler, 1996). Likewise, some private sector approaches may not work in certain circumstances, while others may be very successful. There are various means of delivery; however, the most frequently used options are listed in the Table 2.

Table 2  
Alternative Approaches to Service Delivery

Contracting	State or local governments contract with private firms either profit or nonprofit to provide goods or deliver services. Contracts may include all or a portion of the services to be provided by the private firm.
Franchises	State or governments award either an exclusive or nonexclusive franchise to private firms to provide a service within a certain geographical area. Under a franchise agreement, the citizen pays the firm directly for the service.
Grants/subsidies	Governments make a financial or in-kind contribution to a private organization or individuals to encourage them to provide a service so that the government does not have to provide it.
Vouchers	Governments provide vouchers to citizens needing the service. The individuals are then free to choose the organization from which to buy the good or service. The government then reimburses the organization that provides the goods or services.
Volunteers	Individuals provide free help to a government agency.
Self-help	Governments encourage individuals or groups to undertake self beneficial activities previously provided by the government.
Service Shedding	The government gives up responsibility for an activity but works with a private agency, either profit or non-profit, who is willing to take over responsibility and provision of the service.
Public-Private Partnerships	Government agencies join with businesses in the community to provide a good or service.

Note. Adapted from Review of Private Approaches for Delivery of Public Services, by H. P. Hatry, 1983, p.5-7.

## Efficiency and Privatization

Providing public services through the private sector is not a new idea; however, since the mid-1970's governments have turned increasingly to privatization. Government is frequently criticized for waste and inefficiency; but as the level of criticism increased, privatization emerged as an alternative for delivering public services. This was not surprising to many considering the dilemmas faced by many local and state jurisdictions in an era characterized by reinventing government (Osbourne and Gaebler, 1989) and the federal devolution of responsibilities to state and local governments (Brammer, 1997; Mahtesian, 1994). Despite the attention that privatization has attracted over the years, the concept is often misunderstood (NAPA, 1989). Privatization is difficult to define because it encompasses a variety of ideas and practices. However, these ideas and practices share a common ideal that involves increasing private-sector participation in areas typically considered public-sector responsibilities (Greene, 2002).

Privatization comes in many forms, which include simple contractual arrangements with private businesses and non-profit organizations. In the purest form of privatization, the government divests itself of production and delivery of services. Privatization also includes a broad range of activities such as deregulation, tax reduction, voucher systems, and public divestiture of government properties (Greene, 2002; Hatry, 1983). These activities are intended to enhance government efficiency and reduce government involvement. The ideology of privatization rests on the virtues of a freely functioning market economy. Proponents believe that a market economy produces economic and technological progress, efficient utilization of resources, a rising standard

of living, a reasonable and equitable distribution of wealth and a society characterized by social mobility and political freedom (Friedman, 1962). In this view, government intervention beyond its basic functions (those dealing with purely public goods, such as national defense) impairs efficient resource use. Proponents believe that government should confine its activities only to those related to governing while the private sector is allowed to produce society's goods and services.

Historically, the most common form of privatization (contracting) predates the Constitution. The private sector performed many functions which have eventually been taken over by the public sector (Swanstrom and Judd, 1994). Examples include subways and utilities (Ross & Levine, 2000; Swanstrom and Judd, 1994). As society became more complex because of industrialization, urbanization, and changing values, the government assumed more economic and social responsibility (Greene, 2002). For many, government action was viewed as the solution to society's problems and the government began providing an increasing assortment of services. However, by the 1970's many services were returned to the private sector via contracting and public-private partnerships because of costs and the perceived inefficiency of the public sector. The most prominent issue in privatization has been the allocation of resources to their best use. Efficiency has been one of the driving forces behind the reinventing government movement and the push for performance measures for government agencies and services. In addition to efficiency, there are also other concerns like equity and public accountability. Much of the debate has been on whether privatization can actually deliver public services more economically than tradition government auspices.

## Theoretical Framework

The theoretical foundations or frameworks for privatization have been provided by a variety of economic schools. The most prominent are market theory and public choice theory. Market theory looks at the nature of competitive markets while public choice theory deals with the nature of monopolies and non-market decision making. These two theories provide the underlying assumptions that privatization is a better method for delivering services.

### *Market Theory*

Market theory is based on an idealized model whereby firms seek to maximize profits but their ability to inflate prices is guarded by competition. In the competitive market, the firms are small relative to their industries and there are no restrictions that prevent firms from entering or exiting any industry. Consumers in this market are well informed and have defined preferences about alternative goods and services. Firms compete for a market share. This competition forces efficiency in the market. Efficiency is the ability to produce a product or service in a cost-effective manner. If firms make unusually high profits then others will enter the market and cause decreases in the price of the good or service. Market theory is generally associated with private goods. Private goods include those types of goods that are easy to exclude others from using. Many public goods and services are difficult to exclude others from using; however, there is a general consensus that public or private organizations can provide or produce local or state services. Outcomes are judged by cost effectiveness or efficiency. If the market

can provide a service at a lower cost than the government, or if it can provide a superior service at the same cost, then the market is considered more efficient (Wolf, 1988).

Market theory enters the privatization discussions because it provides an alternative arrangement with a long record of generating goods and services efficiently. It is believed that some of the market's power can be transferred through contracting. Market theorists believe that the problem with government is that it is not an economically driven institution where efficiency is necessary for survival, unlike the marketplace where failing to maintain a competitive orientation and manage resources efficiently would result in the demise of the firm. In addition, government is a monopoly and monopolies are inefficient due to the lack of competition. Financing for public services is not directly connected to the actual services being produced, but are a result of the political process, unlike in a market where the cost of producing a good or service is connected to the expense of performing the function. Because the revenues that sustain government activity usually come from taxes, government organizations are more likely to use budget size to measure performance. This in turn causes personnel to be rewarded for justifying costs rather than reducing them (Wolf, 1988)

#### *Public Choice Theory*

Public choice theory has also had a noticeable impact on the privatization debate. Public choice theory is based on rational choice theory which assumes that all individuals act in a way that maximizes their own self-interest. Within a theoretical framework, public choice theorists provide a rationale that suggests that public managers will take action that is in their own self-interest. This rationale is the same as the motivation of

managers in a competitive market but the incentive structures and the consequences of manager's actions are different in the public sector. When applied to the public bureaucracy, government managers will behave in a way that is in the public's interest only if it is also in their own self-interest as well. Serving a greater good (the public interest) is secondary to serving one's own self interest (Greene, 2002).

Public choice theory argues that the competitive marketplace produces goods and services efficiently while public monopolies are viewed as inefficient. Inefficiency is seen as inherent in government agencies because the incentive structures encourage empire building and overproduction of services. It is believed that public agencies encourage public personnel to advance their powers, budgets, and agency staffing levels. This theory explains why government budgets grow over time (Buchanan, 1978). The theory also states that interest groups form to seek special advantages. According to public choice theory, in the public sector, citizens who are members of interest groups will demand too many services since increased quantities are not regulated by direct increase in costs for those people receiving the services. In situations where the public at large is paying to benefit a few, the cost of the service to the individual becomes so inexpensive that demand for the service increases, resulting in an overly large demand and a bloated, wasteful government (Rubin, 1981).

Public choice theory attributes the problem of inefficiency in government to the natural characteristics of monopolies. Within these government monopolies, public managers behave in ways that are counterproductive to the goal of efficiency. Public choice theory makes many recommendations regarding privatization, but the main one relates to separating governmental financing from the production of services, which can



be accomplished through contracting. By altering the delivery arrangements of public services, public choice theory argues that contracting will enhance efficiency and slow the pace of government growth (Wolf, 1988).

The theoretical foundations discussed above have had a powerful impact on the privatization debate. The thrust of the theories may be summed up as markets versus monopolies. Both theories focus on the positive attributes of the competitive marketplace and emphasize inherent inefficiency in public monopolies. In reality, the choice of markets or monopolies are two imperfect alternatives (Wolf, 1988). In summary, proponents of privatization argue that government should turn over services to private firms to realize cost savings. Privatization is seen as a way of improving efficiency while offering new opportunities for private businesses. They also argue that this will result in greater satisfaction for the people being served. By allowing private firms to provide services, government can benefit from the power of the marketplace and free itself to govern.

#### Privatization in State and Local Government

Services in state and local government are provided through the private sector everyday. At the local level, these services include garbage collection, water and sewer systems, fire and building inspections, and sanitation inspections of food establishments. There is a long history of private companies providing public services. The following are examples of the most commonly privatized local services.

##### *Refuse Collection*

Garbage collection has received more attention in the privatization discussion than any other contracted service. How trash is collected and disposed of raises many public

health and environmental concerns. Numerous studies have been conducted that suggest it is less costly to contract out garbage collection (Greene, 2002; Hatry,1991); while privatization critics point to a similar number of other studies that suggest less than desirable results. Virtually all studies on garbage collection have found private contracting to be the most economical. Many of the studies are listed in Table 3. However, contracting out these services has resulted in corruption and scandal (Bailey, 1991; Greene, 2002). Refuse collection also has the added dimension of disposal. The garbage has to be placed in a landfill, recycled or incinerated.

#### *Transportation*

Transportation has many dimensions including bus systems, rail systems, and highways. Cities encourage mass transportation to reduce pollution and congestion. Most mass transit systems originally operated under franchise agreements but in 1964, the Urban Mass Transportation Act was passed which allowed cities to purchase their own systems. Most of these systems are subsidized through federal grants. Although almost all rail systems remain publicly owned and operated, bus systems have been privatized in many communities. Several studies are listed in Table 3.

#### *Utility Services*

Privatization of water and wastewater facilities in the United States is not a new phenomenon. Converting government-owned facilities to private ownership or management goes back at least three decades (Beecher, 1995). Surveys in recent years by the National League of Cities, U.S. Conference of Mayors, and the International City/County Management Association among other organizations find: Most local

governments have been increasing their use of privatization in recent years, and plan to further increase privatization in coming years; Privatization grows the fastest in communities that have already made the most use of privatization. Water and wastewater service privatization follows these broader trends. More than 40 percent of drinking water systems nationwide are private, regulated utility systems. Of the 60 percent of systems owned by local governments, privatization by contracting for operations and management has grown rapidly in recent years. In 2001, nationwide privatization of water and wastewater services grew by 13 percent, after growing by 84 percent over the decade of the 1990s (Reinhardt, 2001). By the end of 2001, nearly 1300 local governments had privatized operation of wastewater systems, and over 1100 had privatized operations of water systems. Several of these studies are listed in Table 3.

Like water and wastewater systems, provision of electric power comes in several organizational forms including investor-owned organizations, municipally owned and cooperatives. There have also been a number of studies of public and private operations. Some of these studies are listed in Table 3. None of the studies found private power companies to be more efficient than publicly operated utilities. Because utility companies are natural monopolies, they do not face direct competition. However, in cases where power utilities face competition, there appears to be an average reduction in cost of 11 percent whether the companies are public or private (Greene, 2002).

Table 3  
Summary of Major Local Government Privatization Studies

Government Activity	Author	Subject	Findings
1. City Services	Ferris (1988)	Multiple municipal services in 500 U.S. cities	City expenditures decreased with the increased use of contracting.
	Carver (1989)	Property tax assessment in 100 Massachusetts communities	Public provision was found to be less costly than contracting.
	Pack (1992)	Computer networking reliability for 55 public clients.	Contracting with private firms resulted in a 30 percent increase in quality and reliability.
2. Transportation/Buses	Morlok and Moseley (1986)	Survey of 31 bus systems	Average savings of private contracted bus systems was 29 percent.
	Perry and Babitsky (1986)	Private vs. cost-plus private, Contract vs. public	Private operators are significantly more efficient in all indicators.
	Teal et al. (1987)	Study of 864 bus systems	For large bus systems, private costs are 44 percent less than public cost. Contracting should save 36-50 percent for systems of more than 25 buses.
	Sherlock and Cox (1987)	Study of 567 bus systems	During a 13 year period, the cost per mile for private buses decreased by 3 percent while costs increased by 52 percent. Private bus service reduced costs by 32 percent.

Table 3, Continued  
Summary of Major Local Government Privatization Studies

Government Activity	Author	Subject	Findings
4. Refuse Collection	Walters (1987)	Study of bus service in five large cities.	Private operators were 50 to 65 percent less expensive than municipal bus systems.
	Feldman (1987)	68 U.S. bus organizations public and private comparison.	Private operations were significantly more efficient.
	Musgrove (1988)	Busing in 88 school districts in Missouri	Contracting reduced transportation costs.
	Campbell (1988)	Public v. private contracting for vehicle maintenance	Contractors were 1 to 38 percent below in-house municipal costs.
	Bails (1989)	School transportation costs in six U.S. cities	Contracting lowered transportation costs.
	Stevens and Savas (1976)	Public v. private collection	Cost of public collection 40 to 60 percent higher than private contracting.
	Edwards and Stevens (1976)	Public v. private collection	Private monopolies were 5 percent higher than private nonfranchise collection.
	Savas (1977) Savas (1980)	Public v. private collection	Private contracting was found to be the most efficient collection method.
	Stevens (1978)	Public v. private collection	Private contracting was found to be the most efficient collection method.
	Spann (1977)	Survey of U.S. cities, municipal v. private collection	Cost of public collection 45 percent higher.

Table 3, Continued  
Summary of Major Local Government Privatization Studies

Government Activity	Author	Subject	Findings	
5. Utilities ( Electric Power)	Bennett and Johnson (1979)	Fairfax County, VA, 29 private firms v. public collection authority	Private firms in open competition were significantly more efficient.	
	Pescatrice and Trapani (1985)	Public v. private operations	Public operations are more efficient.	
	Fare, Grosskopt, and Logan (1986)	Public v. private operations	No significant differences.	
	(Water)	Atkinson and Halvorsen (1986)	Public v. private operations	No significant differences.
		Bruggink (1982)	Public v private operations	Public more efficient
		Feigenbaum, Temples, and Glycer (1986)	Public v private operations	No significant differences
		Byners, Grasskopt, and Hayes (1986)	Public v private operations	No significant differences
Teeples and Glycer (1987)	Public v private operations	No significant differences		
6. Hospitals	Holcombe (1991)	Public v. private operations for wastewater treatment in U. S. cities	Higher costs associated with private provision.	
	Clarkson (1972)	Sample of U.S. hospitals, public nonprofit v private for-profit	Variations in input ratios greater in nonprofit hospitals. Higher cost found in nonprofit output indicators	
	Lindsay (1976)	Sample of U.S. hospitals v. Veterans Administration	Cost per patient less in VA hospitals	
	Wilson and Jadlow (1978)	1,200 U.S. hospitals producing nuclear medicine, government v. private units	Deviation of private hospitals from a perfect efficiency index was less than public hospitals	
	Wheeler, Zuckerman, Aderholt (1982)	10 hospitals under management contracts in 7 U.S. states	Improved profitability occurred under private management	

Table 3, Continued

Summary of Major Local Government Privatization Studies

Government Activity	Author	Subject	Findings
	Mennenmeyer and Olinger (1989)	Medical care for Medicare patients in 267 California hospitals in the 1980's	Contracting lowered costs between 11 and 23 percent

From Cities and Privatization: Prospects for the New Century (2002)

### *Prisons/Jails*

In recent years, there have been efforts to privatize significant segments of corrections (Savas, 1987). Private entrepreneurs have begun to play a major role in financing and building correctional facilities, in supplying a variety of auxiliary services and in obtaining contracts to operate and administer prisons and jails. Advocates of privatization assert that privatization is efficient and cost-effective. These proponents point to studies that found that private contractors when freed from cumbersome public personnel policies and unionized work forces are able to run correctional institutions and related programs more efficiently. There is nearly a consensus that privatization of a number of correctional functions using newer forms of financing and providing services is more effective and efficient than long-standing conventional methods (Mullen, 1985). Despite generally favorable reviews, critics dismiss comparisons on cost alone. They argue that these studies ignore liability issues, do not account for long-term costs and fail to compare identical prison populations.

### *Public Hospitals*

In recent years, public hospitals have been more likely than either nonprofit or for-profit hospitals to convert their ownership status. The favored conversion is from public to nonprofit status. The government simply converts the legal status of the public hospital to nonprofit status so that it can issue revenue bonds and escape "sunshine laws." In some cases, the government still retains ownership title to the buildings and land, and leases these to the nonprofit entity it created to operate the hospital. Although public hospitals are still more likely to become nonprofit than for-profit, there is a recent trend to change



to for-profit status, if for no other reason than the increased access to capital enjoyed by such publicly traded firms. But from 1990 to 1993 only nineteen percent of conversions were to for-profit status, and the for-profit sector still has a limited market share of the industry (Greene, 2002). The conversion of a public hospital is often described as an effort to improve efficiency by freeing the hospital from civil service and hospital procurement rules, or a response to the unwillingness of local governments to provide continued tax subsidies.

### State Government

The Council of State Governments conducted a national survey of state government officials to identify recent privatization trends. The survey was sent to 450 state agencies dealing with personnel, education, health and human services, corrections, and transportation. In the years surveyed (1998 – 2002), privatization remained the same or only increased slightly. Florida was a leader among states using contracting to deliver services. These services included, road design and maintenance, toll operations, prisons, welfare employment services, and building maintenance.

Table 4  
Privatization in the State of Florida

Agency	Initiative	Results
Department of Transportation	Board of Professional Engineers	Output increased but so did costs
	Toll Collections	Cost reduction of \$2.1 million annually
	Highway Maintenance	Reduced costs by 15.3 percent or \$83.7 million
Department of Corrections	Prison Operations	Reduced costs by 7 percent
	Prison Food Service	Reduced costs by \$16.9 million over 3 years

Table 4, Continued

Privatization in the State of Florida

Agency	Initiative	Results
	Inmate Health Care	Reduced costs by \$24.6 million over 4 years.
Department of Management Services	Janitorial Services	Reduced costs by \$1 million annually
	Personnel Functions	Implementation behind schedule and did not result in estimated savings
Department of Children and Families	WAGES	No difference between state and private operations
	Mental Health Hospitals	Significant quality improvements and \$110 million in savings

(Results from the Office of Program Policy Analysis and Government Accountability)

*Transportation*

Private contractors currently perform many activities at the Florida Department of Transportation including: construction engineering and inspection, design, planning, right-of-way, and materials testing research. Since many of the activities are commercial in nature they were targeted for privatization. In March 2001, the Office of Program Policy Analysis and Government Accountability suggested increased levels of contracting for toll collection operations. In addition, under direction from the Governor's office contracts for highway maintenance were expanded. According to the Asset Management Program Summary from November 2003, the state saved \$83.7 million through the life of the contracts. The agency states that the contractor is performing at better levels and the quality is the same if not superior to previous state delivered maintenance.

### *Corrections*

In 1995 the state of Florida began its venture to privatize prisons. Since that time the Florida Department of Corrections has contracted for the operations of numerous facilities. Several studies have evaluated the initiatives. The South Bay Correctional Facility achieved operational savings of 3.5 percent in 1997-98 and 10.6 percent in 1998-99, which exceeded the state-mandated 7 percent. The report further noted that construction costs were 24 percent less than similar government facilities. Other facilities similarly posted savings but not to such a great extent.

### *Building Maintenance*

The Department of Management Services began contracting out some of its custodial services and reduced state costs. The department also realized cost savings by converting full-time positions to part-time positions, mostly through attrition.

### *WAGES*

In the General Appropriations Act of 1997-98, the Florida Legislature created the Work and Gain Economic Self-Sufficiency (WAGES) pilot project to determine the feasibility of contracting out all program services within a service area. There were no differences between the private pilot projects and the state programs.

### *Human Resources*

The state entered into a contract with Convergys Corporation of Ohio to administer almost all of the routine personnel functions of the state. Initially, that contract was

estimated to save \$173 million over seven years. Eighty million was saved by avoiding the replacement of the aging computer system (COPEs) and it was thought that millions would be saved from recurring fiscal expenses. The benefit of privatizing these functions was that it allowed the state to devote fewer internal resources to administrative tasks and instead concentrate resources on core mission, responsibilities and programs of state government. The implementation of this initiative has been problematic. The project was a year behind schedule diminishing some of the estimated savings. In addition, the functionality and user satisfaction was much lower than anticipated. During the product design phase of the project, an oversight by the contractor led to much of the dissatisfaction. Convergys designed the system to operate on computers with Windows 2000 platform or newer. In the private sector, most computers have newer operating systems; however, in state government many of the computers operated on Windows 95 and 98. The new software was incompatible and did not work (Segal, 2005).

### *State Hospitals*

In 1998, the Department of Children and Families entered into a public-private partnership with Atlantic Shores Healthcare, a subsidiary of the GEO Group to manage South Florida State Hospital (SFSH). The 350-bed facility was completed and opened as the first fully private state mental hospital. Since the partnership, SFSH became fully accredited by the Joint Commission on Accreditation of Healthcare Organizations (JACHO) for the first time in its 40-year history. DCF's contract with Atlantic Shores stipulated that the facility must be fully accredited. The partnership also resulted in several other successes including higher admissions and discharges, lower re-admissions,

and decreased length of stay. Of the discharges, 3.4 percent were readmitted within 30 days which was 50 percent below the national average. In addition, the average length of stay decreased from 8.27 years to 185 days.

Considering the examples listed above, it appears that privatization works in many cases. Aside from the possibility of corruption, some seem to endorse the use of private contractors to provide public services. Most of the examples of successful privatization have been in hard services such as garbage collection, construction, maintenance, etc. However, there are areas in which privatization has been less successful, mainly in soft services. Soft services refer to human services, such as health care, social services, and welfare services. These services are less mechanical, more unique and sometimes involve special needs. Soft services are less profitable for private firms than hard services. When these services are privatized, they are usually shifted to non-profit organizations rather than for-profit firms (Greene, 2002).

#### Public Health Services

The pressure to privatize public health services has occurred since the early 1980's when initiatives favoring privatization brought a 25% reduction to the budget of the Department of Health and Human Services. In 1993, the Council of State Governments conducted a comprehensive landmark study on privatization activities. The findings stated that almost 50 percent of state health departments had privatized some aspect of their operations. In 1996, the Centers for Disease Control and Prevention did an environmental scan of state health departments, with the intention of building upon the 1993 study looking specifically at public health.

The privatization of local health department services may be one of the most important transformations in the nation's public health system. Across the nation, almost 3000 local health departments perform many essential public health services that private organizations may not have the authority, capacity, or incentive to provide (Lipson and Naierman, 1996; Keane, 2001). Therefore, it is worthy of concern that an increasing array of services once performed directly by local health departments have been contracted out or in some way delegated to nongovernmental organizations. According to a study by Keane, Marx, and Ricci (2001), about three quarters of local health departments have privatized some public health services. Two general types of privatization are occurring. One form occurs when a service once directly performed by a local health department is contracted out to a private provider. Another less commonly recognized form of privatization occurs when a local health department becomes involved with a new service but contracts out (or otherwise delegates) the performance of the service from its inception. The most commonly privatized services are personal health services, the largest proportion of which were performed by hospitals, physicians, and private clinics; but, environmental health services, health education and community outreach services, and data-processing functions are also frequently privatized. A majority (57%) of all public health services that have been privatized have been contracted to investor-owned, for-profit organizations. Eighty-four percent of environmental health services were privatized to for-profit concerns (most often engineering companies) (Keane, 2001). The decision to privatize generally depends more on a community's unique characteristics and service delivery system than on a specific type of needed service (CDC, 1998; PHF, 1999; Keane, Marx, and Ricci, 2001). The catalysts for privatization of health

department services vary but generally revolve around four general themes: Medicaid Managed Care, cost savings and other fiscal concerns, improving the quality and efficiency of services, reorganizing state and/or local health department (Halverson et al, 1998; PHF, 1999; Keane, Marx, and Ricci, 2001).

### Privatization Trends in Florida's Public Health System

In 1998, following national trends, the Florida Association of County Health Officials recommended a survey of Florida county health departments to determine which services were previously and currently privatized and models for privatization. This study was completed in 2000 by the Florida Department of Health.

Using the methods outlined in the 1997 CDC study, the privatization committee composed of members from the Florida Association of County Health Officials and the Florida Department of Health developed mail and telephone surveys for 67 counties. The survey identified sixty services that were currently privatized in the county health departments. The type of service privatized varied between small counties and the medium and large counties. For the purposes of the study, small counties were defined as counties with populations between 7,000 and 112,000. Medium counties had populations of greater than 112,000 but less than 500,000. Large counties have populations of greater than 500,000. In small counties there were twenty-four privatized services. The top three were women's health, radiology and pharmacy. These three accounted for 58% of the privatized services. In medium counties there were twenty privatized services. The top three were women's health, primary care and laboratory services. In large counties there were sixteen privatized services. The top three were women's health, primary care

and HIV/AIDS. These three categories accounted for 81% of the privatized services. The decision to outsource these services was based on a variety of factors. These included the limited capacity of local health departments to fulfill public health obligations, availability of private organizations with which to contract, anticipated cost saving and efficiency improvements, and downsizing of government (Crockett & Rainhart, 2000).

### Measures of Privatization

#### *Cost*

Public health accounts for only a fraction of national health spending -- approximately 6.1 percent (\$60 billion) in 2004 (UHF, 2004). These funds consist of federal, state, and local revenues, as well as Medicaid payments, patient fees, and various regulatory fees. Over time the relative importance of each of these sources has shifted. However, federal grants and state and local appropriations consistently account for the bulk of public health spending.

The range of services provided by public health agencies varies considerably across states and local jurisdictions; however, personal health services consume the largest share of the average local health department's staffing and funds (Eilbert, 1996). Florida is one of a few states most likely to deliver comprehensive primary care through county health departments (Wall, 1998). A survey conducted by the National Association of County and City Health Officials found that public health systems in the South have traditionally considered personal health services as central to their mission because of the shortage of private providers in rural areas. Florida's public health system extends beyond maternal and child care to provide an even broader range of services to



indigent patients and the uninsured, in part because of state legislation. However, in an environment dominated by Medicaid managed care, there is an on-going debate among public health officials regarding the role of public health departments in the delivery of personal health services.

In the early 1990s, health departments started to develop cost systems during the shift to managed care which relied on cost-based reimbursement from Medicaid. The old focus on revenue streams (categorical programmatic funding) began to shift toward measuring the actual cost of health care services (Hadley et al, 2004). CPT® codes, published annually by the American Medical Association in Current Procedural Terminology, had become the universal language in the health care field and were used for managed care contracts, setting reimbursement levels, and making comparisons among practice settings. In 2000, the Department of Health and Human Services (DHHS) designated the CPT code set as the national standard for financial and administrative electronic transactions related to health care professional services (HIPAA, Title II). From these codes public health departments determine the cost per service and per client. These codes also provide information on the number and types of service provided in each program area.

#### *Access to Care*

The issue of access has become a central concern for health care policy formulation and reform (Fos and Zuniga, 1999; Brandon, et al, 2003). Access to primary care, in particular, is very important in planning the future of health care delivery in the United States and is viewed as a key to progressing toward the health objectives for Healthy People 2010. According to this report:

“Improving primary care across the Nation depends in part on ensuring that people have a usual source of care. Having a primary care provider as the usual source of care is especially important because of the beneficial attributes of primary care. These benefits include the provision of integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practicing in the context of family and community (DHHS, 1999).”

