To the Graduate Council:

I am submitting herewith a dissertation written by Gary A. Taylor entitled "Leadership Practices for Developing High Performance Public Health Agencies." I have examined the final copy of this dissertation for form and content and recommend that it be accepted for partial fulfillment of the requirements for the degree of Doctor of Philosophy with a major in Human Ecology.

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Leadership Practices for Developing High Performance Public Health Agencies

A Dissertation Presented for the

Doctor of Philosophy Degree

The University of Tennessee, Knoxville

Gary A. Taylor

May, 1996

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Dedication

This dissertation is dedicated to my father, Harold Lee Taylor, and my mother Lelia May Campbell, who always showed their belief in the power and goodness of education.

Acknowledgements

The author wishes to extend his thanks and appreciation to those individuals who assisted in the completion of this study.

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Abstract

The primary problem investigated in this study is the need for improving the performance and effectiveness of leadership in public health. The frequency of workplace practices which public health directors initiate for developing high performance in their agencies was measured with a survey instrument developed for this purpose.

The entire population of health directors in North Carolina was assessed for this study and 76 directors responded giving a response rate of 88.4%. The study was conducted in November, 1995. Items for the survey instrument were drawn from a literature review of leadership in high performance workplaces, incorporating practices from business, industry, and government.

The first research question posed in this study was: What are the high performance workplace practices initiated by leaders that are most often used in North Carolina health agencies? The study found that the health directors often employed high involvement practices, frequently giving staff information about the goals and purposes of agency undertaking and assigning staff to planning groups. Skill training in technical areas and in computer use was rated highly as a training activity. Directing staff toward group achievement and applying new job skills toward service quality improvement was also frequently initiated.

Less frequent practices included training staff in continuous improvement skills of benchmarking, decision-making, statistical measures of quality, and analyzing work flows

or work processes. Decentralized quality control, self-directed teams, reduced management layers, and financial rewards for performance were also not often employed.

The second research question asked: How are the frequency and type of high performance workplace practices initiated by leaders related to agency demographics? The study found that the experience of the director had little relationship to the workplace practices that were initiated. However, the size of the agency, measured by number of employees or population served, was correlated to the frequency of specific training and performance assessment-feedback practices.

The third research question asked: What are the barriers and resources for initiating high performance workplace practices and how do these factors relate to demographic factors and to the workplace practices leaders initiate? The study found that lack of funds to reward good employees and inflexible personnel systems were the greatest barriers to improving agency performance. Support from the local board of health and staff loyalty were the greatest resources. Levels of barriers and resources were not shown to be related to agency demographics, but levels of barriers were often related to lower frequencies of high performance workplace practices.

The study concluded that the local health directors initiated a number of high performance workplace practices but that leadership for performance improvement was diminished by barriers of funding, inflexible personnel systems, and the lack of community/ political support. The study recommends increased research in public health leadership, focusing on how it influences quality, production and agency performance.

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CHAPTER 1

INTRODUCTION

Leadership in Public Health

History and Leadership

Public health services have a long history of significant accomplishments in America and throughout the world. Contributions to our nation's health include the control or elimination of life-threatening communicable diseases such as tuberculosis, smallpox, and polio, and the reduction of environmental hazards. However, critics who work inside and outside public health have recently questioned the capacity of America's public health system to meet new challenges. Evidence is provided by a national study measuring the ability of local public health departments to administer core functions of public health practice. This study estimates that only 40% of the U.S. population is served effectively by the public health system (Turnock et al., 1994).

Questions have also been raised about the levels of leadership and training of public health officials who administer state and local health departments. The Centers for Disease Control and Prevention is responding to this need by offering specialized leadership courses for public health leaders. Efforts are focused on "eclectically trained" leaders facing increasingly complex and diverse problems in an environment of uncertainty and change (Nolan, 1994, p. 8). While the accomplishments of public health leaders are

commendable and even extraordinary, it is clear that formidable problems in the nation's public health care system persist (Lancaster, 1995). Reductions in funding for health services, while the health status of our nation continues to be far lower than what is desirable and achievable, calls for more effective public health leadership. This challenge to competency and vision is summarized, "Solutions to the problems demand not only good management but organizational excellence, heroic behavior, and perhaps even superhuman accomplishments. This is a job for good public managers with a passion for excellence" (Duncan, Ginter, & Capper, 1991, p. 229).

Responses to the Future of Public Health Study

The current delivery system for public health services provides health care and protection to millions of Americans. However, inadequate responses to difficult personal health problems and complex environmental issues indicate that the current public health system is not sufficiently equipped in human resource capabilities (Koplin, 1990). In a comprehensive and widely discussed analysis of the current U.S. public health system, the Committee for the Study of the Future of Public Health (1988) in The Future of Public Health , identifies problems in leadership, organization, and service delivery for public health. The committee report states that the general public and government leaders see many public health officials as ineffective leaders and administrators, who are out of touch with current problems and unable to provide effective, responsive services.

Followup of the Future of Public Health study in 50 states revealed widespread agreement about its recommendations concerning the administration of core public health functions and many states have taken steps to implement organizational improvements

(Scott, Tierney, & Waters, 1990). However, problems in the "infrastructure" of public health agencies are reported to include continuing deficiencies in leadership tenure, reductions in educational requirements for public health directors, and placement of state leaders in positions of insufficient access to policy development. Surveys indicate these human resource issues appear to be less subject to rapid improvement (Scott et al., p. 302).

Specific leadership problems identified in The Future of Public Health study include: (a) high turnover in state and local health directors, (b) political appointments replacing trained professionals as agency heads, (c) loss of authority for public health in dealing with important health issues, (d) isolation of local leaders from political decision-makers, and (e) lack of competencies and skills in upper-level management posts.

More recently, public health concerns have been described as "invisible" on the current federal and state agendas for reforming health care services, a dangerous position when important and far-reaching public policy decisions are being formulated. This deficiency in political influence is said to result from the lack of public understanding about the link between individual well-being and public health functions; the public does not know what they gain from public expenditures on prevention (Cary, 1995, p. vii).

Distinctions Between Leading and Managing

Legnini (1994) draws on transformation leadership principles to illustrate the differences between visionary leaders and those who manage only current resources. The high levels of public responsibility in administering health departments call for both technical skills to "do things right" and values to "know the right thing to do" (p. 1569).

He believes that the training of public health administrators in management-leadership skills must be increased but should remain united with public health's philosophy stressing commitment to equality and social change.

The intellectual and managerial demands of public health leadership have grown as public health problems recently moved to the forefront of public attention. For example, public health leaders have been criticized for their attempts to control the epidemic of AIDS. The combined biological, social, and political factors that created the spread of this complex epidemic has given health directors very difficult assignments in community leadership (Lawlor, 1990). As a result of controversy concerning the AIDS epidemic, both policy makers and citizens question the ability of public health leaders to effectively respond to new health dangers (Rosenberg, 1995).

The National Commission on the State and Local Public Services (1993) calls for public service leaders to more effectively use staff and public funds, to become more responsible and accountable, and to solve problems instead of merely passing paper. Key leadership tasks center on increasing the competencies of employees. Public workers are said to need increased skills in team work, public communication, and cultural awareness . They also need to be more committed and involved in service to the community (pp. 9-11). Thus, the training and motivation of employees in environments of greater public demands and scrutiny is an important challenge; the effective leadership of human resources must be addressed by public health leaders who hope to persevere and excel.

Statement of the Problem

A documented problem is the need for improving the performance and effectiveness of leadership in public health agencies. Due to the lack of information about leadership practices needed for creating high performance in public health agencies, more information should be obtained about how leaders in public health create high performance workplaces. The focus of this study is human resources and how the leaders of public health agencies initiate workplace practices to effectively train, direct, and motivate staff for the provision of high quality public health services.

Purpose of the Study

Few studies have focused on leadership practices to create high performance workplaces in public health. Factors that can be measured to reveal components of high performance workplaces include: (a) the type and frequency of training practices initiated by leaders for the development of staff skills and abilities; (b) the type and frequency of work design or job enrichment practices used in the organization; (c) the type and frequency of performance assessment-feedback practices initiated by leaders for giving employees guidance, feedback, and rewards for good work; (d) demographic factors about the leader and the agency; and (e) measures of resources and barriers for initiating high performance practices. Knowledge of such factors can be used for improving practices of leaders for developing high performing agencies. Therefore, the purpose of

this study is to investigate workplace practices leaders initiate for developing high performing public health agencies.

Research Questions

The first research question that will be investigated in this study is: What are the high performance workplace practices initiated by leaders that are most often used in public health agencies?

The second research question is: How are the frequency and type of high performance workplace practices initiated by leaders related to agency demographics? These demographic factors may include information about the makeup of the agency and the preparation or experience of the director.

The third research question is: What are the barriers and resources in public health for initiating high performance workplace practices and how do these factors relate to demographic factors and to the workplace practices leaders initiate?

Limitations

The following limitations apply to this study:

1. Due to cost restrictions, this study is limited to local public health departments in one state, North Carolina, and any findings are limited to this population.

2. Data collection in this study was based on the cooperation and perceptions of

local health directors. These individuals are the administrative leaders in public health departments. They were asked to estimate the frequency and type of workplace practices initiated in their agencies to improve performance and to give measures of barriers and resources to improving performance. Thus, the study was limited by the accuracy of the health directors' perceptions and responses.

3. No definition exists for determining when a health department fits in the category of a high performance agency. The survey used in the study measured the frequency of workplace practices initiated to improve staff performance, but distinctions were not made between high and low performing agencies.

4. The study was limited to leadership practices related to human resources and did not measure other aspects of the work environment that leaders must address including: external political and economic forces; the need for proficiency in the management of financial, medical, legal, and environmental aspects of public health; and interpersonal factors of leadership that help bring about staff loyalty and community support.

Definitions of Terms

The following terms are defined to clarify their use in this study:

High performance workplace. Places of employment that use a variety of organizational techniques to increase levels of expectancies, rewards, and performance. Goals are achieved through reorganization and enrichment of work, application of

information and production technologies, reduction of management levels, emphasis on skills development and workplace education, and a focus on continuous quality improvements.

Initiate. As operationally defined for the purpose of this study, to cause changes to happen in the workplace through direct or indirect actions, resulting in the dissemination of processes, skills, behaviors, and attitudes in the organization.

Leadership practices. Behaviors undertaken by administrators to implement policies, strategies, and procedures of the organization.

Local health department. Single county or multi-county public health unit operating under local board of health and having responsibility for delivery of local public health services.

Local health director. Administrative head of local public health department.

Performance assessment. Process whereby employees and supervisors confer to set goals, establish expectations, and review progress and achievements on the job.

Public Health. The art and science of maintaining, protecting, and improving the health of people through organized community efforts.

Training. Activities undertaken by employees to enhance workplace knowledge, skills, and abilities for the purpose of improving performance.

Work competencies. Skills, knowledge, and motivation that enable workers to successfully complete tasks and contribute to the performance of the organization.

Work design. Structure and content of jobs affecting both how well the work can be done and the level of motivation in employees.

Organization of Study

This study consists of five chapters using the following format: Chapter I includes the introduction, leadership in public health, statement of the problem, purpose of the study, significance of the study, research questions, limitations, definitions of terms, the organization of the study, theoretical framework, and rationale.

Chapter II includes an overview and a review of the related literature, beginning with developing public health leadership, assessment and planning for public health performance, leadership practices and agency renewal, challenges in public agency cultures, transforming public service agencies for high performance, and specific workplace practices leaders initiate to create high performance; these include performance assessment-feedback, work design, and training. Chapter two concludes with a summary .

Chapter III includes the method of study, subjects, instrumentation including the development of the instrument, and materials and procedures used in the study. The development of a survey instrument is documented to measure workplace practices agency leaders initiate for high performance. The chapter concludes with data collection and data analysis.

Chapter IV provides the data analysis and results. Included in this chapter are the characteristics of the respondent health directors, research questions one, two, and three, and the summary of results.

Chapter V includes the summary of procedures, conclusions to research questions, discussion and recommendations. This is followed by references and the appendixes.

Theoretical Framework

Leadership Practices

This study was based on theories about workplace practices leaders initiate to increase organizational performance through the development of employee knowledge, skills, and motivation. The leadership initiatives investigated included practices for increasing performance through assessment and feedback, training initiatives to improve skills and abilities of the workers, and improvements in job design that increase efficiency and the motivational aspects of work.

Leadership practices are behaviors undertaken by chief executives and top managers to implement policies, strategies and procedures of the organization. The assumption was made in this research study that leadership practices creating high performance workplaces in business and industry can be applied to public health agencies. The U.S. Department of Labor (1993, p. 1) reports:

> High performance work organizations provide workers with the information, skills, incentives, and responsibility to make decisions essential for innovation, quality improvement, and rapid response to change. Systems of mutually reinforcing practices create multiple ways to develop worker skills, to align individual and organizational goals, and to share information crucial to solving problems.

Examples of high performance organizations are seen in Baldrige Award finalists, companies who win national recognition for excellence in management practices. These

organizations employ many high performance leadership practices that include promoting customer-driven approaches to quality, and leading continuous improvement processes. Leaders in these organizations enhance productivity by increasing employee skills, giving performance incentives, widely dispensing information, and increasing opportunities for decision making (U.S. Department of Labor, 1993). Core practices seen in the Baldrige winners include employee involvement strategies, performance measurement and feedback systems, emphasis on training and education of all employees, delegation of authority or responsibility to lower levels of the firm, and tieing all supervisory systems to high performance and quality (Hart & Bogan, 1992).

Leadership for high performance demands business management skills but also requires higher proficiency in managing human beings as crucial assets and organizational resources. Practices from industry leaders that can be applied to public administration include (a) creating and communicating a sense of purpose and vision, (b) upgrading basic management to effective human resource leadership, (c) seeking innovations while actively pursuing change, and (d) improving organizational responsiveness to clients (Duncan et al., 1991).

Initiatives by the current federal administration to create more and better jobs emphasize the role of employee skills and worker involvement in the competitive global environment. High performance, high wage industries depend on basic workforce competencies and the availability of highly skilled workers. Leaders must make use of employee innovation to maintain quality. Therefore, effective training must be provided to create reliable products marketed world-wide (U.S. Department of Labor, 1994).

The U.S. Department of Labor (1993, p. 15) has summarized research on high performance work practices by giving evidence for the benefits of such practices:

> . . . The existing evidence suggests there is a positive correlation between high performance work practices and both productivity and long-term financial performance. The evidence shows that specific practices such as training, alternative pay systems, and employee involvement are often associated with higher productivity. Industry studies show that these and other practices can have a larger impact when implemented together in systems. The analysis of financial indicators reinforces the findings that stronger firm performance is associated with systems of high performance work practices.

Employee Competencies

Employee competencies are determined by motivation, skills, and knowledge that contribute to work performance. Building on Vroom's expectancy theory, Morf (1986) relates how the development of worker competencies requires: (a) motivation to master skills and acquire abilities, (b) the need to achieve, and (c) the belief that the worker's effort will lead to desirable results. Thus, performance on the job is determined by both worker competencies and by elements of the work environment that assist or hinder given assignments.

Former U.S. Secretary of Labor, Ray Marshall, identifies the following practices seen in high performance workplaces that have been proven to positively influence employee competencies: (a) effective use of all company resources, especially the insights and experiences of front-line workers, in order to achieve continuous improvements; (b)

acute concern for the quality of products and services in order to satisfy the demands of a consumer-driven marketplace; and (c) a participatory and non-authoritarian management style in which workers are empowered to make significant decisions (Frei, Hugentobler, Shurman, Duell, & Alioth, 1993, p. 2-3).

Morf (1986) provides the following insights for understanding the relationship of effective leadership and high levels of employee competence: (a) effective leaders know that high work performance is valuable for increasing the quality of life for employees as well as for increasing production; and (b) competence in the workplace creates capable, self-assured workers who carry their skills into all levels of personal life and society. Therefore, optimizing work performance requires that leaders understand human development and the systematic design of work to match skills. Morf describes a high performance leader as one who promotes the quality of the work environment seen in physical and social conditions for work, emphasizes employee training to increase worker abilities, and seeks to apply principles of human motivation.

Work Design

Work design is described by Hackman and Oldham (1980) as ". . . an examination of all aspects of the organization that affect how well the work is done or the quality of the organization member's experiences" (p. 64). The purpose of examining and changing work design is to promote organizational efficiency and to enrich work by making jobs more motivating and rewarding. The properties of work design that promote employee motivation include the essential core job characteristics of skill variety, task identity, task significance, autonomy, and feedback from the job (Hackman & Oldham, 1980, chap. 4).

These elements are said to contribute to psychological states of high internal motivation in workers; they perceive work as meaningful, they feel responsible for outcomes of work, and they know the results of their work activities (Lawler, 1994, chap. 1).

Work behaviors are the product of personal attributes and the interaction of the individual with the overall work environment and design of work. In the past, industrial psychologists tested as independent factors, the intrinsic and extrinsic elements of work (Vroom, 1995). More recent leadership studies relate how worker abilities and the quality of the work design are reciprocal. The worker who is allowed to influence and change the work design can elevate not only personal performance but also the performance of the entire organization (Frei et al., 1993, p. 34).