Access to health services—including preventive care, primary care, and tertiary care—often depends on whether a person has health insurance (Broyles et al, 1999; Broyles et al, 2002). Uninsured people are less than half as likely as people with health insurance to have a primary care provider; to have received appropriate preventive care, such as recent mammograms or Pap tests; or to have had any recent medical visits (Broyles, 2002). In addition, access to care depends in part on access to an ongoing source of care. People with a usual source of health care are more likely than those without a usual source of care to receive a variety of preventive health care services. An estimated 15 percent of adults in the United States lack a usual source of care. Thus, more than 45 million persons have no particular doctor’s office, clinic, health center, or other place where they go for health care advice (Mongan and Lee, 2005). A usual source of primary care helps people clarify the nature of their health problems and can direct them to appropriate health services, including specialty care. Primary care also emphasizes continuity, which implies that individuals use their primary source of care over time for most of their health care needs (Franks, et al, 1997; Starfield, 1998). More after-hours care, shorter travel time to a practice site, and shorter office waits have been associated

with patients' beginning an acute episode of care with primary care physicians. Greater continuity has been observed for individuals with shorter appointment waits, insurance, and access to more after-hours care (Franks, et al; Fos and Zuniga). Other advantages of primary care are that a primary care provider deals with all common health needs (comprehensiveness) and coordinates health care services, such as referrals to specialists (Starfield, 1998). Evidence suggests that first contact care provided by an individual's primary care provider leads to less costly medical care (Moy, et al, 1998; Starfield, 1998)

### *Health Outcomes/Health Status*

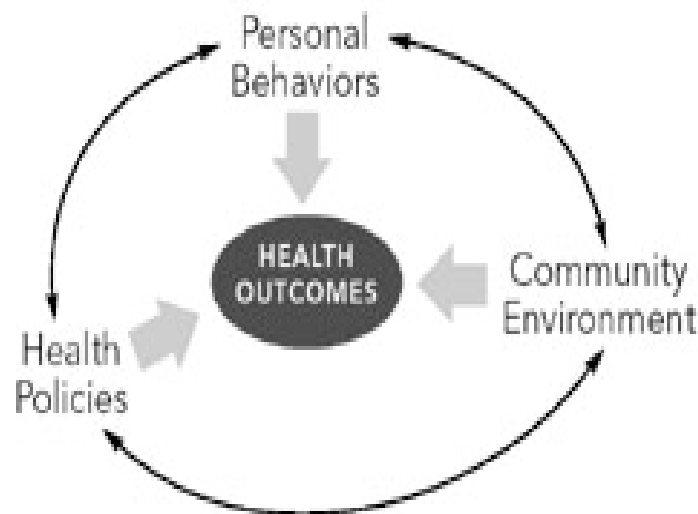
Although health outcomes and health status are equivalent concepts, the former term is applied when assessing the clinical care of a group of patients while the latter is used when the focus is on populations or subpopulations. Historically, outcomes were initially measured by mortality rates. Decades later morbidity was added. In the 1980's a primary care-friendly adaptation of assessments known as the International Classification of Health Problems in Primary Care was developed (World Organization of National Colleges, Academies, and Academic Associations, 1979). The most recent assessment focuses on the extent to which people can perform the activities of living -- health related quality of life. This is a broad concept which takes into account how people feel and what they are able to do.

Health is the result of personal behaviors, the environment of the community in which one lives, the policies and practices of health care and prevention systems, and the contributions of individual genetic predispositions to disease. These three areas interact to

create healthy outcomes, including a long, disease-free and robust life unaffected by race, gender or socio-economic status.

- Personal behaviors include the everyday decisions that affect personal health. They include habits and practices developed as individuals and families that have an effect on personal health and the utilization of health resources.
- Community environment reflects the reality that the daily living conditions have a great effect on achieving optimal individual health.
- Health policies are indicative of the availability of resources and the extent of reach of public health programs into the general population.

Figure 1  
Health Outcomes Model\*



\*From America's State Health Rankings 2004 (UHF, 2004)

These elements influence each other and the resulting health outcomes of a population. Health status indicators measure the burden that disease and death places on the overall health of a population. When the focus is on the measure of health status, whether viewed generically or with a focus on a particular disease, the challenge of that measurement is demanding because of the difficulty in determining specifically what aspects of health should be a responsibility of primary care services (Starfield, 1998). Guidance in the selection of measures to evaluate the impact of primary care at the population level comes from four compendia, each resulting from extensive work by panels of national experts in the United States. The works include: the National Center for Health Statistics (Year 2000 National Objectives), the U.S. Centers for Communicable Disease (from Healthy People 2000) and the Bureau of Primary Care. Of the indicators proposed in the four compendia, no more than nine were proposed in all four and nine others were proposed in three of the compendia. These indicators are listed in Table 5.

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Table 5  
Health Status Indicators Common to Most United States National Compendia

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Percent of the adult population who smoke  
 Percentage of adults who are overweight  
 Appropriate immunization status in childhood and over age 65 years  
 Total mortality rates  
 Rate of mortality from cardiovascular disease  
 Rate of mortality from lung cancer  
 Rate of mortality from breast cancer  
 Rate of mortality from motor vehicle accidents  
 Rate of mortality from suicide  
 Rate of mortality from homicide  
 Infant mortality rate  
 Acquired immunodeficiency syndrome incidence  
 Syphilis incidence  
 Tuberculosis incidence  
 Measles incidence

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Table 5, Continued

Health Status Indicators Common to Most United States National Compendia

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Percentage of the population living in counties not meeting standards for good air quality

Percentage of deliveries with no prenatal care in the first trimester

Percent of births to teenagers

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From "Primary Care" Starfield, 1998, p. 306

A primary care-focused compendium was proposed by the Bureau of Primary Health Care in the U.S. Department of Health and Human Services which considered a variety of ways to evaluate primary care in the facilities under its jurisdiction. Most of the indicators listed above were included in the list of indicators for evaluating primary care at population levels. The Bureau of Primary Care added four other indicators that were particularly sensitive for measuring primary care -- hospitalizations for ambulatory-sensitive conditions, unwanted pregnancies, low incidence of adverse effects of medications, and low post-neonatal mortality. Selected indicators are used by the Florida Department of Health as performance measures and will appear in this study to measure health outcomes.

### Summary

This chapter provided a comprehensive literature review of privatization in state and local governments. Economic theories that provide the framework for privatization were also presented. Examples of privatization initiatives showed that privatization successes vary across government activities. The chapter also presented privatization trends in the public health system in Florida and across the nation. Researchers agree that privatization is widespread and will continue for the foreseeable future. The chapter concluded with an examination of the dimensions that will be used to study privatization

in this dissertation. The next chapter, entitled, “The Research Design,” explains in detail the study population, research methodology and data for this study.

## THE RESEARCH DESIGN

### Overview

This chapter provides the research methodology for the study. This study builds on a 2000 review of the county health department in Florida. In the 2000 survey of county health departments, five of the nine largest health departments privatized primary care programs. This study assesses the impact of privatization along three domains of effect measurement – cost, access to care and health outcomes. The study approach for the three research hypotheses are explained in detail. The data sources and collection procedures are also discussed in addition to the dependent and independent variables. The methodology is divided into three sections corresponding with each measurement domain for clarity.

### Cost Data Sources and Variables

This study is a retrospective, longitudinal population-based analysis to examine the cost of privatized primary care programs versus the cost of primary care programs provided by the county health departments. Secondary data sources were obtained from the Florida Department of Health. The data were extracted from the Contract Management System Variance Report. The Contract Management System Variance Report lists program components for Communicable Disease, Primary Care and Environmental Health. Within the primary care component, there are twelve programs -- chronic disease prevention, tobacco, home health, WIC, family planning, maternal health,



healthy start prenatal, comprehensive child health, healthy start infants, school health, comprehensive adult health, and dental health. The programs included in this study are clinically based programs and include family planning, maternal health, healthy start prenatal and infants, and comprehensive child and adult health.

Program	Description
Chronic Disease Prevention	Provides a range of services to prevent, detect, and reduce complications from chronic diseases including: heart disease, stroke, diabetes and arthritis.
Comprehensive Adult Health	Makes available a range of basic medical care services and treatments that ensure access to essential health care and decrease unnecessary emergency room visits.
Comprehensive Child Health	Provides periodic physical examinations for infants and children who are about to enter school or pre-school. Health and vision tests are also administered in kindergarten and first grade.
Healthy Start Infants/ Healthy Start Prenatal/ Maternal Health IPO	Provides universal risk screening for pregnant women and infants to identify those at risk for poor health and developmental outcomes such as low birth-weight. Healthy start services include care coordination to assure access to needed services as well as the provision of services such as childbirth education.
Family Planning	Provides counseling, medical services, referral and follow-up that will help individuals plan their family size.

Multiple analyses were conducted with the variables in this part of the study. They include: 1) a descriptive analysis to provide information on the average cost, number of clients and number of services provided; 2) a correlational analysis to determine the relationship between the variables of interest; 3) a mixed model analysis to test the hypothesis; and 4) generalized estimating equations analysis to assess findings for spuriousness. Spuriousness is the bias that arises from correlations between individual and cluster-level variables. With clustered observational data, spuriousness is nearly

always a serious concern (Allison, 1999). GEE produces estimates that have less sampling variability than the mixed model. The mixed model however corrects for heterogeneity shrinkage -- attenuation toward 0 in the presence of heterogeneity in the population. Both the mixed model and GEE are used in this study to provide greater insight into the data.

The descriptive analysis of the study variables provides the mean number of clients, services, and expenditures per program. The average cost per client was calculated by dividing the reported expenditures by the number of clients served. The average cost per service for each program was determined by dividing the reported expenditures by the number of services reported. The Variance Reports for years 2001 – 2004 were used to calculate the average cost per client for four years. The descriptive data analysis was conducted using Statistical Application Software (SAS 9.0), version 9.0. Since this data is longitudinal, all observations are not independent. Repeated measures occur on the same data over time. In addition, there is likely correlation among programs within counties. Pearson correlations were used to measure the relationship between the variables of interest. A bi-variate analysis was conducted with PROC CORR using SAS 9.0 version 9. In general, moderate to strong correlations between variables may cause confounding in a regression analysis. The mixed model and GEE adjusts for correlations found with clustered data or repeated measures.

Cost was used as the dependent variable in the test of the hypothesis. Cost is the actual expenditure per program for each county for fiscal years 2001 through 2004 as reported on the Contract Management System Variance Report. The independent variables used in the cost analysis included: unduplicated number of clients or units, the

number of services performed, privatization status, the fiscal year, and the program. These variables, except for privatization status, appear on the Contract Management System Variance Report and were selected as control variables to account for some of the variation of the dependent variable.

Dependent Variable	Independent Variables
Cost (Expenditure)	Number of Clients, Number of Services Performed, Program, Privatization Status (Non-privatized = 0) (Privatized = 1), Year (2000 - 2004)

This analysis tests the following hypothesis:

Contracting primary care to private providers reduces the costs of providing services when compared to providing these services within the county health department.

The analysis was conducted using cost as a dependent variable to determine if there was a difference in cost between privatized programs and non-privatized programs. The data were analyzed using a mixed model repeated measures design. The term repeated measures refers to data sets with multiple measurements of a response variable on the same experimental unit. In this case the variable is time. There are three types of statistical analyses used for repeated measures. The method used in this analysis applies methods based on the mixed model with special parametric structure on the covariance matrices. The autoregressive order one was specified as the covariance matrix to account for correlation between programs.

In order to reduce the possibility of error due to model sensitivity, a second analysis was conducted using generalized estimating equations (GEE). According to

Allison (1999), both GEE and the mixed model can be used to analyze clustered data; however, GEE reduces the possibility of spurious findings. Therefore, a GEE analysis was also conducted to determine if there is a difference among the privatized counties versus the non-privatized counties with regard to clients, services, or expenditures.

GEE is used instead of the ordinary logit analysis for the following reason: In ordinary logit analysis, the maximum likelihood estimates are obtained by iteratively re-weighted least squares. In the GEE analysis, the algorithm used is generalized least squares. This means that the weight matrix has non-zero off-diagonal elements that are functions of the correlations among observations. These correlations are re-estimated at each iteration based on correlations among the Pearson residuals (Allison, 1999).

#### Access Data Sources and Variables

The status of primary care access is unique to each specific geographic area. This analysis uses zip codes as the area for analysis. The methodology for analyzing primary care access uses a scoring system which assigns a numerical score to each zip code. This score represents the relative capacity to provide basic primary care services within the area. This method of assessing the capacity of primary access is based on the model developed by Fos and Zuniga (1999) through a cooperative agreement from the Bureau of Primary Care. This study used three major categories of model variables: demographics and population characteristics, socioeconomics, and primary care resources. These variables and their effect on primary care are listed in Table 8. All variables used in the study are routinely collected and were readily available from state and federal agencies. The data source for each variable is listed in Table 9.

Variables which describe demographics and population characteristics include age, gender, and race. These percentages were calculated from population tables from the 2000 Census. The socioeconomic condition in each zip code affects the specific need for primary care services and the demand on the delivery system. The selected variables include percent unemployment and percent of the population below poverty level. The data were collected from the U.S. Census Bureau's American Fact Finder Quick Reports.

Table 8  
Access Model Variables

	Variable	Effect on Primary Care
A	Demographics and population characteristics	
	1. Percent population over 65 years of age	Negative
	2. Percent population under 15 years of age	Negative
	3. Percent blacks in the population	Negative
	4. Percent females in population	Negative
B	Socio-economics	
	1. Percent unemployment	Negative
	2. Percent of population below poverty level	Negative
C	Primary Care Resources	
	1. Family practice physician / population	Positive
	2. General practice physician / population	Positive
	3. Obstetrics-gynecology physician / population	Positive
	4. Internal medicine physician / population	Positive
	5. Pediatric physician / population	Positive
	6. Number of hospitals with emergency departments	Positive
	7. Number of community care centers	Positive

The availability of health care resources directly affects primary care access. Intuitively, the more available resources, the better the capability to provide basic primary care services. The physician variables were collected from the American Medical Association's database of all the licensed physicians in the United States. The hospital variable was collected from the American Hospital Association's database. Only

hospitals that offered emergency room services were included in this study. The final primary care resource variable, community care centers, was collected from the Florida Association of Community Care Centers and the Bureau of Primary Health Care.

Table 9  
Data Sources for Access Variables

Variable	Data Sources
Demographics and population characteristics	U.S. Census Bureau
1. Percent population over 65 years of age	Census 2000
2. Percent population under 15 years of age	Summary File 1 and
3. Percent blacks in the population	Summary File 3
4. Percent females in population	
Socio-economics	U.S. Census Bureau
1. Percent unemployment	American Fact Finder
2. Percent of population below poverty level	Quick Reports
Primary Care Resources	
1. Family practice physician / population	AMA Physician Select
2. General practice physician / population	(American Medical
3. Obstetrics-gynecology physician / population	Association)
4. Internal medicine physician / population	
5. Pediatric physician / population	
6. Number of hospitals with emergency departments	AHA Find a Hospital
7. Number of community care centers	FACCC/ BPHC (HRSA)

After the data were gathered from each source, variable-specific primary access scores were calculated for each variable. The variable-specific score was determined as follows:

$$\text{Variable-specific Score} = \frac{\text{zip code percentage}}{\text{total zip code average}} \times 10$$

Ratios of zip code and total zip code values were multiplied by 10 to avoid very small numbers. This process was repeated for every variable in each zip code.

Subsequently, model weights were assigned to each of the access variables. These weights appear in a study by Fos and Zuniga and were calculated using numerical estimation techniques. In numerical estimation, variables are rated according to their

importance in relation to the other variables on the outcome measure. In the Fos and Zuniga study, the importance of primary care access was estimated by a panel of experts. The experts used in the estimation were part of a primary care advisory council composed of forty-one physicians, health care planners, public health personnel, and citizen advocates. The assigned variable weights are listed in Table 10.

Variable	Weights
Percent unemployment	0.065251
Percent of population below poverty level	0.061036
Family practice physician / population	0.042514
Number of community care centers	0.040816
Obstetrics-gynecology physician / population	0.032610
Pediatric physician / population	0.023333
General practice physician / population	0.019917
Internal medicine physician / population	0.014757
Percent blacks in the population	0.012931
Percent population under 15 years of age	0.009275
Number of hospitals with emergency departments	0.009106
Percent population over 65 years of age	0.007263
Percent females in population	0.007218

After the variable specific scores were determined, the primary care access score for each zip code was calculated. The model for calculating the access score is an additive model and is represented as follows:

$$\text{Primary care access score} = \sum_{i=1}^n w_i v_i,$$

where  $w_i$  = each individual variable weight and  $v_i$  = each variable specific score. The model in its extended form appears as follows:

$$\text{Primary care access score} = w_1 v_1 + w_2 v_2 + w_3 v_3 + \dots + w_{13} v_{13}.$$

The individual weighted scores are added together to determine the primary care access score for each zip code. The weight of variables which have a negative effect on

primary care access decrease the capability to provide services while the variables that have a beneficial effect on primary care access increases the capability to provide services. Once primary care access scores were determined for each zip code, these scores were used in the access analysis. The analysis was conducted using a regression analysis to determine if there is a difference in access scores among the privatized counties versus the non-privatized counties. The model for this analysis was:

$$\text{Access Score} = \beta (\text{Privatization Status})$$

The independent variable, privatization status, was coded as 0 for non-privatized counties and 1 for privatized counties. Again, the generalized estimating equations (GEE) procedure is used because the zip codes are clustered by county. It is assumed that there will be some correlation between zip codes within the same county. The analysis tests the following hypothesis:

In counties where primary care programs have been privatized, potential access to primary care services will be significantly greater than in non-privatized areas.

#### Health Outcomes Data Sources and Variables

The final analysis is a retrospective, longitudinal population-based study to examine the health status of populations in areas with contracted primary care versus the health status of those in areas where primary care programs are provided by the county health departments. Data were obtained from the United Census and the Florida Department of Health. The analysis included three years of data from 2001 through 2003. The demographic and population variables: the percentage of Blacks and Hispanics in the population. The percentages for years 2001 through 2003 were calculated from the



population estimates from the American Community Survey. The American Community Survey is a part of the Census reengineering plan to produce more accurate data by surveying 3 million U.S. households each year to calculate demographic changes for the year. The percent of the population under 18 and the unemployment rate were extracted from the American Fact Finder Quick Reports.

Table 11  
Variables and Data Sources for Outcomes Analysis

Variable	Data Sources
Demographics and population characteristics	U.S. Census Bureau
1. Percent Blacks in the population	American Community Survey (2001 – 2003)
2. Percent Hispanics in the population	American Fact Finder Quick Reports
3. Percent population under 18 years of age	American Fact Finder Quick Reports
Socio-economics	American Fact Finder Quick Reports
1. Percent unemployment	American Fact Finder Quick Reports
Primary Care Specific Population Indicators	Florida CHARTS*
1. Infant mortality rate	
2. Neonatal mortality rate	
3. Post-neonatal mortality rate	
4. Non-white infant mortality rate	
5. Births to mothers 15-19 yrs	
6. Low birth weight births	
7. No prenatal care in the first trimester	

Note: CHARTS is the abbreviation for Community Health Assessment Resource Tool Set

The primary care specific indicators were selected from the Florida Department of Health's Strategic Plan. An earlier section of the dissertation listed the health status indicators that are specific for primary care. These indicators are widely available from state and federal sources; however, the health outcomes in this study were limited to the indicators used by the Department of Health to evaluate their performance. Primarily indicators linked to the primary care programs used in the cost analysis were included. These indicators are listed in Table 11. The data were extracted from Florida Community

Health Assessment Resource Tool Set (CHARTS). CHARTS is a public health data website that contains a wide variety of health statistics for Florida such as live births, deaths, hospitalizations, in addition to population statistics and community health status information.

The analysis of the data was conducted using a mixed model with repeated measures. As stated in a previous analysis, a mixed model adjusts for correlations found with clustered data or repeated measures. The following hypothesis was analyzed:

In counties where primary care programs have been privatized, health outcomes on primary care sensitive indicators (i.e. post neonatal mortality) will be significantly better when compared to non-privatized areas.

The unit of analysis was county level. The dependent variables are primary care sensitive indicators used by the Florida Department of Health as performance measures. Equations were developed using the health status indicators as independent variables. The independent variables were percent Black and Hispanic in the population, percent below poverty level, under 18 years of age, and year. Privatization status (coded as 0 and 1) was also an independent variable. A test of effects is used to determine whether outcome measures differ significantly based on their privatization status.

Table 12  
Health Status Models Using Primary Care Specific Indicators

Outcome Measure	Random Effects	Fixed Effect
Infant Mortality Rate	%Black, %Hispanic % Below Poverty, Under 18, Year	Privatization Status (Non-privatized = 0) (Privatized = 1)
Non-white Infant Mortality	%Black, %Hispanic % Below Poverty, Under 18, Year	Privatization Status (Non-privatized = 0) (Privatized = 1)

Outcome Measure	Random Effects	Fixed Effect
Neonatal Mortality	%Black, %Hispanic % Below Poverty, Under 18, Year	Privatization Status (Non-privatized = 0) (Privatized = 1)
Post-neonatal Mortality	%Black, %Hispanic % Below Poverty, Under 18, Year	Privatization Status (Non-privatized = 0) (Privatized = 1)
Births to Mothers 15 – 19 years	%Black, %Hispanic % Below Poverty, Under 18, Year	Privatization Status (Non-privatized = 0) (Privatized = 1)
Low Birth Weight	%Black, %Hispanic % Below Poverty, Under 18, Year	Privatization Status (Non-privatized = 0) (Privatized = 1)
No Prenatal Care in the First Trimester	%Black, %Hispanic % Below Poverty, Under 18, Year	Privatization Status (Non-privatized = 0) (Privatized = 1)

### Summary

This chapter provided an explanation of the concepts and applications of the research methodology. For clarity each dimension (cost, access, and health outcomes) was presented separately. The definitions and treatment of study variables was explained as well as the selection of specific analytic techniques used to address the research questions. The next chapter entitled ‘The Results’ presents the findings of this study.

## THE RESULTS

### Overview

This chapter summarizes the results of the data analysis conducted for this study. The analysis was conducted in phases to answer the three research questions. In the first phase, the descriptive statistics and analysis was conducted to answer the research question addressing the cost of privatization. In the second phase, primary care access scores were compiled and the analysis was conducted to answer the second research question. In the third phase, the descriptive statistics and analysis was conducted to answer the third research question. To maintain consistency and for ease of review, the analysis is presented in three segments.

### Results of Cost Analyses

This study was a retrospective, longitudinal population-based analysis to examine the cost of privatized primary care programs versus the cost of primary care programs provided by the county health departments. Table 13 gives the descriptive statistics for the number of clients, services, and expenditures in the nine counties for the fiscal years 2001 through 2004. Seven primary care programs were analyzed for each county for the four years. The total number of observations (programs) was 236. Total number of clients reported through the Contract Management Variance System was 944, 214. The actual number of clients may be slightly elevated. Each client was counted only once per year; however, this analysis combined four years of data. The total number of services

reported was 7,866,762 and the total expenditures reported was \$378,473,155. There was no missing data.

Table 13  
Descriptive Statistics for Primary Care Cost Analysis

Variables	Total for All Counties	Mean	Average Cost
Clients	944,214	4001	\$400.83
Services	7,866,762	33,334	\$48.11
Expenditures (Reported)	378,473,155	1,603,700	-

Note: n = 236 for all variables.

Pearson correlations were used to measure the relationship between variables. The bivariate analysis was conducted with PROC CORR using SAS 9.0 version 9. There was a moderate correlation (.68) between expenditures and services and also a moderate correlation (.56) between expenditures and clients. However, there was a low correlation (.38) between clients and services. This analysis is important in that a moderate to strong correlation between clients and services may cause confounding in a regression analysis.

Table 14 reports the results of the mixed model for repeated measures analysis using cost as the dependent variable. The analysis was conducted using PROC GENMOD in SAS 9.0. The covariance matrix was specified as autoregressive order one to account for correlation between programs. This analysis determined if there was a difference in cost between privatized programs and non-privatized programs.

The results of the analysis shows a significant effect for clients ( $p < .0001$ ) and services ( $p < .0001$ ) on the cost of services. This result is expected. The findings also show that privatize and non-privatized programs did not have a significant effect on the cost of services ( $p = 0.38$ ). Privatization status was coded as a categorical variable

(Privatized = 1, Non-privatized = 0), thus the model shows results for each level. Year, coded as a continuous variable in the table shown, was not significant. Year was originally coded as a categorical variable. None of the years were significant. In the final analysis, year was coded as a continuous variable because consecutive years were used in the analysis. Also, coding the variable as continuous reduced the standard errors of other variables in the model.

Table 14  
Cost Analysis Parameter Estimates for Mixed Model with Repeated Measures

Effect	B	SE	T	<i>p</i>
Clients	42.90	9.03	4.75	< .0001
Services	23.48	1.93	12.17	< .0001
Privatized Programs	-5.59E7	6.29E7	-0.89	0.377
Non-privatized Programs	-5.60E7	6.29E7	-0.89	0.378

Note: Model  $R^2 = 0.57$

A second analysis was conducted using generalized estimating equations (GEE) to establish if there is a difference among privatized counties versus non-privatized counties with regard to clients, services, or expenditures. The analysis was conducted using the PROC GENMOD procedure in SAS version 9.0. Although the previous analysis examined the effect of each variable on cost, the purpose of this analysis is to determine if the effect shown for clients and services is based on privatization status.

Table 15 shows the chi square results reported in the logistic regression and the z-scores as reported by the GEE analysis. As stated in the previous section, in PROC GENMOD, GEE estimation is used with a repeated statement because the data is clustered by counties. In addition, the data is longitudinal and correlated. The covariance structure selected for this analysis is autoregressive one because there is

greater correlation between programs within counties and also a greater correlation between years that are closer in time.

Table 15  
Chi-Square and Z-Statistics Comparison for GEE Analysis

Variable	Standard Estimates		GEE Estimates	
	$\chi^2$	<i>p</i> -value	<i>z</i>	<i>p</i> -value
Clients	0.01	0.91	0.33	0.07
Services	0.42	0.52	1.76	0.88
Expenditures	0.23	0.63	0.15	0.24
Year 2001	0.00	0.95	-1.18	0.55
Year 2002	0.00	0.96	0.60	0.32
Year 2003	0.00	0.98	0.99	0.29
Year 2004	-	-	-	-

Note: N=236

Table 15 shows the results of the analysis. The first column shows the results of a standard logistic analysis of the data using privatization as the dependent variable with a binomial distribution and a logit link function. There were 236 observations used in the analysis and there was no missing data. The analysis shows that the effect shown for clients ( $\chi^2 = 0.01$ ,  $p=0.91$ ) is not significant in this analysis. This shows that effects of clients and services on cost are not a result of the privatization status of the program. There is however, an alternative explanation for the finding. The previous finding may occurred from bias that arising from correlations between individual and cluster-level variables. The table also reveals that year is not significant. As in the first analysis, year was coded as a continuous and then as a categorical variable. The variable was not significant in either case however, in Table 15, year was retained as a categorical variable because it reduced the standard errors of other variables in the model. Table 15 also reports the results of the GEE analysis. As in the standard logit analysis, none of the

variables are significant, although the z-statistic is larger and the p-value is smaller when the correlation between variables is included.

### Results of Access Analyses

The analysis to determine the potential access (availability) of primary care services was based on a primary care access model developed by Fos and Zuniga. The calculation of primary care access scores is discussed in detail in the previous section of this dissertation. As expected, the distribution of the primary care access scores varied across the nine counties. Because of the amount of data generated by this process, the primary care access scores are presented as Appendix A in this document. The variable specific scores used measure each zip code by a single indicator and also to compile primary care access scores are presented as Appendix B. Descriptive statistics were tabulated for each zip code. Information is available on demographics, socioeconomics, and physician resources. This information is presented in Appendix C.

Once primary care access scores were determined for each zip code, these scores were used in the access analysis. The analysis used a simple logistic regression to determine if there is a difference in access scores between the privatized counties and the non-privatized counties. The data were evaluated using the PROC GENMOD procedure in SAS 9.0. Table 16 provides the results of this analysis.



Table 16  
GEE Analysis for Primary Care Access Scores

Parameter	Initial Parameter Estimates				GEE Parameter Estimates			
	B	SE	$\chi^2$	<i>p</i>	B	SE	<i>z</i>	<i>p</i>
Intercept	-0.840	0.123	46.37	.0001	-0.840	0.134	-6.3	.0001
Privatization Status	0.336	0.153	4.84	0.028	0.336	0.198	1.7	0.090

Note: N = 420

Access score was evaluated as the dependent variable with a normal distribution and an identity link function. There were 420 observations used in the analysis and there was no missing data. The GENMOD Procedure reports the standard analysis of parameter estimates first and then the GEE parameter estimates. The standard analysis assumes that all observations are independent and the effect shown for primary care access score ( $\chi^2 = 4.84, p=.03$ ) is significant. However, the zip codes are clustered by county therefore the observations are not independent. The GEE analysis accounts for this correlation. Using an autoregressive one correlation structure, the effect for privatization is not significant ( $z = 1.70, p=.09$ ). The result suggests that there is no difference in the primary care access scores between privatized counties and non-privatized counties.

#### Results of Health Outcomes Analyses

This analysis used retrospective, longitudinal population-based data to examine the health status of populations in areas with contracted primary care versus the health status of those in areas where primary care programs are provided by the county health departments. The analysis was conducted using a series of mixed models to compare

rates for the selected outcome measures. In each model the health status indicator (i.e. post neonatal mortality) was treated as the dependent variable.

Table 17 presents the results of the mixed model analysis. The table represents a side by side comparison of privatization status as a fixed effect. An effect is fixed if the levels in the study represent all possible levels of the factor, or at least all the levels about which inference is made.

Health Status Indicator	Non-privatized Counties		Privatized Counties	
	T	p-value	T	p-value
Infant Mortality	-0.73	0.47	-0.64	0.53
Neonatal Mortality	-0.06	0.95	-0.17	0.87
Post-neonatal Mortality	-0.63	0.53	-0.74	0.47
Non-white Infant Mortality	-1.86	0.08	-1.85	0.08
Births to Mothers 15 – 19 years	-0.43	0.67	-0.67	0.50
Low Birth Weight	1.53	0.14	1.87	0.08
No Pre-natal Care during First Trimester	1.65	0.11	1.90	0.07

The other effects in the mixed model were random effects which represent a random sample of a larger set of potential levels that affects the outcome measure; however, they were not of particular interest in this analysis so the results will not be discussed here.

Table 17 shows that privatization status did not have a significant effect on any of the health status indicators selected for this study. The p-value was greater than .05 for all indicators for both privatized and non-privatized counties. As mentioned in the previous section, these indicators were selected for their sensitivity in measuring good primary care. Also the majority of these indicators are used by the Department of Health as

performance measures. These results show that privatization status had no effect on health status.

### Summary

This chapter presented the results of this study in three segments. In the first segment, a descriptive analysis, a mixed model and GEE analysis was conducted to test the hypothesis that primary care services costs less in privatized counties. In the second segment, primary care access scores were compiled and a GEE analysis was conducted to test the hypothesis that potential access (availability) is greater in privatized counties. The third segment provided the results of a series of mixed models which were used to test whether the health outcomes were better in the populations with privatized primary care programs than in counties with non-privatized programs. The final chapter presents a discussion of these results as well as an overall summary of the conclusions and recommendations of this study.

## THE CONCLUSIONS AND RECOMMENDATIONS

### Discussion and Conclusions

The results of this study provides empirical evidence that privatization of primary care programs does not result in cost savings or offer significant differences in health outcomes when compared to non-privatized care. The analysis also revealed that potential access to care did not differ significantly in privatized and non-privatized counties. These findings do not support economic theories that privatization results in cost savings and improved services. The explanations for these findings are complex. A few reasons will be proposed here however, they are not all inclusive. Again, for clarity, the discussion will examine each dimension separately.

### Impact of Privatization on Cost

The desire to save money is frequently mentioned by government officials as the rationale for privatizing government services (Keene, et al, 2002). However, the results of this study indicate that privatization of health care services does not automatically result in a reduction in cost. In a 2001 study, Keane, Marx and Ricci stated that one in ten health department directors reported increased costs, decreased revenue, or a loss of efficiency due to privatization. In previous research, increases in cost were the result of increased levels of administration associated with contracting out services. Although in a few cases, private providers actually did cost more. Public health physicians and nurses are likely to be paid less than similar employees in the private sector. Higher wages

among private sector doctors and nurses may create the incentive for private contractors to use less skilled employees to reduce costs.

In addition to cost, this study also examined the number of services and the number of clients as part of the analysis. The significant findings on clients and services in the mixed model analysis can be attributed to the differences in the number provided over the four year period. While cost savings are a prominent reason for privatization, public health officials should also focus on quality of services and health outcomes.

### Impact of Privatization on Access

Adequate access to primary care services is achieved when all community residents are able to use health care services according to their specific needs. Access is not possible if primary care providers, facilities, and supporting health care infrastructure are not in place. Even when essential primary care services are available, they might not be accessible. Barriers to access include language and culture, geography, weather, and the lack of affordable public transportation and medical transportation services.

This dimension of the analysis examined the variation of primary care access scores within each zip code across the nine counties. Although the logistic regression analysis revealed that privatization did not have a significant effect on primary care access scores between privatized and non-privatized areas, there were large variations within counties. Examination of zip code level access scores within each county is also important. The greatest variation of scores (-3.96 to 5.19) occurred within Duval county. Pinellas county has the least amount of variation within the county (-2.54 to 1.53), although they also had lower primary care access scores than other counties. Examining

potential access across areas is important in order to establish where improvement is needed.

During the past few years, the health care system has experienced significant changes in service delivery methods. These changes have caused increasing levels of stress on the system especially with regard to primary care. Rural and inner city areas are at greatest risk for negative impacts. Population characteristics, including age, gender, race, and socio-economic status were calculated for each zip code area (See Appendix C). These population characteristics along with primary care resources were used to develop variable specific scores. The variable specific score can be used to compare areas on individual items such as poverty or unemployment (See Appendix B).

In summary, the scores found in Appendix B and C can be used for many purposes. The information derived can be used to (1) identify areas that are at greatest risk (2) establish which areas should be targeted for improvement, and (3) evaluate the allocation of primary care resources.

### Impact of Privatization on Health Outcomes

The third analysis examined health status of the populations within privatized and non-privatized counties. The indicators for this analysis were selected based on the performance measures used by the Florida Department of Health. Privatization status did not have a significant effect on the outcomes measures selected for this study. As previously mentioned, only the indicators which were related to primary care were selected for analysis. These indicators centered heavily on maternal and child health. This area is one in which the Department has focused attention for the last decade. As a

result, infant mortality has been significantly reduced. Publicly provided maternal and child health programs have been available since the 1930's. With regard to these types of services, there may be an advantage for providing in-house services.

### Implications and Recommendations

Privatization proponents speak of the advantages of using the competitive forces of the marketplace to control costs. This is consistent with economic theories such as market theory and public choice theory. However, several previous studies suggest that privatization in social services, i.e. primary care programs, take place for political reasons (Van Slyke, 2003; Savas, 1987; Halverson, et al, 1998). Politically, privatization symbolizes smaller government, more efficiency, and cooperation with private markets. However, shrinking government may compromise public health managers' ability to provide sufficient oversight to prevent fraud, waste, and abuse.

Competition, capacity, politics, and defined outcomes have a significant effect on the quality of services and also how contracts are managed. It affects the level of funding and staffing allocated to public health programs. These resources are critical to providing services and ensuring service quality and accountability when contracting. If a smaller, more results-oriented government is what citizens and elected officials desire, then simply contracting out services without rigorous requirements will not meet anyone's expectations. Evaluation of all dimensions of privatization are necessary if there is to be movement toward equitable allocation of finite resources and support from citizens and government officials.

## Summary

This chapter brings this dissertation to a close by discussing the findings and summarizing the conclusions and recommendations from this study. Research questions on the effects of privatization on the cost of primary care services, access to primary care, and primary care specific health outcomes were answered. The answer to the first question was answered by the finding that there was no difference in cost between privately provided primary care when compared to care provided by the county health department. The second research question was answered by the finding that there was no difference in potential access to primary care services in privatized and non-privatized counties. And the final question on privatization was answered by the finding privatization status did not have a significant effect on health outcomes in privatized or non-privatized counties. The findings of this dissertation have relevance to government officials, particularly those in public health, as well as the citizens of Florida in determining the direction of publicly provided primary care in the state.



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## Appendices



Appendix A  
Primary Care Access Scores

Case	County	Zip Code	PC_Score	Privatized
1	Brevard	32754	-1.48	0
1	Brevard	32759	-1.26	0
1	Brevard	32775	-0.24	0
1	Brevard	32780	-0.79	0
1	Brevard	32796	-0.32	0
1	Brevard	32901	-1.08	0
1	Brevard	32903	1.34	0
1	Brevard	32904	-0.32	0
1	Brevard	32905	-0.53	0
1	Brevard	32907	-1.10	0
1	Brevard	32908	-1.17	0
1	Brevard	32909	-0.98	0
1	Brevard	32920	-1.11	0
1	Brevard	32922	-3.20	0
1	Brevard	32925	-1.11	0
1	Brevard	32926	-1.41	0
1	Brevard	32927	-1.08	0
1	Brevard	32931	0.84	0
1	Brevard	32934	-0.29	0
1	Brevard	32935	-0.72	0
1	Brevard	32937	-0.23	0
1	Brevard	32940	0.96	0
1	Brevard	32948	-1.52	0
1	Brevard	32949	-0.13	0
1	Brevard	32950	-0.29	0
1	Brevard	32951	0.14	0
1	Brevard	32952	-0.21	0
1	Brevard	32953	-0.94	0
1	Brevard	32955	0.14	0
1	Brevard	32976	-0.89	0
2	Broward	33004	-0.05	1
2	Broward	33009	-1.37	1
2	Broward	33019	0.52	1
2	Broward	33020	-2.04	1
2	Broward	33021	1.07	1

Appendix A, Continued  
Primary Care Access Scores

Case	County	Zip Code	PC_Score	Privatized
2	Broward	33023	-2.18	1
2	Broward	33024	-0.40	1
2	Broward	33025	-1.50	1
2	Broward	33026	0.22	1
2	Broward	33027	0.52	1
2	Broward	33028	0.25	1
2	Broward	33029	0.40	1
2	Broward	33060	-2.03	1
2	Broward	33062	0.17	1
2	Broward	33063	-0.56	1
2	Broward	33064	-0.99	1
2	Broward	33065	-0.68	1
2	Broward	33066	-0.07	1
2	Broward	33067	1.07	1
2	Broward	33068	-1.91	1
2	Broward	33069	-0.55	1
2	Broward	33071	-0.04	1
2	Broward	33073	0.25	1
2	Broward	33076	0.92	1
2	Broward	33301	0.17	1
2	Broward	33304	-1.75	1
2	Broward	33305	-0.37	1
2	Broward	33306	1.46	1
2	Broward	33308	2.12	1
2	Broward	33309	-1.86	1
2	Broward	33311	-3.66	1
2	Broward	33312	-1.42	1
2	Broward	33313	-2.52	1
2	Broward	33314	-1.48	1
2	Broward	33315	-1.13	1
2	Broward	33316	3.15	1
2	Broward	33317	0.25	1
2	Broward	33319	-1.52	1
2	Broward	33321	-0.47	1
2	Broward	33322	-0.70	1

Appendix A, Continued  
Primary Care Access Scores

Case	County	Zip Code	PC_Score	Privatized
2	Broward	33323	0.39	1
2	Broward	33324	0.88	1
2	Broward	33325	-0.59	1
2	Broward	33326	0.47	1
2	Broward	33327	1.77	1
2	Broward	33328	0.34	1
2	Broward	33330	0.47	1
2	Broward	33331	0.82	1
2	Broward	33332	4.93	1
2	Broward	33334	-1.85	1
2	Broward	33351	-1.19	1
2	Broward	33388	0.00	1
2	Broward	33394	0.00	1
2	Broward	33441	-1.47	1
2	Broward	33442	-0.65	1
3	Dade	33010	-2.30	1
3	Dade	33012	-0.69	1
3	Dade	33013	-0.82	1
3	Dade	33014	-0.73	1
3	Dade	33015	-1.41	1
3	Dade	33016	-0.49	1
3	Dade	33018	-1.45	1
3	Dade	33030	-2.33	1
3	Dade	33031	2.40	1
3	Dade	33032	-3.13	1
3	Dade	33033	-3.14	1
3	Dade	33034	-4.55	1
3	Dade	33035	-1.41	1
3	Dade	33054	-4.22	1
3	Dade	33055	-2.37	1
3	Dade	33056	-3.29	1
3	Dade	33109	-0.24	1
3	Dade	33122	0.00	1
3	Dade	33125	-2.01	1
3	Dade	33126	-1.49	1
3	Dade	33127	-4.29	1

Appendix A, Continued  
Primary Care Access Scores

Case	County	Zip	PC_Score	Privatized
		Code		
3	Dade	33128	-3.45	1
3	Dade	33129	0.72	1
3	Dade	33130	-2.49	1
3	Dade	33131	1.81	1
3	Dade	33132	-1.07	1
3	Dade	33133	1.65	1
3	Dade	33134	2.11	1
3	Dade	33135	-1.70	1
3	Dade	33136	-0.71	1
3	Dade	33137	-2.50	1
3	Dade	33138	-2.10	1
3	Dade	33139	-0.45	1
3	Dade	33140	3.19	1
3	Dade	33141	-1.93	1
3	Dade	33142	-3.87	1
3	Dade	33143	2.10	1
3	Dade	33144	-0.13	1
3	Dade	33145	-0.34	1
3	Dade	33146	2.96	1
3	Dade	33147	-4.53	1
3	Dade	33149	1.10	1
3	Dade	33150	-3.51	1
3	Dade	33154	1.10	1
3	Dade	33155	0.79	1
3	Dade	33156	1.64	1
3	Dade	33157	-1.15	1
3	Dade	33158	1.32	1
3	Dade	33160	-0.36	1
3	Dade	33161	-3.32	1
3	Dade	33162	-2.40	1
3	Dade	33165	0.18	1
3	Dade	33166	-0.35	1
3	Dade	33167	-3.74	1
3	Dade	33168	-3.69	1
3	Dade	33169	-2.78	1
3	Dade	33170	-3.58	1

Appendix A, Continued  
Primary Care Access Scores

Case	County	Zip	PC_Score	Privatized
		Code		
3	Dade	33172	-1.42	1
3	Dade	33173	1.49	1
3	Dade	33174	-0.46	1
3	Dade	33175	0.15	1
3	Dade	33176	1.33	1
3	Dade	33177	-1.25	1
3	Dade	33178	0.77	1
3	Dade	33179	-1.16	1
3	Dade	33180	2.77	1
3	Dade	33181	-1.21	1
3	Dade	33182	0.89	1
3	Dade	33183	-1.13	1
3	Dade	33184	-0.67	1
3	Dade	33185	0.53	1
3	Dade	33186	-0.43	1
3	Dade	33187	-0.54	1
3	Dade	33189	-1.80	1
3	Dade	33190	-2.07	1
3	Dade	33193	-1.81	1
3	Dade	33194	0.00	1
3	Dade	33196	-0.82	1
4	Duval	32009	-1.57	0
4	Duval	32073	0.08	0
4	Duval	32202	-1.16	0
4	Duval	32204	5.19	0
4	Duval	32205	-1.13	0
4	Duval	32206	-3.96	0
4	Duval	32207	0.49	0
4	Duval	32208	-2.58	0
4	Duval	32209	-2.39	0
4	Duval	32210	-1.17	0
4	Duval	32211	-1.92	0
4	Duval	32212	-1.73	0
4	Duval	32215	-1.21	0
4	Duval	32216	1.18	0
4	Duval	32217	-0.54	0

Appendix A, Continued  
Primary Care Access Scores

Case	County	Zip Code	PC_Score	Privatized
4	Duval	32218	-1.69	0
4	Duval	32219	-1.98	0
4	Duval	32220	-1.13	0
4	Duval	32221	-0.89	0
4	Duval	32222	-1.36	0
4	Duval	32223	0.42	0
4	Duval	32224	0.25	0
4	Duval	32225	-0.08	0
4	Duval	32226	-0.37	0
4	Duval	32227	-0.95	0
4	Duval	32233	-1.02	0
4	Duval	32234	-1.40	0
4	Duval	32244	-1.36	0
4	Duval	32246	-0.93	0
4	Duval	32250	0.51	0
4	Duval	32254	-2.70	0
4	Duval	32256	0.71	0
4	Duval	32257	0.17	0
4	Duval	32258	0.50	0
4	Duval	32259	0.23	0
4	Duval	32266	-0.06	0
4	Duval	32277	-1.06	0
5	Hillsbo	33510	-0.64	0
5	Hillsbo	33511	0.85	0
5	Hillsbo	33527	-2.08	0
5	Hillsbo	33534	-2.22	0
5	Hillsbo	33540	-1.05	0
5	Hillsbo	33547	0.42	0
5	Hillsbo	33549	-0.90	0
5	Hillsbo	33556	0.77	0
5	Hillsbo	33565	-1.05	0
5	Hillsbo	33566	-1.32	0
5	Hillsbo	33567	-1.48	0
5	Hillsbo	33569	-0.65	0
5	Hillsbo	33570	-1.36	0
5	Hillsbo	33572	-0.05	0

Appendix A, Continued  
Primary Care Access Scores

Case	County	Zip Code	PC_Score	Privatized
5	Hillsbo	33573	-0.07	0
5	Hillsbo	33584	-1.23	0
5	Hillsbo	33592	-1.56	0
5	Hillsbo	33594	-0.23	0
5	Hillsbo	33598	-2.71	0
5	Hillsbo	33602	-2.15	0
5	Hillsbo	33603	-2.44	0
5	Hillsbo	33604	-2.22	0
5	Hillsbo	33605	-3.31	0
5	Hillsbo	33606	2.55	0
5	Hillsbo	33607	1.84	0
5	Hillsbo	33609	1.55	0
5	Hillsbo	33610	-2.85	0
5	Hillsbo	33611	-0.34	0
5	Hillsbo	33612	-1.84	0
5	Hillsbo	33613	0.10	0
5	Hillsbo	33614	-0.58	0
5	Hillsbo	33615	-0.78	0
5	Hillsbo	33616	-1.93	0
5	Hillsbo	33617	-1.45	0
5	Hillsbo	33618	0.83	0
5	Hillsbo	33619	-2.01	0
5	Hillsbo	33620	-17.33	0
5	Hillsbo	33621	-1.16	0
5	Hillsbo	33624	-0.44	0
5	Hillsbo	33625	-0.67	0
5	Hillsbo	33626	2.72	0
5	Hillsbo	33629	1.04	0
5	Hillsbo	33634	-0.35	0
5	Hillsbo	33635	-0.44	0
5	Hillsbo	33637	-1.14	0
5	Hillsbo	33647	1.93	0
5	Hillsbo	33834	-2.00	0
5	Hillsbo	34221	-1.14	0
6	Orange	32703	-1.19	1
6	Orange	32709	-1.55	1

Appendix A, Continued  
Primary Care Access Scores

Case	County	Zip Code	PC_Score	Privatized
6	Orange	32712	-0.38	1
6	Orange	32751	0.61	1
6	Orange	32757	-0.73	1
6	Orange	32776	-0.60	1
6	Orange	32789	0.24	1
6	Orange	32792	0.00	1
6	Orange	32798	-0.70	1
6	Orange	32801	-1.53	1
6	Orange	32803	1.96	1
6	Orange	32804	1.78	1
6	Orange	32805	-3.50	1
6	Orange	32806	3.65	1
6	Orange	32807	-0.87	1
6	Orange	32808	-2.59	1
6	Orange	32809	-1.16	1
6	Orange	32810	-1.48	1
6	Orange	32811	-2.50	1
6	Orange	32812	-0.44	1
6	Orange	32817	-0.65	1
6	Orange	32818	-1.65	1
6	Orange	32819	1.07	1
6	Orange	32820	-1.77	1
6	Orange	32821	-0.31	1
6	Orange	32822	-1.28	1
6	Orange	32824	-0.82	1
6	Orange	32825	-0.86	1
6	Orange	32826	-1.37	1
6	Orange	32827	-0.92	1
6	Orange	32828	-0.21	1
6	Orange	32829	0.89	1
6	Orange	32831	-0.19	1
6	Orange	32832	0.68	1
6	Orange	32833	-1.71	1
6	Orange	32835	-0.07	1
6	Orange	32836	1.95	1
6	Orange	32837	-0.24	1



Appendix A, Continued  
Primary Care Access Scores

Case	County	Zip Code	PC_Score	Privatized
6	Orange	32839	-2.17	1
6	Orange	34734	-0.16	1
6	Orange	34747	3.96	1
6	Orange	34760	-1.40	1
6	Orange	34761	0.10	1
6	Orange	34786	3.59	1
6	Orange	34787	-1.01	1
7	PalmBe	33401	0.33	1
7	PalmBe	33403	0.50	1
7	PalmBe	33404	-2.58	1
7	PalmBe	33405	-0.79	1
7	PalmBe	33406	-0.37	1
7	PalmBe	33407	-1.44	1
7	PalmBe	33408	0.04	1
7	PalmBe	33409	-1.22	1
7	PalmBe	33410	0.72	1
7	PalmBe	33411	-0.24	1
7	PalmBe	33412	1.56	1
7	PalmBe	33413	-0.83	1
7	PalmBe	33414	1.94	1
7	PalmBe	33415	-1.59	1
7	PalmBe	33417	-1.51	1
7	PalmBe	33418	-1.12	1
7	PalmBe	33426	-0.17	1
7	PalmBe	33428	0.16	1
7	PalmBe	33430	-3.68	1
7	PalmBe	33431	-0.57	1
7	PalmBe	33432	0.79	1
7	PalmBe	33433	0.36	1
7	PalmBe	33434	1.04	1
7	PalmBe	33435	-1.00	1
7	PalmBe	33436	-0.16	1
7	PalmBe	33437	0.34	1
7	PalmBe	33438	-3.61	1
7	PalmBe	33440	-2.11	1
7	PalmBe	33444	-2.26	1

Appendix A, Continued  
Primary Care Access Scores

Case	County	Zip		PC_Score	Privatized
		Code			
7	PalmBe	33445		-0.59	1
7	PalmBe	33446		1.05	1
7	PalmBe	33458		0.49	1
7	PalmBe	33460		-1.61	1
7	PalmBe	33461		-1.46	1
7	PalmBe	33462		-0.69	1
7	PalmBe	33463		-1.07	1
7	PalmBe	33467		0.08	1
7	PalmBe	33469		0.28	1
7	PalmBe	33470		0.17	1
7	PalmBe	33476		-4.84	1
7	PalmBe	33477		0.28	1
7	PalmBe	33478		-0.49	1
7	PalmBe	33480		0.60	1
7	PalmBe	33483		0.28	1
7	PalmBe	33484		-0.17	1
7	PalmBe	33486		2.12	1
7	PalmBe	33487		1.12	1
7	PalmBe	33493		-3.98	1
7	PalmBe	33496		2.38	1
7	PalmBe	33498		0.71	1
8	Pinellas	33701		1.53	1
8	Pinellas	33702		-0.25	1
8	Pinellas	33703		-0.02	1
8	Pinellas	33704		0.46	1
8	Pinellas	33705		-1.86	1
8	Pinellas	33706		0.17	1
8	Pinellas	33707		-0.07	1
8	Pinellas	33708		-0.20	1
8	Pinellas	33709		-0.81	1
8	Pinellas	33710		0.64	1
8	Pinellas	33711		-2.54	1
8	Pinellas	33712		-2.47	1
8	Pinellas	33713		-0.91	1
8	Pinellas	33714		-1.39	1
8	Pinellas	33715		0.14	1

Appendix A, Continued  
Primary Care Access Scores

Case	County	Zip Code	PC_Score	Privatized
8	Pinellas	33716	-0.02	1
8	Pinellas	33755	-1.44	1
8	Pinellas	33756	1.50	1
8	Pinellas	33759	-1.31	1
8	Pinellas	33760	-1.23	1
8	Pinellas	33761	0.48	1
8	Pinellas	33762	0.79	1
8	Pinellas	33763	-0.26	1
8	Pinellas	33764	-0.37	1
8	Pinellas	33765	-0.59	1
8	Pinellas	33767	0.59	1
8	Pinellas	33770	0.12	1
8	Pinellas	33771	-0.31	1
8	Pinellas	33772	-0.46	1
8	Pinellas	33773	-0.45	1
8	Pinellas	33774	-0.65	1
8	Pinellas	33776	0.10	1
8	Pinellas	33777	-0.34	1
8	Pinellas	33778	-0.11	1
8	Pinellas	33781	-1.07	1
8	Pinellas	33782	-0.39	1
8	Pinellas	33785	-0.04	1
8	Pinellas	33786	1.40	1
8	Pinellas	34677	-0.54	1
8	Pinellas	34681	0.38	1
8	Pinellas	34683	-0.15	1
8	Pinellas	34684	0.34	1
8	Pinellas	34685	0.43	1
8	Pinellas	34689	-0.34	1
8	Pinellas	34695	0.10	1
8	Pinellas	34698	0.27	1
9	Polk	33547	0.66	0
9	Polk	33801	-1.75	0
9	Polk	33803	-0.55	0
9	Polk	33805	-0.60	0
9	Polk	33809	-1.01	0

Appendix A, Continued  
Primary Care Access Scores

Case	County	Zip Code	PC_Score	Privatized
9	Polk	33810	-1.01	0
9	Polk	33811	-0.98	0
9	Polk	33813	0.88	0
9	Polk	33815	-2.30	0
9	Polk	33823	-1.27	0
9	Polk	33825	-1.24	0
9	Polk	33827	-2.59	0
9	Polk	33830	-1.26	0
9	Polk	33835	-0.26	0
9	Polk	33837	-0.70	0
9	Polk	33838	-1.80	0
9	Polk	33839	-1.39	0
9	Polk	33841	-2.07	0
9	Polk	33843	-1.86	0
9	Polk	33844	-1.77	0
9	Polk	33847	-2.61	0
9	Polk	33849	-1.97	0
9	Polk	33850	-1.63	0
9	Polk	33851	-1.32	0
9	Polk	33853	-1.43	0
9	Polk	33860	-1.57	0
9	Polk	33868	-1.28	0
9	Polk	33877	-7.02	0
9	Polk	33880	-0.46	0
9	Polk	33881	-1.34	0
9	Polk	33884	0.28	0
9	Polk	34759	-0.67	0

\*Note: Privatized Coding (0 = Non-privatized, 1 = Privatized)