German concepts for developing workforce competency are presented as *Qualifizierung*, a concept referring " . . . broadly to a systematic process of developing human potential, or 'personality' by designing important human activities and experiences in such a way as to promote lifelong learning, growth, and competence development" (Frei et al., 1993, p. 8). In the qualifizierung model for competence development, work design is seen as both an enabler, allowing the use of advanced skills, and a teacher that promotes learning on the job by giving meaningful and challenging activities. Competence development proceeds in tandem with organizational change; each process is necessary and interdependent in the development of high performance.

Training

Training is the activities undertaken by employees to enhance workplace knowledge, skills, and motivation for the purpose of improving performance. Leading

industries stress the importance of workforce preparation by providing ample resources to increase employee skills and by demonstrating high involvement of company leadership. The SCANS Report for America 2000 describes leadership and support from top management as

> . . . the most critical element in the high performance process. It is imperative that top managers are actively committed to implementing a system of high performance and are involved in creating a work climate where risk-taking and innovation are encouraged and rewarded. (U.S. Department of Labor, 1992, p. 3)

In organizations focused on quality, the purpose of training is clearly tied to improving performance. Leading industries align training with key company priorities to make training relevant and applicable. The Conference Board of U.S. industries reports:

> Challenged to make quality the business of everyone in the corporation, firms have set out to transform the way they work. Training has become a vital element in efforts to raise employee awareness, to equip them with problem solving and statistical skills, and to prepare managers and supervisors to build teams and facilitate group dynamics. (Troy, 1991, p. 9)

With continuous improvement as a key factor for global competitiveness, trained workers are needed who can adapt to new, decentralized work environments that require decision making on the front line of production or service (U.S. Department of Labor, 1992). Increasingly, sophisticated production calls for workers with basic skills in reading, problem solving, presentation skills, reasoning, and data analysis, as well as

specific occupational training (Office of Strategic Planning and Policy Development, U.S. Department of Labor, 1994).

A survey of 13 successful U.S. companies provided guidelines for improving the effectiveness of training. As a first priority in training, leading industries report that all employees are oriented to quality issues and are continually involved in quality concerns. Job-related tasks, work processes, and problem solving follow as priorities for training activities. Training may be given initially to supervisors and key employees who then train other employees. Multiple approaches to training are utilized, including just-in-time techniques, to facilitate transfer of new skills to the worksite. Classroom instruction may be supplemented with closed-circuit television, self-directed study, seminars, and problem solving (Troy, 1991).

Training develops employee skills and abilities, creating organizational competency; this is the accumulated learning and capability needed to respond to challenges and changing markets. This organizational learning may focus on benchmarking products to the best in the industry for service and value. As customers experience superior product quality, they come to regard it as a standard. Therefore, innovations never provide a permanent competitive advantage and continuous increases in learning and product value are required (Werther & Kerr, 1995; Zeller & Gillis, 1995).

In order to implement continuous improvement, the goals of training are derived from multiple assessments, including skills demonstrated on the job, employee performance assessments, product quality, customer relations surveys, and employee turnover statistics. All educational assessments and activities are tied to the purpose of

quality, innovation, and performance (Troy, 1991; U.S. Congress, Office of Technology Assessment, 1990)).

Carnevale (1991) describes the changing demands of markets, technology, and labor in the new international economic arena and gives evidence for how training must respond to technical and economic change:

> Inside the workplace, flexible technology needs to be matched with more skilled and autonomous workers and work teams. New, more flexible work organizations that drive authority and resources toward the point of production, service delivery, and the customer are also required if we are to take advantage of the inherent potential of new human-machine combinations. (p. 10)

Statements and Assumptions for Theoretical Framework

In summary, the following statements were identified as being essential to the development of a theoretical framework for understanding leadership in a high performance organization:

Statement 1. Productivity, work quality, and overall performance increase when effective workplace practices are initiated by leaders to develop human resources. Leaders in high performance organizations stress the development of employee skills, effective work design, high performance, and continuous quality improvement.

Statement 2. Worker competencies are employee skills, knowledge, and motivation that serve as a key element in creating high performance organizations. Worker competencies are increased when employees have ample opportunities for training, input into improvement of work processes, adequate challenges, and motivational work design.

Statement 3. The design of work is an essential factor in work motivation and the performance of workers. High performance organizations strive to make continuous improvements in work design, with the input of all employees involved in the work.

Statement 4. High performance organizations implement the goals of the organization through focused training. Leadership and involvement of top managers and supervisors is essential to employees perceiving training as meaningful and important.

Statement 5. The chief goal and function of leadership in a high performance organization is the improvement of performance in the organization, through the work of the employees.

In conclusion, recent research in the area of leadership in high performance workplaces identifies these assumptions:

Assumption 1. Workplace practices that leaders initiate to create high performance organizations include a high frequency of behaviors for improving and expanding the work competencies of all the employees.

Assumption 2. Work competencies are the skills, knowledge, and motivation of employees that enable them to complete tasks and to perform in the organization.

Assumption 3. Performance in an organization is influenced by both employee competencies and by work designs that enable or prohibit the expression of worker competencies. These relationships can be expressed in the formulas:

worker competencies = skills and knowledge X motivation

work performance = worker competencies X work design

Assumption 4. Strategic aims and goals of leadership in high performance workplaces will frequently be implemented through a variety of focused training activities.

Assumption 5. Workplace practices initiated by leaders in high performance workplaces will include a high frequency of activities focused on improving the design of work in the organization; this increases the work efficiency and motivation of employees.

Assumption 6. Worker competencies and input to work design are reciprocal factors in the elevation of employee work performance; when employees have opportunities to give input to the improvement of work design, the organization is improved and the employees' competencies are elevated.

Assumption 7. High work performance can best be seen as a dynamic system. The relationships of leadership, work design, training, and employee competencies interact as the organization is led toward higher levels of quality and production. The theoretical assumptions for the proposed study are illustrated below in Figure 1.

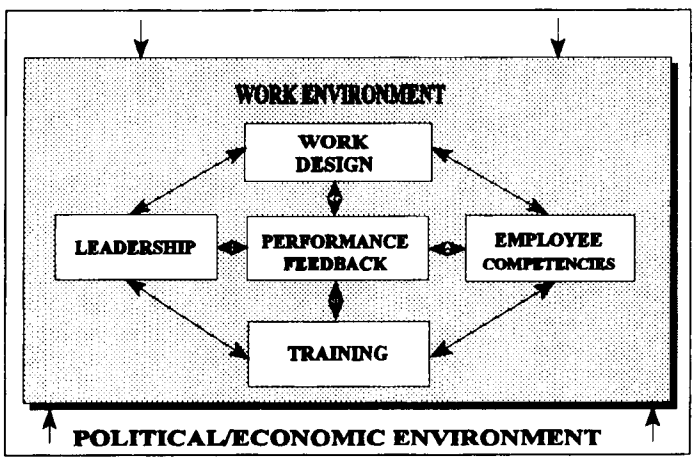

Figure 1. Leadership to Initiate High Performance Workplaces

Development of Human Resources in High Performance Organizations

Figure 1 illustrates the relationships that exist in high performance organizations. Each organization functions in a political and economic environment , illustrated as areas larger than the work environment, that influences the process of leadership and the effectiveness of the organization. Within the organization are generalized factors of morale, structures, compensations, rules, physical environments, organizational design, and personnel that constitute the overall work environment. This is illustrated as the shaded area of Figure 1. Leaders must necessarily interact in the political/economic environment and seek to influence the overall work environment. The factors that are the focus of this study are the relationships of specific workplace practices initiated by leaders that enhance employee competencies, determined by the motivation, knowledge, and skills of the employee.

The model proposes that leaders can influence the competencies and performance of employees in three ways: (a) through general leadership practices of supervision and guidance that give measures of achievement, feedback, and rewards for performance of work; (b) through training practices that increase worker motivation, skills and knowledge; and (c) through improvements in the design of work to increase the motivational content and efficiency of jobs.

These practices are shown as reciprocal relationships; a leader can lead better with competent workers, training practices benefit both employees and leaders, efficient work design assists the achievements of leaders and workers, and competent employees can improve both work processes and themselves.

In this dynamic model of a high performing organization, the interacting factors of leadership practices, training, employee competencies, and work design sustain an organization that is continually seeking and implementing improvements. The results are seen in outstanding levels of quality for products and services.

Rationale

Information has been obtained in this study that can be applied to the improvement of public health agencies. By determining which workplace practices are most frequently initiated in leading staff performance, successful practices can be replicated. By assessing where differences in leadership practices are related to demographic characteristics of the agency and leaders, organizational support can be improved. Information obtained about workplace practices that leaders initiate for the development of human resources and high staff performance can be applied to the training of public health leaders, and to improving the administration and organization of local public health agencies.

CHAPTER 2

LITERATURE REVIEW

Overview

The purpose of this study was to investigate workplace practices leaders initiate for developing high performing public health agencies. This chapter presents a review of literature related to this study including leadership issues in public health, challenges in public agency cultures, and a summary of leadership practices seen in business and government for creating high performance agencies.

The first section of the literature review describes national and international needs for developing public health leadership. The second section reviews leadership issues related to assessing and planning for public health performance. This is followed by section three, a review of leadership practices recommended for organizational renewal. The fourth section gives a summary of challenges to leadership in public agency cultures, followed by section five, a review of leadership practices needed to transform public services for high performance. The sixth section reviews workplace systems for creating high performance and documents the components of this dissertation's leadership practices model: performance assessment-feedback, work design, and training.

Developing Public Health Leadership

The Demand for Prepared Leaders

A review of literature indicates there is a world-wide shortage of public health leaders adequately trained for today's challenges. Graduate school output of public health leaders falls short of needs. In terms of availability, Roemer (1993) estimates that the output of graduate schools training public health leaders should be increased twelve-fold to meet current needs in international public health. The Alma-Ata Conference, a historic United Nations initiative for improving primary care in all nations, presented "health for all" as a world-wide goal which can only be achieved through effective local public health leadership (Basch,1990, p. 226). Recent reports from the World Health Organization show that the ambitious goals of Alma-Ata are not met and that health for all is more inspiration than reality. The Director-General of the World Health Organization reports that while progress is seen in reducing levels of infant mortality and increasing longevity in the world population, wide differences in health status remain between countries and among ethnic groups (Nakajima, 1995; Subramanian, 1995). Alleviating these differences demands effective public health leadership throughout the world.

The Need for Public Confidence

In the United States, planning for national health insurance has subsided and health care is administered in a turbulent environment where the legitimacy and need for public services is challenged. In Tennessee, the state's director for TennCare, a state-run

alternative to Medicaid services for the poor, was quoted as saying, "We don't believe free health care is [a] right any more than free electricity. Anything you get free isn't worth anything" (Ferrar,1995). A study conducted for the Healthcare Forum (Johnson, 1994) found that the American public may have a broader understanding than some leaders about the needs and determinants of community health. This sample survey has revealed that Americans believe that health is connected to community factors of jobs and environment, but that public leaders should not be trusted to address and resolve health issues. The author states,

> The public lacks confidence in institutions that now provide leadership. Fewer than 30% have confidence in local government, business and community leaders, as well as the media. State and federal officials and national business leaders fare even worse. . . . In fact, traditional sources of leadership are seen as obstacles to building a healthier community because people believe that traditional leadership-compartmentalized, competitive, command-and-control driven, has failed. (Johnson, 1994, p. 13)

Our nation today needs public health leaders who can prevail over difficult challenges to their credibility, knowledge, and skills. A national nursing leader in the Public Health Services, Maria Salmon, writes, "Never before in the history of the United States has the relationship between public policy and the health of the American people been more apparent or more important" (Salmon, 1995, p.1). She describes how our country is ". . . rich in knowledge and technology but currently poor in the public health policies that mobilize these assets on behalf of the public's health" (p. 2).

Fighting for a Preventive Agenda

Koop (1995) surveys the present health care landscape, with large-scale governmental health care reform now less likely to be implemented, ". . . insurance companies, health maintenance organizations, private practice physicians, nurses, health care worker unions, hospitals, consumer advocates, drug companies, and a host of other vested interests fight furiously in a free-for-all struggle to come out on top. The patient may end up on the bottom" (p. 759). Koop recommends that public health leaders should not mourn the passing of national health insurance plans that inadequately addressed social and behavior- induced health problems. The failure of the recent national health agenda represents an opportunity, Koop proposes, to pursue the implementation of a preventive health care system that focuses on social justice and health promotion.

Preparation for Leadership

The management of human resources is important for implementing strategies in public health but administrators often build their careers on technical disciplines such as medicine, epidemiology, and related fields, without any formal training in leadership. William Roper cites his experience in being appointed director of a large urban health department in Birmingham, Alabama, when his only supervisory experience consisted of directing a few medical interns. He states, ". . . medical schools are no more explicit than public health schools about the qualities of leadership and how to achieve them. American physicians, like their colleagues in public health, often seem to equate leadership with facility in science and technology" (Roper, 1994, p. 24).

Often, leaders in public health are promoted from within the organization. Leadership deficiencies detracting from strategy implementation in public health are revealed in a case study of an Indiana health department (Duncan, Ginter, & Swayne, 1995). When little or no management training was provided to technically-trained employees promoted to supervision, individuals previously productive became frustrated in human resource undertakings and leadership performance was "unremarkable" (p. 598).

The Development of an Ethic

In a commencement address to school of public health graduates, Krieger (1990) describes the core concepts of democracy, leadership, and accountability, whose understanding is needed for becoming an effective public health professional. When considering ethics and priorities, she writes,

> It behooves us to remember that the task of prevention, the provision of care, the search for a cure--these never have been simply technical exercises. Instead, they are activities fundamentally shaped by multiple agendas of those who set and react to these priorities, who control and contest these resources. . . . " (p. 418)

Public health, Kieger reflects, holds as a vital concern the participation and representation of the people served, and public health leadership requires unique political insights and skills. In similar reflections about his career experiences, Foege (1994) lists the belief in equity, the striving for quality, a focus on prevention, and the seeking measurable outcomes, as four guideposts for public health leadership.

Training Core Disciplines

Epidemiology is a core discipline in the leadership of public health and past

achievements in epidemiology are a source of professional pride and identity. Causes for modern epidemiologists becoming disenfranchised from their historic public health ties were recently analyzed. Weed (1995) writes, "Simply put, many epidemiologist have lost touch with public health. They are more interested in methods than in the communities that may benefit from those methods, more interested in science than in its application . . ." (p. 914). He recommends curriculum expansion in professional epidemiology training that includes alternative courses in humanities and history.

Reflecting on future workforce needs, North Carolina public health leaders acknowledge the role of managed care in providing services once under the sole administration of official agencies. They predict the cadre of providers of public health services will expand and diversify beyond traditional government organizations. However, since managed care has financial incentives to maintain healthy populations, skills in community leadership and population medicine will continue be emphasized for the core disciplines trained by graduate health administration programs (Ibrahim, House, & Levine, 1995).

Assessment and Planning for Public Health Performance

Implementing National Plans

The need for effective public health leadership is further demonstrated in reports about our nations's health describing nationwide problems to be addressed. Healthy Communities 2000: Model Standards (American Public Health Association, 1991)

provides a framework for implementing ambitious national goals in American public health. In this report, the local public health leader is considered essential for implementing national health strategies. In its call for community action, and in related plans for mobilizing people to adopt preventive health behaviors, the standards designate local public health departments as a focal point for service delivery and community decision-making.

Public health leaders could be buoyed and elevated by the challenge of reducing preventable deaths and illness following a nationwide plan. Instead, literature reveals that many appear to feel frustrated by a lack of progress in meeting lofty agendas (Coye, 1994, p. 1). Some appear to wish for a world where reason and science is more dominant than politics and are dismayed by the gap between obtainable national health objectives and the reality of our present national status (Foege, 1994).

National and Local Health Status

The United States Public Health Service reports on progress in meeting the 1990 Objectives for the Nation (McGinnis, Richmond, Brandt, Windom, & Mason, 1992). This national scorecard, made from current mortality and morbidity data, reveals success in reducing nationwide mortality in injuries, high blood pressure, and infant mortality. However, the report also shows failures in reducing many behavioral-related causes of deaths. Increases in homicides, teenage suicide, drug-related deaths, and low-birth weights offset success in other areas. Clearly, public health leaders have not succeeded in achieving some important objectives when broad social, economic, and racial factors greatly compound prevention strategy.

Challenges in Leading Communities

At the community level, quality-of-life problems like crime, teen-age pregnancy, and drug abuse are highly viable. One reason for perceived stagnation in meeting public health objectives is that many of the goals articulated in national plans depend on actions by large numbers of persons and organizations external to the local health department. These external forces include federal and state agencies, related community agencies, private and public health care providers, and most important, the citizens themselves. In their analysis of public management jobs so difficult that they can be classified as "impossible," Hargrove and Glidewell (1990) list four factors that determine the relationship of a public manager to the external environment: (a) legitimacy of the clientele as seen by the public, (b) intensity of conflict about competing goals or objectives among constituencies, (c) public confidence in the leader's authority or profession, and (d) strength of the agency's image or "myth" (p. 9).

Considering these factors, leading a public health department seems to include elements of an impossible job. For example, public health directors' struggles to deal effectively with epidemics and the environment demand balancing and resolving strong conflicts among political and community leaders; this dilemma is described in case studies about public conflict management (Lawlor, 1990). Although the myth or legend of past success in public health is strong, the public and staff are reported to view public health in lower esteem when seemingly intractable problems like AIDS and teenage pregnancy hold center stage (Roper, 1994).

Public health leaders, dependent on external forces for success, feel disappointed by a lack of goal attainment and by the knowledge that millions of unnecessary deaths could be prevented, but are not (McGinnis et al., 1992). In addition, non-fatal, disabling conditions including arthritis, visual and hearing impairments, rob millions of Americans of full-life functions but do not receive health care services equal to their prevalence and limiting ability (Verbrugge & Patrick, 1995). Reported imbalances and inequities in our health care system continue to nurture conflict, and meager resources are given to prevention (Salmon, 1995; Terris, 1990; Lancaster, 1995).

Problems Within the Public Health Culture

Internal barriers to effective leadership are more clearly within the scope of local actions and accountability. Coye (1994) describes the public health culture as a real source of resistance to improvement in the system. Included in her list of public health attitudes that should be improved are a large sense of entitlement, resistance to outside accountability, hesitation of leaders to share information with all levels of staff, and a "cowboy" image of public health leaders that detracts from cooperation and collaboration with other leaders (p. 4).

Leadership of Human Resources

While interacting with external forces is an important function of public health leadership, each agency leader must necessarily focus on local issues and internal management. Public health, with its emphasis on providing economical preventive services, is largely centered on using human resources. Roemer (1993) describes the functions of leadership as including: the attainment of knowledge about basic public

health practice, the understanding of how to organize and support staff, the enhancement of social aspects in organizations, promoting effective interpersonal relations, training staff, and measuring individual and agency performance. Roemer (1993) relates, "Performance in public health falls short of expectations due in part to poor supervision or more generally to lack of public health leadership" (p. 398). Thus, it is in the human resource area where many of the problems in leadership are found and where opportunities can be seized for improving agency performance.

Leadership Practices and Agency Renewal

Leadership and Public Agency Performance

As documented nationwide, the inability of public agency leaders to effectively manage staff performance is a cause for poor agency outcomes. This problem is addressed by the National Commission on the State and Local Public Service (1993). Among its recommendations are a call for a new type of public manager, capable of implementing "lead and trust" strategies that change the role of the manager from a "double-checker" to a leader of high performing, job-motivated employees (p. 45). The Commission states the leadership of human resources is a real concern in public services, whether due to antiquated, encrusted, personnel systems, the lack of merit rewards for effective performance, or the absence of leadership training. Can public health be reinvented, as other organizations have been reinvented, when acute problems force dramatic changes in leadership thinking and workplace practices?

Vision and Reinvention

The complexity of modern public health problems requires leaders who are better equipped to take on the morale, skills, and systems problems described in recent assessments by national public health leaders, and by other narratives analyzing public services. Early heralds helped business leaders recognize that the world they inhabited was changing so dramatically that they must adopt a new vision of reality; this pronounced change in vision was coined a "paradigm shift" (Bennis & Nanus, 1985, p. 13). Similarly, Leebov and Scott (1990) describe the healthcare leadership skills needed to transmit new visions and intentions into better services. With new rules, new organizations, and the status quo becoming obsolete, health leaders are said to need an entirely new job description. Transformation leadership, or "reinvention" of structure and management, as it was later called by Hammer and Champy (1993), begins with leaders who sufficiently challenge conventional wisdom and see possibilities for real change. Roper (1994) describes the challenge:

> The major progress in public health leadership that I am calling for will require entirely new and different efforts. We need not simply minor, or even modest, adjustments, but rather major shifts. . . . The single greatest difficulty facing us is a general unwillingness to confront the lack of leadership in public health and then allot the necessary time and resources to deal with it. (p. 28)

A review of public health leadership needs, taken from leading public health advocates, reveals the time for reinventing public health services and transforming

agencies into higher performing organizations appears to be at hand. How can these skills be documented and disseminated in local agencies?

Focusing on Leadership Practices

Early research on leadership was centered on the study of personality traits and character attributes of great men. Hundreds of studies failed to show a consistent relationship between traits like intelligence or masculinity, and effectiveness as a leader (Campbell, 1993). Therefore, if leadership is not bound by personal, inborn attributes, then the opportunity is reported to exist for identifying successful leadership practices that can be systematically taught and replicated (Stewart & Garson, 1983; Tomasko, 1993).

Studies in business and industry have demonstrated how leaders can initiate high performance workplace practices for increasing quality and productivity (Mavrinac, Jones, & Meyer, 1995). A quality revolution is reported in American business showing how performance improvement has become a fundamental leadership task. Leadership for performance and quality is described as ". . . absolutely essential, because standing still on quality is tantamount to falling behind one's competitors at home and abroad" (Fisher, Schoenfeldt, & Shaw, 1993, p. 421).

After considering the success of business leaders, what are the challenges to leaders of public service organizations wishing to initiate workplace practices for high quality, innovation, and high performance?

Leadership Challenges in Public Agency Cultures

Culture and Image

Literature reveals that the culture of public agencies presents unique problems in initiating workplace practices for high performance. Hasenfeld (1992) writes that public service agencies are an "enigma" to those they serve (p. 3); by embodying healing, teaching, and assistance in structures of rules, regulations, and passionless authority, agencies confound their clients seeking help. "Thus to the recipients, human service organizations evoke hope and fear, caring and victimization, dignity and abuse" (Hasenfeld, 1992, p. 4).

Serving Multiple Constituencies

Leaders striving to create consumer value and high customer satisfaction find that the consumers are but one of many groups to be pleased, and other powerful, external, forces may have differing definitions of agency performance. Public agency staff are taught their service organizations must strive to please multiple masters. These include agency boards, local government officials, state and federal rule makers, advocacy groups who support or oppose the agency's objectives, professional associations, and the consumers of services (D'Aunno, 1992; Duncan et al., 1995). In this multiple constituency model of agency performance, ". . . an organization is effective to the extent that it at least minimally satisfies the interests of multiple constituencies associated with it" (D'Aunno, 1992, p. 344).

Employee Attitudes

Employees in public agencies are described as besieged by conflicting demands for services and levels of attainment that they cannot meet within their present work structure (Cohen & Brand, 1993). Feeling powerless to change the structures and processes that make them ineffective, employees may adopt attitudes of resignation or withdrawal. Work designs that employees know are ineffective are criticized but not changed. When employees loose psychological connection to their work, they become disillusioned and apathetic about the quality of services they provide (Chell, 1987, pp. 129-154; Seltzer, 1989, pp. 41-45). These behaviors reinforce the public's view of government as indifferent and unresponsive (Federal Quality Institute, 1991, 1994)

Performance in Knowledge Industries

Another challenge to leaders of public agencies is determining how to improve the performance of organizations dependent entirely on service and knowledge workers. Production principles were once thought to apply mainly to manufacturing, but as services and knowledge work takes an increasing role in our economy, the need for efficiency in this work is realized (Heskett, Sasser, & Hart, 1990). Government services seem to many citizens to be focused so thoroughly on procedures that results for the customer are ignored (Gore, 1995). The importance of quality management in service industries is stated as follows:

> In comparing manufacturing quality to quality in public services , it can be argued that quality is even more important in services, as services are rendered to clients in real time. There is no chance to inspect and correct errors before the product

reaches the client: The service produced is either good or not good, and it is consumed the moment it is produced. (Fisher et al., 1993, pp. 420-421)

Peter Drucker (1993) believes that teachers, nurses, clerical workers, and other direct service providers have become less effective in recent years, even with the introduction of computers and other electronic communications. He states the need for public and governmental services will increase in an era of vast economic change. In Drucker's analysis of the "post-capitalist" society, he gives steps for increasing the productivity and performance of knowledge workers (pp. 83-92). These include seeking input from the workers themselves about the elements of the workplace that distract from their main task, defining in certain terms expected levels of services or performance, determining appropriate work flows, and establishing new or different team structures to make service work effective.

Ineffective Structures

In many areas of public service, an agency is the sole proprietor for a service and customer satisfaction may be less influential than following procedures and regulations created in the agency structure. Characteristics of ineffective agency structures are said to include divisions of duties by narrow function, communications flowing primarily from management down, and condescending attitudes about clients that permeate the organization and muffle staff concerns (Ezerman, 1991). In this model of organization, administrative authority is placed at the top of a pyramid, with the direct service workers having little authority to change the workplace. The components of the model are also reported to include high specialization in job designs, adherence to numerous rules and

regulations that take priority over service performance, abundance of vertical supervisory hierarchies, and low employee involvement for improving the organization (Ruchelman, 1989, chap. 1).

Remedies That Create More Problems

Public service customers who have no alternative to this sort of agency have diminished consumer power. Government attempts to mediate these imbalances in the agency-consumer relationship by creating governing boards, restrictive agency policies, rulings, strict procedural guidelines, and appeal structures, to protect the public from abuse (Gore, 1995). These practices enforce a culture that gives greater weight to following rules than breaking them, even when efficiency and service quality could be enhanced with greater flexibility (Hasenfeld, 1994; Mastenbroek, 1991; National Commission on the State and Local Public Service, 1993).

As a result of these factors, dedicated employees can be thwarted by their organization. In describing problems in service organizations they observed, European critics describe the cycle of poor performance:

> Usually, such problems do not reflect individual errors and neglect, but have a persistent and often structural basis. One could even say there is often a system in the madness. Bureaucratic and mechanistic production structures result in the lack of commitment, in opaque and blurred organizational processes and in bad performance. Bad performance results in more bureaucratic control. . . .
> (den Hertog & Kunst,1992, p. 7)

Limits of Rational Management

A rational approach to creating better performance is to set agency goals and measure their attainment. Public health and other service agencies make use of management by objectives and demographic measures of sickness and death to gauge program success. Examples are seen in the Healthy Communities 2000 Model Standards (American Public Health Association, 1991) and in studies that measure health department performance of core practices that should be provided in all localities (Turnock et al., 1994).

Problems compound this task of rational management. The consumer of health education or health services may offer great resistance to learning or adopting new habits, even when offered high-quality services. Public health officials are often charged with assisting some consumers who are not repentant in their unhealthy behaviors, and are disliked by the general public who pay for public services (Lawlor, 1990). Public health leaders document the unhealthy habits that the public continues to exhibit, giving evidence that preventive programs need to be funded and could save many lives. However, the distance of many culturally ingrained health problems from the influence of public health agencies, and a lack of social agreement about goals and priorities, portends that the problems will continue (McGinnis et al., 1992).

Other challenges to rationality occur when agencies operate in highly turbulent and uncertain environments, and continuous efforts may be required to justify agency existence (National Commission on the State and Local Public Service, 1993). Changes in public opinion about the need for services reinforce a survival atmosphere that discourages risk

taking. Leaders may seek high staff performance but have no means to give financial rewards for merit. Thus, staff may feel, ". . . Growth and survival depend less on technical proficiency of their work and more on their conformity with dominant cultural symbols and belief systems, that is, institutional rules" (Hasenfeld, 1992, p. 10).

Performance in Improved Agency Cultures

In summarizing literature on agency cultures, it can be reported that the leader in public services faces considerable challenges in moving an agency from a bureaucracy to a high performance organization. Evidence exists, however, as most recently documented in the Innovations in American Government program, that effective leadership can greatly change the quality of public services by demonstrating creative problem solving and resourcefulness (John F. Kennedy School of Government, 1995). Service leaders who achieve outstanding performance are said to encompass and surpass good management techniques of staffing, planning, and controlling. By carrying their agencies to higher levels of innovation, responsiveness, and employee competence and security, they can create high performing agencies that provide truly excellent service (Duncan et al., 1991; Federal Quality Institute, 1994).

Transforming Public Service Agencies for High Performance

Summary of Leadership Initiatives

The performance that Americans want from government and public services is described in "common sense" measures. Citizens are said to want government that

focuses on results instead of rules, public service that recognizes that the people are its customers, and agencies that work faster, better, and cheaper (Gore, 1995, p. 13).

For transforming traditional government organizations to high performance agencies, the U.S. Department of Labor (1992) recommends the following leadership initiatives: (a) reduce hierarchical organizations structures and create flexible, responsive work units; (b) change the role of supervisors from overseer to coach and focus employees on team efforts to reduce individual competition; (c) provide and manage training as an investment for the future and create development opportunities for all employees, not just the top managers and supervisors; (d) involve all staff, suppliers, and customers in defining and creating quality services; and (e) initiate strategic planning focused on long-term objectives. Following are further descriptions of specific workplace practices that leaders can initiate for high performance.

Reduce Segmentation and Hierarchy

Changing failing structures requires changing the "bureaucratic and mechanistic" organizational systems that reduce employee commitment and hide responsibility for performance (den Hertog & Kunst, 1992, p. 7). Leadership initiatives to implement workplace reform should include reducing the segmentation of services delivery. This can be done by organizing workers and integrating resources around larger problems. Also, simplifying control and supervisory systems while increasing abilities, authority, and responsibility of service workers is recommended. Changing organizations from outdated, industrial-production models of "complex organizations and simple jobs" to "simple

organizations and complex jobs" is presented as a key to improving the structure of service organizations (den Hertog & Kunst, 1992, p. 11).

Create Enabling Systems

Demming provided that effective leadership is focused on helping employees to do a better job and that leaders must take responsibility for developing systems of work that enable workers to be successful (Walton, 1986). Organizational structure is designed by leaders; therefore, leaders determine the level of self-control and independent problem-solving that workers can practice. Organizations that facilitate high levels of employee self-worth and motivation are described as having simple organizational designs to increase job range and decrease specialization, decentralized command to place authority and responsibility at lower levels in the organization, and informal cultures that emphasize the value of the customer and product (Donnelly, Gibson, & Ivancevich, 1992).

Design Rewarding Jobs

Making work valuable and efficient is reported to be aided by changing the structure of jobs in three ways: (a) increasing the depth of jobs by adding to the mental substance and responsibility levels of assignments; (b) increasing the flexibility of jobs by expanding the range of functions and creating multifunctional positions; and (c) increasing the levels of self-control to give employees more coordinating, scheduling, and quality control duties (Tomasko, 1993). Edward Lawler, a strong proponent for improving job designs in organizations, provides a contingency model for supervision that substitutes improved information technology, better work designs, incentive-reward systems, and leadership from non-managers for organization hierarchy (Kreitner & Kinicki, 1992).

Apply Information Technology

Davis (1994) illustrates how innovations in information technology and organizational structure, developed first in transportation and manufacturing industries, can boost productivity and quality in service organizations. He writes that effective service organizations focus on customer needs by developing infrastructures (organizational processes) and competencies (human and technical resources) that allow staff to respond quickly to individual requests and problems (p. 3). Knowing customers and catering to individuals has replaced mass marketing as a competitive strategy, and information technology provides new resources for creating relationships with customers. Varva (1992) reports how information systems allow workers to develop long-term, productive relationships with customers, to accurately diagnose individual needs, and to deliver services in a timely and responsive manner.

Change Organizational Structures

The redesign of work is an important element in high performance workplaces. Reporting on favorable gains in United States productivity in "Rethinking Work," Business Week (1995) attributes U.S. success in producing better services and goods to applications of information technology and to reorganizations in the workplace:

U.S. companies are now taking investment in their human capital--their workforces--more seriously. When mass production ruled, competitive advantage lay in fragmenting work, highly specializing tasks, and managing via hierarchial bureaucracy. What's different today is that productivity gains, in an era

of computers and communications technology, increasing rely on delegating authority and organizing workers into self-managing teams. (p. 142)

Change Management Models

Golembiewski and Kiepper (1988) state that adherence to "ancient management models," rather than employee inadequacies, is the chief cause of deficiencies in public agency performance (p. xii). However, experience is growing, in applying new management practices, including total quality management (TQM) to government. At the federal level, leadership for promoting improved management is led by the Federal Quality Institute (1993b), which has issued a series management-leadership guides and booklets as a part of the Federal Total Quality Management Handbook. This institute also provides consultation and awards to federal offices and agencies that excel in making quality improvements. In Employee Involvement and Quality Management in the Federal Government, the Federal Quality Institute (1993a) identifies core principles of quality management as focusing on customer satisfaction, seeking continuous and long-term improvements in processes and products, and fully involving the entire workforce in quality initiatives.

Balance Control with Autonomy

Initiatives identified for leading high performance in government require balancing institutional control with collaborative leadership; this is required to encourage risk-taking and innovation while providing adequate coordination of activities (Mastenbroek, 1991, p. 15). Vice President Al Gore (1995) describes how government agencies grew and evolved from small offices to inflexible giants, modeled on early

corporate leadership models of strong, central control, narrow divisions of labor, and little individual employee discretion:

> . . . we wanted to protect against corruption, treat everyone fairly, and safeguard the common interests of the people. So we created rules to make sure the government makes no mistakes, takes no risks, tolerates no uncertainty. The result was galloping bureaucracy and stifling regulation." (p. 28)

Gore (1995) has summarized how social and technical changes have caused the transformation of business leadership and applies these lessons to government. The corporate models of past decades are said to no longer fit the needs of business or public service agencies, thus Gore reveals, ". . . by the 1970's what was once good for General Motors wasn't even good for General Motors anymore. (p. 32)

Achieving the control-autonomy balance allows leaders to make high performance organizations look, feel, and act differently. Enthusiasm, commitment to goals, channeling energy toward a common direction, a sense of identification with a cohesive unit, positive feelings about subordinates, and a tolerance for mistakes are reported to be tangible and important features of organizations that achieve high performance (Golembiewski & Kiepper, 1988).