Appendix B  
Variable Specific Score by Zip Code

Case	County	Zip Code	Female	Black	Under 15	Over 65	Unempl	Poverty
1	Brevard	32754	9.97	7.01	10.46	11.37	8.31	9.81
1	Brevard	32759	9.72	7.18	8.12	15.94	5.82	8.65
1	Brevard	32775	9.89	0.67	10.82	7.56	0.00	0.00
1	Brevard	32780	10.36	6.80	9.02	15.39	7.76	8.02
1	Brevard	32796	10.27	7.26	10.52	12.82	9.97	9.28
1	Brevard	32901	10.26	13.63	7.49	18.94	13.30	14.45
1	Brevard	32903	10.02	0.46	8.23	15.59	4.71	4.32
1	Brevard	32904	10.51	0.84	7.36	19.64	8.31	4.43
1	Brevard	32905	10.32	8.30	8.88	15.05	8.03	12.87
1	Brevard	32907	10.16	7.45	11.97	9.53	8.03	5.80
1	Brevard	32908	10.13	5.96	13.81	6.13	8.86	4.96
1	Brevard	32909	10.05	7.18	12.48	6.58	10.80	5.38
1	Brevard	32920	9.50	0.94	4.75	16.23	8.59	9.49
1	Brevard	32922	10.38	24.26	11.91	9.66	14.96	27.53
1	Brevard	32925	9.18	13.18	18.15	0.29	9.42	4.01
1	Brevard	32926	10.08	8.95	10.52	9.74	7.76	9.18
1	Brevard	32927	9.22	5.50	11.44	6.33	7.76	5.70
1	Brevard	32931	9.86	0.39	5.04	22.53	6.65	3.69
1	Brevard	32934	10.19	2.12	10.50	11.42	5.54	4.75
1	Brevard	32935	10.20	2.93	9.00	11.60	6.37	7.38
1	Brevard	32937	10.22	1.26	8.83	15.09	6.09	3.06
1	Brevard	32940	10.40	1.64	8.72	19.06	5.26	2.95
1	Brevard	32948	8.47	4.12	13.55	4.67	13.30	19.51
1	Brevard	32949	10.16	0.64	6.06	13.62	0.00	17.72
1	Brevard	32950	9.77	3.10	9.44	9.79	3.05	5.80
1	Brevard	32951	9.99	0.14	6.64	19.95	3.88	1.69
1	Brevard	32952	10.04	0.57	9.14	13.64	6.93	4.96
1	Brevard	32953	10.23	5.61	9.56	12.55	9.42	8.65
1	Brevard	32955	10.35	8.31	9.70	12.06	5.82	4.22
1	Brevard	32976	10.58	0.20	2.64	39.32	4.43	5.06
2	Broward	33004	10.12	20.01	8.53	12.27	11.36	16.67
2	Broward	33009	10.60	10.97	6.18	23.01	9.70	15.40
2	Broward	33019	10.37	0.89	4.22	23.18	6.09	4.43
2	Broward	33020	9.94	15.41	9.60	9.19	12.74	18.99
2	Broward	33021	10.50	4.67	8.30	15.58	8.03	8.02

Appendix B, Continued  
Variable Specific Score by Zip Code

Case	County	Zip Code	Female	Black	Under 15	Over 65	Unempl	Poverty
2	Broward	33023	10.37	30.28	13.35	6.12	13.85	11.39
2	Broward	33024	10.31	6.59	11.78	7.48	8.31	8.12
2	Broward	33025	10.61	26.98	11.98	6.46	12.19	7.49
2	Broward	33026	10.71	4.68	10.86	9.56	7.48	2.85
2	Broward	33027	11.19	7.14	7.97	25.82	5.54	4.22
2	Broward	33028	10.25	8.90	14.25	2.83	7.20	3.27
2	Broward	33029	10.16	8.94	14.94	3.21	6.37	2.95
2	Broward	33060	9.95	24.70	11.11	9.31	12.19	18.35
2	Broward	33062	10.37	0.47	3.30	25.71	6.37	6.96
2	Broward	33063	10.60	5.84	8.54	15.55	6.09	5.91
2	Broward	33064	9.93	12.77	10.12	10.55	9.42	11.92
2	Broward	33065	10.30	8.94	12.67	6.21	9.97	10.76
2	Broward	33066	11.50	2.08	4.37	36.89	3.32	3.38
2	Broward	33067	10.10	3.14	14.01	3.00	7.20	3.59
2	Broward	33068	10.14	20.56	12.80	5.48	11.91	11.60
2	Broward	33069	10.10	20.65	6.28	19.32	8.31	12.45
2	Broward	33071	10.15	3.74	12.30	3.40	10.53	3.59
2	Broward	33073	9.95	5.01	11.34	5.83	7.48	5.91
2	Broward	33076	10.09	3.71	15.33	2.12	6.65	2.32
2	Broward	33301	7.85	8.67	4.41	8.42	6.65	6.65
2	Broward	33304	8.91	13.14	6.37	10.23	14.13	16.77
2	Broward	33305	8.65	3.62	6.06	10.21	7.20	8.76
2	Broward	33306	9.45	0.72	5.70	14.15	4.43	1.90
2	Broward	33308	10.26	0.58	4.48	22.07	5.26	4.43
2	Broward	33309	9.69	23.02	10.25	7.47	13.57	11.18
2	Broward	33311	10.38	54.53	13.86	7.03	17.45	29.01
2	Broward	33312	9.67	23.09	10.34	7.35	10.25	11.18
2	Broward	33313	10.71	45.57	13.02	8.07	15.24	19.51
2	Broward	33314	10.01	3.62	10.31	6.57	11.91	11.08
2	Broward	33315	9.52	4.73	7.33	8.58	7.48	9.92
2	Broward	33316	9.38	2.72	4.61	16.01	6.65	6.01
2	Broward	33317	10.17	13.47	10.90	9.03	9.42	5.91
2	Broward	33319	11.00	22.63	7.86	20.51	9.14	10.02
2	Broward	33321	10.98	4.95	5.94	26.56	6.37	5.06
2	Broward	33322	10.87	7.03	7.49	22.47	6.09	6.01

Appendix B, Continued  
Variable Specific Score by Zip Code

Case	County	Zip Code	Female	Black	Under 15	Over 65	Unempl	Poverty
2	Broward	33323	10.01	7.32	12.98	3.85	7.48	3.48
2	Broward	33324	10.55	4.50	8.85	10.76	6.37	4.11
2	Broward	33325	10.13	2.55	12.50	4.83	7.76	5.06
2	Broward	33326	10.32	2.16	13.09	6.15	6.93	5.91
2	Broward	33327	10.08	2.63	16.45	2.61	6.65	1.90
2	Broward	33328	10.23	1.41	11.28	6.52	6.09	4.01
2	Broward	33330	10.15	2.38	13.51	4.78	2.49	2.22
2	Broward	33331	10.11	3.09	14.73	3.41	4.43	2.00
2	Broward	33332	11.43	6.48	10.80	3.64	9.42	0.95
2	Broward	33334	9.42	8.27	9.78	7.77	11.63	18.88
2	Broward	33351	10.46	12.27	11.84	6.58	11.36	8.12
2	Broward	33388	0.00	0.00	0.00	0.00	0.00	0.00
2	Broward	33394	0.00	0.00	0.00	0.00	0.00	0.00
2	Broward	33441	10.19	18.24	8.84	12.38	9.70	13.29
2	Broward	33442	11.18	2.25	4.87	29.59	5.26	5.59
3	Dade	33010	9.98	1.30	9.02	13.54	14.40	23.42
3	Dade	33012	10.52	0.34	8.88	13.89	13.30	15.19
3	Dade	33013	10.13	0.21	8.20	13.75	11.63	13.82
3	Dade	33014	10.32	1.19	10.66	8.48	13.85	14.98
3	Dade	33015	10.39	11.12	12.36	4.64	13.30	9.49
3	Dade	33016	10.46	0.95	12.07	6.83	16.34	13.61
3	Dade	33018	10.23	0.55	12.68	5.34	12.47	9.18
3	Dade	33030	9.33	13.42	14.56	4.83	16.07	27.95
3	Dade	33031	9.80	0.85	10.26	6.85	8.31	5.06
3	Dade	33032	10.01	22.43	16.00	4.02	19.67	23.31
3	Dade	33033	10.00	11.89	15.53	5.05	20.50	24.05
3	Dade	33034	9.46	24.96	13.85	4.74	27.42	36.39
3	Dade	33035	10.67	6.53	10.80	9.45	11.36	5.49
3	Dade	33054	10.67	50.35	13.45	7.42	26.04	28.06
3	Dade	33055	10.24	25.47	12.38	6.36	16.90	13.82
3	Dade	33056	10.60	58.08	14.32	4.32	20.22	16.56
3	Dade	33109	9.87	2.15	7.32	10.50	0.00	0.00
3	Dade	33122	0.00	0.00	0.00	0.00	0.00	0.00
3	Dade	33125	10.09	1.29	9.33	13.54	14.96	22.36
3	Dade	33126	10.54	0.43	9.29	11.90	13.30	17.19
3	Dade	33127	10.05	41.62	13.21	7.71	25.48	36.18

Appendix B, Continued  
Variable Specific Score by Zip Code

Case	County	Zip Code	Female	Black	Under 15	Over 65	Unempl	Poverty
3	Dade	33128	8.84	3.67	9.07	13.32	23.55	35.34
3	Dade	33129	10.53	0.64	5.72	12.82	9.42	6.96
3	Dade	33130	9.78	1.23	9.16	13.31	15.79	34.81
3	Dade	33131	9.74	0.75	3.89	7.63	6.65	7.91
3	Dade	33132	6.52	7.04	2.76	8.12	9.70	21.62
3	Dade	33133	10.19	10.54	7.78	10.95	9.42	12.55
3	Dade	33134	10.73	0.34	6.99	14.56	9.42	8.97
3	Dade	33135	10.25	0.28	8.30	15.30	17.45	24.79
3	Dade	33136	10.13	39.59	12.59	6.30	21.05	43.46
3	Dade	33137	9.52	23.45	9.40	8.14	24.10	29.01
3	Dade	33138	9.67	26.07	10.52	7.62	14.68	24.05
3	Dade	33139	9.05	1.75	3.28	14.08	11.63	17.09
3	Dade	33140	10.21	0.80	7.13	15.75	6.93	8.65
3	Dade	33141	10.12	2.80	7.95	10.22	14.68	21.73
3	Dade	33142	9.63	33.63	11.86	8.72	19.11	34.49
3	Dade	33143	10.51	7.74	9.43	9.35	9.70	7.49
3	Dade	33144	10.57	0.10	7.20	17.19	11.63	11.29
3	Dade	33145	10.45	0.37	7.75	15.77	11.08	12.87
3	Dade	33146	10.42	3.16	6.90	8.77	17.17	1.90
3	Dade	33147	10.43	43.74	13.93	7.02	22.44	37.03
3	Dade	33149	10.55	0.18	11.05	10.75	4.99	6.01
3	Dade	33150	10.35	46.42	13.46	6.68	21.88	30.91
3	Dade	33154	10.95	0.84	7.06	19.16	8.03	7.38
3	Dade	33155	10.51	0.35	8.54	13.59	9.14	6.65
3	Dade	33156	10.25	1.28	12.19	7.67	5.82	3.80
3	Dade	33157	10.37	20.60	12.77	7.04	12.19	12.76
3	Dade	33158	10.15	1.09	12.64	7.59	3.60	2.11
3	Dade	33160	10.77	3.18	5.59	20.47	7.76	12.03
3	Dade	33161	10.39	36.55	12.56	6.79	22.44	24.05
3	Dade	33162	10.40	31.49	13.03	6.64	18.28	19.20
3	Dade	33165	10.58	0.84	7.94	13.62	12.19	9.39
3	Dade	33166	9.90	3.00	9.56	8.27	9.14	9.39
3	Dade	33167	10.38	47.28	13.34	5.83	23.55	22.47
3	Dade	33168	10.21	42.96	13.15	5.59	23.55	22.47
3	Dade	33169	10.60	52.17	13.33	6.15	15.24	14.56
3	Dade	33170	10.35	39.21	14.72	6.42	15.79	29.22



Appendix B, Continued  
Variable Specific Score by Zip Code

Case	County	Zip Code	Female	Black	Under 15	Over 65	Unempl	Poverty
3	Dade	33172	10.54	0.75	9.81	7.93	13.02	13.40
3	Dade	33173	10.64	1.16	9.47	9.80	9.70	6.01
3	Dade	33174	10.64	0.23	8.80	12.05	12.19	12.76
3	Dade	33175	10.39	0.37	10.19	9.35	9.42	7.28
3	Dade	33176	10.48	11.68	10.71	7.36	9.70	7.28
3	Dade	33177	9.86	11.73	13.54	4.79	13.57	8.54
3	Dade	33178	10.15	1.66	11.71	3.69	7.48	9.07
3	Dade	33179	10.90	20.17	10.04	11.63	12.47	9.18
3	Dade	33180	10.68	1.62	6.25	20.18	6.37	6.01
3	Dade	33181	10.20	21.02	9.30	8.29	14.96	17.09
3	Dade	33182	8.32	6.84	9.85	4.41	6.93	7.59
3	Dade	33183	10.53	1.50	11.12	7.09	10.80	9.28
3	Dade	33184	10.44	0.25	10.05	9.33	10.53	8.65
3	Dade	33185	10.40	0.90	12.46	5.42	8.31	6.54
3	Dade	33186	10.52	4.32	11.46	5.27	10.25	6.43
3	Dade	33187	9.96	4.36	13.45	4.87	11.08	4.64
3	Dade	33189	10.39	14.72	13.67	6.43	12.47	14.35
3	Dade	33190	10.28	16.91	14.93	3.09	12.74	12.97
3	Dade	33193	10.05	3.86	12.16	4.79	14.13	13.50
3	Dade	33194	0.00	0.00	0.00	0.00	0.00	0.00
3	Dade	33196	10.40	4.55	13.07	3.93	11.63	6.33
4	Duval	32009	9.77	0.71	12.48	5.51	14.96	5.80
4	Duval	32073	10.18	6.06	11.57	7.23	7.76	3.90
4	Duval	32202	6.65	43.86	3.39	14.57	8.59	23.10
4	Duval	32204	10.71	33.82	9.64	13.86	10.25	28.16
4	Duval	32205	10.40	13.74	10.44	9.10	8.59	13.29
4	Duval	32206	10.32	55.29	12.89	7.59	16.62	36.81
4	Duval	32207	10.47	14.05	10.26	10.04	8.31	10.34
4	Duval	32208	10.74	50.59	11.81	8.91	13.02	16.03
4	Duval	32209	11.04	65.72	13.05	11.52	16.34	27.32
4	Duval	32210	10.35	16.77	12.10	8.06	8.03	10.34
4	Duval	32211	10.23	19.60	11.50	7.57	13.57	11.50
4	Duval	32212	7.26	18.60	14.42	0.11	4.99	19.30
4	Duval	32215	10.03	23.71	25.26	0.68	0.00	9.70
4	Duval	32216	10.34	13.14	11.06	9.11	8.03	8.86
4	Duval	32217	10.54	9.22	9.92	10.97	9.70	7.81

Appendix B, Continued  
Variable Specific Score by Zip Code

Case	County	Zip Code	Female	Black	Under 15	Over 65	Unempl	Poverty
4	Duval	32218	10.29	26.59	12.14	6.24	10.53	8.33
4	Duval	32219	10.03	28.55	11.08	7.50	11.08	10.86
4	Duval	32220	9.82	2.77	11.82	5.91	6.09	8.02
4	Duval	32221	10.18	6.75	11.69	6.53	8.31	6.12
4	Duval	32222	9.99	7.34	12.41	4.78	9.97	6.43
4	Duval	32223	10.20	2.84	10.99	5.83	6.09	1.79
4	Duval	32224	10.14	5.38	10.53	4.88	8.59	3.69
4	Duval	32225	10.16	10.50	12.42	4.89	6.37	3.27
4	Duval	32226	9.96	1.07	9.99	7.29	4.71	6.75
4	Duval	32227	5.95	17.07	10.40	0.08	1.94	7.59
4	Duval	32233	9.95	11.30	11.99	6.71	6.93	7.28
4	Duval	32234	10.20	5.81	12.48	5.83	9.70	7.49
4	Duval	32244	10.20	14.98	13.10	5.00	7.20	9.39
4	Duval	32246	10.11	10.71	12.46	4.38	7.20	7.81
4	Duval	32250	9.89	2.97	7.74	8.93	10.53	4.01
4	Duval	32254	10.37	35.84	13.80	6.76	14.40	20.57
4	Duval	32256	10.05	8.08	8.46	5.87	7.76	3.48
4	Duval	32257	10.36	5.80	11.04	6.42	5.54	4.01
4	Duval	32258	10.12	5.25	12.61	4.52	6.09	1.05
4	Duval	32259	9.92	1.37	13.93	5.18	5.26	1.48
4	Duval	32266	9.74	0.49	8.00	8.41	8.03	2.00
4	Duval	32277	10.38	20.97	11.82	6.66	6.93	6.22
5	Hillsbo	33510	10.27	6.03	11.56	6.64	6.65	4.22
5	Hillsbo	33511	10.22	6.36	11.46	5.90	7.76	4.22
5	Hillsbo	33527	9.55	0.57	12.71	6.02	16.07	13.40
5	Hillsbo	33534	9.59	0.93	13.64	5.72	13.85	17.41
5	Hillsbo	33540	10.55	1.77	8.75	20.83	6.93	7.70
5	Hillsbo	33547	9.96	0.87	12.72	5.48	7.20	7.38
5	Hillsbo	33549	10.01	2.74	10.96	6.11	8.03	4.11
5	Hillsbo	33556	9.83	2.07	11.48	5.78	2.22	2.00
5	Hillsbo	33565	10.03	1.03	10.93	11.78	6.09	6.96
5	Hillsbo	33566	10.36	13.81	12.55	8.55	9.42	13.61
5	Hillsbo	33567	9.88	4.61	12.83	7.17	8.59	10.13
5	Hillsbo	33569	9.94	5.21	12.05	6.90	5.82	6.96
5	Hillsbo	33570	9.80	0.67	10.36	15.23	8.31	10.02
5	Hillsbo	33572	9.97	0.57	7.56	12.87	8.03	2.53

Appendix B, Continued  
Variable Specific Score by Zip Code

Case	County	Zip Code	Female	Black	Under 15	Over 65	Unempl	Poverty
5	Hillsbo	33573	11.40	0.09	0.18	57.35	1.66	2.32
5	Hillsbo	33584	9.98	4.75	11.96	6.33	9.14	5.70
5	Hillsbo	33592	9.88	7.82	11.62	8.49	9.14	10.13
5	Hillsbo	33594	10.11	4.01	12.44	6.23	5.54	3.16
5	Hillsbo	33598	9.33	2.89	16.15	4.36	14.40	24.37
5	Hillsbo	33602	9.99	31.04	10.80	9.15	22.16	29.43
5	Hillsbo	33603	10.25	18.84	11.68	9.02	16.62	18.67
5	Hillsbo	33604	10.17	16.63	12.21	7.55	11.08	20.68
5	Hillsbo	33605	10.08	41.42	12.72	9.98	16.90	29.85
5	Hillsbo	33606	9.93	7.65	7.07	7.47	30.75	4.01
5	Hillsbo	33607	10.46	25.81	10.68	13.18	11.36	19.94
5	Hillsbo	33609	10.13	4.72	8.54	11.65	6.93	6.43
5	Hillsbo	33610	10.54	38.01	12.78	8.75	14.13	19.83
5	Hillsbo	33611	10.18	4.15	8.40	10.61	6.37	6.22
5	Hillsbo	33612	10.28	19.43	11.77	8.44	14.13	18.25
5	Hillsbo	33613	10.05	12.80	8.90	8.17	14.13	15.30
5	Hillsbo	33614	10.02	5.99	9.91	7.43	9.14	14.14
5	Hillsbo	33615	10.15	5.59	10.08	7.39	8.59	6.33
5	Hillsbo	33616	9.88	11.93	11.13	5.73	13.85	14.35
5	Hillsbo	33617	10.36	18.36	10.93	6.14	10.25	10.76
5	Hillsbo	33618	10.27	3.02	10.07	7.51	6.09	4.64
5	Hillsbo	33619	9.53	26.90	12.15	6.09	10.53	16.77
5	Hillsbo	33620	0.00	21.19	0.00	0.00	263.43	0.00
5	Hillsbo	33621	9.32	16.44	18.68	0.15	7.76	4.32
5	Hillsbo	33624	10.39	4.31	10.75	5.76	5.82	3.59
5	Hillsbo	33625	10.13	4.90	12.47	4.90	10.80	5.06
5	Hillsbo	33626	10.12	3.40	12.81	3.78	4.16	1.79
5	Hillsbo	33629	10.38	0.79	9.13	11.67	5.54	2.43
5	Hillsbo	33634	10.28	5.41	10.84	6.26	7.76	6.86
5	Hillsbo	33635	10.10	3.91	11.15	7.04	5.82	6.65
5	Hillsbo	33637	10.28	11.35	11.30	4.83	4.71	11.39
5	Hillsbo	33647	10.05	3.93	12.47	3.41	5.82	4.11
5	Hillsbo	33834	7.85	9.88	10.29	9.80	8.03	18.46
5	Hillsbo	34221	9.82	11.51	10.21	15.08	5.54	9.60
6	Orange	32703	10.07	12.25	12.39	6.73	8.86	10.02
6	Orange	32709	9.55	0.30	10.91	7.78	8.31	12.76

Appendix B, Continued  
Variable Specific Score by Zip Code

Case	County	Zip Code	Female	Black	Under 15	Over 65	Unempl	Poverty
6	Orange	32712	10.07	6.02	11.83	7.56	6.37	5.70
6	Orange	32751	10.46	7.01	10.66	11.81	6.37	3.90
6	Orange	32757	10.43	9.66	9.00	16.79	4.71	9.28
6	Orange	32776	10.02	2.16	11.25	8.09	9.42	2.95
6	Orange	32789	10.47	8.53	8.63	11.70	14.96	5.38
6	Orange	32792	10.10	4.08	8.49	9.67	8.03	6.01
6	Orange	32798	11.34	0.25	1.56	49.07	2.49	1.27
6	Orange	32801	10.62	8.84	4.46	21.01	12.47	16.77
6	Orange	32803	9.94	3.39	6.08	12.97	7.20	5.06
6	Orange	32804	10.12	1.66	7.95	10.42	5.26	3.59
6	Orange	32805	10.13	52.83	13.19	7.65	16.62	31.22
6	Orange	32806	10.01	3.57	8.67	10.79	7.48	6.65
6	Orange	32807	9.89	4.62	10.79	7.81	8.86	9.92
6	Orange	32808	10.44	35.56	14.41	5.72	15.24	19.51
6	Orange	32809	9.89	8.81	11.25	7.47	10.80	12.03
6	Orange	32810	10.05	17.88	12.74	5.56	9.97	10.13
6	Orange	32811	10.25	36.20	11.35	4.36	12.74	17.62
6	Orange	32812	10.25	4.38	10.83	7.46	6.09	7.38
6	Orange	32817	9.85	3.36	9.71	4.44	9.42	6.12
6	Orange	32818	10.30	28.93	12.71	5.78	9.14	9.18
6	Orange	32819	10.03	8.67	10.98	5.65	8.31	5.06
6	Orange	32820	9.62	0.60	11.66	6.20	15.79	11.39
6	Orange	32821	9.90	3.16	6.00	11.93	4.43	2.85
6	Orange	32822	10.15	5.79	10.51	7.08	10.25	9.81
6	Orange	32824	10.11	7.90	13.04	4.90	12.47	6.75
6	Orange	32825	9.56	5.92	11.27	4.74	8.59	6.75
6	Orange	32826	9.74	5.22	7.45	5.36	13.30	8.33
6	Orange	32827	10.07	4.51	12.60	3.79	5.26	7.81
6	Orange	32828	10.03	4.73	13.33	3.07	8.31	3.69
6	Orange	32829	10.37	4.35	12.13	4.47	8.59	2.00
6	Orange	32831	9.41	9.41	0.00	0.00	0.00	0.00
6	Orange	32832	9.54	0.54	10.33	5.64	4.43	0.00
6	Orange	32833	9.67	2.70	10.97	6.37	10.25	14.14
6	Orange	32835	9.91	8.01	10.56	3.48	7.76	6.96
6	Orange	32836	10.02	2.13	12.77	5.27	5.26	5.70
6	Orange	32837	10.12	5.45	12.23	4.74	6.65	5.27

Appendix B, Continued  
Variable Specific Score by Zip Code

Case	County	Zip Code	Female	Black	Under 15	Over 65	Unempl	Poverty
6	Orange	32839	9.17	23.82	10.69	4.28	12.47	17.72
6	Orange	34734	10.34	6.60	13.57	4.71	2.22	2.95
6	Orange	34747	9.92	1.99	11.59	5.04	8.03	5.27
6	Orange	34760	10.43	28.61	12.38	6.90	4.16	8.44
6	Orange	34761	10.06	4.41	12.62	5.05	6.93	5.70
6	Orange	34786	9.97	1.83	13.31	5.57	2.22	1.48
6	Orange	34787	10.21	9.26	11.31	9.30	7.76	8.97
7	PalmBe	33401	10.57	26.66	8.11	15.65	8.03	16.77
7	PalmBe	33403	10.06	22.06	10.42	12.41	11.91	9.60
7	PalmBe	33404	10.42	45.47	12.44	15.20	12.74	20.25
7	PalmBe	33405	9.64	3.24	9.49	12.06	7.48	12.34
7	PalmBe	33406	9.50	4.83	9.85	10.61	8.03	7.17
7	PalmBe	33407	10.08	40.67	12.72	12.39	11.91	21.10
7	PalmBe	33408	10.24	0.49	5.93	16.06	3.60	2.11
7	PalmBe	33409	9.97	14.82	9.21	10.87	10.80	12.45
7	PalmBe	33410	10.31	2.56	8.35	12.39	6.93	6.22
7	PalmBe	33411	10.25	8.60	11.08	13.44	7.20	4.64
7	PalmBe	33412	9.74	4.57	12.92	10.33	6.65	1.79
7	PalmBe	33413	10.05	6.92	10.25	11.53	6.65	7.07
7	PalmBe	33414	10.17	3.61	13.03	11.74	5.26	3.06
7	PalmBe	33415	10.46	7.89	10.88	13.81	9.42	12.55
7	PalmBe	33417	10.88	10.41	7.32	20.09	8.86	10.34
7	PalmBe	33418	10.32	1.10	8.61	12.83	38.78	1.79
7	PalmBe	33426	10.92	5.18	6.50	18.92	3.05	3.38
7	PalmBe	33428	10.24	2.35	11.51	13.62	7.48	4.32
7	PalmBe	33430	9.31	36.03	14.87	12.30	18.84	33.12
7	PalmBe	33431	10.22	3.83	7.11	11.77	21.88	2.85
7	PalmBe	33432	10.18	3.42	6.19	14.43	2.77	7.07
7	PalmBe	33433	10.79	0.90	6.84	16.62	6.09	2.00
7	PalmBe	33434	11.02	0.81	6.16	22.65	2.49	3.38
7	PalmBe	33435	10.41	23.85	9.82	15.76	10.53	12.03
7	PalmBe	33436	10.59	5.67	7.42	17.06	4.99	4.22
7	PalmBe	33437	10.38	2.29	5.37	20.07	3.88	3.06
7	PalmBe	33438	10.21	17.80	13.88	13.64	30.75	17.62
7	PalmBe	33440	9.60	14.81	14.17	12.42	16.34	16.98
7	PalmBe	33444	9.91	32.62	11.38	11.65	11.91	16.03