Lead Through Involvement

Leaders who initiate performance improvements are instructed to change their roles from planning and controlling in isolation to fully involving all employees in seeking improvements to the organization; to "shift their effort from directing and controlling how the operations will be carried out to identifying and removing barriers that prevent

employees from meeting customer requirements and expectations the first time and every time" (Federal Quality Institute, 1993a, p. 4).

Thus, high performance leaders take full responsibility for their own performance and promote the same attitude in subordinates. They understand and focus on self-motivation by giving employees reasons to excel. These leaders see their role as helping subordinates to perform at high levels. While recognizing the high economic value of continuing customers, performance leaders focus all staff on achieving zero defections of customers to other service providers (Reichheld & Sasser, 1990, p 110).

Reduce Fear of Change

Changes in leadership practices may be particularly difficult in large public service agencies due to the absence of honest and unbiased evaluations of agency processes. Government agencies are said to exhibit a high degree of defensiveness, where public and political scrutiny is unforgiving of shortcomings (Cohen & Brand,1993). Thus, leaders must overcome cultures that save and protect inefficiency; alternatively, they create workplaces where employees feel safe in offering suggestions. Driving out fear is one of Demming's fourteen points for leading quality initiatives. Eliminating the fear of punishment for uncovering agency deficiencies is reported to help employees contribute to improved work processes (Walton, 1986, chap 12).

Mobilize Staff to Create Quality and Value

Successful performance management requires leaders who show an interest in all agency processes that create quality and value for the customer. Quality might be defined as "how good is the service" where value is seen as "what good does the service do"

(Foggin, 1991, p. 511). Closing the performance gaps between customer expectations and service delivery requires organizations to learn what customers want, design responsive systems, develop controls with accurate information on performance, and continually measure results (Foggin, 1991). In a human service organizations, thousands of independent interactions occur between staff and customers, most of which are beyond the direct control of agency leaders. Thus, assigning quality functions to decentralized or autonomous teams who measure quality indicators and interpret data is a critical strategy for achieving high performance (Mastenbroek, 1991).

Transform Work Through Team Efforts

The Federal Quality Institute (1993 a) gives reasons for implementing performance improvement as a team effort: (a) different talents and perspectives are brought to bear on problems; (b) coordinated thinking is needed to solve complex problems across functional lines; (c) customers and suppliers should be included in giving input to quality improvements; and (d) membership on a quality improvement team gives individuals security in making suggestions.

Former strategies to improve performance through employee suggestion committees or quality circles often had mixed impact due to the lack of management support or the inability of staff to implement changes across functional lines or departments. Effective quality improvement is more readily gained through teams that work as part of a larger, organizational-level effort to change the culture and processes of the organization (Fisher et al., 1993). Autonomous work teams have greater responsibilities than suggestion committees, meeting independently to solve problems on a

short time-frame, and making use of measurable data and adequate information.

Successful team efforts for improving agency performance can be gained when the agency's leadership is committed and involved in performance improvement, leading the entire staff in implementing the "emerging paradigm" of quality as a central element of strategy and culture (Bounds,Yorks, Adams, & Ranney, 1994, p. 83). Employee involvement in performance improvement is seen in this way:

> . . . Creating an organization dedicated to the emerging paradigm requires a strong connection between strategic focus and operational reality. In many organizations, this link has been poorly made. Employees, managers, and nonmanagers must alike accept responsibility to make this connection. Employee involvement is the process through which this crucial link is made. (Bounds et al., p. 83)

Develop High Performance Workplace Systems

This review has summarized steps public service leaders can take to transform workplaces. Although a small percentage of American business organizations, perhaps as few as 13 %, can truly be described as high performance workplaces, the success of pioneers like Ford or Cummings has created interest in applying new leadership skills to create ". . . a uniquely American approach to the architecture of work that combines the rigor and discipline of total quality management with the American values of innovation, entrepreneurship, individualism, teamwork, and diversity" (White, 1994, p.162).

The first part of this literature review described needs for invigorated leadership in public health and then listed problems that confound leaders of public services wishing to

elevate the performance of their agencies. Warren Bennis (1989) became so frustrated by distractions as the President of the University of Cincinnati that he described his work environment as an unconscious conspiracy to prevent him from changing anything important. Similarly, public health leaders grapple with formidable external challenges that distract them from examining and improving the capacity of their organizations (see Karpatkin & Shearer, 1995, for a recent review of public health concerns about health care reform).

Efforts to provide a tool or mechanism for leadership assessment, as seen in the Assessment Protocol for Excellence in Public Health, (National Association of County Health Officiers, 1991) provides some assistance, but this tool seems to be structured more closely to past standards and protocol methods than to continuous improvement seen in high performance agencies. Many good examples are documented for applying TQM in the hospital environment (McLaughlin & Kaluzny, 1994; Mozena & Anderson, 1993; Leebov & Ersoz, 1991). Public health, with its traditions of decentralized, local agencies and high levels of staff involvement and independent decision-making, would seem to be fertile ground for implementing high performance workplaces. The literature, however, gives little documentation that these practices are being adopted or even considered in public health.

Characteristics of Effective Leadership

Burns (1978) has stated that effective leadership has three elements: (a) It is transactional when providing rewards to employees for following or complying with leadership initiatives; (b) it is transformational when employees and leaders embark on

activities like training, education, and making improvements to create true change and elevate concerns; and (c) it is morally-based when societal values and goals are reflected in the organization's mission and purposes.

The leadership model presented in this dissertation and illustrated in Figure 1 provides a sketch of specific leadership initiatives that incorporate similar principles. Please see Figure 1. Exchange or transactional processes include performance assessment and feedback techniques, pay incentives, and opportunities for staff involvement. Tranformational processes include training opportunities and input of the staff into improving the design of their work. The moral purpose of the agency is presented when leaders explain the goals and objectives of the agency and seek the cooperation and commitment of all staff to high purposes (see Rost, 1991, pp. 91-128, for an updated definition of transformational leadership).

Leadership is defined by Burns (1978) as "the reciprocal process of mobilizing, by persons with certain motives and values, various economic, political, and other resources, in a context of competition and conflict, in order to realize goals independently or mutually held by both leaders and followers" (p. 425). The model in Figure 1 illustrates leadership initiatives taken to improve employee competencies, leading to improved workplaces and agency performance. Leadership for creating workplace systems leading to high performance is further described in the remainder of this chapter.

Workplace Systems for High Performance

A Model for Leadership

One phenomena that has come to the forefront for leadership in private and public domains is the issue of performance. It seems clear from the literature that even greater pressures will confront public agency leaders to demonstrate value in what they do. The remainder of the literature review examines specific elements of the dissertation leadership model to show how systems of workplace practices can be created for high performance.

Leaders who create and sustain high performance increase the quality and productivity of organizations through workplace practices that are interacting and reinforcing. A study of successful industry practices concludes, "The evidence shows that specific practices such as training, alternative pay systems, and employee involvement are often associated with higher productivity. Industry studies show that these and other practices can have a larger impact when implemented together in systems" (U.S. Department of Labor, 1993, p. 15).

A report from the AFL-CIO (1994) also describes the benefits to labor and management from new systems of work organization,

> . . . the change has served to increase worker opportunities, to enhance job satisfaction, and to bring greater democracy to the workplace. . . . At the same time, the new work systems have demonstrated their capacity to improve the quality, and reduce the cost, of the goods and services being produced. (p. 1)

In the leadership model presented in Fig. 1, leadership practices to initiate performance assessment-feedback, training, and work design improvements are illustrated in a dynamic relationship; each workplace practice contributes to the overall performance of individuals in the organization. The remainder of this literature review will examine research about the system of practices illustrated in the high performance model. Documentation is provided for the creation of the survey instrument used in this study.

Performance Assessment and Feedback

Early Research

Abraham Maslow and Kurt Lewin provide theoretical foundations for leadership practices that improve work performance through knowledge of human motivation. In A Theory of Human Motivation, Maslow (1970) presents a needs hierarchy illustrating how higher-ranked esteem needs are fulfilled by work that provides self-respect and the full use of human capacities. Satisfaction of these needs is said to elevate workers' self-confidence and to provide a sense of strength and adequacy. Denial of esteem needs leads to feeling of inferiority and discouragement. Central also to Maslow's theory is the postulate that only unsatisfied needs are strong motivators. Promoting self-esteem in employees is now considered essential in organizational development and is a factor in job design, supervision, and human resource practices (Kreitner & Kinicki, 1992).

In examining Lewin's contributions to management practices, Weisbord (1987) writes that ". . . Lewin's stamp is everywhere in contemporary management: running

meetings, work design, training, team development, systems change, cultural change, leadership styles, participative methods, minority-majority relationships, survey feedback methods, consultation skills" (p.71).

Lewin's early research concerned group behavior in relationship to work environments. He observed, with Lippitt, how group leadership promoting self-monitoring and self-control is more effective than autocratic, centrally-controlled methods (Weisbord, 1987, p. 83). Leadership practices advanced by Lewin are central to self-directed teams, to quality control practiced by service and line workers themselves, and in the promotion of the quality of worklife through employee participation. In his popular book, The Seven Habits of Highly Effective People, Stephen Covey (1989) uses Lewin's force field analysis in advising leaders to seek win-win solutions to problems.

> . . . increasing the driving forces [counter-force against force] may bring results--for a while. But as long as the restraining forces are there, it becomes increasingly harder. . . create an atmosphere in which it is safe to talk about these forces. You unfreeze them, loosen them up, and create new insights that actually transform those restraining forces into driving ones. (Covey, 1989, pp. 279-280)

Expectancy Theory

Victor Vroom (1995) draws from the work of Maslow and other prominent researchers, including Lewin and Atkinson, to create his widely-cited work expectancy theory. Early in his career, Vroom was attracted to the analysis of external and internal forces affecting workers' motivation and production. Vroom labels workers' attraction to rewards or outcomes as "valences," which are preferences having both strength and

direction. Individual decisions about work behavior are said to be based on preferences for specific outcomes, the strength of desire for expected outcomes, and the likelihood of obtaining a reward from a given effort (p. 20). Thus, Vroom expands and operationalizes the premise that workers have internal needs and desires that leaders don't create; effective leaders understand that employees make decisions about work effort based on their personal values and their expected reward for a given effort.

Performance as a Motivator

Vroom (1995), however, dismisses work satisfaction as an independent motivator for creating high work performance. Reviewing human relations theories popularized by the Herzberg studies and other human relations experiments, he concludes that general satisfaction is not proven to increase work performance. Vroom then provides an important idea that is now a part of current leadership focus; abandoning satisfaction as an initiator of performance, he theorizes that high performance should be viewed as an initiator of satisfaction (pp. 252-254). In this context, work satisfaction is the product of competency and the ability to perform. Current researchers who stress the role of competency development as a self-paying or intrinsic reward (see Frei et al, 1993; Morf, 1986) share Vroom's perspective of work satisfaction as an incomplete goal by itself, and stress the development of human ability, pride in quality, and dignity in work as primary motivators.

Contributions of Lawler

A number of high performance leadership practices can be linked to expectancy theory, including providing employees clear expectations of rewards for performance, and

using practices communicating goals and expected outcomes. Edward Lawler (1985) reviews and weighs theories of human motivation and adopts the core ideas in the expectancy model for understanding motivation at work. Lawler's contributions are the expansion and popularization of leadership models based on rational and cognitive-based motivation, and in testing leadership practices that reduce hierarchy by using work teams, broadly applied employee training, and initiatives for greater employee self-direction (Lawler, 1994; Kreitner & Kinicki, 1992).

Most recently, Lawler and his associates have examined leadership practices in Fortune 1000 companies (Lawler, Mohrman, & Ledford, 1992). Their study lists a number of performance-based reward systems and assesses leading industries about their frequency of use. Practices included are individual work incentives, team incentives, profit sharing, gainsharing, stock ownership, all-salaried pay plans, knowledge/skill-based pay, flexible benefits and non-monetary rewards.

This research found the utilization of several reward systems remained unchanged from 1987 to 1990, including individual incentives and stock ownership. However, gainsharing, flexible benefits, and skill-based pay increased in frequency of use. In summary, about 29% of the companies surveyed used performance-reward systems widely, leading to the conclusion that the overall level of using rewards for performance in American business is not high (p. 21).

Pay-based Rewards

Financial incentives are often categorized as extrinsic rewards for performance; these are given to reward the work effort of individuals who expect financial gains, value

and need the monetary reward, and perceive that work effort will result in financial benefits (Champagne & McAffee, 1989). Profit-sharing, productivity bonuses, skill-based pay, and gainsharing are examples of so-called extrinsic financial awards. In classic organizational structures of the earlier industrial era, external motivation was aimed at the employees' need for physical and economic security based on fear and sanctions, and relied predominantly on financial incentives (Donnelly et al., 1992).

Effects of Monetary Rewards

Frederick Taylor is widely criticized by human relations proponents for his reliance on piece-work pay incentives and his lack of belief in employee decision-making and management participation. However, Taylor gave early demonstrations that productivity in the industries of his day could be raised dramatically through pay incentives (Waring, 1991; Weisbord, 1987; AFL-CIO Committee on the Evolution of Work, 1994). The U.S. Labor Department (1993) reports that tieing compensation to work performance is consistently effective in raising productivity in industry; however the difficulty of administering performance appraisal systems is well documented (Fisher, Schoenfeldt, & Shaw, 1993, pp. 470-503), and the inability of local governments to give pay rewards for merit and performance is seen as a major impediment to higher worker performance (National Commission on the State and Local Public Service, 1993).

Non-monetary Rewards

Although financial reward systems are featured in high performance organizations, these incentives are augmented with other forms of performance assessments and feedback. Morf (1986) describes initiatives leaders can employ to increase motivation in

work including: (a) tieing organizational goals to the aspirations and needs of workers, (b) providing non-monetary rewards for achievement, (c) creating and reinforcing high levels of competencies in employees which enhance self-esteem, and (d) creating the expectation throughout the organization that performance is related to desired outcomes.

Aligning Performance Systems and Agency Goals

Performance management. New methods of performance management are being considered as organizations strive to align goals and strategies in current business environments with performance measures that truly reflect the organization's goals. A recent study of 437 American companies revealed that although performance management was strongly linked to financial success, needs existed for improvements in the performance management system. Suggested improvements included: (a) greater employee involvement through self-monitoring, (b) increased coaching and feedback from supervisors, (c) better communication systems throughout the organization, (d) emphasis on clear work expectations and related employee counseling, and (e) customized employee training for particular needs (Rheem, 1995).

New performance factors. As organizations adjust from measuring performance by mass production techniques to including service factors like customer satisfaction, quality, market share, and the utilization of human resources, they realize that many performance assessment-feedback systems are inadequate. Eccles (1991) describes dissatisfaction performance leaders experience from reliance on accounting-data systems that fail to measure important quality and performance factors. He summarizes corrective steps managers are taking, "As a result, they have committed substantial resources to

developing measures such as defect rates, response time, delivery commitments, and the like, to evaluate the performance of their products, services, and operations" (p. 132).

Creating better feedback systems. Thus, performance assessment-feedback systems are changing in both content and method. Various aspects of quality and customer satisfaction are now primary factors to be assessed for performance. Modern information technology allows performance information to be widely distributed and manipulated by employees at all levels (Laudon & Laudon, 1994). Direct feedback from customers is also generated for review and benchmarking products to the best in industry is described as an "eye-opening" effect (Eccles, 1991, p. 133; Bullivant, 1994). The role of the leader in initiating new performance assessment and feedback practices includes: (a) improving the technical support system and skills of employees using information; (b) instructing employees in means to continually measure quality; and (c) setting managerial and supervisory systems in place that align feedback, assessment, and incentives with company priorities (Eccles, 1991; also see Albrecht, 1988).

Multiple factors in performance. Kaplan and Norman (1992) relate how perceptive senior executives understand that "what you measure is what you get" (p. 71) and how managers are increasingly using both financial and service data to guide performance assessment and feedback. These authors present a "balanced scorecard" consisting of four performance elements: (a) customer perspective: what do the consumers think of us, (b) internal perspective: at what must we excel, (c) innovation and learning perspective: how can improvements and innovations be fostered, and (d) financial perspective: how do the shareholders see us (p. 72).

Participation in continuous assessment. Performance assessments that address current quality requirements must necessarily foster a high degree of employee participation. Earlier industrial performance assessment systems were designed to specify the particular actions bosses wanted employees to take and then measured whether the employees had in fact, taken those actions (Eccles, 1991). Practices that leaders must now initiate for effective performance assessment-feedback are said to include creating cross-functional teams, encouraging better customer-supplier partnerships, reducing inter-organizational barriers, and leading continuous improvement systems (Appelbaum & Batt, 1994).

Successful Applications in High Performance Organizations

The U.S. Department of Labor (1993) has summarized research studies on high performance organizations and gives the following findings related to organizations' systems of performance assessment and feedback: (a) High levels of employee involvement in decision-making are associated with positive affects on productivity; (b) firms with progressive management styles and reward systems have higher rates of earnings and profits; (c) profit sharing and gain sharing are positively correlated with productivity increases; (d) flexible production systems using contingent compensation, work teams, problem solving groups, suggestion systems and decentralized quality control provide increased product quality and productivity; and (e) performance differences in manufacturing operations are substantial when feedback on work is frequent, and when levels of worker autonomy and input to problem solving are high.

The American workplace is large and diverse and industry leaders experiment with workplace practices they observe here and abroad. Kerka (1995) provides a review of new high performance strategies and describes the difficulty in defining consistent models of workplace organizations; common practices are shared but no formula or package of practices is proven to exclusively determine high performance. Effective performance assessment-feedback practices are summarized in Table 1.

Work Design

Early Research

Hackman and Oldham (1980) survey leadership initiatives taken to redesign work for increased motivation and productivity. Their review of scientific management, human relations management, and contingency-reward systems reveals that each approach has shortcomings.

Engineering workers' behavior to fit the job (scientific management), as advanced by work-efficiency proponents of the early industrial era, created work systems that made incomplete use of human talent. Engineers and managers defined one best way to do a job and instructed the employees in the application. Thus, jobs were divided into small, repetitive tasks that produced efficiency but low morale. In contrast, human relations techniques were later adopted to increase job satisfaction, but by themselves, are reported to be ineffective in advancing company productivity. Contingency-reward systems may be over-dependent on external motivators, whose impact is entirely financial.

Table 1. **Workplace Practices Leaders Initiate for Performance Assessment-Feedback**

Level of interaction	Workplace practice
Self-assessment	Feedback and intrinsic rewards from enriched work Development of competency and self esteem Participation in continuous learning to increase skills and broaden responsibility on the job.
Customer to provider	Feedback directly from clients Customer surveys and client data to measure quality and productivity
Team-coworkers	Analysis of data to continually assess team performance Receipt of feedback and rewards through team membership Analysis of critical incidents to solve problems in team meetings
Supervisor	Setting unit goals with supervisors Receiving financial rewards for individual or team performance Individual promotions granted for performance and skill development Receiving non-monetary rewards, or recognition for problem solving and special contributions
Agency leader	Provides purpose and meaning for agency activities Directs supervisors and subordinates in performance-related assessment Leads in quality initiatives Sets atmosphere for openness, involvement, and effective communication Provides recognition and reward for performance Provides resources for achieving excellence Provides information on agency goals and objectives

Therefore, the central focus for advancement in work design is ". . . how organizations can be designed, staffed, and managed so that employees are simultaneously utilized and satisfied to the fullest extent possible, with neither the goals of the organization nor the personal needs of the employees dominating the other" (Hackman & Oldham, 1980, p. 20).

Jobs in the Reengineered Workplace

Recently, American work organizations have initiated a wave of downsizing and reorganization that provides further challenges to effective work design. Drucker (1995) reports that no industry or public service organization is immune from the vast sweep of organizational change caused by fundamental shifts in power and demographics (p. 213-233). In this era of revolutionary change in economic and social structures, the responsibilities and rewards of jobs are in great flux. Current leaders must again look for strategies through job enrichment or work design to improve motivation and human performance.

In his provoking article, "The End of the Job," Bridges (1994) describes a world-wide employment-workplace shift that abandons past trappings of supervision, structure, and control. Replacing comfortable and familiar work places are smaller, leaner organizations that quickly change their output or methods and rely on flexible, better-trained, but less secure employees.

In addressing similar issues, Champy (1995) compares how American workplaces in the past eras gave security, middle-class prosperity, and unlimited possibilities for business expansion; a time he calls the era of "smooth sailing" (p. 14). Now in an age of

uncertain sailing, leaders in business and government are said to find that nothing about leadership is easy.

Hackman and Oldham (1980) identify critical psychological states that are said to be internal factors for worker motivation: (a) experiencing meaningful work, (b) assignment of responsibility for outcomes of work, and (c) knowledge of the results from work activities (p. 77). Current business advisors pose that these basic factors in human motivation have relevance in these current times of great organizational change.

Leadership in Changing Organizations

In addressing current tasks for leaders of change, Champy (1995) gives the following as core leadership practices: (a) mobilize employees by educating them about why organizational changes must be made and how the organization must respond to unstable environments and markets; (b) empower workers by redesigning work to fully utilize their skills and knowledge, give up highly centralized control tactics and distribute authority and responsibility; (c) define and communicate clear objectives about expected results, examine each organizational function and process as related to core goals and objectives; (d) improve business measurements to truly reflect performance and quality processes; and (e) use a full range of tools to articulate and define desired outcomes to communicate truthfully and with authenticity that brings people to a common purposes (pp.111-128).

Why Quality Initiatives Fail

Steininger (1994) reviews the failure of many industrial quality programs to increase company competitiveness and attributes failure to low levels of human resource

skills exhibited by leaders. Extrinsic, punishment-reward systems are said to "enhance the self-esteem of a given leader, but [do] little to enhance the self-esteem and self-worth of the individuals being managed" (p. 609). Alternatively, work environments that tap internal desires build both skills, satisfaction, and production. Steininger lists as core motivators the desire for knowledge, the desire to acquire skills, the need for recognition, the need to develop self-worth, the desire to earn self-esteem and self-respect, and the need for feedback. Success in management is dependent, Steininger states, on the ability of leaders to focus on the workforce and create conditions for responding to the inner needs and values of today's working population (p. 615).

International Workforce Development

Developing worker personality. International competition in manufacturing has made leaders in U.S. industries mindful of advances in human resource development in Japanese and German organizations. German industrialists recognize that improvements in technical production are dependent on both the skills of the workers and the creation of better job designs. Their outlook is summarized:

> . . . Job design is, accordingly, assuming a more central role in the reorganization of work. Such design has to meet a range of criteria: improving productivity, quality, and efficiency on the part of the worker; optimizing the patterns of physical and mental effort; and developing conditions favorable to the personal development of the worker in the work context. In other words, the aim is to combine a high level of efficiency at both a social and an economic level. (Macher, & Mielke, 1991, p. 64)

Competency through work design. The development of "worker personality" through work design, called "qualifitzierung" by Germany labor management, is closely related to what American educators might call general competency. It is described as ". . . the accumulation of knowledge, skills, and abilities through experiences in various work-related activities. The sum total of this accumulated competence is available not only for use in immediate task performance, but also for general problem-solving and idea contribution" (Frei et al., 1993, p. 8).

Innovation and organization. In German manufacturing, organizations that previously used narrow divisions of labor and hierarchies of supervision are reported being transformed into work systems stressing the marriage of advanced technology and high levels of worker motivation and abilities. These systems employ self-managed teams, define broad job functions, increase the use of information technology, assign a greater variety of tasks to be performed, and provide greater employee discretion and individual decision-making (Macher & Mielke, 1991).

Concurrent tasks. Thus, a central task in developing high performance workplace is developing the skills, abilities, and motivation of employees while improving the work setting, or job design. The goal is to maximize the employee's contribution, learning, participation, and personal growth. In describing how qualifizierung is successfully implemented in democratic workplace international observers state, "Qualifizierung is based on the premiss that competence development requires the active participation of the developing person in shaping and reflecting upon his or her experience. Without such active participation there can be little development" (Frei, et al, 1993, p. 10).

Applications of Improved Work Design in the Federal Government.

A large volume of guidance and documentation about implementing high performance practices has been published by the Federal Quality Institute. In the Conference Proceedings: Sixth Annual National Conference on Federal Quality, federal managers from both military and civilian agencies give evidence that government leaders can successfully transform the workplace:

In the U.S. Forest Service. One participant, a district ranger in the USDA Forest Service, describes the steps undertaken in his agency to renew an organization that was designed in 1905 (Horton, 1993, pp. 51-57). With the goal of lessening constraints on area managers and improving services to the public, Horton relates how employee empowerment and public participation in the agency's stewardship of natural resources was increased.

In Naval Supply. Another speaker described how the Naval Supply Office restructured its performance appraisal system to give more quality-oriented leadership and to encourage teamwork and recognition in the design of the workplace (Sandler, 1993, pp. 309-317).

In the Air Force. The theme of the conference, "Transforming Government: Putting People and Quality First", was illustrated by an Air Force officer who compared how "forming a more perfect union," as the Constitution proposes, can be tied to transforming federal services into more efficient, and trustful organizations benefiting the people (Houle, 1993, p. 1-10).

Small Business Applications

Improving work skills and the workplace. In addressing workforce skills required in a new economy of competition and change, Bassi (1992) writes, "Some students of the workplace suggest that little will be accomplished if worker's skills are upgraded, and then the workers are sent back to the same jobs they had before" (p. 2). Increases in training and education, must be accompanied, Bassi reasons, by the reorganization or redesign of work. In a survey of small businesses Bassi reports the frequency and types of work reorganization undertaken, along with the frequency of workplace education. Methods of work reorganization included in the study were: (a) work teams or quality circles, (b) total quality management, (c) profit sharing or gain sharing, (d) reducing management layers while increasing worker responsibility; and (e) increasing training. Workforce education was defined as programs providing training apart from regular job activities in basic education for English, math, writing, and communications.

Results of the study. Bassi found only minimal portion of the smallest businesses studied had engaged in substantial activities in workforce education; only about 4% reported having an education program. In larger firms with 200-499 employees, about 25% of the businesses reported having a workforce education program. The reorganization activities were higher, with smaller firms reporting that 40% implemented one or more reorganization practice and larger firms reporting about 75% implementation. Bassi relates that those firms who provide workforce education programs usually engage in work reorganization also. However, many firms engage in reorganization practices without workforce education (pp. 8-13).

From the review of literature, workplace practices leaders initiate to improve the design of work can be summarized. These practices can be grouped by the core motivational factors outlined by Hackman and Oldham (1980), which still hold relevance in the reengineered workplace of today. See Table 2.

Training for High Performance

The Effects of Training

The U.S. Department of Labor (1993) finds in a review of research on high performance organizations that training provides positive effects on productivity; however evidence is more limited than with other factors such as compensation and employee involvement. The effects of training are reported to be more pronounced when training is administered as a part of larger systems of innovative workplace practices. The reviewers conclude, "Individual practices had little or no effect unless they were a part of a larger set of complementary work practices" (p. 8).

Training in the New Economy

Human resource development is described as one of the most important, and often most expensive, company functions; while the need for well-trained and highly motivated employees is generally recognized, training functions are often criticized for their lack of accountability and systematic integration with company goals (Fisher, Schoenfeldt, &

Table 2

Workplace Practices Leaders Initiate for Improving Work Design

Core motivational factors	Workplace practices
Task significance	Provide vision and goals of organization related to individual and team effort Provide information about organization's performance and relationships with external stakeholders and customers
Autonomy	Create self-directed work units Reduce supervisory levels and place responsibility for monitoring quality on production line or service worker level
Feedback	Increase information flow from customers and other internal and external clients Increase ongoing supervisory communication Enhance employee skills at data collection Provide training in analysis of work process
Skill variety	Increase dimensions and responsibilities of jobs Make full use of employee resources and skills Provide cross training and job rotation Enhance technical skills
Task identity	Initiate continuous team and agency performance reviews Increase information flow both vertically and across functional lines Provide clear goals and objectives for teams and individual employees

Shaw, 1993). In highly competitive industries, employees are trained in both job content (technical or business skills), in how to work with others (communications, teamwork, planning), and in making contributions to the improvement of work processes or methods (continuous improvement). Baldrige Award competitors, for example, are required to provide detailed, company-wide plans for how the company integrates focused human resource strategies with goals for achieving high quality and customer satisfaction. Training is reported to be one of the largest costs in quality improvement activities and generally includes quality orientations and specific continuous improvement skills (Hart & Bogan, 1992).

Drucker (1995) describes how knowledge in work has evolved as a fundamental advantage, a "key resource," (p. 259) for the economic strength of organizations and nations; but he also cautions that advantages based on knowledge are highly transitory, by its very nature, knowledge is quickly copied and cannot be easily confined by political boundaries. Since knowledge is so easily transmitted now, low-wage, low-skill, mass production techniques that built great prosperity in the United States are under continuous challenge by lesser developed countries (National Center on Education and the Economy, 1990; Commission on Workforce Quality and Labor Market Efficiency, 1989).

Open, world-wide markets, advances in technology, and changes in demographics, have created what Carnevale calls "a new economy". In comparing human resource strategies of past industrial eras to skill requirements in the present economic environment, Carnevale writes,

> In the new economy, however, a productivity strategy based on deskillling work and reducing personnel costs will not work. New, more flexible technologies and reorganizational formats require more flexible and skilled employees. Moreover, automating or deskilling work reduces the organization's ability to deliver on other competitive standards. In the new economy, the simultaneous pursuit of productivity and other competitive standards requires that people be treated as assets to be developed in order to add value rather than costs to be reduced. (Carnevale, 1991, p. 146)

Fewer Employees, Higher Skills

Therefore, training is necessary and complimentary to new workplace: organizations streamlined to employ fewer people, but utilizing workers better educated and better equipped with technology. In "Rethinking Work" (1994), Business Week provides the example of coalminers in Colorado who operate sophisticated machinery, track production information with laptop computers, and come to work with more experience in electronics than with picks and shovels. These coalminers have college preparation and greatly differ in outlook and skills from coalminers of the past. " Better technology, better processes, and fewer, better workers" are the goals of downsized, technology-oriented industry (p. 81).

New production methods in industry require more advanced skills in technical areas, problem-solving, teamwork, communications, quality control, and in the analysis of manufacturing or business processes. Therefore, "High performance organizations view training as vital to the continued success of the organization. . . Every employee, from the

agency head to the entry-level clerk, is encouraged and assisted to participate in adequate training. . ." (U.S. Department of Labor, 1992, p. 4).

Reengineering Training

The Commission on Workforce Quality and Labor Market Efficiency (1989) reports on the work organization and training requirements of businesses entering the "third industrial revolution" (p. 1) that is fueled by advances in information technology and communications. As the organization of work is changed to reflect demands for quality and responsiveness, training needs are redefined by reduced supervisory layers, increased employee responsibility, greater needs for judgement and decision-making in front-line workers, and expansion of jobs in complexity of skill and in range of assignments.

The Commission further reports that American business has been slow to adopt high-skill, high-pay strategies, and a majority of our workplace do not operate on the high performance model. However, international competitors offering better basic skills education in their schools, and making greater investments in adult worker training, can readily employ their workforce to create high quality products. This competition in quality and productivity has spurred our society to change the workplace and to invest in worker training.

Traditionally, the great bulk of our training expenditures has been directed toward professional workers, due to management fear that training investments would be lost to other employers, and due to the delayed return on investment seen in human resources. In high performance workplace, employees at all levels are engaged in activities to create increased productivity by gaining higher skills and abilities. The U.S. Secretary of Labor

lists five competencies essential to higher production: (a) identification and organization of resources, (b) ability to work well with others, (c) ability to acquire and evaluate data, (d) understanding systems of technology and organization, and (e) ability to work with a variety of technologies (U.S. Department of Labor, 1994, pp. 50-51). Therefore, a world-class workforce requires leadership and investments to create high-skill workers at all levels.

Rummler and Brache (1995) also list similar practices that leaders must initiate to accomplish performance goals: (a) establish performance specifications, the outputs and standards for company and individual goals; (b) design well-structured jobs that allow employees to perform with adequate resources and minimal interference; (c) tie meaningful consequences to achievements; (d) provide specific and timely feedback about levels of performance; (e) provide training to create high levels of skills and knowledge in employees, including informal hints and techniques derived from outstanding performers; and (f) promote and develop individual capacities (physical status, motivations, and attitudes) for achieving goals (p. 72).

Social Skills and Organizational Control

Increases in training programs are attributed to technical needs in the workplace but also to the need for social control of organizations. Scott and Meyer (1991) report these needs result from complex work requiring employees better trained in job-related technologies, along with the need for higher internal commitment from employees monitoring the results of their work. Training is seen as a work benefit, a right of

membership, by employees seeking reward or advancement. Also, competitive, external pressures demand more effective use of human and technical resources.

Training and Productivity Increases

In "Productivity to the Rescue" (1995), Business Week reports that U.S. productivity averaged 2.2% annual growth from 1990 to 1995, an increase labeled as a productivity "reincarnation" (p. 134) for its impact on workers and business. Productivity gains are attributed in large part to the application of technologies in the workplace, and particularly to investments in and mastery of information technology. Competitive forces dictate, in a period of low inflation, that market advantages be gained through innovation and better quality. It is also reported that formal training has increased in industry by 45% from 1984-1993 (p. 142). Thus, training in the information age involves both learning how to use new technologies at work and also learning how to work in decentralized, flexible workplaces.

Training to Meet International Competition

The U.S. Congress, Office of Technology Assessment (1990), reports on worker training needed to compete in new international economies. The U.S. system for worker training is described as "remarkably underdeveloped" (p. 73) compared to international competitors. While many of our new jobs are created in small business, training resources are reported to be lacking in firms with less than 100 employees.

The report also states the U.S. labor market shows weakness in our population's preparation for jobs; deficiencies exist for both basic workplace skill involving literacy and computations, and in higher order skills in reasoning and communications. Other

performance-related trends include: (a) production systems call for working in groups and require more advanced social skills, (b) fewer supervisory levels require more decision-making on the job but also limit the upward movement of disadvantaged workers, (c) higher technical levels of production work require more skill training, (d) training needs result from workers changing employment in volatile business structures, and (e) quickly changing markets place demands on business to become more flexible and responsive to change. This creates the need for workers who can apply changing technologies and take more responsibility for quality and innovation.