Appendix B, Continued  
Variable Specific Score by Zip Code

Case	County	Zip Code	Female	Black	Under 15	Over 65	Unempl	Poverty
7	PalmBe	33445	10.75	11.60	6.84	18.73	7.20	4.96
7	PalmBe	33446	11.16	0.35	1.49	30.10	3.05	3.48
7	PalmBe	33458	9.91	2.39	11.06	11.55	6.37	3.48
7	PalmBe	33460	9.42	13.38	10.36	11.73	12.47	17.51
7	PalmBe	33461	9.86	6.41	10.70	13.21	12.19	11.60
7	PalmBe	33462	10.11	7.12	9.19	13.99	7.48	6.96
7	PalmBe	33463	10.22	6.21	11.61	13.82	8.03	6.75
7	PalmBe	33467	10.32	2.09	9.66	17.31	4.43	2.95
7	PalmBe	33469	10.36	0.28	7.46	16.43	3.32	2.53
7	PalmBe	33470	9.80	3.95	14.30	10.99	5.82	3.80
7	PalmBe	33476	10.19	43.59	17.01	14.64	24.93	37.87
7	PalmBe	33477	10.47	0.14	3.49	16.13	3.60	2.74
7	PalmBe	33478	9.83	0.66	12.11	10.08	4.71	1.90
7	PalmBe	33480	11.09	1.61	4.02	23.00	2.77	3.27
7	PalmBe	33483	10.33	4.63	4.63	15.15	7.20	5.91
7	PalmBe	33484	11.23	1.54	2.06	29.19	2.77	3.06
7	PalmBe	33486	10.16	1.56	9.36	11.59	9.70	3.90
7	PalmBe	33487	10.37	1.77	5.52	16.44	4.99	2.74
7	PalmBe	33493	7.32	44.48	11.55	9.77	23.55	30.59
7	PalmBe	33496	10.49	0.86	7.92	15.48	4.43	3.06
7	PalmBe	33498	10.09	1.17	11.27	13.59	4.16	3.27
8	Pinellas	33701	9.81	14.07	6.34	9.39	15.51	14.24
8	Pinellas	33702	10.26	1.89	7.82	7.10	5.82	5.49
8	Pinellas	33703	10.39	0.76	9.23	6.61	4.99	3.69
8	Pinellas	33704	10.33	1.22	8.75	5.47	4.43	5.49
8	Pinellas	33705	10.70	37.41	11.40	6.09	11.36	17.83
8	Pinellas	33706	10.05	0.34	4.11	11.03	6.37	4.01
8	Pinellas	33707	10.80	4.09	5.99	12.07	6.93	8.65
8	Pinellas	33708	10.23	0.20	4.11	12.16	4.71	4.22
8	Pinellas	33709	10.53	1.92	7.86	10.10	6.65	9.92
8	Pinellas	33710	10.50	1.05	8.83	6.75	4.99	4.85
8	Pinellas	33711	10.82	39.66	11.40	5.30	14.13	18.04
8	Pinellas	33712	10.77	47.31	11.79	4.48	14.40	15.08
8	Pinellas	33713	9.99	6.31	10.08	4.77	8.59	10.65
8	Pinellas	33714	9.94	2.01	9.19	6.66	8.86	12.13
8	Pinellas	33715	10.22	0.82	3.50	12.44	6.37	1.69

Appendix B, Continued  
Variable Specific Score by Zip Code

Case	County	Zip Code	Female	Black	Under 15	Over 65	Unempl	Poverty
8	Pinellas	33716	9.82	3.74	4.87	3.86	8.86	6.96
8	Pinellas	33755	10.06	16.64	10.17	4.19	9.97	13.08
8	Pinellas	33756	10.47	4.35	8.44	8.80	5.82	8.44
8	Pinellas	33759	10.47	6.46	9.90	7.53	6.09	13.29
8	Pinellas	33760	8.86	10.43	8.65	3.30	6.37	14.03
8	Pinellas	33761	10.81	0.55	7.09	9.51	4.99	4.64
8	Pinellas	33762	10.22	1.44	5.33	7.33	6.37	2.74
8	Pinellas	33763	11.06	1.12	4.83	14.88	4.99	3.59
8	Pinellas	33764	10.43	1.63	7.60	9.67	6.37	5.59
8	Pinellas	33765	10.23	2.87	7.52	6.46	3.60	7.91
8	Pinellas	33767	10.08	0.14	2.85	13.41	7.20	3.69
8	Pinellas	33770	10.36	1.76	7.21	9.37	8.31	6.54
8	Pinellas	33771	10.69	1.79	6.41	11.27	3.88	7.07
8	Pinellas	33772	10.75	0.37	7.49	10.33	5.26	3.69
8	Pinellas	33773	10.27	1.42	9.16	6.26	6.37	4.22
8	Pinellas	33774	10.63	3.79	8.19	9.45	5.54	5.91
8	Pinellas	33776	10.42	0.31	9.13	6.93	4.71	2.11
8	Pinellas	33777	10.54	0.91	9.67	6.80	6.37	6.12
8	Pinellas	33778	10.53	8.66	8.92	8.05	6.37	4.85
8	Pinellas	33781	10.20	1.64	10.67	4.71	9.97	8.54
8	Pinellas	33782	10.62	0.82	8.26	8.94	6.09	5.49
8	Pinellas	33785	9.88	0.21	4.09	7.09	4.71	2.95
8	Pinellas	33786	9.95	0.17	5.34	9.66	3.60	3.59
8	Pinellas	34677	10.27	1.65	10.51	5.48	6.93	2.95
8	Pinellas	34681	9.81	0.22	11.41	4.12	1.66	5.27
8	Pinellas	34683	10.28	0.62	10.05	5.37	7.20	4.11
8	Pinellas	34684	10.83	0.74	7.50	12.26	3.88	4.85
8	Pinellas	34685	10.17	0.83	11.09	5.37	7.20	4.01
8	Pinellas	34689	10.30	3.34	8.37	8.45	5.54	7.07
8	Pinellas	34695	10.40	2.83	9.10	6.73	5.26	3.69
8	Pinellas	34698	10.84	1.36	6.57	10.99	5.26	5.27
9	Polk	33547	9.96	0.87	12.72	5.48	7.20	7.38
9	Polk	33801	10.20	8.37	9.96	11.42	12.19	14.35
9	Polk	33803	10.61	3.35	8.40	15.11	14.96	6.75
9	Polk	33805	10.57	32.60	12.52	11.79	11.63	19.51
9	Polk	33809	10.34	2.65	9.49	15.54	6.65	6.22

Appendix B, Continued  
Variable Specific Score by Zip Code

Case	County	Zip Code	Female	Black	Under 15	Over 65	Unempl	Poverty
9	Polk	33810	10.09	4.81	11.57	10.14	6.09	8.44
9	Polk	33811	10.04	4.65	11.25	7.66	6.65	4.85
9	Polk	33813	10.22	2.87	11.54	8.61	6.37	2.53
9	Polk	33815	10.26	18.51	12.14	13.18	12.19	19.09
9	Polk	33823	10.11	5.58	11.46	10.03	9.14	11.60
9	Polk	33825	9.58	11.75	9.02	18.01	6.93	13.08
9	Polk	33827	9.91	6.10	10.78	9.76	23.55	11.92
9	Polk	33830	10.01	15.75	11.48	9.45	11.36	12.24
9	Polk	33835	11.13	2.68	10.36	6.91	0.00	0.00
9	Polk	33837	9.99	2.93	8.79	14.44	4.99	5.91
9	Polk	33838	10.34	15.26	11.53	15.28	11.36	12.45
9	Polk	33839	10.37	3.84	12.11	8.94	6.09	12.97
9	Polk	33841	10.00	10.58	12.13	10.94	11.91	14.98
9	Polk	33843	8.95	6.55	9.67	14.65	9.70	14.87
9	Polk	33844	10.02	13.71	10.57	15.61	10.53	13.50
9	Polk	33847	7.09	10.66	11.35	8.79	0.00	36.81
9	Polk	33849	9.17	0.64	13.13	5.62	17.45	9.70
9	Polk	33850	10.52	10.28	11.35	11.66	6.09	13.71
9	Polk	33851	10.30	2.44	10.16	9.82	11.36	4.96
9	Polk	33853	10.23	10.84	9.50	17.40	9.14	11.39
9	Polk	33860	9.85	7.95	12.11	8.70	11.63	7.49
9	Polk	33868	8.31	9.64	9.87	7.74	5.82	9.49
9	Polk	33877	10.01	51.34	15.63	8.41	43.77	52.74
9	Polk	33880	10.14	6.38	11.59	10.02	9.42	11.39
9	Polk	33881	10.49	18.05	9.04	19.87	8.86	11.60
9	Polk	33884	10.57	1.49	8.51	18.76	5.26	2.32
9	Polk	34759	10.25	9.42	12.22	7.25	4.71	5.59



Appendix B, Continued  
Variable Specific Scores by Zip Code

Case	County	Zip Code	Family	General	Ob-Gyn	Internal	Pediatric
1	Brevard	32754	0.00	0.00	0.00	0.00	0.00
1	Brevard	32759	0.00	0.00	0.00	0.00	0.00
1	Brevard	32775	0.00	0.00	0.00	0.00	0.00
1	Brevard	32780	0.49	15.20	2.18	6.78	3.09
1	Brevard	32796	2.06	5.74	19.79	16.66	7.01
1	Brevard	32901	1.19	0.00	20.98	19.79	4.25
1	Brevard	32903	3.00	9.20	26.41	38.98	18.70
1	Brevard	32904	1.50	0.00	15.11	2.94	8.03
1	Brevard	32905	0.88	21.66	9.33	8.45	11.01
1	Brevard	32907	0.56	3.45	0.00	2.31	0.00
1	Brevard	32908	0.71	0.00	0.00	0.00	0.00
1	Brevard	32909	0.21	6.46	3.71	4.33	2.63
1	Brevard	32920	0.42	13.02	0.00	0.00	0.00
1	Brevard	32922	0.72	0.00	0.00	0.00	0.00
1	Brevard	32925	3.59	0.00	0.00	0.00	0.00
1	Brevard	32926	0.40	0.00	0.00	0.00	0.00
1	Brevard	32927	0.57	0.00	0.00	0.00	1.77
1	Brevard	32931	1.82	0.00	41.25	19.58	3.25
1	Brevard	32934	1.64	8.40	0.00	11.25	10.25
1	Brevard	32935	0.38	0.00	8.30	5.80	2.35
1	Brevard	32937	2.14	4.38	7.54	8.79	3.56
1	Brevard	32940	4.42	6.17	21.24	34.38	12.54
1	Brevard	32948	6.28	0.00	13.84	5.38	0.00
1	Brevard	32949	15.64	0.00	0.00	35.71	0.00
1	Brevard	32950	0.84	0.00	0.00	0.00	21.06
1	Brevard	32951	0.73	0.00	6.41	14.94	13.61
1	Brevard	32952	1.30	0.00	13.06	7.61	9.25
1	Brevard	32953	0.88	0.00	9.34	2.42	6.62
1	Brevard	32955	0.88	9.04	10.38	16.13	14.70
1	Brevard	32976	0.39	0.00	0.00	5.35	0.00
2	Broward	33004	0.25	93.13	4.46	3.46	6.31
2	Broward	33009	0.67	10.23	7.83	10.65	0.00
2	Broward	33019	0.66	6.75	23.26	16.56	13.72
2	Broward	33020	0.38	2.91	1.67	8.43	4.73
2	Broward	33021	1.83	12.74	24.87	24.44	38.34

Appendix B, Continued  
Variable Specific Scores by Zip Code

Case	County	Zip Code	Family	General	Ob-Gyn	Internal	Pediatric
2	Broward	33023	0.31	1.93	0.00	0.43	0.00
2	Broward	33024	0.78	25.97	3.44	10.25	6.50
2	Broward	33025	0.33	5.07	1.46	2.26	6.19
2	Broward	33026	0.39	3.98	11.42	13.31	22.64
2	Broward	33027	3.01	4.62	10.61	23.70	28.18
2	Broward	33028	1.38	5.32	15.26	20.16	12.97
2	Broward	33029	1.74	19.98	5.74	16.35	18.96
2	Broward	33060	0.34	7.05	6.07	3.14	1.43
2	Broward	33062	2.70	13.83	10.59	15.43	15.00
2	Broward	33063	1.20	4.61	6.63	7.72	2.81
2	Broward	33064	0.58	20.02	3.83	6.95	4.52
2	Broward	33065	1.11	6.84	11.78	5.59	13.90
2	Broward	33066	0.68	35.05	0.00	3.13	0.00
2	Broward	33067	1.33	35.64	8.77	13.63	33.13
2	Broward	33068	0.08	2.47	0.00	1.65	0.00
2	Broward	33069	0.31	57.56	0.00	2.14	3.90
2	Broward	33071	0.52	3.19	20.17	9.26	10.39
2	Broward	33073	0.19	40.99	10.09	7.84	4.76
2	Broward	33076	1.17	11.94	10.28	27.96	31.56
2	Broward	33301	1.28	9.81	16.90	26.26	3.99
2	Broward	33304	1.03	12.59	0.00	14.05	2.56
2	Broward	33305	0.64	9.79	5.62	13.11	11.95
2	Broward	33306	7.07	31.00	17.80	20.74	12.60
2	Broward	33308	2.42	24.72	40.23	43.20	20.11
2	Broward	33309	0.46	3.53	0.00	4.72	2.87
2	Broward	33311	0.12	3.59	1.03	3.61	1.46
2	Broward	33312	0.51	2.61	6.00	5.24	4.25
2	Broward	33313	0.20	6.21	5.94	6.00	4.21
2	Broward	33314	0.00	0.00	5.66	0.00	2.01
2	Broward	33315	0.59	0.00	5.24	2.03	0.00
2	Broward	33316	2.87	33.09	63.34	41.83	31.40
2	Broward	33317	1.12	10.27	27.53	12.99	12.53
2	Broward	33319	0.27	0.00	3.14	6.10	3.34
2	Broward	33321	0.29	2.98	12.00	8.65	2.43
2	Broward	33322	0.47	2.89	4.98	3.87	7.06

Appendix B, Continued  
Variable Specific Scores by Zip Code

Case	County	Zip Code	Family	General	Ob-Gyn	Internal	Pediatric
2	Broward	33323	1.08	0.00	19.00	11.81	24.21
2	Broward	33324	2.21	5.43	21.82	17.56	28.69
2	Broward	33325	1.11	4.27	2.45	7.62	6.95
2	Broward	33326	1.92	7.86	18.04	11.39	23.96
2	Broward	33327	1.16	8.93	41.04	29.89	25.43
2	Broward	33328	1.53	29.36	6.74	5.24	11.94
2	Broward	33330	2.06	10.53	6.04	16.44	12.84
2	Broward	33331	1.64	5.61	16.11	21.27	20.53
2	Broward	33332	2.03	31.14	125.19	34.74	25.33
2	Broward	33334	0.99	3.81	0.00	12.76	3.10
2	Broward	33351	0.83	7.25	2.08	8.08	2.95
2	Broward	33388	0.00	0.00	0.00	0.00	0.00
2	Broward	33394	0.00	0.00	0.00	0.00	0.00
2	Broward	33441	0.57	13.09	0.00	2.92	5.32
2	Broward	33442	0.80	4.10	4.71	6.41	1.67
3	Dade	33010	0.00	12.97	0.00	2.89	1.05
3	Dade	33012	0.51	43.96	5.41	5.95	8.94
3	Dade	33013	0.34	21.16	8.10	11.01	7.17
3	Dade	33014	1.19	12.17	13.98	10.86	18.56
3	Dade	33015	0.54	7.16	1.37	2.66	6.80
3	Dade	33016	0.53	24.43	17.15	10.29	18.76
3	Dade	33018	0.41	0.00	0.00	3.48	3.80
3	Dade	33030	0.42	4.31	12.37	3.85	10.51
3	Dade	33031	0.69	42.68	73.52	0.00	8.68
3	Dade	33032	0.18	5.68	0.00	0.00	0.00
3	Dade	33033	0.12	0.00	2.15	0.00	0.00
3	Dade	33034	0.00	0.00	0.00	0.00	0.00
3	Dade	33035	0.00	0.00	0.00	0.00	0.00
3	Dade	33054	0.00	4.18	0.00	0.93	0.00
3	Dade	33055	0.25	2.61	0.00	0.00	3.18
3	Dade	33056	0.12	0.00	0.00	0.79	0.00
3	Dade	33109	0.00	0.00	0.00	0.00	0.00
3	Dade	33122	0.00	0.00	0.00	0.00	0.00
3	Dade	33125	0.87	14.53	1.39	9.72	3.94
3	Dade	33126	0.35	18.80	3.08	4.19	5.46
3	Dade	33127	0.41	12.70	0.00	0.94	3.44

Appendix B, Continued  
Variable Specific Scores by Zip Code

Case	County	Zip Code	Family	General	Ob-Gyn	Internal	Pediatric
3	Dade	33128	0.00	0.00	9.65	3.75	6.83
3	Dade	33129	1.73	31.80	12.17	33.10	17.24
3	Dade	33130	0.00	28.64	6.58	2.56	4.66
3	Dade	33131	2.43	24.91	28.61	44.46	30.39
3	Dade	33132	0.72	22.11	0.00	14.80	17.98
3	Dade	33133	1.02	15.73	63.21	32.45	20.78
3	Dade	33134	2.93	79.49	19.85	30.07	30.92
3	Dade	33135	0.54	36.24	3.78	8.82	9.38
3	Dade	33136	2.63	0.00	66.95	56.02	40.12
3	Dade	33137	1.52	20.01	7.66	8.93	21.70
3	Dade	33138	1.17	7.97	13.73	8.00	4.86
3	Dade	33139	1.59	27.55	12.30	15.02	13.69
3	Dade	33140	1.89	29.07	40.06	77.81	56.74
3	Dade	33141	1.05	9.66	1.85	8.62	7.86
3	Dade	33142	0.22	2.20	2.53	0.98	0.00
3	Dade	33143	2.32	19.75	58.98	31.72	27.31
3	Dade	33144	1.81	41.80	8.00	13.47	9.44
3	Dade	33145	1.32	40.68	4.67	12.71	9.93
3	Dade	33146	1.45	35.63	40.92	49.67	68.82
3	Dade	33147	0.15	0.00	0.00	0.00	0.00
3	Dade	33149	1.09	11.19	12.85	34.95	36.41
3	Dade	33150	0.00	8.93	10.25	1.00	5.45
3	Dade	33154	1.15	35.23	25.29	25.54	17.91
3	Dade	33155	1.22	39.98	6.12	9.51	36.85
3	Dade	33156	2.19	3.74	27.93	34.22	39.56
3	Dade	33157	0.69	11.52	7.72	7.28	13.27
3	Dade	33158	0.59	0.00	10.46	36.58	44.46
3	Dade	33160	1.59	20.87	9.99	13.19	8.49
3	Dade	33161	0.36	4.42	2.54	3.45	3.59
3	Dade	33162	0.68	13.01	4.48	4.06	5.29
3	Dade	33165	1.01	55.66	3.55	7.82	18.44
3	Dade	33166	0.34	26.07	2.99	6.98	14.84
3	Dade	33167	0.42	0.00	0.00	0.00	0.00
3	Dade	33168	0.15	0.00	0.00	0.00	0.00
3	Dade	33169	0.42	0.00	0.00	0.00	0.00
3	Dade	33170	0.00	0.00	0.00	0.00	0.00

Appendix B, Continued  
Variable Specific Scores by Zip Code

Case	County	Zip Code	Family	General	Ob-Gyn	Internal	Pediatric
3	Dade	33172	0.10	15.27	1.75	0.00	4.97
3	Dade	33173	1.14	17.49	26.11	22.63	49.78
3	Dade	33174	0.51	54.40	2.23	2.60	6.32
3	Dade	33175	0.95	42.52	6.43	6.99	10.92
3	Dade	33176	1.69	18.07	42.81	21.17	27.56
3	Dade	33177	0.08	15.52	4.46	0.58	3.16
3	Dade	33178	1.76	0.00	17.70	24.06	43.86
3	Dade	33179	1.02	6.30	3.62	9.83	12.80
3	Dade	33180	2.03	50.91	48.73	31.55	29.91
3	Dade	33181	1.52	26.60	3.82	22.25	10.82
3	Dade	33182	0.45	20.90	40.01	9.33	8.50
3	Dade	33183	0.32	6.64	1.91	3.70	5.40
3	Dade	33184	0.19	23.70	0.00	5.29	9.64
3	Dade	33185	0.78	59.62	0.00	10.64	14.55
3	Dade	33186	0.83	11.78	6.76	6.57	13.57
3	Dade	33187	0.00	16.79	4.82	1.87	10.24
3	Dade	33189	0.76	0.00	0.00	9.06	7.08
3	Dade	33190	0.00	0.00	0.00	0.00	0.00
3	Dade	33193	0.27	2.77	0.00	2.47	4.51
3	Dade	33194	0.00	0.00	0.00	0.00	0.00
3	Dade	33196	0.11	13.58	0.00	7.57	9.66
4	Duval	32009	0.00	0.00	0.00	0.00	0.00
4	Duval	32073	2.29	4.68	17.47	10.44	9.52
4	Duval	32202	3.79	0.00	0.00	5.19	56.72
4	Duval	32204	5.42	30.26	121.63	60.75	110.74
4	Duval	32205	2.04	3.91	6.74	6.11	7.96
4	Duval	32206	0.36	0.00	0.00	3.72	11.31
4	Duval	32207	0.79	3.49	36.03	21.00	21.26
4	Duval	32208	1.25	3.49	0.00	0.00	1.42
4	Duval	32209	1.64	2.97	22.15	9.27	20.51
4	Duval	32210	0.85	4.04	5.80	3.15	4.10
4	Duval	32211	1.22	0.00	1.96	0.76	1.39
4	Duval	32212	4.63	0.00	0.00	0.00	0.00
4	Duval	32215	0.00	0.00	0.00	0.00	0.00
4	Duval	32216	2.99	19.95	48.13	12.46	16.23
4	Duval	32217	1.14	5.82	3.34	7.79	23.66

Appendix B, Continued  
Variable Specific Scores by Zip Code

Case	County	Zip Code	Family	General	Ob-Gyn	Internal	Pediatric
4	Duval	32218	0.61	0.00	0.00	2.08	1.27
4	Duval	32219	0.00	0.00	0.00	0.00	0.00
4	Duval	32220	0.36	0.00	0.00	0.00	0.00
4	Duval	32221	0.43	13.13	0.00	0.00	2.67
4	Duval	32222	0.00	0.00	0.00	0.00	0.00
4	Duval	32223	2.56	9.26	13.29	4.13	16.94
4	Duval	32224	3.88	0.00	10.36	38.62	10.27
4	Duval	32225	1.34	0.00	10.35	7.47	16.75
4	Duval	32226	0.47	14.40	0.00	0.00	11.71
4	Duval	32227	0.00	0.00	0.00	0.00	0.00
4	Duval	32233	0.75	4.63	0.00	3.10	3.77
4	Duval	32234	0.00	0.00	0.00	0.00	0.00
4	Duval	32244	1.07	0.00	0.00	1.13	2.05
4	Duval	32246	0.85	0.00	0.00	10.18	7.95
4	Duval	32250	2.73	9.85	28.27	12.08	12.01
4	Duval	32254	0.00	7.86	0.00	3.51	0.00
4	Duval	32256	3.81	16.15	0.00	35.13	31.20
4	Duval	32257	1.37	9.71	9.29	10.10	15.79
4	Duval	32258	1.82	9.34	26.81	2.08	3.80
4	Duval	32259	2.12	0.00	7.48	14.53	15.89
4	Duval	32266	1.59	0.00	0.00	18.14	19.84
4	Duval	32277	1.39	0.00	0.00	3.80	6.93
5	Hillsbo	33510	0.17	5.26	6.04	3.52	0.00
5	Hillsbo	33511	0.77	10.48	27.07	16.94	23.43
5	Hillsbo	33527	0.34	0.00	0.00	0.00	0.00
5	Hillsbo	33534	0.00	0.00	0.00	0.00	0.00
5	Hillsbo	33540	0.20	0.00	3.59	5.57	0.00
5	Hillsbo	33547	1.35	0.00	23.77	15.39	22.44
5	Hillsbo	33549	0.09	0.00	0.00	3.53	3.21
5	Hillsbo	33556	2.19	8.41	9.66	20.63	17.09
5	Hillsbo	33565	0.00	0.00	0.00	3.12	0.00
5	Hillsbo	33566	0.53	5.46	3.14	10.96	6.66
5	Hillsbo	33567	0.00	0.00	0.00	0.00	0.00
5	Hillsbo	33569	0.54	3.30	3.79	8.09	5.36
5	Hillsbo	33570	0.89	0.00	0.00	2.04	0.00
5	Hillsbo	33572	2.57	15.77	9.06	10.55	0.00

Appendix B, Continued  
Variable Specific Scores by Zip Code

Case	County	Zip Code	Family	General	Ob-Gyn	Internal	Pediatric
5	Hillsbo	33573	1.17	14.42	4.14	9.65	2.93
5	Hillsbo	33584	0.00	0.00	0.00	0.00	0.00
5	Hillsbo	33592	0.00	0.00	0.00	0.00	0.00
5	Hillsbo	33594	0.96	2.47	5.66	9.90	8.02
5	Hillsbo	33598	0.00	0.00	0.00	0.00	0.00
5	Hillsbo	33602	1.28	0.00	30.18	11.72	21.37
5	Hillsbo	33603	0.55	0.00	0.00	6.27	6.85
5	Hillsbo	33604	0.10	3.20	0.00	4.28	3.90
5	Hillsbo	33605	0.22	13.78	3.96	0.00	0.00
5	Hillsbo	33606	1.02	15.73	76.78	35.09	73.56
5	Hillsbo	33607	1.01	5.16	94.83	12.66	41.97
5	Hillsbo	33609	2.37	14.54	37.58	30.82	26.61
5	Hillsbo	33610	0.47	0.00	0.00	0.00	0.00
5	Hillsbo	33611	1.03	7.89	9.06	6.16	6.41
5	Hillsbo	33612	0.98	8.22	3.15	15.27	6.68
5	Hillsbo	33613	1.56	12.00	41.33	17.84	17.89
5	Hillsbo	33614	0.35	16.12	13.88	13.78	7.65
5	Hillsbo	33615	0.46	5.69	1.63	10.79	4.63
5	Hillsbo	33616	0.00	0.00	5.62	2.18	0.00
5	Hillsbo	33617	0.63	2.78	0.00	8.07	5.66
5	Hillsbo	33618	2.26	17.34	6.64	27.07	30.55
5	Hillsbo	33619	0.40	4.13	0.00	3.69	5.04
5	Hillsbo	33620	3.03	0.00	0.00	0.00	0.00
5	Hillsbo	33621	1.42	0.00	0.00	0.00	0.00
5	Hillsbo	33624	0.43	5.22	6.00	5.82	1.06
5	Hillsbo	33625	0.92	0.00	6.50	3.79	13.81
5	Hillsbo	33626	5.86	10.58	24.31	61.39	51.65
5	Hillsbo	33629	1.34	5.15	17.74	19.52	33.49
5	Hillsbo	33634	1.39	12.22	10.53	2.73	7.45
5	Hillsbo	33635	0.92	9.46	0.00	8.44	11.54
5	Hillsbo	33637	0.92	0.00	0.00	6.28	3.82
5	Hillsbo	33647	2.48	17.90	17.99	59.90	38.22
5	Hillsbo	33834	0.00	0.00	0.00	0.00	0.00
5	Hillsbo	34221	0.85	0.00	2.14	1.66	4.54
6	Orange	32703	1.06	5.44	4.69	4.25	1.11
6	Orange	32709	0.00	0.00	0.00	0.00	0.00