Bartel reviews current research on the relationship between training and labor productivity and states "In light of the national attention given to the impact of training on labor productivity, it is disturbing that the empirical evidence on this subject is so limited" (Bartel, 1994, p 411). Focusing at the firm level, Bartel analyzes how formal employee training affects labor productivity. She uses data from Columbia University business surveys to calculate how factors of formal training, and other workplace practices, relate to production measures. Her research shows that the effects of training on productivity vary with the efficiency of the business. She concludes that "implementation of formal employee training programs can enable businesses that are operating at below-expected levels of labor productivity to eliminate this gap" (p. 422).

Training in Top Companies

The Conference Board's report, Quality Training: What Top Companies Have Learned (Troy, 1991), relates that training to increase performance and quality must be highly focused on performance objectives and be fully integrated with company mission,

goals and strategy. Their survey of training practices in leading industries reveals:

> The responses show that relevance and applicability are crucial to the success of quality training programs. The Council-member firms report that their quality training strategy is aligned with critical company priorities. Training curricula and courses help employees and managers link corporate priorities first to quality concepts and techniques and then to job-related tasks, problems and work processes. (p. 7)

The report gives specific workplace training practices initiated to focus training on performance; included is just-in-time training, where workers make immediate application of new knowledge or skills. Line managers are reported to be highly involved in the training process and specific content is offered in quality control, customer relations, continuous improvement techniques, and benchmarking (Troy, 1991).

Skills and Changing Work Organizations

Osterman (1995) reviews the relationship between skills, training, and work organization and examines how high performance organizations affect training and the demand for skills. His review documents a general upgrading of skills occurring in American industry, but these skill improvements are not uniformly applied across all occupations. Clerical workers, for example, do not receive the level of training provided by technicians. Also, while total industry spending on training continues to be high, ". . . the distribution of training is very much biased toward managers and white-collar workers and away from blue-collar employees" (p. 128).

Rummler and Brache (1995) relate how skill and knowledge requirements for

employees tie to other work components of job design and goal setting. They present performance management as a systems approach; the value of training is recognized only when improvement in individual job performance is synchronized with effective work organization and processes. The relationship of training, human resources development, and improved production strategies are also described by Appelbaum and Batt (1994).

From the review of literature, practices leaders initiate to increase skills and knowledge are summarized in Table 3.

Summary of Review of Literature

Several observations can be made from the review of literature. A need is documented in public health for effective leadership that uses improved workplace practices. The leadership of human resources is described as essential for agency renewal and for transforming public agencies into high performance organizations. However, public health is often described as an organization of professionals in a state of uncertainty, where performance is hampered by political, resource, and cultural barriers. Leadership development is a foremost need in public health to overcome barriers documented in the present system.

All public agencies must react to forced changes in the organization and delivery of public services, including health care. These changes are part of larger political, social, and economic changes that have challenged American leadership in business and in communities. New methods of workplace organization are shown to be effective in

Table 3

Workplace Practices Leaders Initiate for Training

Skill area	Training provided
Technical skills	Skill training for using more complex machinery or production processes Managing and manipulating information in computer systems Benchmarking techniques to compare and improve products and services
Quality improvement	TQM or continuous improvement methods Statistical quality control Use of survey and customer satisfaction data Techniques to analyses work process
Group skills	Teambuilding-problem analysis Presentation skills Leadership skills for scheduling, assessment and planning formerly carried out by middle management
Leadership skills	Coaching for performance Planning, assessment, goal setting Employee career development Performance appraisal-feedback Decision making

creating high performance. U.S. manufacturing organizations were the first to experiment with high performance workplace systems when overpowered by foreign competition. Now, service organizations, including public health, must face similar challenges due to reduced funding, new political agendas, and the public demand for quality and efficiency in services.

Effective public health leadership is important for the health of people in our United States and throughout the world. Public health has a role in the restructuring of health care but public agency cultures present great challenges to providing effective leadership. The success of business organizations in increasing productivity and quality provides examples of how leaders can create high performance through workplace practices they initiate. Experiments and innovations in public agencies, as documented by the Federal Quality Institute and the John F Kennedy School of Government, show that government leaders can successfully implement better workplace practices.

Workplace practices for leading human resources are illustrated in the dissertation model shown in Figure 1. These practices are said to be most effective when administered in a complete system of workplace activities. Psychological studies give the basic principles of motivation in work. In the dissertation model, workplace practices for performance assessment-feedback, training, and work design are presented as interacting practices that create and reinforce increased competencies in the employees. The diversity of organizations and their related environments prohibits making simple predictions about leadership and performance outcomes. Some businesses fail regardless of the quality of leadership. However, the literature shows that applying leadership practices drawing on

sound motivational theory and related theories of effective work organization can contribute to higher levels of performance.

The literature about public health calls for improved leadership but documents very little in regard to specific activities for human resource development. The frequency of workplace practices that contribute to high performance is unknown. Also unknown is the relationship of agency demographics and characteristics of local leaders to related workplace practices. These factors are central to questions about how public health agencies can be better organized and how leaders should be trained.

Therefore, by studying the frequency of workplace practices leaders initiate in public health agencies for high performance, and by determining how these practices relate to the demographics of the agency and to the levels of local barriers and resources, insights can be gained about how leadership in local public health can improved.

CHAPTER 3

METHODOLOGY

Introduction

The purpose of this study was to investigate workplace practices leaders initiate for developing high performing public health agencies. The first research goal was to document the frequency of workplace practices seen in local health departments that are identified contributors to high performance. These practices, as applied to human resource development, are illustrated in the dissertation model shown in Fig.1 and summarized from the literature review in Tables 1, 2, and 3. Next, the study sought to determine the relationships between demographic factors of the agencies, and the types and frequencies of workplace practices that leaders in local health departments initiate. Reported levels of barriers and resources for improving performance were then summarized and analyzed by agency demographics. Other research topics explored were the relationships between the levels of barriers and resources that health directors reported for improving performance and the frequency of high performance workplace practices reported.

This chapter describes the methods and procedures used in the study. The sections include research methods employed, the selection of subjects, the development of the survey instrument, materials and procedures, and methods of data analysis.

Method of Study

The method used in this study was a non-experimental survey of an entire population of agency leaders, using an instrument developed to confidentially measure workplace practices leaders initiate. Related demographic information and information about local barriers and resources were also included in the data collection.

Subjects

The subjects in this study were public health directors in North Carolina. Every county in North Carolina is served by a local health department, operating either as a single county agency or as a multi-county district health department. Each health department operates under an appointed board of health that exercises local policy making authority including the hiring and oversight of the health director. North Carolina health departments are often lead by non-medical administrators who contract with local medical personnel for clinic supervision. In larger counties, and in some rural counties with special needs, the health departments are often administered by physicians and in one county, by a dentist.

Local health directors are responsible for the administration and leadership of their agencies. They are tied to the state health department by delegated authority and legal requirements in state public health laws, by the state personnel system which exercises limited control over local personnel policy, and by requirements in service contracts.

Thus, these individual health directors function with a high degree of local autonomy but with much state interaction and oversight.

Public health directors in North Carolina benefit from their proximity to the University of North Carolina School of Public Health. The state personnel system requires graduate training in public health for administrators and many receive their graduate training and continuing education there.

At the time this study was initiated, a total of 86 individuals were identified as local public health directors in North Carolina. The entire population of health directors was selected as the target for the study and the goal in data collection was to gain information from all the directors in the state. The health directors maintain a very active North Carolina Local Health Directors' Association, which serves as their independent political and professional organization. This organization was solicited early to assist in the implementation of the study.

Instrumentation

The survey instrument used in this study, "Leadership Practices Survey," was developed by the author, with the assistance of his faculty advisor at the University of Tennessee. The survey instrument can be review in Appendix A. The survey consisted of these parts: (a) an introductory letter that explained the purpose of the study and gave directions for completion, (b) a demographic section that documented information about the agency and its leader, (c) three 20-item sections that measured frequency of workplace

practices that leaders initiated in their agencies, and (d) a final section that measured the level of barriers and resources for improving performance in local health departments.

Development of the Instrument

The demographic section was created by reviewing the North CarolinaVital Statistics (1994) and the Directory: Public Health Offices in North Carolina (1995). The items in this scale are shown in Appendix A. The levels in the individual survey items were developed to reflect the diversity of service population by size and location, the size of the agency measured by number of employees, and the preparation and experience of the agency director.

The survey items in the three leadership practice sections were drawn from the literature review. The items in these scales are shown in Appendix A. The three areas of workplace practices addressed by the survey are performance assessment-feedback, work design, and training. These reflect the leadership model proposed in this dissertation and documented in the literature review.

Although many different studies were reviewed to select workplace practices that are reported to contribute to high performance, studies cited in the review of literature that were particularly helpful were: Bassi (1992); Federal Quality Institute (1993a); Hackman and Oldham (1980); Lawler, Mohrman, & Ledford (1992); Osterman (1995); and U.S. Department of Labor (1992).

The last section of the survey assessed local resources and barriers that the agency

leaders identified for initiating workplace practices for high performance. The items for this scale are shown in Appendix A. The content for these scales was drawn from the literature review of needs in public health and from barriers to agency performance documented by the National Commission on the State and Local Public Services (1993).

A pilot test of the survey was administered to 20 graduate students enrolled in a principles of supervision class at the University of Tennessee. They evaluated the instrument for clarity of design and instructions.

Pilot tests also included reviews by public health leaders who had previously served as health directors in North Carolina, reviews by supervisory personnel at the Knox County (Tennessee) Health Department, and reviews by several other health administrators outside the survey population. Comments from these additional pilot tests provided valuable assistance in improving the instrument for clarity and content.

Materials and Procedures

The president of the North Carolina Local Health Directors' Association was contacted and visited by the author to gain support for conducting this leadership practices study. He agreed to provide assistance and reported to the association's executive committee, which on September 12, 1995, voted to endorse the study. The Directory: Public Health Offices in North Carolina (1995) was obtained from the N.C. Division of Health Services and was used for determining the identity and addresses of current health directors.

The survey method generally followed the procedures prescribed by Dillman (1978). Materials mailed to the population were the instrument, which included an introductory section on the first page, and a stamped, self-addressed return envelope. These materials were mailed to every North Carolina health director on October 12, 1995. This mailing was followed by a reminder letter mailed 2 weeks later. After another 2 weeks, phone calls were made to those health directors who had not responded and a number of surveys were mailed again as requested. The survey was concluded on November 23, 1995. Out of 86 possible respondents, 76 health directors returned completed surveys, giving a response rate of 88.4%.

Data Collection

Returned surveys were mailed to the author at the University of Tennessee and confidentially entered in Lotus 1-2-3 Spreadsheet for Windows (Lotus Development Corporation, 1995). The university statistics center provided assistance in converting the spreadsheet to a SAS data set which was entered in the author's mainframe computer research file. Data were also entered into SPSS on a personal computer (Schlotzhauer & Littell, 1987; SPSS Inc., 1994).

Data Analysis

The variables in this study were the frequency of high performance workplace practices tested by variables of agency demographic factors. Also tested were the relationships of agency demographics to levels of barriers and resources and the relationship of barriers and resources to the frequency of workplace practices.

Statistical tests employed included frequency and univariate procedures to examine the demographic makeup of the respondents and the distribution of the data. Tests of correlation were conducted to examine the relationships between the variables of demographics, frequency of workplace practices, and levels of barriers and resources. Analysis of variance and Duncan's Multiple Range post hoc tests were employed to further test for differences in the frequency of workplace practices by levels of demographic variables. Multiple regression was also employed to examine the relationships between three important barriers and the frequency of workplace practices the directors initiated.

Chapter 4 further documents statistical procedures and gives results from the data analysis in this study.

CHAPTER 4

ANALYSIS OF DATA AND RESULTS

Overview

This chapter provides the results of the study beginning with a description of the respondents. Next, frequency data are summarized from the survey to answer the first research question: What are the high performance workplace practices initiated by leaders that are most often used in North Carolina public health agencies? The second research question is: How are the frequency and type of high performance workplace practices initiated by leaders related to agency demographics? Data are presented in correlation matrix tables and with results from analysis of variance tests to answer this question. The third research question is: What are the barriers and resources in public health for initiating high performance workplace practices and how do these factors relate to demographic variables and to the workplace practices leaders initiate? This question is answered with a report on barriers and resources ranked by levels. Also, correlation tests on the relationships between barriers/resources and demographics are provided; this section concludes with similar tests on the relationships of barriers and resources to high performance workplace practices. As a followup to the findings about barriers and workplace practices, results from multiple regression tests are presented for several of the barriers showing high levels of correlation to the frequency of workplace practices.

Respondent Health Directors

Respondents included 76 North Carolina health directors, giving a response rate of 88.4%. Characteristics of the respondents are summarized in Table 4. The summary reveals that the majority of health directors held jobs at Level I (35.5%) or Level II (38.2%). A smaller portion were classified at Level III (9.2%) or Level IV (10.5%). The levels of North Carolina health director positions are determined by state and county personnel requirements and reflect the size or complexity of the agency that is lead. It can be seen that due to the rural characteristics of North Carolina's population, and due to the decentralized system of local county public health departments, most of the respondent leaders worked independently in moderate-sized public health agencies.

Respondents having less than 1 year experience as a health director were 15.8%. Also, 28.9% had 1-4 years experience and core group of 30.3% had 10+ years of experience as local health directors. In terms of total years experience in public health, 83% had 10+ years experience. Thus, while many of the respondent leaders were new at their jobs as health directors, most had worked for a period in some public health capacity and then graduated to leadership positions.

Examining the size and location of the health departments, the report shows the number of full-time employees in the agencies ranged from 3 health departments with fewer than 25 employees (4.0%) to 28 (36.8%) with 100+ employees. It can be seen that the majority of health departments (63.2%) had fewer than 100 employees and 76.3% of

Table 4

Health Director Characteristics

Variable	Level	n	% of total
Job title	I	27	35.5
	II	29	38.2
	III	7	9.2
	IV	8	10.5
	Acting	4	5.3
	Other	1	1.3
	Total	76	100.0
Years employed	<1	12	15.8
in present job	1-4	22	28.9
as health director	5-9	19	25.0
	10-14	12	15.8
	15+	11	14.5
	Total	76	100.0
Total years	<5	7	9.2
experience in	5-9	6	7.9
public health	10-19	31	40.8
	20+	32	42.1
	Total	76	100.0

Table 4 (continued)

Variable	Level	n	% of total
Number of full-time employees	<25	3	4.0
	25-50	19	25.0
	51-74	14	18.4
	75-99	12	15.8
	100+	28	36.8
	Total	76	100.0
Total population agency serves	<20,000	6	7.9
	20,000-60,000	38	50.0
	60,001-100,000	14	18.4
	100,000+	18	23.7
	Total	76	100.0
Service makeup	Rural	55	72.4
	Urban	2	2.6
	Mixed	19	25.0
	Total	76	100.0
Educational preparation	BS only	3	3.9
	Graduate degree in public health	37	48.7
	* With medical degree	7	9.2
	Graduate degree in other areas	21	27.6
	Medical degree only	4	5.3
	Other	4	5.3
	Total	76	100

the health departments served populations of less than 100,000. Only 18 health departments served populations greater than 100,000. While 72.4% of the health departments serving primarily rural populations, only 2 described their population as primarily urban.

In examining the educational preparation of the leaders, the report shows the great majority of health directors had completed graduate degrees (90.8%) and 57.9% completed graduate education in public health. Also, 27.6% had graduate degrees in other areas.

Seven individuals had both public health and medical degrees and 4 had medical degrees only. North Carolina has followed a personnel strategy that allows non-medical administrators to function as local health directors. However, state and county personnel rules require graduate preparation in public health or related areas for these individuals to be appointed. Medical directors are generally appointed in larger health departments, or in rural areas with medical personnel shortages.

Research Question One

Overview of Measurements

The first research question asked: What are the high performance workplace practices initiated by leaders that are most often used in North Carolina health departments? To answer this question, the frequency of high performance workplace practices leaders initiated by leaders were assessed on a 1-5 scale (see the survey

instrument in Appendix A). The scale ranged in frequency of practices initiated from seldom (1) to always (5). Workplace practices in training, design of work, and performance assessment-feedback were measured in 3 sections with 20 workplace practice items in each section.

Training Practices

Tables 5 and 6 provide a summary of training practices that health department leaders in North Carolina initiated. Table 5 lists the means and standard deviations of each training practice item, along with the correlation (r) of each item to the whole section of training practices. Alpha tests using Cronbach's coefficient alpha (α) show the inner-correlation or reliability of the test items. Results are presented from standardized variables giving the average correlation within a test item.

Table 6 provides a list of training practices in ascending rank order. The survey revealed that several of the training practices with the highest frequency, T8, T16, and T12, were related to agency planning and goal setting. Health directors showed evidence of frequently informing staff about the purpose and value of agency undertakings.

Also high in frequency measures were activities to master new technology, including computer usage (T18 and T3). Activities ranked as least frequent included skill training for staff leadership, including: presentation skills (T11), mentoring (T17), and decision making (T13). Although quality control/quality assurance training (T4) was ranked high, specific training in areas related to increasing staff ability to assess and monitor quality processes (T7, T10, T1, T19) was in the lower ranks.