Appendix B, Continued  
Variable Specific Scores by Zip Code

Case	County	Zip Code	Family	General	Ob-Gyn	Internal	Pediatric
6	Orange	32712	1.70	8.05	9.25	3.59	4.91
6	Orange	32751	3.17	0.00	18.65	17.39	26.41
6	Orange	32757	1.22	0.00	7.19	9.78	5.09
6	Orange	32776	1.16	17.74	0.00	3.96	0.00
6	Orange	32789	1.45	4.95	42.65	19.88	2.01
6	Orange	32792	1.81	6.95	22.62	8.27	3.77
6	Orange	32798	0.00	0.00	0.00	0.00	0.00
6	Orange	32801	1.92	0.00	8.47	13.16	6.00
6	Orange	32803	3.06	11.06	34.93	20.97	51.71
6	Orange	32804	4.45	0.00	56.05	21.77	10.58
6	Orange	32805	0.31	14.45	0.00	2.15	3.92
6	Orange	32806	2.73	13.23	81.03	28.53	59.18
6	Orange	32807	0.53	8.07	6.95	2.70	6.56
6	Orange	32808	0.31	4.81	2.76	1.07	3.91
6	Orange	32809	0.34	15.57	5.96	3.47	2.11
6	Orange	32810	0.35	0.00	2.07	2.41	5.87
6	Orange	32811	0.00	0.00	0.00	1.57	2.87
6	Orange	32812	1.07	9.82	5.64	5.84	7.99
6	Orange	32817	1.10	8.43	0.00	2.82	13.71
6	Orange	32818	0.64	0.00	0.00	1.47	2.68
6	Orange	32819	3.85	14.76	22.60	27.44	28.01
6	Orange	32820	1.27	0.00	0.00	8.73	0.00
6	Orange	32821	0.28	0.00	9.70	0.00	3.43
6	Orange	32822	0.88	4.51	0.00	5.03	3.67
6	Orange	32824	3.77	12.18	0.00	19.01	2.48
6	Orange	32825	1.05	2.69	3.09	4.81	5.48
6	Orange	32826	0.00	4.85	0.00	1.08	5.92
6	Orange	32827	0.00	0.00	0.00	12.01	0.00
6	Orange	32828	2.06	5.28	9.09	3.53	12.87
6	Orange	32829	0.00	66.01	0.00	14.72	13.42
6	Orange	32831	0.00	0.00	0.00	0.00	0.00
6	Orange	32832	0.00	0.00	36.33	0.00	0.00
6	Orange	32833	0.00	0.00	0.00	5.15	0.00
6	Orange	32835	1.71	7.50	10.76	13.38	16.77
6	Orange	32836	2.53	0.00	27.90	58.52	43.46
6	Orange	32837	1.87	10.13	5.82	7.53	9.61



Appendix B, Continued  
Variable Specific Scores by Zip Code

Case	County	Zip Code	Family	General	Ob-Gyn	Internal	Pediatric
6	Orange	32839	0.19	0.00	3.34	1.95	3.55
6	Orange	34734	4.38	0.00	0.00	20.02	0.00
6	Orange	34747	4.20	0.00	111.19	28.80	34.99
6	Orange	34760	0.00	0.00	0.00	0.00	0.00
6	Orange	34761	1.52	4.23	17.00	13.21	12.04
6	Orange	34786	4.08	27.85	39.99	49.70	56.63
6	Orange	34787	0.34	0.00	5.93	6.91	4.20
7	PalmBe	33401	0.93	0.00	59.30	26.87	4.67
7	PalmBe	33403	0.32	0.00	72.52	2.17	0.00
7	PalmBe	33404	0.51	7.85	4.51	3.50	0.00
7	PalmBe	33405	0.77	5.93	6.81	9.26	9.65
7	PalmBe	33406	0.45	9.30	10.69	5.19	11.35
7	PalmBe	33407	0.67	8.21	9.43	22.89	25.03
7	PalmBe	33408	0.90	6.89	3.95	10.75	8.40
7	PalmBe	33409	0.35	0.00	12.19	10.66	4.32
7	PalmBe	33410	1.83	8.66	14.92	34.77	24.65
7	PalmBe	33411	0.92	2.83	11.36	11.35	11.49
7	PalmBe	33412	0.86	26.54	15.24	41.44	32.37
7	PalmBe	33413	0.40	0.00	0.00	8.30	10.09
7	PalmBe	33414	1.86	19.06	34.65	28.34	33.58
7	PalmBe	33415	0.10	5.94	0.00	1.33	1.21
7	PalmBe	33417	0.14	0.00	0.00	5.67	1.72
7	PalmBe	33418	1.54	4.30	24.67	25.87	19.21
7	PalmBe	33426	0.50	0.00	8.78	13.64	3.11
7	PalmBe	33428	1.42	6.24	19.72	12.54	8.89
7	PalmBe	33430	0.54	0.00	3.18	2.47	6.76
7	PalmBe	33431	0.66	6.77	23.32	25.66	0.00
7	PalmBe	33432	1.71	26.28	15.09	19.05	13.36
7	PalmBe	33433	0.75	5.77	19.87	7.72	10.55
7	PalmBe	33434	0.92	11.35	29.34	15.19	11.54
7	PalmBe	33435	0.75	3.85	19.87	9.44	4.69
7	PalmBe	33436	0.75	6.59	11.36	7.36	5.36
7	PalmBe	33437	1.17	9.00	10.34	15.40	12.20
7	PalmBe	33438	0.00	0.00	0.00	0.00	0.00
7	PalmBe	33440	0.63	6.46	0.00	4.32	10.50
7	PalmBe	33444	0.90	0.00	0.00	6.16	2.25

Appendix B, Continued  
Variable Specific Scores by Zip Code

Case	County	Zip Code	Family	General	Ob-Gyn	Internal	Pediatric
7	PalmBe	33445	0.96	8.39	4.82	11.22	3.41
7	PalmBe	33446	1.77	7.77	26.77	20.79	15.80
7	PalmBe	33458	0.92	7.08	24.41	17.39	7.20
7	PalmBe	33460	0.48	7.35	0.00	2.46	20.93
7	PalmBe	33461	0.32	6.58	3.78	6.61	1.34
7	PalmBe	33462	0.58	4.49	2.58	17.02	5.47
7	PalmBe	33463	0.84	0.00	1.65	3.84	3.50
7	PalmBe	33467	0.75	2.88	8.26	17.96	10.53
7	PalmBe	33469	1.86	16.34	9.38	9.11	3.32
7	PalmBe	33470	1.00	0.00	21.22	9.62	10.02
7	PalmBe	33476	0.00	0.00	0.00	0.00	0.00
7	PalmBe	33477	1.61	0.00	17.03	6.62	8.04
7	PalmBe	33478	0.00	0.00	0.00	6.96	4.23
7	PalmBe	33480	1.37	0.00	30.16	16.40	0.00
7	PalmBe	33483	1.50	46.22	5.31	4.12	7.52
7	PalmBe	33484	0.16	4.82	0.00	19.37	5.89
7	PalmBe	33486	1.92	58.92	33.83	33.46	17.43
7	PalmBe	33487	1.65	50.82	16.68	8.10	5.90
7	PalmBe	33493	2.95	0.00	0.00	6.74	0.00
7	PalmBe	33496	2.23	68.35	19.62	36.85	20.85
7	PalmBe	33498	0.79	24.34	9.32	18.10	16.50
8	Pinellas	33701	6.48	7.65	48.34	22.19	62.24
8	Pinellas	33702	0.76	7.83	8.99	6.11	4.78
8	Pinellas	33703	2.29	9.39	5.39	7.33	7.64
8	Pinellas	33704	1.38	14.08	8.09	10.99	22.90
8	Pinellas	33705	1.36	8.38	2.41	11.22	8.52
8	Pinellas	33706	1.54	20.31	7.78	7.55	8.26
8	Pinellas	33707	1.44	22.16	7.64	17.80	7.21
8	Pinellas	33708	0.89	13.68	3.93	4.58	2.78
8	Pinellas	33709	0.29	4.52	5.19	8.06	3.68
8	Pinellas	33710	0.92	17.71	18.31	10.27	14.41
8	Pinellas	33711	0.77	0.00	3.39	1.32	2.40
8	Pinellas	33712	0.29	0.00	2.58	0.00	5.47
8	Pinellas	33713	0.98	7.52	4.32	5.04	7.65
8	Pinellas	33714	0.43	0.00	3.81	1.48	0.00
8	Pinellas	33715	5.18	0.00	18.25	3.55	0.00

Appendix B, Continued  
Variable Specific Scores by Zip Code

Case	County	Zip Code	Family	General	Ob-Gyn	Internal	Pediatric
8	Pinellas	33716	2.21	0.00	6.49	15.13	27.58
8	Pinellas	33755	2.35	4.51	5.19	4.03	0.00
8	Pinellas	33756	1.32	20.23	41.82	31.59	16.45
8	Pinellas	33759	0.76	0.00	3.37	3.92	0.00
8	Pinellas	33760	0.68	6.94	0.00	3.10	5.64
8	Pinellas	33761	1.37	6.00	10.35	22.77	19.54
8	Pinellas	33762	1.69	17.26	9.91	23.10	21.05
8	Pinellas	33763	0.43	13.05	0.00	8.73	5.31
8	Pinellas	33764	1.94	4.97	8.56	7.76	2.02
8	Pinellas	33765	1.14	0.00	5.04	3.92	3.57
8	Pinellas	33767	1.57	12.05	27.68	18.81	0.00
8	Pinellas	33770	1.26	14.47	11.08	15.06	15.69
8	Pinellas	33771	0.92	16.10	2.31	1.80	6.55
8	Pinellas	33772	0.99	0.00	2.91	6.78	4.12
8	Pinellas	33773	0.00	14.38	0.00	6.41	2.92
8	Pinellas	33774	3.12	6.38	0.00	5.70	0.00
8	Pinellas	33776	1.43	17.58	0.00	11.76	7.15
8	Pinellas	33777	2.21	0.00	7.80	13.63	5.52
8	Pinellas	33778	1.97	25.88	4.95	5.77	3.51
8	Pinellas	33781	0.91	4.65	0.00	3.11	5.68
8	Pinellas	33782	1.57	6.03	3.46	10.75	4.90
8	Pinellas	33785	1.93	19.78	0.00	8.82	0.00
8	Pinellas	33786	2.39	73.49	0.00	32.79	0.00
8	Pinellas	34677	2.15	0.00	0.00	4.01	7.31
8	Pinellas	34681	9.28	0.00	0.00	42.37	0.00
8	Pinellas	34683	0.90	6.92	7.94	6.17	11.25
8	Pinellas	34684	0.98	8.58	12.32	16.27	12.21
8	Pinellas	34685	1.75	13.40	7.70	22.42	19.07
8	Pinellas	34689	1.20	8.18	7.05	7.30	6.66
8	Pinellas	34695	0.63	6.48	11.16	14.46	7.91
8	Pinellas	34698	1.45	17.18	11.84	16.87	5.59
9	Polk	33547	1.35	13.80	23.77	21.55	16.83
9	Polk	33801	0.00	3.72	2.14	4.15	3.03
9	Polk	33803	0.57	4.36	7.51	28.20	15.95
9	Polk	33805	1.88	0.00	26.46	26.98	30.45
9	Polk	33809	0.40	4.08	0.00	0.91	0.00

Appendix B, Continued  
Variable Specific Scores by Zip Code

Case	County	Zip Code	Family	General	Ob-Gyn	Internal	Pediatric
9	Polk	33810	0.00	0.00	2.37	4.59	3.35
9	Polk	33811	0.47	0.00	0.00	1.62	0.00
9	Polk	33813	1.08	19.94	20.99	21.49	12.16
9	Polk	33815	0.28	8.64	0.00	0.00	0.00
9	Polk	33823	0.29	13.33	2.55	0.00	0.00
9	Polk	33825	0.33	5.06	2.91	5.64	6.17
9	Polk	33827	0.00	0.00	0.00	0.00	0.00
9	Polk	33830	0.74	9.15	5.25	5.10	9.30
9	Polk	33835	0.00	0.00	0.00	0.00	0.00
9	Polk	33837	0.00	0.00	3.17	1.23	6.73
9	Polk	33838	1.35	0.00	0.00	9.23	0.00
9	Polk	33839	2.41	0.00	0.00	0.00	0.00
9	Polk	33841	0.49	0.00	0.00	0.00	0.00
9	Polk	33843	0.36	0.00	0.00	0.00	0.00
9	Polk	33844	0.43	0.00	2.54	3.95	1.80
9	Polk	33847	0.00	0.00	0.00	0.00	0.00
9	Polk	33849	0.00	0.00	0.00	0.00	0.00
9	Polk	33850	0.00	0.00	0.00	0.00	0.00
9	Polk	33851	0.00	0.00	0.00	0.00	0.00
9	Polk	33853	0.45	3.42	3.92	3.05	1.39
9	Polk	33860	0.00	0.00	0.00	0.00	0.00
9	Polk	33868	0.35	0.00	0.00	0.00	0.00
9	Polk	33877	0.00	0.00	0.00	0.00	0.00
9	Polk	33880	1.13	6.97	22.00	7.77	7.08
9	Polk	33881	0.95	0.00	4.79	8.37	6.78
9	Polk	33884	0.96	11.76	13.50	9.18	9.56
9	Polk	34759	0.00	0.00	8.95	3.48	0.00

Appendix C  
Descriptive Statistics for Population by Zip Code

Case	County	Zip Code	Population	Female	Male	White	Black	Hispanic
1	Brevard	32754	8,972	50.18	49.82	87.33	10.45	1.29
1	Brevard	32759	2,448	48.94	51.06	86.93	10.70	0.98
1	Brevard	32775	603	49.75	50.25	96.02	1.00	1.00
1	Brevard	32780	30,966	52.13	47.87	86.13	10.14	3.62
1	Brevard	32796	20,485	51.67	48.33	85.82	10.82	2.86
1	Brevard	32901	22,542	51.61	48.39	73.62	20.32	5.51
1	Brevard	32903	12,792	50.45	49.55	96.36	0.68	2.94
1	Brevard	32904	17,884	52.91	47.09	94.86	1.26	3.34
1	Brevard	32905	21,731	51.93	48.07	79.26	12.37	9.28
1	Brevard	32907	34,113	51.13	48.87	82.39	11.11	8.57
1	Brevard	32908	5,422	50.98	49.02	83.68	8.89	7.51
1	Brevard	32909	18,203	50.57	49.43	82.77	10.70	8.20
1	Brevard	32920	9,036	47.80	52.20	94.71	1.39	3.52
1	Brevard	32922	15,968	52.24	47.76	58.35	36.17	5.30
1	Brevard	32925	2,137	46.19	53.81	66.45	19.65	12.21
1	Brevard	32926	19,234	50.72	49.28	83.34	13.34	2.52
1	Brevard	32927	27,018	46.39	53.61	87.07	8.21	3.89
1	Brevard	32931	14,742	49.63	50.37	96.54	0.58	2.46
1	Brevard	32934	14,001	51.28	48.72	92.09	3.16	4.84
1	Brevard	32935	40,693	51.32	48.68	89.47	4.37	5.38
1	Brevard	32937	26,867	51.42	48.58	93.54	1.88	3.72
1	Brevard	32940	19,083	52.32	47.68	93.02	2.45	4.25
1	Brevard	32948	4,881	42.63	57.37	64.37	6.15	61.75
1	Brevard	32949	735	51.16	48.84	96.46	0.95	2.18
1	Brevard	32950	4,543	49.20	50.80	90.78	4.62	3.32
1	Brevard	32951	10,543	50.26	49.74	97.92	0.21	2.12
1	Brevard	32952	20,696	50.53	49.47	94.98	0.85	3.58
1	Brevard	32953	21,695	51.50	48.50	86.77	8.37	4.11
1	Brevard	32955	26,036	52.09	47.91	83.30	12.39	3.55
1	Brevard	32976	9,817	53.24	46.76	98.77	0.31	1.26
2	Broward	33004	15,161	50.95	49.05	65.12	29.83	10.51
2	Broward	33009	34,504	53.34	46.66	76.60	16.36	19.07
2	Broward	33019	17,432	52.21	47.79	95.47	1.33	13.31
2	Broward	33020	40,466	50.03	49.97	66.31	22.97	21.68
2	Broward	33021	46,177	52.86	47.14	85.46	6.96	17.81

Appendix C, Continued  
Descriptive Statistics for Population by Zip Code

Case	County	Zip Code	Population	Female	Male	White	Black	Hispanic
2	Broward	33023	60,897	52.20	47.80	42.67	45.14	24.10
2	Broward	33024	58,895	51.87	48.13	76.88	9.83	30.82
2	Broward	33025	46,392	53.41	46.59	46.14	40.22	24.13
2	Broward	33026	29,582	53.88	46.12	84.57	6.98	19.58
2	Broward	33027	25,471	56.31	43.69	80.97	10.65	30.28
2	Broward	33028	22,132	51.59	48.41	71.35	13.27	38.13
2	Broward	33029	35,326	51.15	48.85	74.84	13.32	37.17
2	Broward	33060	33,389	50.09	49.91	53.03	36.83	11.93
2	Broward	33062	25,514	52.18	47.82	96.91	0.70	5.05
2	Broward	33063	50,993	53.34	46.66	82.55	8.71	14.10
2	Broward	33064	52,892	49.99	50.01	69.03	19.04	14.17
2	Broward	33065	51,620	51.82	48.18	75.06	13.33	18.86
2	Broward	33066	16,785	57.90	42.10	93.57	3.10	5.65
2	Broward	33067	23,107	50.83	49.17	88.12	4.68	10.08
2	Broward	33068	47,696	51.01	48.99	54.51	30.66	22.55
2	Broward	33069	24,530	50.82	49.18	64.00	30.79	10.63
2	Broward	33071	36,841	51.07	48.93	87.52	5.58	13.32
2	Broward	33073	20,091	50.08	49.92	82.29	7.47	15.73
2	Broward	33076	19,710	50.77	49.23	86.97	5.54	11.86
2	Broward	33301	11,996	39.50	60.50	83.65	12.93	7.07
2	Broward	33304	18,684	44.86	55.14	70.33	19.59	9.02
2	Broward	33305	12,014	43.56	56.44	88.85	5.40	7.95
2	Broward	33306	3,796	47.55	52.45	95.60	1.08	4.98
2	Broward	33308	28,554	51.62	48.38	96.17	0.87	6.43
2	Broward	33309	33,342	48.78	51.22	56.53	34.33	13.04
2	Broward	33311	65,469	52.24	47.76	11.75	81.30	3.45
2	Broward	33312	45,055	48.66	51.34	57.65	34.43	14.93
2	Broward	33313	56,847	53.91	46.09	23.69	67.94	7.87
2	Broward	33314	23,859	50.37	49.63	84.72	5.39	22.18
2	Broward	33315	12,905	47.91	52.09	85.85	7.06	16.09
2	Broward	33316	10,668	47.20	52.80	90.98	4.05	9.95
2	Broward	33317	34,359	51.18	48.82	70.94	20.08	17.45
2	Broward	33319	43,015	55.36	44.64	57.98	33.74	11.20
2	Broward	33321	39,427	55.27	44.73	85.58	7.37	14.37
2	Broward	33322	40,691	54.70	45.30	82.67	10.49	11.81

Appendix C, Continued  
Descriptive Statistics for Population by Zip Code

Case	County	Zip Code	Population	Female	Male	White	Black	Hispanic
2	Broward	33323	17,784	50.40	49.60	79.83	10.91	18.21
2	Broward	33324	43,355	53.11	46.89	85.80	6.71	14.22
2	Broward	33325	27,552	51.00	49.00	88.75	3.80	17.40
2	Broward	33326	29,956	51.93	48.07	88.69	3.22	29.21
2	Broward	33327	13,171	50.75	49.25	88.00	3.93	29.22
2	Broward	33328	20,035	51.47	48.53	91.39	2.10	12.87
2	Broward	33330	11,178	51.10	48.90	89.48	3.55	18.37
2	Broward	33331	20,975	50.87	49.13	85.79	4.60	26.57
2	Broward	33332	3,778	57.54	42.46	85.04	9.66	17.81
2	Broward	33334	30,847	47.39	52.61	76.45	12.34	21.51
2	Broward	33351	32,464	52.66	47.34	69.30	18.29	19.80
2	Broward	33388	0	0.00	0.00	0.00	0.00	0.00
2	Broward	33394	0	0.00	0.00	0.00	0.00	0.00
2	Broward	33441	26,973	51.31	48.69	65.00	27.20	8.93
2	Broward	33442	28,666	56.29	43.71	91.67	3.36	7.47
3	Dade	33010	45,353	50.24	49.76	6.32	1.94	91.37
3	Dade	33012	74,948	52.96	47.04	8.77	0.51	90.03
3	Dade	33013	33,365	50.96	49.04	8.94	0.31	90.32
3	Dade	33014	38,667	51.94	48.06	18.16	1.78	78.51
3	Dade	33015	49,279	52.30	47.70	17.37	16.58	62.04
3	Dade	33016	43,347	52.64	47.36	9.67	1.42	87.58
3	Dade	33018	37,725	51.49	48.51	9.22	0.82	88.59
3	Dade	33030	27,304	46.97	53.03	26.71	20.01	49.38
3	Dade	33031	5,514	49.33	50.67	66.72	1.27	29.18
3	Dade	33032	20,716	50.41	49.59	19.59	33.44	43.19
3	Dade	33033	31,394	50.33	49.67	20.27	17.73	59.32
3	Dade	33034	15,402	47.62	52.38	19.59	37.22	39.65
3	Dade	33035	2,762	53.69	46.31	58.73	9.74	27.01
3	Dade	33054	28,177	53.72	46.28	2.97	75.07	20.37
3	Dade	33055	45,105	51.55	48.45	7.74	37.97	52.60
3	Dade	33056	33,223	53.34	46.66	1.82	86.60	9.33
3	Dade	33109	467	49.68	50.32	77.94	3.21	14.78
3	Dade	33122	0	0.00	0.00	0.00	0.00	0.00
3	Dade	33125	48,598	50.77	49.23	7.32	1.92	89.84
3	Dade	33126	43,814	53.06	46.94	7.30	0.64	91.03
3	Dade	33127	27,796	50.58	49.42	2.57	62.05	32.01

Appendix C, Continued  
Descriptive Statistics for Population by Zip Code

Case	County	Zip Code	Population	Female	Male	White	Black	Hispanic
3	Dade	33128	7,002	44.50	55.50	5.24	5.47	88.70
3	Dade	33129	11,100	53.00	47.00	34.30	0.95	62.79
3	Dade	33130	20,541	49.25	50.75	6.83	1.83	90.54
3	Dade	33131	4,723	49.04	50.96	40.67	1.12	54.65
3	Dade	33132	5,322	32.83	67.17	32.39	10.50	54.06
3	Dade	33133	29,929	51.29	48.71	37.50	15.71	44.93
3	Dade	33134	34,045	53.99	46.01	28.96	0.51	69.08
3	Dade	33135	35,712	51.58	48.42	6.03	0.41	92.88
3	Dade	33136	13,119	50.99	49.01	8.68	59.03	28.23
3	Dade	33137	17,638	47.94	52.06	21.32	34.96	37.63
3	Dade	33138	29,522	48.67	51.33	29.27	38.87	22.34
3	Dade	33139	38,441	45.56	54.44	43.38	2.61	50.68
3	Dade	33140	20,240	51.37	48.63	56.60	1.20	40.03
3	Dade	33141	36,545	50.96	49.04	29.82	4.18	62.68
3	Dade	33142	53,398	48.45	51.55	3.44	50.15	45.39
3	Dade	33143	29,788	52.89	47.11	41.99	11.54	42.85
3	Dade	33144	25,332	53.19	46.81	10.47	0.15	88.63
3	Dade	33145	28,921	52.62	47.38	13.24	0.55	84.86
3	Dade	33146	13,210	52.44	47.56	54.20	4.71	36.92
3	Dade	33147	50,500	52.47	47.53	2.69	65.22	30.68
3	Dade	33149	10,513	53.08	46.92	48.12	0.27	49.81
3	Dade	33150	26,355	52.10	47.90	4.17	69.22	18.63
3	Dade	33154	13,359	55.11	44.89	60.84	1.26	35.19
3	Dade	33155	44,142	52.91	47.09	22.40	0.53	75.84
3	Dade	33156	31,450	51.61	48.39	57.86	1.91	34.78
3	Dade	33157	61,288	52.20	47.80	33.95	30.72	30.48
3	Dade	33158	6,457	51.08	48.92	69.83	1.63	24.27
3	Dade	33160	33,833	54.21	45.79	61.09	4.74	30.74
3	Dade	33161	53,248	52.30	47.70	17.18	54.50	21.29
3	Dade	33162	45,224	52.36	47.64	19.12	46.95	25.62
3	Dade	33165	57,079	53.27	46.73	16.11	1.25	81.29
3	Dade	33166	22,563	49.83	50.17	30.36	4.47	62.11
3	Dade	33167	18,203	52.23	47.77	4.88	70.49	20.54
3	Dade	33168	25,151	51.37	48.63	8.52	64.06	21.98
3	Dade	33169	36,115	53.37	46.63	6.96	77.78	10.78
3	Dade	33170	8,460	52.09	47.91	18.45	58.46	21.10



Appendix C, Continued  
Descriptive Statistics for Population by Zip Code

Case	County	Zip Code	Population	Female	Male	White	Black	Hispanic
3	Dade	33172	38,515	53.03	46.97	10.59	1.12	85.46
3	Dade	33173	33,640	53.54	46.46	30.41	1.72	64.63
3	Dade	33174	30,281	53.53	46.47	8.41	0.35	90.13
3	Dade	33175	52,581	52.28	47.72	13.75	0.55	84.25
3	Dade	33176	52,081	52.76	47.24	38.17	17.42	40.14
3	Dade	33177	45,482	49.63	50.37	14.99	17.49	63.78
3	Dade	33178	15,272	51.10	48.90	26.06	2.48	65.04
3	Dade	33179	37,380	54.84	45.16	38.57	30.07	25.42
3	Dade	33180	20,799	53.73	46.27	72.28	2.42	22.15
3	Dade	33181	17,694	51.34	48.66	36.86	31.34	26.39
3	Dade	33182	16,887	41.90	58.10	11.74	10.20	76.47
3	Dade	33183	35,422	53.00	47.00	20.78	2.23	73.94
3	Dade	33184	19,855	52.52	47.48	10.83	0.38	88.11
3	Dade	33185	9,868	52.34	47.66	18.00	1.35	78.35
3	Dade	33186	59,935	52.95	47.05	29.94	6.45	58.01
3	Dade	33187	14,014	50.12	49.88	29.57	6.49	59.91
3	Dade	33189	20,280	52.27	47.73	30.24	21.95	42.82
3	Dade	33190	4,820	51.72	48.28	26.99	25.21	43.86
3	Dade	33193	42,469	50.58	49.42	14.72	5.75	76.77
3	Dade	33194	0	0.00	0.00	0.00	0.00	0.00
3	Dade	33196	34,661	52.34	47.66	22.58	6.78	65.38
4	Duval	32009	2,730	49.16	50.84	96.96	1.06	0.88
4	Duval	32073	50,282	51.24	48.76	82.98	9.03	5.38
4	Duval	32202	5,061	33.49	66.51	31.99	65.40	2.21
4	Duval	32204	7,777	53.93	46.07	45.71	50.43	2.26
4	Duval	32205	30,067	52.37	47.63	73.83	20.48	2.95
4	Duval	32206	21,153	51.96	48.04	15.06	82.44	1.85
4	Duval	32207	33,753	52.70	47.30	72.79	20.94	4.70
4	Duval	32208	33,667	54.08	45.92	23.01	75.44	0.96
4	Duval	32209	39,653	55.58	44.42	0.98	97.99	0.71
4	Duval	32210	58,283	52.11	47.89	67.34	25.01	4.34
4	Duval	32211	34,475	51.47	48.53	64.48	29.22	5.25
4	Duval	32212	2,485	36.54	63.46	60.36	27.73	12.23
4	Duval	32215	812	50.49	49.51	49.75	35.34	8.99
4	Duval	32216	29,483	52.06	47.94	73.83	19.59	5.50
4	Duval	32217	20,224	53.04	46.96	77.59	13.75	6.12

Appendix C, Continued  
Descriptive Statistics for Population by Zip Code

Case	County	Zip Code	Population	Female	Male	White	Black	Hispanic
4	Duval	32218	37,790	51.77	48.23	57.84	39.65	1.65
4	Duval	32219	9,448	50.47	49.53	55.73	42.57	1.04
4	Duval	32220	10,615	49.45	50.55	93.16	4.13	1.84
4	Duval	32221	17,927	51.25	48.75	84.74	10.06	2.84
4	Duval	32222	4,423	50.26	49.74	83.68	10.94	4.11
4	Duval	32223	25,424	51.35	48.65	91.81	4.23	3.49
4	Duval	32224	32,625	51.03	48.97	83.27	8.02	5.66
4	Duval	32225	45,702	51.13	48.87	74.67	15.65	5.55
4	Duval	32226	8,173	50.13	49.87	96.67	1.59	1.82
4	Duval	32227	5,250	29.94	70.06	61.01	25.45	11.87
4	Duval	32233	25,398	50.08	49.92	74.79	16.85	5.97
4	Duval	32234	6,307	51.32	48.68	89.82	8.66	1.33
4	Duval	32244	46,584	51.32	48.68	68.09	22.34	5.44
4	Duval	32246	36,100	50.86	49.14	71.76	15.96	6.43
4	Duval	32250	23,900	49.80	50.20	91.49	4.42	2.93
4	Duval	32254	14,969	52.17	47.83	43.72	53.43	1.64
4	Duval	32256	29,141	50.60	49.40	75.79	12.05	6.30
4	Duval	32257	36,364	52.13	47.87	84.19	8.64	5.13
4	Duval	32258	12,603	50.94	49.06	85.42	7.82	3.78
4	Duval	32259	18,063	49.91	50.09	94.82	2.04	2.39
4	Duval	32266	7,235	49.01	50.99	96.06	0.73	2.10
4	Duval	32277	27,622	52.26	47.74	62.48	31.26	4.50
5	Hillsbo	33510	22,374	51.68	48.32	82.80	9.00	11.40
5	Hillsbo	33511	44,927	51.44	48.56	81.27	9.49	12.80
5	Hillsbo	33527	11,431	48.04	51.96	82.93	0.86	30.29
5	Hillsbo	33534	7,496	48.28	51.72	87.65	1.39	20.13
5	Hillsbo	33540	18,837	53.11	46.89	92.71	2.64	4.70
5	Hillsbo	33547	8,527	50.13	49.87	93.77	1.29	6.52
5	Hillsbo	33549	44,672	50.39	49.61	89.88	4.09	10.08
5	Hillsbo	33556	13,995	49.48	50.52	92.44	3.08	7.02
5	Hillsbo	33565	16,814	50.46	49.54	92.11	1.54	8.53
5	Hillsbo	33566	21,552	52.15	47.85	68.65	20.59	16.39
5	Hillsbo	33567	25,920	49.74	50.26	78.26	6.88	22.16
5	Hillsbo	33569	35,689	50.05	49.95	85.19	7.77	10.70
5	Hillsbo	33570	12,857	49.32	50.68	84.30	1.00	32.04
5	Hillsbo	33572	7,461	50.17	49.83	93.70	0.84	7.59

Appendix C, Continued  
Descriptive Statistics for Population by Zip Code

Case	County	Zip Code	Population	Female	Male	White	Black	Hispanic
5	Hillsbo	33573	16,321	57.36	42.64	98.96	0.13	1.19
5	Hillsbo	33584	20,490	50.23	49.77	86.80	7.08	8.71
5	Hillsbo	33592	9,970	49.73	50.27	82.99	11.66	6.29
5	Hillsbo	33594	47,721	50.89	49.11	88.00	5.98	9.52
5	Hillsbo	33598	8,019	46.95	53.05	59.26	4.31	61.55
5	Hillsbo	33602	8,955	50.26	49.74	45.92	46.29	17.62
5	Hillsbo	33603	20,947	51.58	48.42	61.08	28.09	28.51
5	Hillsbo	33604	36,785	51.19	48.81	64.55	24.80	20.97
5	Hillsbo	33605	17,081	50.72	49.28	28.10	61.76	26.48
5	Hillsbo	33606	14,960	49.98	50.02	83.66	11.40	7.77
5	Hillsbo	33607	22,801	52.62	47.38	50.20	38.48	41.37
5	Hillsbo	33609	16,180	51.01	48.99	84.53	7.03	21.42
5	Hillsbo	33610	32,397	53.03	46.97	37.65	56.68	9.08
5	Hillsbo	33611	29,837	51.25	48.75	85.15	6.19	10.50
5	Hillsbo	33612	42,961	51.74	48.26	60.01	28.97	17.85
5	Hillsbo	33613	29,424	50.58	49.42	68.17	19.09	17.11
5	Hillsbo	33614	43,803	50.44	49.56	74.51	8.92	47.20
5	Hillsbo	33615	41,349	51.10	48.90	77.69	8.34	28.63
5	Hillsbo	33616	12,014	49.71	50.29	67.36	17.79	13.38
5	Hillsbo	33617	42,281	52.13	47.87	62.30	27.38	13.92
5	Hillsbo	33618	20,358	51.69	48.31	87.37	4.50	15.59
5	Hillsbo	33619	28,459	47.95	52.05	50.62	40.11	18.10
5	Hillsbo	33620	2,532	0.00	0.00	60.51	31.60	8.14
5	Hillsbo	33621	2,689	46.89	53.11	61.81	24.51	12.01
5	Hillsbo	33624	45,065	52.29	47.71	83.60	6.42	17.77
5	Hillsbo	33625	20,781	50.99	49.01	82.12	7.30	20.12
5	Hillsbo	33626	11,116	50.94	49.06	86.91	5.06	11.89
5	Hillsbo	33629	22,858	52.22	47.78	95.24	1.18	8.45
5	Hillsbo	33634	19,255	51.72	48.28	77.17	8.07	37.44
5	Hillsbo	33635	12,439	50.83	49.17	83.63	5.84	16.22
5	Hillsbo	33637	12,534	51.76	48.24	73.74	16.93	12.72
5	Hillsbo	33647	26,290	50.57	49.43	82.72	5.86	9.25
5	Hillsbo	33834	7,274	39.50	60.50	66.15	14.74	31.36
5	Hillsbo	34221	31,646	49.40	50.60	74.11	17.16	18.60
6	Orange	32703	43,263	50.69	49.31	71.44	18.27	16.35
6	Orange	32709	2,211	48.08	51.92	95.93	0.45	3.17

Appendix C, Continued  
Descriptive Statistics for Population by Zip Code

Case	County	Zip Code	Population	Female	Male	White	Black	Hispanic
6	Orange	32712	29,230	50.67	49.33	83.68	8.97	12.37
6	Orange	32751	18,114	52.64	47.36	85.39	10.46	5.59
6	Orange	32757	18,785	52.48	47.52	81.70	14.41	7.59
6	Orange	32776	6,634	50.41	49.59	91.78	3.23	6.38
6	Orange	32789	23,764	52.72	47.28	83.11	12.71	4.99
6	Orange	32792	50,783	50.85	49.15	82.73	6.09	15.84
6	Orange	32798	1,627	57.10	42.90	97.11	0.37	3.81
6	Orange	32801	7,979	53.44	46.56	79.77	13.18	12.61
6	Orange	32803	21,280	50.02	49.98	88.52	5.05	8.36
6	Orange	32804	18,083	50.92	49.08	92.78	2.48	4.58
6	Orange	32805	24,432	50.96	49.04	14.84	78.77	5.01
6	Orange	32806	26,682	50.39	49.61	88.11	5.32	9.73
6	Orange	32807	29,167	49.77	50.23	72.79	6.89	38.62
6	Orange	32808	48,886	52.54	47.46	33.76	53.03	12.19
6	Orange	32809	22,676	49.79	50.21	67.36	13.14	35.56
6	Orange	32810	32,623	50.56	49.44	61.97	26.66	14.30
6	Orange	32811	33,391	51.59	48.41	33.74	53.98	12.98
6	Orange	32812	35,952	51.56	48.44	82.14	6.53	21.08
6	Orange	32817	27,923	49.58	50.42	80.45	5.01	20.33
6	Orange	32818	35,679	51.81	48.19	43.27	43.13	13.78
6	Orange	32819	23,913	50.46	49.54	74.06	12.93	9.50
6	Orange	32820	3,007	48.42	51.58	93.71	0.90	8.88
6	Orange	32821	13,930	49.82	50.18	83.50	4.72	13.14
6	Orange	32822	52,182	51.07	48.93	71.33	8.63	37.55
6	Orange	32824	19,327	50.88	49.12	67.17	11.78	43.96
6	Orange	32825	43,682	48.11	51.89	72.39	8.83	31.85
6	Orange	32826	24,253	49.02	50.98	78.25	7.78	16.71
6	Orange	32827	2,186	50.69	49.31	74.61	6.72	48.49
6	Orange	32828	22,301	50.50	49.50	79.31	7.05	19.08
6	Orange	32829	3,565	52.17	47.83	78.06	6.48	30.41
6	Orange	32831	57	47.37	52.63	84.21	14.04	12.28
6	Orange	32832	1,860	48.01	51.99	95.86	0.81	4.30
6	Orange	32833	5,092	48.68	51.32	87.04	4.03	8.72
6	Orange	32835	31,387	49.87	50.13	72.92	11.94	12.66
6	Orange	32836	12,109	50.42	49.58	80.19	3.18	12.10
6	Orange	32837	34,855	50.94	49.06	69.62	8.13	28.35

Appendix C, Continued  
Descriptive Statistics for Population by Zip Code

Case	County	Zip Code	Population	Female	Male	White	Black	Hispanic
6	Orange	32839	40,457	46.16	53.84	44.95	35.51	26.61
6	Orange	34734	2,622	52.02	47.98	80.51	9.84	13.65
6	Orange	34747	5,469	49.94	50.06	88.99	2.96	10.70
6	Orange	34760	661	52.50	47.50	54.46	42.66	2.72
6	Orange	34761	27,815	50.61	49.39	82.03	6.57	14.57
6	Orange	34786	8,449	50.18	49.82	91.18	2.72	4.54
6	Orange	34787	22,779	51.39	48.61	77.41	13.81	14.33
7	PalmBe	33401	20,510	53.21	46.79	51.97	39.76	10.17
7	PalmBe	33403	12,112	50.63	49.37	58.07	32.89	5.69
7	PalmBe	33404	29,975	52.46	47.54	28.70	67.80	3.47
7	PalmBe	33405	19,840	48.51	51.49	81.91	4.82	46.28
7	PalmBe	33406	25,292	47.79	52.21	81.65	7.20	29.09
7	PalmBe	33407	28,672	50.75	49.25	29.90	60.63	9.32
7	PalmBe	33408	17,086	51.56	48.44	96.83	0.73	3.65
7	PalmBe	33409	22,164	50.18	49.82	68.00	22.09	17.05
7	PalmBe	33410	27,174	51.91	48.09	91.50	3.81	6.68
7	PalmBe	33411	41,637	51.58	48.42	80.07	12.82	11.40
7	PalmBe	33412	8,868	49.00	51.00	87.51	6.81	9.34
7	PalmBe	33413	9,484	50.59	49.41	79.74	10.31	19.51
7	PalmBe	33414	37,047	51.18	48.82	88.81	5.39	11.47
7	PalmBe	33415	39,584	52.64	47.36	76.40	11.77	27.22
7	PalmBe	33417	27,755	54.78	45.22	77.38	15.53	11.19
7	PalmBe	33418	27,391	51.96	48.04	94.13	1.65	5.26
7	PalmBe	33426	15,391	54.96	45.04	87.58	7.72	7.01
7	PalmBe	33428	37,682	51.56	48.44	89.12	3.50	12.14
7	PalmBe	33430	21,244	46.86	53.14	29.21	53.72	26.94
7	PalmBe	33431	17,386	51.44	48.56	88.84	5.72	7.86
7	PalmBe	33432	17,910	51.22	48.78	88.61	5.10	10.37
7	PalmBe	33433	40,807	54.32	45.68	94.44	1.35	7.74
7	PalmBe	33434	20,728	55.47	44.53	95.59	1.21	5.15
7	PalmBe	33435	30,597	52.37	47.63	57.06	35.57	10.12
7	PalmBe	33436	35,683	53.29	46.71	86.24	8.45	7.69
7	PalmBe	33437	39,212	52.24	47.76	92.95	3.41	5.60
7	PalmBe	33438	780	51.41	48.59	53.59	26.54	30.26
7	PalmBe	33440	18,227	48.30	51.70	63.49	22.08	35.60
7	PalmBe	33444	21,293	49.85	50.15	41.49	48.63	9.42

Appendix C, Continued  
Descriptive Statistics for Population by Zip Code

Case	County	Zip Code	Population	Female	Male	White	Black	Hispanic
7	PalmBe	33445	28,061	54.10	45.90	77.61	17.30	5.76
7	PalmBe	33446	15,146	56.19	43.81	98.34	0.51	2.96
7	PalmBe	33458	33,214	49.86	50.14	91.80	3.56	8.88
7	PalmBe	33460	32,007	47.40	52.60	63.20	19.94	31.51
7	PalmBe	33461	35,754	49.61	50.39	75.40	9.56	29.57
7	PalmBe	33462	26,221	50.90	49.10	81.07	10.61	14.76
7	PalmBe	33463	41,043	51.44	48.56	78.27	9.26	22.24
7	PalmBe	33467	40,914	51.95	48.05	92.58	3.11	8.41
7	PalmBe	33469	14,400	52.15	47.85	98.14	0.42	2.27
7	PalmBe	33470	19,103	49.32	50.68	88.54	5.88	10.98
7	PalmBe	33476	8,456	51.30	48.70	19.60	65.00	23.86
7	PalmBe	33477	11,903	52.68	47.32	98.31	0.21	1.79
7	PalmBe	33478	11,315	49.49	50.51	96.45	0.98	3.78
7	PalmBe	33480	11,200	55.83	44.17	96.20	2.40	2.54
7	PalmBe	33483	12,729	51.98	48.02	87.85	6.91	5.21
7	PalmBe	33484	24,390	56.51	43.49	95.78	2.30	3.02
7	PalmBe	33486	21,967	51.14	48.86	91.41	2.33	9.23
7	PalmBe	33487	16,206	52.19	47.81	93.97	2.63	6.53
7	PalmBe	33493	3,895	36.82	63.18	24.67	66.32	19.79
7	PalmBe	33496	20,658	52.80	47.20	95.05	1.28	6.20
7	PalmBe	33498	14,501	50.78	49.22	92.40	1.74	8.75
8	Pinellas	33701	15,374	49.36	50.64	73.41	20.98	3.80
8	Pinellas	33702	30,058	51.62	48.38	89.48	2.82	4.95
8	Pinellas	33703	25,063	52.28	47.72	93.80	1.13	3.90
8	Pinellas	33704	16,714	51.97	48.03	93.62	1.82	4.00
8	Pinellas	33705	28,083	53.85	46.15	39.21	55.78	3.18
8	Pinellas	33706	17,376	50.56	49.44	97.65	0.50	2.39
8	Pinellas	33707	26,542	54.34	45.66	90.97	6.09	2.82
8	Pinellas	33708	17,199	51.47	48.53	97.55	0.30	2.38
8	Pinellas	33709	26,039	53.02	46.98	90.33	2.87	4.77
8	Pinellas	33710	33,213	52.86	47.14	92.84	1.56	4.42
8	Pinellas	33711	19,915	54.46	45.54	37.21	59.14	2.45
8	Pinellas	33712	26,222	54.19	45.81	25.17	70.54	2.76
8	Pinellas	33713	31,273	50.29	49.71	78.80	9.40	6.13
8	Pinellas	33714	17,753	50.01	49.99	88.13	3.00	4.19
8	Pinellas	33715	7,403	51.44	48.56	96.61	1.22	2.89

Appendix C, Continued  
Descriptive Statistics for Population by Zip Code

Case	County	Zip Code	Population	Female	Male	White	Black	Hispanic
8	Pinellas	33716	10,409	49.44	50.56	85.18	5.58	8.23
8	Pinellas	33755	26,061	50.62	49.38	67.08	24.81	11.33
8	Pinellas	33756	29,081	52.70	47.30	88.28	6.49	8.25
8	Pinellas	33759	20,071	52.70	47.30	82.69	9.64	8.89
8	Pinellas	33760	16,958	44.59	55.41	76.47	15.54	7.68
8	Pinellas	33761	19,594	54.39	45.61	96.15	0.82	3.83
8	Pinellas	33762	6,818	51.45	48.55	92.05	2.14	3.56
8	Pinellas	33763	18,029	55.65	44.35	94.36	1.67	6.40
8	Pinellas	33764	23,673	52.48	47.52	93.52	2.44	4.73
8	Pinellas	33765	13,403	51.50	48.50	88.08	4.28	10.60
8	Pinellas	33767	9,765	50.75	49.25	97.84	0.20	2.54
8	Pinellas	33770	24,394	52.14	47.86	92.58	2.63	4.52
8	Pinellas	33771	29,225	53.81	46.19	92.19	2.67	4.12
8	Pinellas	33772	23,232	54.08	45.92	95.94	0.56	2.96
8	Pinellas	33773	16,369	51.68	48.32	91.83	2.12	4.11
8	Pinellas	33774	18,431	53.52	46.48	91.32	5.65	2.91
8	Pinellas	33776	13,388	52.46	47.54	96.89	0.46	2.32
8	Pinellas	33777	17,328	53.06	46.94	93.37	1.36	3.78
8	Pinellas	33778	13,639	53.00	47.00	83.64	12.91	3.40
8	Pinellas	33781	25,287	51.34	48.66	88.86	2.44	7.77
8	Pinellas	33782	19,527	53.43	46.57	90.48	1.22	4.12
8	Pinellas	33785	5,949	49.72	50.28	97.44	0.32	3.41
8	Pinellas	33786	1,601	50.09	49.91	96.75	0.25	2.94
8	Pinellas	34677	19,628	51.69	48.31	91.81	2.47	6.00
8	Pinellas	34681	1,239	49.39	50.61	98.22	0.32	2.02
8	Pinellas	34683	34,025	51.72	48.28	96.10	0.93	3.54
8	Pinellas	34684	27,429	54.52	45.48	95.28	1.10	3.50
8	Pinellas	34685	17,559	51.19	48.81	94.57	1.24	3.76
8	Pinellas	34689	28,752	51.82	48.18	91.16	4.97	3.98
8	Pinellas	34695	18,156	52.35	47.65	92.18	4.22	3.51
8	Pinellas	34698	34,235	54.53	45.47	94.97	2.02	3.18
9	Polk	33547	8,527	50.13	49.87	93.77	1.29	6.52
9	Polk	33801	31,593	51.33	48.67	81.15	12.48	7.47
9	Polk	33803	26,994	53.39	46.61	90.02	4.99	7.03
9	Polk	33805	20,426	53.20	46.80	45.89	48.60	7.33
9	Polk	33809	28,855	52.06	47.94	91.29	3.95	4.75

Appendix C, Continued  
Descriptive Statistics for Population by Zip Code

Case	County	Zip Code	Population	Female	Male	White	Black	Hispanic
9	Polk	33810	28,563	50.78	49.22	88.91	7.17	5.02
9	Polk	33811	16,176	50.54	49.46	88.41	6.93	6.21
9	Polk	33813	35,411	51.45	48.55	90.61	4.28	5.14
9	Polk	33815	13,620	51.64	48.36	63.38	27.59	12.14
9	Polk	33823	26,485	50.89	49.11	85.43	8.32	7.62
9	Polk	33825	23,257	48.23	51.77	72.27	17.52	15.11
9	Polk	33827	2,527	49.90	50.10	86.66	9.10	5.78
9	Polk	33830	25,723	50.40	49.60	69.40	23.48	9.98
9	Polk	33835	50	56.00	44.00	84.00	4.00	2.00
9	Polk	33837	21,315	50.27	49.73	88.07	4.37	14.29
9	Polk	33838	2,843	52.02	47.98	69.15	22.76	11.40
9	Polk	33839	1,591	52.17	47.83	88.37	5.72	7.79
9	Polk	33841	7,881	50.34	49.66	69.83	15.77	22.48
9	Polk	33843	10,668	45.05	54.95	71.98	9.77	22.33
9	Polk	33844	26,600	50.42	49.58	66.87	20.44	22.13
9	Polk	33847	283	35.69	64.31	76.68	15.90	8.48
9	Polk	33849	418	46.17	53.83	92.82	0.96	4.78
9	Polk	33850	4,039	52.93	47.07	80.12	15.33	6.36
9	Polk	33851	907	51.82	48.18	92.28	3.64	6.06
9	Polk	33853	34,439	51.49	48.51	78.45	16.16	7.74
9	Polk	33860	17,015	49.56	50.44	81.15	11.86	12.20
9	Polk	33868	10,885	41.85	58.15	81.26	14.38	6.85
9	Polk	33877	550	50.36	49.64	15.45	76.55	7.09
9	Polk	33880	33,778	51.02	48.98	79.67	9.51	15.45
9	Polk	33881	28,225	52.78	47.22	68.07	26.92	4.21
9	Polk	33884	20,016	53.20	46.80	93.86	2.23	3.50
9	Polk	34759	7,553	51.57	48.43	69.27	14.05	37.22



Appendix C, Continued  
Descriptive Statistics for Population by Zip Code

Case	County	Zip	Under_15	Over_65	Unemp	Poverty	Phy_Rate
		Code					
1	Brevard	32754	20.20	16.46	3	9.3	0.00
1	Brevard	32759	15.69	23.08	2.1	8.2	0.00
1	Brevard	32775	20.90	10.95	0	0	0.00
1	Brevard	32780	17.42	22.28	2.8	7.6	3.07
1	Brevard	32796	20.31	18.56	3.6	8.8	8.30
1	Brevard	32901	14.46	27.43	4.8	13.7	7.32
1	Brevard	32903	15.89	22.57	1.7	4.1	15.63
1	Brevard	32904	14.21	28.43	3	4.2	4.47
1	Brevard	32905	17.14	21.79	2.9	12.2	5.52
1	Brevard	32907	23.11	13.79	2.9	5.5	1.32
1	Brevard	32908	26.67	8.87	3.2	4.7	0.92
1	Brevard	32909	24.11	9.53	3.9	5.1	1.92
1	Brevard	32920	9.17	23.51	3.1	9	1.11
1	Brevard	32922	23.00	13.98	5.4	26.1	0.94
1	Brevard	32925	35.05	0.42	3.4	3.8	4.68
1	Brevard	32926	20.32	14.11	2.8	8.7	0.52
1	Brevard	32927	22.10	9.16	2.8	5.4	0.93
1	Brevard	32931	9.74	32.62	2.4	3.5	9.50
1	Brevard	32934	20.28	16.54	2	4.5	5.71
1	Brevard	32935	17.38	16.79	2.3	7	2.46
1	Brevard	32937	17.05	21.85	2.2	2.9	5.58
1	Brevard	32940	16.84	27.61	1.9	2.8	15.46
1	Brevard	32948	26.16	6.76	4.8	18.5	10.24
1	Brevard	32949	11.70	19.73	0	16.8	27.21
1	Brevard	32950	18.23	14.18	1.1	5.5	3.30
1	Brevard	32951	12.82	28.89	1.4	1.6	5.69
1	Brevard	32952	17.65	19.75	2.5	4.7	5.07
1	Brevard	32953	18.47	18.17	3.4	8.2	3.00
1	Brevard	32955	18.72	17.46	2.1	4	6.91
1	Brevard	32976	5.09	56.94	1.6	4.8	1.53
2	Broward	33004	16.47	17.77	4.1	15.8	5.94
2	Broward	33009	11.93	33.31	3.5	14.6	3.91
2	Broward	33019	8.16	33.56	2.2	4.2	7.46
2	Broward	33020	18.54	13.30	4.6	18	2.84
2	Broward	33021	16.02	22.57	2.9	7.6	13.43

Appendix C, Continued  
Descriptive Statistics for Population by Zip Code

Case	County	Zip	Under_15	Over_65	Unemp	Poverty	Phy_Rate
		Code					
2	Broward	33023	25.77	8.87	5	10.8	0.57
2	Broward	33024	22.75	10.83	3	7.7	5.01
2	Broward	33025	23.14	9.36	4.4	7.1	1.83
2	Broward	33026	20.96	13.85	2.7	2.7	6.42
2	Broward	33027	15.38	37.39	2	4	12.37
2	Broward	33028	27.51	4.10	2.6	3.1	8.36
2	Broward	33029	28.86	4.65	2	2.8	8.63
2	Broward	33060	21.44	13.48	4.4	17.4	1.95
2	Broward	33062	6.37	37.22	2.3	6.6	9.41
2	Broward	33063	16.48	22.52	2.2	5.6	4.02
2	Broward	33064	19.55	15.28	3.4	11.3	3.69
2	Broward	33065	24.47	8.99	3.6	10.2	5.13
2	Broward	33066	8.45	53.42	1.2	3.2	2.98
2	Broward	33067	27.05	4.35	2.6	3.4	9.95
2	Broward	33068	24.71	7.94	4.3	11	0.52
2	Broward	33069	12.13	27.98	3	11.8	3.67
2	Broward	33071	23.75	4.92	3.8	3.4	5.16
2	Broward	33073	21.90	8.44	2.7	5.6	4.73
2	Broward	33076	29.59	3.07	2.4	2.2	11.42
2	Broward	33301	8.52	12.19	2.4	6.3	8.75
2	Broward	33304	12.29	14.81	5.1	15.9	4.82
2	Broward	33305	11.71	14.78	2.6	8.3	5.41
2	Broward	33306	11.01	20.50	1.6	1.8	17.12
2	Broward	33308	8.65	31.96	1.9	4.2	17.51
2	Broward	33309	19.79	10.82	4.9	10.6	1.95
2	Broward	33311	26.76	10.17	6.3	27.5	1.22
2	Broward	33312	19.97	10.64	3.7	10.6	2.66
2	Broward	33313	25.15	11.69	5.5	18.5	2.55
2	Broward	33314	19.90	9.52	4.3	10.5	0.63
2	Broward	33315	14.15	12.42	2.7	9.4	1.55
2	Broward	33316	8.90	23.18	2.4	5.7	21.09
2	Broward	33317	21.05	13.08	3.4	5.6	7.71
2	Broward	33319	15.18	29.69	3.3	9.5	2.09
2	Broward	33321	11.47	38.46	2.3	4.8	3.30
2	Broward	33322	14.46	32.54	2.2	5.7	2.58