Table 5

Frequency of Training Practices

Subject or skill area	n	M	SD	r	α
1. Problem solving/participation skills	76	2.84	1.16	.67	.94
2. Leadership skills	76	3.01	1.14	.70	.94
3. Skills for using new technology	75	3.69	0.86	.47	.94
4. Quality control/quality assurance	76	3.67	0.89	.60	.94
5. Continuous improvement techniques	75	3.30	1.28	.75	.93
6. Interpersonal/communication skills	76	3.20	1.01	.67	.94
7. Statistical measures of quality	76	2.65	1.17	.56	.94
8. Planning/assessment/organizing	75	3.21	1.03	.65	.94
9. Team building	76	3.12	1.15	.71	.94
10. Analyzing work flow/work process	76	2.78	1.03	.68	.93
11. Presentation skills	73	2.27	0.92	.68	.94
12. Information on agency programs, goals, and objectives	76	3.74	0.93	.67	.94
13. Decision-making	76	2.71	1.03	.53	.94
14. Measuring client satisfaction	76	3.03	1.02	.75	.93
15. Coaching and developing staff	75	3.07	1.10	.76	.93
16. Training about agency values and purposes	76	3.42	1.06	.64	.94
17. Mentor/shadowing techniques	75	2.41	1.19	.49	.94
18. Computer usage/ info. management	76	3.45	0.96	.44	.94
19. Benchmarking best practices	76	2.34	1.09	.70	.93
20. Career development	76	2.82	1.20	.57	.94

Table 6

Rank Order of Training Practices

Rank	Variable	M	SD	Skill or subject area
1.	T11	2.27	.92	Presentation skills
2.	T19	2.34	1.09	Benchmarking best practices
3.	T17	2.41	1.19	Mentor/shadowing techniques
4.	T7	2.64	1.17	Statistical measures of quality
5.	T13	2.71	1.03	Decision-making
6.	T10	2.78	1.03	Analyzing work flow/work process
7.	T20	2.82	1.20	Career development
8.	T1	2.84	1.16	Problem solving/participation skills
9.	T14	3.03	1.02	Measuring client satisfaction
10.	T2	3.04	1.14	Leadership skills
11.	T15	3.07	1.09	Coaching developing staff
12.	T9	3.12	1.15	Team building
13.	T6	3.20	1.01	Interpersonal/ communication skills
14.	T8	3.21	1.03	Planning/assessment/organizing
15.	T5	3.29	1.28	Continuous improvement techniques
16.	T16	3.42	1.06	Training about agency values and purposes
17.	T18	3.45	.96	Computer usage/info management
18.	T4	3.66	.89	Quality control/quality assurance
19.	T3	3.68	.86	Skills for new technology
20.	T12	3.74	.93	Information on agency programs, goals, and objectives

The image that emerges from these data is that the health directors frequently made use of high involvement practices to give meaning and purpose to the programs and undertakings of the health departments. Keeping staff upgraded in technical areas appeared a priority. However, activities to train staff in expanded decision-making, in presenting findings, or in methods of analyzing work flows and processes were less frequent. The high ranking of T4, training for quality control-quality assurance, revealed that compliance with safety or policy requirements might have been higher priority than expanded staff performance through training in self-directed, quality management activities.

Design of Work Practices

Tables 7 and 8 provide a summary of design of work practices that health leaders in North Carolina initiated. Table 7 lists the means and standard deviations of each item, along with the correlation (r) of each item to the whole section of design of work practices. Alpha tests using Cronbach's cofficient alpha (α) show the inner-correlation of the test items. Table 8 provides a list of design of work practices in ascending rank order. The survey revealed that practices related to serving in planning or problem-solving groups (W16, W5) and applying new skills for quality improvement (W17, W15, W18) were the most frequently initiated practices. Practices related to analyzing jobs and changing work designs (W1, W12, W10, W11) were less frequently used. The relatively low ranking of W9, W4, and W3 gave an indication that reengineering activities like reducing management layers and distributing authority to independent teams were not as widely initiated as skill development and planning in traditional structures.

Table 7

Frequency of Design of Work Practices

Design of work practice	n	M	SD	r	α
1. Rotated jobs	76	2.62	.92	.22	.91
2. Received cross training	76	3.61	.73	.33	.92
3. Appointed to self-directed team	75	2.89	1.11	.65	.90
4. Took more advanced responsibilities due to reduced management layers	73	2.92	1.00	.51	.91
5. Served on interdisciplinary planning group	76	3.79	.96	.66	.91
6. Assigned to problem-solving committee	76	3.37	1.11	.61	.91
7. Gave input to employee suggestion program	76	3.41	1.15	.66	.91
8. Improved data processing or information system	76	3.47	.96	.49	.91
9. Implemented decentralized quality control	76	2.66	1.07	.68	.90
10. Designed a job differently	76	3.04	.92	.55	.91
11. Analyzed work flow/work process	75	3.19	.95	.62	.91
12. Completed job analysis to assess training needs	75	2.79	1.00	.64	.90

Table 7 (continued)

Design of work practice	n	M	SD	r	α
13. Assessed feedback from clients about service quality, reliability, or accessibility	76	3.54	.92	.62	.91
14. Monitored data to measure unit performance	76	3.57	1.05	.58	.90
15. Used many different skills to complete assignments	76	3.75	.91	.53	.91
16. Were highly involved in identifying and solving problems	76	3.79	.82	.57	.91
17. Applied new job skills and training to improve service quality	75	3.71	.78	.65	.91
18. Were delegated more independent authority to make decisions on the job	76	3.74	.81	.67	.91
19. Were directed toward group achievement	76	3.64	.93	.65	.91
20. Reviewed procedures of other agencies to find improved techniques or processes	76	3.47	.82	.34	.92

Table 8

Rank Order of Design of Work Practices

Rank	Variable	M	SD	Skill or subject area
1.	W1	2.62	.92	Rotated jobs
2.	W9	2.66	1.07	Implemented decentralized quality control
3.	W12	2.79	1.00	Completed job analysis to assess training
4.	W3	2.89	1.11	Appointed to self-directed team
5.	W4	2.92	1.00	Took advanced responsibilities due to reduced management layers
6.	W10	3.04	.92	Designed a job differently
7.	W11	3.19	.95	Analyzed work flow/work process
8.	W6	3.37	1.11	Assigned to problem solving team
9.	W7	3.41	1.15	Gave input to employee suggestion team
10.	W20	3.47	.82	Reviewed proceedures of other agencies
10.	W8	3.47	.96	Improved data processing or information system
12.	W13	3.54	.92	Assessed feedback from clients about service quality, reliability, or accessibility
13.	W14	3.57	1.05	Monitored data to measure unit performance

Table 8 (continued)

Rank	Variable	M	SD	Skill or subject area
14.	W2	3.61	.73	Received cross-training
15.	W19	3.64	.93	Were directed toward group achievement
16.	W17	3.71	.78	Applied new job skills and training to improve service quality
17.	W18	3.74	.81	Were delegated more independent authority to make decision on the job
18.	W15	3.75	.91	Used many different skills to complete assignments
19.	W5	3.79	.96	Served on interdisciplinary planning group
20.	W16	3.79	.82	Were highly involved in identifying and solving problems

Performance Assessment-Feedback Practices

Tables 9 and 10 provide a summary of performance assessment-feedback practices that health department leaders in North Carolina initiated. Table 9 lists the means and standard deviations of each item, along with the correlation (r) of each item to the whole section of performance assessment-feedback practices. Alpha tests using Cronbach's cofficient alpha (α) showed the inner-correlation of the test items. Table 10 provides a list of performance assessment-feedback practices in ascending rank order.

The survey revealed that practices related to sharing information about individual or group performance were most frequently initiated. Sharing information about agency goals (P2), agency performance (P6), team performance (P3) were ranked highest, along with giving individual performance information (P5, P10).

Winning non-monetary recognition or rewards (P13) ranked as a mid-range activity. The least frequently initiated workplace practices involved giving financial awards for teams (P8), and individuals (P12, P7, P4). The image that emerged from the performance assessment-feedback portion of the survey is that the health directors frequently initiated information giving activities through supervisor or group meetings. However, direct financial rewards and monetary reinforcement of high performance were not frequently initiated.

Table 9

Frequency of Performance Assessment-Feedback Practices

Performance assessment-feedback	n	M	SD	r	α
1. Given information from client or customer surveys	76	3.67	1.01	.55	.89
2. Given information about agency goals and objectives	76	4.18	.83	.45	.89
3. Provided data to measure unit or team performance	75	3.76	.97	.61	.89
4. Provide merit pay	75	2.43	1.57	.51	.89
5. Provide annual individual performance assessment	76	4.12	1.17	.52	.89
6. Given information about overall agency performance	76	3.88	1.15	.60	.89
7. Given pay raise for advancement in skills	76	2.33	1.18	.45	.89
8. Given team bonus for gains in productivity	76	1.28	.72	.38	.89
9. Given choices for flexible benefits	75	2.48	1.39	.26	.89
10. Provide frequent individual feedback from supervisor	76	3.83	.79	.40	.89
11. Employed critical incidents for feedback and training	75	3.04	1.11	.52	.89
12. Were financially rewarded for high performance	76	2.12	1.70	.53	.89

Table 9 (continued)

Performance assessment-feedback	n	M	SD	r	α
13. Received non-monetary rewards or recognition for improving work process or solving problems	76	3.12	1.01	.55	.89
14. Set unit performance goals with supervisor	76	3.24	1.08	.51	.89
15. Received promotion based on skill development	75	2.67	1.07	.57	.89
16. Received feedback directly from clients about service quality	74	3.54	1.01	.61	.89
17. Given clear explanations about how performance of their job relates to agency values and objectives	76	3.50	.99	.65	.89
18. Won awards or recognition from peers or professional groups	76	3.26	1.00	.54	.89
19. Used statistical tools to measure quality of services	76	3.05	1.07	.59	.89
20. Were rewarded by membership in a cohesive team	76	2.74	1.06	.50	.89

Table 10

Rank Order of Performance Assessment-Feedback Practices

Rank	Variable	M	SD	Performance assessment-feedback practice
1.	P8	1.28	.72	Given team bonus for gains in productivity
2.	P12	2.12	1.70	Were financially rewarded for high performance
3.	P7	2.33	1.18	Given pay raise for advancement in skills
4.	P4	2.43	1.57	Provided merit pay
5.	P9	2.48	1.39	Given choice for flexible benefits
6.	P15	2.67	1.07	Received promotion based on skill development
7.	P20	2.74	1.06	Were rewarded by membership in a cohesive team
8.	P11	3.04	1.11	Employed critical incidents for feedback and training
9.	P19	3.05	1.07	Used statistical tools to measure quality of services
10.	P13	3.12	1.01	Received non-monetary reward or recognition for improving work process or solving problems
11.	P14	3.24	1.08	Set performance goals with supervisor
12.	P18	3.26	1.00	Won awards or recotnition from peers or professional groups

Table 10 (continued)

Rank	Variable	M	SD	Performance assessment-feedback practice
13.	P17	3.50	.99	Given clear expectations about how performance of their job related to agency values and objectives
14.	P16	3.54	1.01	Received feedback directly from clients about service quality
15.	P1	3.67	1.01	Given information from client or customer surveys
16.	P3	3.76	.97	Provided data to measure unit or team performance
17.	P10	3.83	.79	Provided frequent individual feedback from supervisor
18.	P6	3.88	1.15	Given information about overall agency performance
19.	P5	4.12	1.17	Provided annual individual performance assessment
20.	P2	4.18	.83	Given information about agency goals and objectives

Research Question Two

Overview

The second research question asked: How are the frequency and type of high performance workplace practices initiated by leaders related to agency demographics ? To answer this question, the demographic factors of years employed as health director, and total years experience in public health were selected as general indicators of experience to be tested. The factors of number of employees and total population agency served were selected as general indicators of agency size to be tested. The responses to all questions were entered into the database as numbered responses with ascending values corresponding to the ascending values shown in the questionaire.

Demographic questions are seen in the Background Information section of the survey in Appendix A. Examination of the distribution of the responses was completed using the univariate procedure in SAS. Several of the demographic variables were unbalanced in the number of responses and the researcher collapsed the levels as shown in Table 11. This procedure was implemented through the "if...then" option in the SAS program.

Correlations

As a first step in the analysis of the responses, correlation tests of the relationships between the demographic variables and workplace practices of training, design of work, and performance assessment-feedback were performed. This procedure was initiated with the correlation option in SAS which provides a Pearson's correlation

Table 11

Collapsed Levels
Health Director Characteristics

Variable	Group in SAS	Level	n	% of total
Years employed in present job as health director	1	<1	12	15.8
	2	1-4	22	28.9
	3	5-9	19	25.0
	4	10-14	12	15.8
	5	15+	11	14.5
		Total	76	100.0
Total years experience in public health	2	<10	13	17.1
	3	10-19	31	40.8
	4	20+	32	42.1
		Total	76	100.0
Number of full-time employees	2	25-50	22	29.0
	3	51-74	14	18.4
	4	75-99	12	15.8
	5	100+	28	36.8
		Total	76	100.0
Population	1	<20,000	6	7.9
	2	20,000-60,000	38	50.0
	3	60,001-100,000	14	18.4
	4	100,000+	18	23.7
		Total	76	100.0

coefficient statistic. The correlation matrixes can be reviewed in Tables 12, 13, and 14.

Training Practices

The tests of correlation, as shown in Table 12, revealed that the experience variables, total years in public health and years employed as health director, had little relationship to the frequency of training practices. Only one practice item had a significant relationship at $p<.05$ to frequency of training. Those health directors with more experience in their jobs showed a greater frequency in training employees in computer usage (T18). The variables related to the agency size, number of employees and the population served, showed several significant correlations to training practices. The size of the agency related to the frequency of training practices in problem solving (T1), leadership skills (T2), communication skills (T6), decision-making (T13) , measuring client satisfaction (T14), and coaching and developing staff (T15).

Design of Work Practices

Tests of correlation between design of work practices and the demographic variables are provided in Table 13. These tests revealed where the number of employees was related to the frequency of design of work practices. The design of work variables W5, W6, and W7, reflected employee involvement in planning and problem solving and all had significant relationships to the number of employees in the agency. The variables W10, W12, and W15, encompass job enrichment practices and decentralized responsibility for quality control. These work design factors were also shown to be related to number of employees. In the variables for the experience of the health director, only W14 and W17, encompassing service improvement techniques, were shown to be significant.

Table 12

Correlation of Demographic Variables
to Mean Frequency of Training Practices

		Training practices																		
		T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	T15	T16	T17	T18	T19	T20
Demographic variables																					
Total years in public health	r	.03	.04	.06	.01	.01	-.05	-.04	.10	-.01	-.14	.02	.04	.19	-.08	-.00	-.03	.06	.09	.04	.05
	p	.79	.76	.61	.93	.96	.67	.76	.38	.97	.24	.88	.73	.11	.49	.98	.77	.64	.46	.72	.65
Years employed director	r	.06	.04	.04	.19	.08	.11	.03	.19	.07	-.06	.09	-.05	.21	.09	-.05	-.01	.07	.35	.14	.17
	p	.64	.73	.77	.10	.51	.36	.78	.11	.57	.62	.44	.69	.07	.47	.67	.94	.55	.00*	.22	.14
Number of employed	r	.32	.32	.20	.12	.19	.34	.03	.12	.19	.12	.21	.04	.28	.24	.24	.16	.12	.14	.10	-.01
	p	.01*	.01*	.09	.32	.11	.00*	.80	.31	.09	.31	.07	.76	.01*	.04*	.03*	.16	.28	.24	.41	.91
Population served	r	.28	.27	.13	-.03	.12	.37	-.08	.12	.19	.05	.16	.13	.20	.11	.30	.10	.06	.11	.08	-.18
	p	.01*	.02*	.25	.79	.30	.00*	.51	.30	.09	.65	.17	.26	.08	.35	.01*	.39	.62	.35	.51	.13

*P<.05

Table 13

Correlation of Demographic Variables
to Mean Frequency of Design of Work Practices

		Design of work practices																		
		W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14	W15	W16	W17	W18	W19	W20
Demographic Variables																					
Total years in public health	r	-.11	-.06	.06	-.05	.04	.07	-.06	.11	.03	-.05	-.20	.04	-.10	.09	.06	.13	.17	.14	.07	-.02
	p	.33	.59	.57	.68	.74	.57	.61	.33	.83	.64	.08	.75	.37	.43	.64	.25	.14	.24	.53	.85
Years employed as director	r	-.10	-.10	-.05	-.04	.12	.08	-.03	.18	.08	-.01	.04	.07	.05	.23	.00	.14	.23	.05	.15	-.13
	p	.41	.41	.68	.73	.29	.50	.81	.12	.51	.10	.71	.55	.66	.04*	1.0	.21	.05*	.67	.19	.26
Number of employees	r	.05	.01	.16	.16	.22	.43	.34	.01	.22	.27	.18	.27	.21	.11	.29	.11	.04	.13	.10	.07
	p	.66	.98	.16	.19	.05*	.00*	.00*	.98	.06	.02*	.13	.02*	.08	.33	.01*	.33	.72	.25	.36	.52
Population served	r	-.11	-.17	.07	.21	.17	.32	.14	.12	.16	.16	.09	.13	-.01	.04	.19	.11	-.14	.08	.07	-.10
	p	.34	.15	.53	.07	.15	.01*	.23	.30	.17	.17	.46	.25	.92	.72	.11	.35	.23	.49	.55	.39

*p<.05

Table 14

Correlation of Demographic Variables
to Mean Frequency of Performance Assessment-Feedback Practices

		Performance assessment-feedback practices																		
		P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15	P16	P17	P18	P19	P20
Demographic variables																					
Total years in public health	r	-.03	-.03	.02	.21	-.10	-.03	.17	.06	.20	.19	.21	.24	-.02	.08	.31	.09	.08	.02	.12	.15
	p	.79	.78	.90	.06	.40	.79	.15	.60	.09	.10	.07	.04*	.85	.52	.01*	.46	.48	.08	.31	.18
Years employed director	r	.12	-.01	.12	.18	.05	-.03	.17	.06	.20	.13	.21	.19	.05	.15	.30	.20	.08	.09	.17	.09
	p	.29	.34	.31	.13	.68	.79	.15	.60	.09	.26	.07	.10	.70	.19	.01*	.09	.47	.41	.14	.46
Number of employees	r	.02	.08	.21	.17	.29	.01	.07	.08	.23	.12	.21	.09	.37	.14	.17	.01	.03	.37	.13	.18
	p	.85	.48	.07	.13	.01*	.97	.54	.50	.05*	.30	.08	.44	.01*	.23	.15	.95	.78	.00*	.24	.12
Population served	r	-.08	-.09	.06	.33	.23	.05	-.07	.15	.25	.06	.18	.25	.25	.15	.13	.03	.08	.35	.13	.21
	p	.51	.45	.59	.00*	.05*	.66	.57	.19	.03*	.59	.11	.03*	.03*	.19	.29	.78	.46	.00*	.27	.07

*p<.05

Performance Assessment-Feedback Practices

Test of correlation results between performance assessment-feedback practices and the demographic variables are provided in Table 14. These tests revealed some scattered correlations between all the demographic variables and performance assessment practices. Two workplace practices related to rewarding employees for performance with pay or promotions (P12 and P15) were shown to be correlated with the experience of the health director. Providing individual feedback through annual performance assessments (P5) was significantly related with number of employees and population served. Providing merit pay (P4) was related to the population served along with P12, giving financial rewards for performance.