Appendix C, Continued  
Descriptive Statistics for Population by Zip Code

Case	County	Zip					
		Code	Under_15	Over_65	Unemp	Poverty	Phy_Rate
2	Broward	33323	25.07	5.57	2.7	3.3	7.59
2	Broward	33324	17.10	15.58	2.3	3.9	11.07
2	Broward	33325	24.13	6.99	2.8	4.8	3.99
2	Broward	33326	25.28	8.91	2.5	5.6	8.85
2	Broward	33327	31.76	3.77	2.4	1.8	13.29
2	Broward	33328	21.79	9.44	2.2	3.8	5.99
2	Broward	33330	26.10	6.92	0.9	2.1	8.05
2	Broward	33331	28.44	4.93	1.6	1.9	9.77
2	Broward	33332	20.86	5.27	3.4	0.9	22.50
2	Broward	33334	18.89	11.25	4.2	17.9	4.21
2	Broward	33351	22.87	9.52	4.1	7.7	3.39
2	Broward	33388	0.00	0.00	0.00	0.00	0.00
2	Broward	33394	0.00	0.00	0.00	0.00	0.00
2	Broward	33441	17.08	17.93	3.5	12.6	2.41
2	Broward	33442	9.40	42.84	1.9	5.3	2.97
3	Dade	33010	17.42	19.60	5.2	22.2	1.21
3	Dade	33012	17.15	20.11	4.8	14.4	5.00
3	Dade	33013	15.84	19.90	4.2	13.1	4.80
3	Dade	33014	20.59	12.28	5	14.2	7.11
3	Dade	33015	23.86	6.72	4.8	9	2.33
3	Dade	33016	23.30	9.90	5.9	12.9	6.92
3	Dade	33018	24.48	7.73	4.5	8.7	1.59
3	Dade	33030	28.12	7.00	5.8	26.5	3.48
3	Dade	33031	19.80	9.92	3	4.8	9.07
3	Dade	33032	30.90	5.82	7.1	22.1	0.48
3	Dade	33033	29.98	7.31	7.4	22.8	0.32
3	Dade	33034	26.75	6.87	9.9	34.5	0.00
3	Dade	33035	20.85	13.69	4.1	5.2	0.00
3	Dade	33054	25.98	10.74	9.4	26.6	0.35
3	Dade	33055	23.91	9.21	6.1	13.1	0.78
3	Dade	33056	27.65	6.25	7.3	15.7	0.30
3	Dade	33109	14.13	15.20	0	0	0.00
3	Dade	33122	0.00	0.00	0	0	0.00
3	Dade	33125	18.02	19.61	5.4	21.2	4.12
3	Dade	33126	17.94	17.23	4.8	16.3	2.85
3	Dade	33127	25.52	11.17	9.2	34.3	1.62

Appendix C, Continued  
Descriptive Statistics for Population by Zip Code

Case	County	Zip					
		Code	Under_15	Over_65	Unemp	Poverty	Phy_Rate
3	Dade	33128	17.51	19.28	8.5	33.5	2.14
3	Dade	33129	11.05	18.56	3.4	6.6	12.61
3	Dade	33130	17.70	19.28	5.7	33	2.68
3	Dade	33131	7.52	11.05	2.4	7.5	18.00
3	Dade	33132	5.34	11.76	3.5	20.5	6.58
3	Dade	33133	15.02	15.86	3.4	11.9	15.04
3	Dade	33134	13.50	21.08	3.4	8.5	17.62
3	Dade	33135	16.03	22.15	6.3	23.5	5.18
3	Dade	33136	24.32	9.12	7.6	41.2	23.25
3	Dade	33137	18.15	11.78	8.7	27.5	7.37
3	Dade	33138	20.31	11.03	5.3	22.8	4.91
3	Dade	33139	6.33	20.39	4.2	16.2	8.45
3	Dade	33140	13.77	22.81	2.5	8.2	27.42
3	Dade	33141	15.34	14.79	5.3	20.6	4.38
3	Dade	33142	22.91	12.62	6.9	32.7	0.75
3	Dade	33143	18.21	13.54	3.5	7.1	17.12
3	Dade	33144	13.90	24.89	4.2	10.7	8.29
3	Dade	33145	14.96	22.84	4	12.2	7.26
3	Dade	33146	13.33	12.69	6.2	1.8	23.09
3	Dade	33147	26.89	10.16	8.1	35.1	0.20
3	Dade	33149	21.35	15.57	1.8	5.7	13.32
3	Dade	33150	25.99	9.67	7.9	29.3	1.90
3	Dade	33154	13.63	27.74	2.9	7	11.60
3	Dade	33155	16.49	19.68	3.3	6.3	9.40
3	Dade	33156	23.55	11.10	2.1	3.6	15.74
3	Dade	33157	24.66	10.19	4.4	12.1	4.73
3	Dade	33158	24.41	11.00	1.3	2	13.16
3	Dade	33160	10.80	29.64	2.8	11.4	7.09
3	Dade	33161	24.25	9.83	8.1	22.8	1.88
3	Dade	33162	25.16	9.62	6.6	18.2	3.10
3	Dade	33165	15.34	19.72	4.4	8.9	7.36
3	Dade	33166	18.45	11.98	3.3	8.9	4.65
3	Dade	33167	25.75	8.44	8.5	21.3	0.55
3	Dade	33168	25.39	8.09	8.5	21.3	0.20
3	Dade	33169	25.73	8.91	5.5	13.8	0.55
3	Dade	33170	28.43	9.30	5.7	27.7	0.00

Appendix C, Continued  
Descriptive Statistics for Population by Zip Code

Case	County	Zip	Under_15	Over_65	Unemp	Poverty	Phy_Rate
		Code					
3	Dade	33172	18.95	11.48	4.7	12.7	1.43
3	Dade	33173	18.28	14.19	3.5	5.7	13.67
3	Dade	33174	16.99	17.45	4.4	12.1	4.29
3	Dade	33175	19.69	13.54	3.4	6.9	5.99
3	Dade	33176	20.67	10.66	3.5	6.9	13.06
3	Dade	33177	26.14	6.93	4.9	8.1	1.54
3	Dade	33178	22.62	5.35	2.7	8.6	12.77
3	Dade	33179	19.39	16.85	4.5	8.7	5.08
3	Dade	33180	12.07	29.22	2.3	5.7	17.55
3	Dade	33181	17.97	12.00	5.4	16.2	8.76
3	Dade	33182	19.01	6.38	2.5	7.2	7.11
3	Dade	33183	21.48	10.26	3.9	8.8	2.12
3	Dade	33184	19.42	13.51	3.8	8.2	3.27
3	Dade	33185	24.07	7.85	3	6.2	7.09
3	Dade	33186	22.12	7.63	3.7	6.1	4.76
3	Dade	33187	25.98	7.05	4	4.4	2.50
3	Dade	33189	26.40	9.31	4.5	13.6	3.45
3	Dade	33190	28.84	4.48	4.6	12.3	0.00
3	Dade	33193	23.49	6.94	5.1	12.8	1.41
3	Dade	33194	0.00	0.00	0	0	0.00
3	Dade	33196	25.25	5.69	4.2	6	3.17
4	Duval	32009	24.10	7.99	5.4	5.5	0.00
4	Duval	32073	22.35	10.47	2.8	3.7	7.46
4	Duval	32202	6.54	21.10	3.1	21.9	11.86
4	Duval	32204	18.61	20.07	3.7	26.7	40.50
4	Duval	32205	20.17	13.18	3.1	12.6	5.32
4	Duval	32206	24.89	10.99	6	34.9	2.36
4	Duval	32207	19.81	14.54	3	9.8	10.07
4	Duval	32208	22.80	12.90	4.7	15.2	1.93
4	Duval	32209	25.19	16.67	5.9	25.9	7.82
4	Duval	32210	23.36	11.67	2.9	9.8	2.75
4	Duval	32211	22.20	10.97	4.9	10.9	2.03
4	Duval	32212	27.85	0.16	1.8	18.3	6.04
4	Duval	32215	48.77	0.99	0	9.2	0.00
4	Duval	32216	21.35	13.19	2.9	8.4	12.38
4	Duval	32217	19.16	15.89	3.5	7.4	5.93

Appendix C, Continued  
Descriptive Statistics for Population by Zip Code

Case	County	Zip	Under_15	Over_65	Unemp	Poverty	Phy_Rate
		Code					
4	Duval	32218	23.44	9.04	3.8	7.9	1.32
4	Duval	32219	21.40	10.86	4	10.3	0.00
4	Duval	32220	22.83	8.56	2.2	7.6	0.47
4	Duval	32221	22.58	9.46	3	5.8	1.39
4	Duval	32222	23.97	6.92	3.6	6.1	0.00
4	Duval	32223	21.22	8.44	2.2	1.7	7.28
4	Duval	32224	20.33	7.07	3.1	3.5	14.25
4	Duval	32225	23.98	7.08	2.3	3.1	5.69
4	Duval	32226	19.28	10.56	1.7	6.4	2.45
4	Duval	32227	20.08	0.11	0.7	7.2	0.00
4	Duval	32233	23.16	9.71	2.5	6.9	2.17
4	Duval	32234	24.10	8.44	3.5	7.1	0.00
4	Duval	32244	25.29	7.23	2.6	8.9	1.82
4	Duval	32246	24.05	6.34	2.6	7.4	3.88
4	Duval	32250	14.94	12.93	3.8	3.8	9.62
4	Duval	32254	26.66	9.79	5.2	19.5	1.00
4	Duval	32256	16.33	8.50	2.8	3.3	15.61
4	Duval	32257	21.32	9.29	2	3.8	6.46
4	Duval	32258	24.34	6.54	2.2	1	5.55
4	Duval	32259	26.89	7.50	1.9	1.4	7.75
4	Duval	32266	15.44	12.18	2.9	1.9	7.60
4	Duval	32277	22.82	9.64	2.5	5.9	3.26
5	Hillsbo	33510	22.32	9.61	2.4	4	1.56
5	Hillsbo	33511	22.12	8.55	2.8	4	9.13
5	Hillsbo	33527	24.54	8.71	5.8	12.7	0.44
5	Hillsbo	33534	26.35	8.28	5	16.5	0.00
5	Hillsbo	33540	16.89	30.16	2.5	7.3	1.59
5	Hillsbo	33547	24.57	7.94	2.6	7	8.80
5	Hillsbo	33549	21.15	8.85	2.9	3.9	1.12
5	Hillsbo	33556	22.17	8.37	0.8	1.9	9.65
5	Hillsbo	33565	21.11	17.06	2.2	6.6	0.59
5	Hillsbo	33566	24.23	12.38	3.4	12.9	3.94
5	Hillsbo	33567	24.78	10.38	3.1	9.6	0.00
5	Hillsbo	33569	23.26	9.99	2.1	6.6	3.22
5	Hillsbo	33570	20.01	22.06	3	9.5	1.56
5	Hillsbo	33572	14.60	18.63	2.9	2.4	6.70

Appendix C, Continued  
Descriptive Statistics for Population by Zip Code

Case	County	Zip					
		Code	Under_15	Over_65	Unemp	Poverty	Phy_Rate
5	Hillsbo	33573	0.34	83.05	0.6	2.2	4.60
5	Hillsbo	33584	23.09	9.16	3.3	5.4	0.00
5	Hillsbo	33592	22.45	12.30	3.3	9.6	0.00
5	Hillsbo	33594	24.03	9.02	2	3	4.51
5	Hillsbo	33598	31.19	6.31	5.2	23.1	0.00
5	Hillsbo	33602	20.85	13.26	8	27.9	8.38
5	Hillsbo	33603	22.56	13.07	6	17.7	2.63
5	Hillsbo	33604	23.58	10.94	4	19.6	1.50
5	Hillsbo	33605	24.55	14.45	6.1	28.3	1.17
5	Hillsbo	33606	13.66	10.82	11.1	3.8	22.06
5	Hillsbo	33607	20.62	19.08	4.1	18.9	15.35
5	Hillsbo	33609	16.49	16.87	2.5	6.1	15.14
5	Hillsbo	33610	24.69	12.68	5.1	18.8	0.62
5	Hillsbo	33611	16.22	15.37	2.3	5.9	4.19
5	Hillsbo	33612	22.73	12.22	5.1	17.3	5.47
5	Hillsbo	33613	17.19	11.82	5.1	14.5	10.88
5	Hillsbo	33614	19.13	10.76	3.3	13.4	5.59
5	Hillsbo	33615	19.47	10.70	3.1	6	3.51
5	Hillsbo	33616	21.49	8.29	5	13.6	0.83
5	Hillsbo	33617	21.10	8.89	3.7	10.2	3.07
5	Hillsbo	33618	19.45	10.87	2.2	4.4	12.53
5	Hillsbo	33619	23.47	8.82	3.8	15.9	1.93
5	Hillsbo	33620	0.00	0.00	95.1	0	3.95
5	Hillsbo	33621	36.07	0.22	2.8	4.1	1.86
5	Hillsbo	33624	20.75	8.35	2.1	3.4	2.44
5	Hillsbo	33625	24.07	7.10	3.9	4.8	3.85
5	Hillsbo	33626	24.73	5.47	1.5	1.7	26.99
5	Hillsbo	33629	17.64	16.89	2	2.3	10.50
5	Hillsbo	33634	20.93	9.07	2.8	6.5	4.41
5	Hillsbo	33635	21.53	10.19	2.1	6.3	4.42
5	Hillsbo	33637	21.83	7.00	1.7	10.8	2.79
5	Hillsbo	33647	24.07	4.94	2.1	3.9	20.73
5	Hillsbo	33834	19.88	14.19	2.9	17.5	0.00
5	Hillsbo	34221	19.71	21.84	2	9.1	2.05
6	Orange	32703	23.93	9.74	3.2	9.5	2.89
6	Orange	32709	21.08	11.26	3	12.1	0.00

Appendix C, Continued  
Descriptive Statistics for Population by Zip Code

Case	County	Zip					
		Code	Under_15	Over_65	Unemp	Poverty	Phy_Rate
6	Orange	32712	22.85	10.94	2.3	5.4	4.45
6	Orange	32751	20.58	17.10	2.3	3.7	11.59
6	Orange	32757	17.38	24.31	1.7	8.8	4.52
6	Orange	32776	21.72	11.71	3.4	2.8	3.01
6	Orange	32789	16.66	16.94	5.4	5.1	9.26
6	Orange	32792	16.39	14.01	2.9	5.7	6.30
6	Orange	32798	3.01	71.05	0.9	1.2	0.00
6	Orange	32801	8.61	30.42	4.5	15.9	6.27
6	Orange	32803	11.74	18.78	2.6	4.8	16.45
6	Orange	32804	15.36	15.09	1.9	3.4	15.21
6	Orange	32805	25.47	11.08	6	29.6	1.84
6	Orange	32806	16.74	15.62	2.7	6.3	21.74
6	Orange	32807	20.84	11.31	3.2	9.4	2.74
6	Orange	32808	27.82	8.28	5.5	18.5	1.43
6	Orange	32809	21.72	10.81	3.9	11.4	2.43
6	Orange	32810	24.59	8.05	3.6	9.6	1.69
6	Orange	32811	21.91	6.31	4.6	16.7	0.60
6	Orange	32812	20.91	10.79	2.2	7	4.17
6	Orange	32817	18.76	6.42	3.4	5.8	3.76
6	Orange	32818	24.55	8.37	3.3	8.7	1.40
6	Orange	32819	21.20	8.18	3	4.8	15.47
6	Orange	32820	22.51	8.98	5.7	10.8	3.33
6	Orange	32821	11.58	17.27	1.6	2.7	1.44
6	Orange	32822	20.30	10.26	3.7	9.3	2.68
6	Orange	32824	25.19	7.09	4.5	6.4	9.31
6	Orange	32825	21.76	6.86	3.1	6.4	3.20
6	Orange	32826	14.39	7.76	4.8	7.9	1.03
6	Orange	32827	24.34	5.49	1.9	7.4	2.29
6	Orange	32828	25.74	4.44	3	3.5	5.61
6	Orange	32829	23.42	6.48	3.1	1.9	7.01
6	Orange	32831	0.00	0.00	0	0	0.00
6	Orange	32832	19.95	8.17	1.6	0	2.69
6	Orange	32833	21.19	9.23	3.7	13.4	0.98
6	Orange	32835	20.40	5.03	2.8	6.6	7.65
6	Orange	32836	24.67	7.63	1.9	5.4	21.06
6	Orange	32837	23.62	6.86	2.4	5	5.74



Appendix C, Continued  
Descriptive Statistics for Population by Zip Code

Case	County	Zip					
		Code	Under_15	Over_65	Unemp	Poverty	Phy_Rate
6	Orange	32839	20.64	6.19	4.5	16.8	1.24
6	Orange	34734	26.20	6.83	0.8	2.8	9.53
6	Orange	34747	22.38	7.30	2.9	5	22.86
6	Orange	34760	23.90	9.98	1.5	8	0.00
6	Orange	34761	24.37	7.31	2.5	5.4	7.19
6	Orange	34786	25.71	8.06	0.8	1.4	24.86
6	Orange	34787	21.85	13.46	2.8	8.5	2.63
7	PalmBe	33401	15.65	22.66	2.9	15.9	11.21
7	PalmBe	33403	20.11	17.97	4.3	9.1	6.19
7	PalmBe	33404	24.03	22.01	4.6	19.2	2.00
7	PalmBe	33405	18.32	17.46	2.7	11.7	4.54
7	PalmBe	33406	19.03	15.36	2.9	6.8	3.95
7	PalmBe	33407	24.56	17.94	4.3	20	8.89
7	PalmBe	33408	11.45	23.25	1.3	2	4.68
7	PalmBe	33409	17.78	15.74	3.9	11.8	3.84
7	PalmBe	33410	16.11	17.94	2.5	5.9	13.06
7	PalmBe	33411	21.39	19.47	2.6	4.4	5.52
7	PalmBe	33412	24.94	14.96	2.4	1.7	14.66
7	PalmBe	33413	19.79	16.70	2.4	6.7	3.16
7	PalmBe	33414	25.17	17.00	1.9	2.9	14.71
7	PalmBe	33415	21.02	20.00	3.4	11.9	0.76
7	PalmBe	33417	14.14	29.09	3.2	9.8	1.44
7	PalmBe	33418	16.63	18.58	14	1.7	10.95
7	PalmBe	33426	12.55	27.40	1.1	3.2	4.22
7	PalmBe	33428	22.23	19.73	2.7	4.1	6.90
7	PalmBe	33430	28.70	17.82	6.8	31.4	2.12
7	PalmBe	33431	13.73	17.05	7.9	2.7	7.76
7	PalmBe	33432	11.95	20.89	1	6.7	9.49
7	PalmBe	33433	13.21	24.06	2.2	1.9	5.27
7	PalmBe	33434	11.89	32.79	0.9	3.2	7.96
7	PalmBe	33435	18.97	22.82	3.8	11.4	4.90
7	PalmBe	33436	14.33	24.70	1.8	4	4.06
7	PalmBe	33437	10.37	29.06	1.4	2.9	6.89
7	PalmBe	33438	26.79	19.74	11.1	16.7	0.00
7	PalmBe	33440	27.36	17.98	5.9	16.1	3.02
7	PalmBe	33444	21.98	16.87	4.3	15.2	2.58

Appendix C, Continued  
Descriptive Statistics for Population by Zip Code

Case	County	Zip					
		Code	Under_15	Over_65	Unemp	Poverty	Phy_Rate
7	PalmBe	33445	13.21	27.13	2.6	4.7	4.45
7	PalmBe	33446	2.89	43.58	1.1	3.3	10.23
7	PalmBe	33458	21.35	16.73	2.3	3.3	7.38
7	PalmBe	33460	20.01	16.98	4.5	16.6	3.59
7	PalmBe	33461	20.65	19.13	4.4	11	2.38
7	PalmBe	33462	17.75	20.26	2.7	6.6	4.96
7	PalmBe	33463	22.42	20.01	2.9	6.4	2.31
7	PalmBe	33467	18.66	25.06	1.6	2.8	6.23
7	PalmBe	33469	14.41	23.78	1.2	2.4	5.90
7	PalmBe	33470	27.62	15.92	2.1	3.6	5.76
7	PalmBe	33476	32.84	21.20	9	35.9	0.00
7	PalmBe	33477	6.74	23.36	1.3	2.6	5.46
7	PalmBe	33478	23.38	14.59	1.7	1.8	1.77
7	PalmBe	33480	7.77	33.30	1	3.1	7.14
7	PalmBe	33483	8.95	21.94	2.6	5.6	5.89
7	PalmBe	33484	3.99	42.27	1	2.9	4.72
7	PalmBe	33486	18.08	16.78	3.5	3.7	15.71
7	PalmBe	33487	10.66	23.81	1.8	2.6	7.71
7	PalmBe	33493	22.31	14.15	8.5	29	5.13
7	PalmBe	33496	15.30	22.41	1.6	2.9	16.46
7	PalmBe	33498	21.76	19.68	1.5	3.1	7.93
8	Pinellas	33701	12.23	13.59	5.6	13.5	23.09
8	Pinellas	33702	15.09	10.28	2.1	5.2	3.66
8	Pinellas	33703	17.83	9.57	1.8	3.5	5.98
8	Pinellas	33704	16.89	7.92	1.6	5.2	7.48
8	Pinellas	33705	22.01	8.82	4.1	16.9	5.34
8	Pinellas	33706	7.94	15.96	2.3	3.8	5.76
8	Pinellas	33707	11.56	17.47	2.5	8.2	7.54
8	Pinellas	33708	7.94	17.61	1.7	4	3.20
8	Pinellas	33709	15.17	14.62	2.4	9.4	2.88
8	Pinellas	33710	17.06	9.77	1.8	4.6	6.77
8	Pinellas	33711	22.02	7.68	5.1	17.1	1.76
8	Pinellas	33712	22.76	6.49	5.2	14.3	1.14
8	Pinellas	33713	19.46	6.91	3.1	10.1	3.68
8	Pinellas	33714	17.75	9.64	3.2	11.5	1.13
8	Pinellas	33715	6.77	18.01	2.3	1.6	8.78

Appendix C, Continued  
Descriptive Statistics for Population by Zip Code

Case	County	Zip					
		Code	Under_15	Over_65	Unemp	Poverty	Phy_Rate
8	Pinellas	33716	9.40	5.59	3.2	6.6	9.13
8	Pinellas	33755	19.65	6.07	3.6	12.4	4.41
8	Pinellas	33756	16.30	12.75	2.1	8	13.41
8	Pinellas	33759	19.11	10.91	2.2	12.6	1.99
8	Pinellas	33760	16.70	4.78	2.3	13.3	2.36
8	Pinellas	33761	13.69	13.76	1.8	4.4	9.19
8	Pinellas	33762	10.30	10.62	2.3	2.6	10.27
8	Pinellas	33763	9.33	21.54	1.8	3.4	3.33
8	Pinellas	33764	14.68	14.00	2.3	5.3	5.07
8	Pinellas	33765	14.52	9.36	1.3	7.5	2.98
8	Pinellas	33767	5.50	19.42	2.6	3.5	8.19
8	Pinellas	33770	13.93	13.56	3	6.2	7.58
8	Pinellas	33771	12.39	16.32	1.4	6.7	3.08
8	Pinellas	33772	14.46	14.96	1.9	3.5	3.23
8	Pinellas	33773	17.68	9.07	2.3	4	2.14
8	Pinellas	33774	15.82	13.68	2	5.6	5.43
8	Pinellas	33776	17.63	10.04	1.7	2	5.60
8	Pinellas	33777	18.67	9.84	2.3	5.8	6.64
8	Pinellas	33778	17.22	11.65	2.3	4.6	5.50
8	Pinellas	33781	20.60	6.81	3.6	8.1	2.57
8	Pinellas	33782	15.96	12.95	2.2	5.2	5.12
8	Pinellas	33785	7.90	10.27	1.7	2.8	5.04
8	Pinellas	33786	10.31	13.99	1.3	3.4	12.49
8	Pinellas	34677	20.29	7.94	2.5	2.8	4.33
8	Pinellas	34681	22.03	5.97	0.6	5	20.18
8	Pinellas	34683	19.41	7.77	2.6	3.9	4.41
8	Pinellas	34684	14.49	17.75	1.4	4.6	6.93
8	Pinellas	34685	21.41	7.77	2.6	3.8	9.68
8	Pinellas	34689	16.16	12.23	2	6.7	4.52
8	Pinellas	34695	17.58	9.74	1.9	3.5	5.51
8	Pinellas	34698	12.69	15.92	1.9	5	7.30
9	Polk	33547	24.57	7.94	2.6	7	9.97
9	Polk	33801	19.23	16.54	4.4	13.6	1.42
9	Polk	33803	16.23	21.88	5.4	6.4	8.52
9	Polk	33805	24.18	17.07	4.2	18.5	12.73
9	Polk	33809	18.33	22.51	2.4	5.9	0.87

Appendix C, Continued  
Descriptive Statistics for Population by Zip Code

Case	County	Zip					
		Code	Under_15	Over_65	Unemp	Poverty	Phy_Rate
9	Polk	33810	22.34	14.68	2.2	8	1.40
9	Polk	33811	21.72	11.09	2.4	4.6	0.93
9	Polk	33813	22.28	12.46	2.3	2.4	9.18
9	Polk	33815	23.44	19.08	4.4	18.1	0.73
9	Polk	33823	22.13	14.52	3.3	11	1.13
9	Polk	33825	17.42	26.08	2.5	12.4	2.58
9	Polk	33827	20.82	14.13	8.5	11.3	0.00
9	Polk	33830	22.16	13.68	4.1	11.6	3.69
9	Polk	33835	20.00	10.00	0	0	0.00
9	Polk	33837	16.97	20.91	1.8	5.6	1.17
9	Polk	33838	22.27	22.12	4.1	11.8	3.52
9	Polk	33839	23.38	12.95	2.2	12.3	3.14
9	Polk	33841	23.42	15.85	4.3	14.2	0.63
9	Polk	33843	18.67	21.21	3.5	14.1	0.47
9	Polk	33844	20.41	22.61	3.8	12.8	1.69
9	Polk	33847	21.91	12.72	0	34.9	0.00
9	Polk	33849	25.36	8.13	6.3	9.2	0.00
9	Polk	33850	21.91	16.89	2.2	13	0.00
9	Polk	33851	19.63	14.22	4.1	4.7	0.00
9	Polk	33853	18.35	25.19	3.3	10.8	1.74
9	Polk	33860	23.39	12.59	4.2	7.1	0.00
9	Polk	33868	19.05	11.21	2.1	9	0.46
9	Polk	33877	30.18	12.18	15.8	50	0.00
9	Polk	33880	22.38	14.51	3.4	10.8	5.62
9	Polk	33881	17.46	28.77	3.2	11	3.90
9	Polk	33884	16.43	27.16	1.9	2.2	5.50
9	Polk	34759	23.59	10.50	1.7	5.3	1.32

## About the Author

Arlesia Brock was admitted to the Department of Health Policy and Management in Fall 2002 on a fully funded fellowship from the Florida Education Fund.

Subsequently, she was awarded a pre-doctoral fellowship from the Demographic and Behavioral Sciences Center for Population Research at the National Institute of Child Health and Human Development for her research on the effects of privatization in the provision of public health services.

Ms. Brock earned Bachelor of Science degrees in Microbiology and Psychology from the Louisiana State University and a Master of Arts in Industrial/Organizational Psychology from the University of West Florida. She also completed a certification in Public Management from Florida State University Center for Professional Development. She holds numerous professional and academic awards including the prestigious McKnight Doctoral Fellowship and the Ruth L. Kirschstein National Research Service Award.