Providing non-monetary rewards in the form of agency recognition or awards from professional peers (P13 and P18) was shown to be highly related to number of agency employees and to the population served. Also correlated to agency size was giving choices for flexible benfits (P9).

ANOVA and Duncan's Multiple Range Post Hoc Tests

Having determined that there were limited correlations between the demographic variables and the frequency of high performance workplace practices, the researcher further tested the demographic variables with significant correlations to workplace practices; tests employed the general linear model analysis of variance (GLM ANOVA) procedure and the Duncan's multiple range post hoc test. The purpose of these procedures was to test for differences between the levels in the demographic variables related to frequency of workplace practices. The Duncan's post hoc test lists the means in

each level and gives significant differences in means with a table of comparisons. This test was selected because it gives a pair-wise test of differences between the variables while controlling for the error rate of the group of variables tested.

Training practices. Table 15 provides the results from analysis of variance and and Duncan's post hoc tests on the demographic variables of years employed by frequency of training practices. The tests showed that only T18, computer usage, had significant differences between the levels of years employed as health director.

Table 16 provides the results from analysis of variance and Duncan's multiple range test on the frequency of training practices by number of employees. The tests revealed significant relationships in the frequency of T1, T2, T6, and T13 to the number of employees in the agency. All these variables encompass practices in staff leadership training and skill training in decision-making and problem solving.

The next tests, reported in Table 17, compared the population served to frequency of training practices. Results of these tests are shown in Tables 17. The ANOVA tests illustrated that only T6 had significant difference between the levels of population served and the frequency of training practices. These practices related to staff development and communication skills.

Demographic Variables by Design of Work Practices

Analysis of variance tests and Ducan's post hoc multiple range were next applied to selected demographic factors to compare the frequency of design of work practices. Table 18 shows the results of the ANOVA test on W17, which measures the application of new job skills for quality improvement.

Table 15

Analysis of Variance
Selected Training Practices by Years Employed as Health Director

Variable	R^2	DF	Sum of squares	Mean square	F	P>F
T18	.15	4	10.41	2.60	3.17	.02*

*p<.05

Duncan's Multiple Range

T18	Years employed	Group 1	2	3	4	5
3.00	Grp 1					
3.32	Grp 2					
3.37	Grp 3					
3.50	Grp 4					
4.27	Grp 5	*	*	*	*	

*indicates p<.05

Table 16

Analysis of Variance
Selected Training Practices by Number of Employees

Variable	R^2	DF	Sum of squares	Mean square	F	P>F
T1	.12	3	11.18	3.73	3.02	.04*
T2	.12	3	10.45	3.48	2.90	.04*
T6	.17	3	11.45	3.85	4.30	.01*
T13	.11	3	8.32	2.78	2.80	.05*
T14	.06	3	5.01	1.67	1.64	.19
T15	.09	3	7.30	2.43	2.12	.11

*p<.05

Duncan's Multiple Range

T1 Mean	Number of employees	Group 2	4	3	5		T2 Mean	Number of employees	Group 2	3	4	5
2.27	Grp 2						2.50	Grp 2				
2.92	Grp 4						3.00	Grp 3				
2.93	Grp 3						3.25	Grp 4				
3.21	Grp 5	*					3.39	Grp 5	*			

*indicates significant difference p<.05

Duncan's Multiple Range

T6 Mean	Number of employees	Group 2	3	5	4		T13 Mean	Number of employees	Group 2	3	5	4
2.59	Grp 2						2.27	Grp 2				
3.36	Grp 3	*					2.57	Grp 3				
3.46	Grp 5	*					2.93	Grp 5	*			
3.50	Grp 4	*					3.17	Grp 4	*			

*indicates significant difference p<.05

Table 17

Analysis of Variance
Selected Training Practices by Population Served

Variable	R^2	DF	Sum of squares	Mean square	F	P>F
T1	.08	3	8.18	2.73	2.14	.10
T2	.08	3	7.88	2.63	2.12	.11
T6	.14	3	10.57	3.52	3.88	.01*
T15	.12	3	9.00	3.00	2.68	.05

*p<.05

Duncan's Multiple Range

T6 Mean	Population	Group 1	2	3	4		T15 Mean	Population	Group 1	2	3	4
2.50	Grp 1						2.67	Grp 1				
3.00	Grp 2						2.87	Grp 2				
3.28	Grp 3						3.00	Grp 3				
3.78	Grp 4	*	*				3.67	Grp 4		*		

*indicates significant difference P<.05

Table 18

Analysis of Variance
Selected Design of Work Practices by Years Employed as Health Director

Variable	R^2	DF	Sum of squares	Mean square	F	P>F
W17	.15	4	6.98	1.75	3.17	.02*

*p<.05

Duncan's Multiple Range

Mean	Years employed	Group 3	1	4	2	5
3.42	Grp 3					
3.54	Grp 1					
3.67	Grp 4					
3.78	Grp 2					
4.40	Grp 5	*	*	*	*	

*indicates significant difference p<.05

Table 19 provides the results from analysis of variance tests on the frequency of design of work practices by number of employees. W6, W7, W12, and W15 showed significant differences at the $p<.05$ level. These variables reflect employee involvement activities and skill training.

Demographic Variables by Performance Appraisal-Feedback Practices

Next, analysis of variance and Duncan's multiple range post hoc test were used to test the differences in the frequency of performance assessment practices by the demographic factors. Table 20 shows that only one variable, P15, tested significantly at $p<.05$ level. This variable reflects providing promotions based on skill development.

Table 21 gives test results on the frequency of performance appraisal practices by the number of employees. The results show that P5, P13, and P18 had significant differences at the $p<.05$ level. P5 measures frequency of providing annual performance reviews. P13 and P18 measure the provision of non-monetary rewards or recognitions.

The final tests of the demographic factors by frequency of workplace practices was to test performance assessment-feedback practices by population served. Results of these tests are given in Table 22. The analysis of variance shows that P4, and P18 had differences significant at the $p<.05$ level. P4 and P12 relate to giving financial rewards for performance. P18 measures providing rewards from professional groups.

Summary: Relationship of Demographics to Frequency of Workplace Practices

Correlation tests and further testing with analysis of variance and Duncan's multiple range tests revealed that the number of employees and population served were most frequently correlated to initiating high performance workplace practices. The

Table 19

Analysis of Variance
Selected Design of Work Practices by Number of Employees

Variable	R^2	DF	Sum of squares	Mean square	F	P>F
W5	.06	4	4.35	1.09	1.20	.32
W6	.21	4	20.00	4.99	4.94	.01*
W7	.13	4	12.60	3.15	2.61	.04*
W9	.06	4	4.91	1.22	1.09	.36
W10	.11	4	7.15	1.79	2.28	.07
W12	.12	4	9.43	2.36	2.53	.05*
W15	.14	4	8.97	2.24	2.99	.02*

*p<.05

Duncan's Multiple Range

W6 Mean	Number of employees	Group 2	4	3	5		W7 Mean	Number of employees	Group 2	3	4	5
2.78	Grp 2						2.82	Grp 2				
3.17	Grp 4						3.36	Grp 3				
3.21	Grp 3						3.67	Grp 4	*			
4.00	Grp 5	*	*	*			3.79	Grp 5	*			

*indicates significant difference p<.05

Duncan's Multiple Range

W12 Mean	Number of employees	Group 2	3	5	4		W15 Mean	Number of employees	Group 2	4	3	5
2.29	Grp 2						3.32	Grp 2				
2.79	Grp 3						3.50	Grp 4				
2.93	Grp 5	*					4.00	Grp 3		*		
3.33	Grp 4	*					4.07	Grp 5		*		

*indicates significant difference p<.05

Table 20

Analysis of Variance
Selected Performance Appraisal-Feedback Practices by Total Years in Public Health

Variable	R^2	DF	Sum of squares	Mean square	F	P>F
P12	.07	2	14.28	7.14	2.58	.08
P15	.11	2	.99	4.50	4.26	.02*

*p<.05

Duncan's Multiple Range

P15 Mean	Total Years	Group 2	3	4
2.25	Grp 2			
2.42	Grp 3			
3.06	Grp 4	*	*	

*indicates significant difference p<.05

Table 21

Analysis of Variance
Selected Performance Assessment-Feedback Practices by Number of Employees

Variable	R^2	DF	Sum of squares	Mean square	F	P>F
P5	.11	3	10.89	3.63	2.87	.04*
P9	.06	3	8.93	2.98	1.58	.20
P13	.15	3	11.69	3.90	4.37	.01*
P18	.14	3	10.44	3.48	3.90	.01*

*p<.05

Duncan's Multiple Range

P5 Mean	Number of employees	Group 3	2	5	4
3.64	Grp 3				
3.78	Grp 2				
4.46	Grp 5	*	*		
4.5	Grp 4				

P13 Mean	Number of employees	Group 2	3	5	4
2.55	Grp 2				
3.07	Grp 3				
3.43	Grp 5	*			
3.5	Grp 4	*			

*indicates significant difference p<.05

Duncan's Multiple Range

P18 Mean	Number of employees	Group 2	3	4	5
2.82	Grp 2				
3	Grp 3				
3.42	Grp 4				
3.68	Grp 5	*	*		

*indicates significant difference p<.05

Table 22

Analysis of Variance
Selected Performance Assessment-Feedback Practices by Population Served

Variable	R^2	DF	Sum of squares	Mean square	F	P>F
P4	.11	3	20.23	6.74	2.95	.04*
P5	.06	3	6.36	2.12	1.60	.19
P12	.09	3	10.00	3.34	2.25	.02*
P13	.07	3	5.65	1.88	1.93	.13
P18	.13	3	9.33	3.11	3.42	.02*

*p<.05

Duncan's Multiple Range

P4 Mean	Population	Group 1	2	3	4
1.50	Grp 1				
2.13	Grp 2				
2.64	Grp 3				
3.23	Grp 4	*	*		

P12 Mean	Population	Group 1	3	2	4
1.5	Grp 1				
1.71	Grp 3				
1.87	Grp 2				
3.2	Grp 4	*	*	*	

*indicates significant difference p<.05

P18 Mean	Population	Group 1	2	3	4
2.50	Grp 1				
3.10	Grp 2				
3.35	Grp 3				
3.78	Grp 4	*	*		

* indicates signifiant differerence p<.05

experience of the director was shown only to be related to the frequency of a limited group of workplace practices. Do directors in larger agencies experience fewer problems in leading performance? The next section explores how the levels of resources and barriers relate to the agency demographics and to the workplace practices the director initiated.

Research Question Three

Overview

The third research question asks: What are the barriers and resources in public health for initiating high performance work practices and how do these factors relate to demographic factors and to the workplace practices leaders initiate?

In order to answer this question, the research survey assessed the levels of effect that barriers and resources were reported to have on the health directors' ability to improve performance in the agency. Levels of effect were measured on a 1-5 scale ranging from no effect (1) to always effects (5). Levels the effects of barriers and resources are summarized and ranked for the population of health directors in Tables 23 and 24. The summary of resources and barriers reveals that all the factors were rated in the 3 to 5 range, with the lack of funds and inflexible personnel systems rated as the greatest barriers to improving performance. The lack of training in performance-related leadership was the lowest rated barrier at 3.11 (sometimes effects). Support from the board of health and staff loyalty were the highest rated resources related to improving

Table 23

Barriers to Improving Agency Performance

Barriers to improving performance	n	M	SD	Rank
1. Lack of funds to reward good workers	76	3.96	1.00	5
2. Inflexible personnel system	76	3.70	.94	4
3. Lack of public/political support	76	3.51	.99	3
4. Lack of qualified candidates	76	3.13	.97	2
5. Lack of training offered in performance-focused leadership	75	3.11	.99	1

Table 24

Resources for Improving Agency Performance

Resources for improving performance	n	M	SD	Rank
1. Community support	76	3.78	.89	4
2. Support from board of health	76	4.20	1.03	6
3. Staff loyalty	74	4.16	.99	5
4. State-local partnership	76	3.61	.98	3
5. Local health director's association	76	3.51	.96	2
6. Training at school of public health	76	3.28	1.08	1

performance in the agency. However, all the resources were in the 4 to 5 range (usually-always effects).

Correlation Tests: Demographics by Barriers and Resources

The next procedure, reported in Table 25, was to perform tests of correlation on the barriers and resources by the agency demographics. The purpose of the tests was to determine if relationships existed between the demographic variables and the levels of support and resistance to improving performance.

The correlation tests show that few relationships were detected. Only in two examples did the directors' work experience relate to levels of resources, in staff loyalty (R3) and in support from the board of health (R2). There was no correlation shown between other demographic factors and the levels of barriers to improving agency performance.

Correlation Tests: Barriers and Resources by Workplace Practices

The next set of procedures was to perform correlation tests on the levels of barriers and resources by the frequency of high performance workplace practices. The purpose of these tests was to determine if the workplace practices that health department leaders initiated were related to the levels of resources or levels of barriers they find in their agencies. Tables 26-31 provide summary matrixes of the correlation tests.

Training Practices. In Table 26, all significant correlations (at $p<.05$) between the levels of barriers and the frequency of training practices were reflective of negative coefficient values; higher levels of barriers were related to lower frequency of training practices. The lack of funds to reward good workers (B1) was significantly related to

Table 25

Correlation of Demographic Variables
by Mean Frequency of Barriers and Resources

		Barriers					Resources					
		B1	B2	B3	B4	B5	R1	R2	R3	R4	R5	R6
Demographic Variables												
Total years in public health	r	-.06	-.12	-.03	.01	-.17	.19	.25	.09	.14	.02	-.09
	p	.61	.29	.78	.94	.15	.10	.03*	.43	.23	.84	.45
Years employed as director	r	-.06	-.06	.05	.06	.02	.11	.12	.25	.16	-.02	-.09
	p	.63	.59	.64	.61	.89	.35	.29	.03*	.16	.87	.42
Number of employees	r	-.08	.08	-.11	-.06	-.00	.04	.12	.10	-.02	.09	.01
	p	.51	.50	.33	.64	.99	.73	.29	.38	.86	.42	.91
Population served	r	-.13	.08	.02	-.06	.05	.06	.13	.11	-.11	-.05	-.07
	p	.26	.49	.86	.64	.69	.60	.27	.33	.34	.65	.56

*p<.05

Table 26

Correlations and Probability Levels:
Training Practices by Barriers

		Training practices																		
		T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	T15	T16	T17	T18	T19	T20
B1	r	-.21	-.27	-.17	-.05	-.15	-.25	-.04	-.12	-.23	-.24	-.25	-.18	-.23	-.26	-.23	-.23	-.13	-.19	-.26	-.29
	p	.07	.02*	.14	.70	.21	.03*	.77	.30	.04*	.04*	.03*	.11	.04*	.02*	.05*	.04*	.27	.10	.03*	.03*
B2	r	-.01	-.04	-.26	-.11	-.19	.08	-.30	-.09	-.11	-.21	-.07	-.15	-.11	-.00	-.18	-.19	-.10	-.13	-.18	-.16
	p	.95	.74	.03*	.35	.10	.50	.01*	.40	.31	.07	.54	.19	.36	.96	.13	.10	.40	.27	.11	.18
B3	r	-.21	-.19	-.16	-.13	-.24	-.17	-.21	-.35	-.29	-.23	-.09	-.16	-.18	-.32	-.28	-.26	-.20	-.01	-.28	-.30
	p	.07	.11	.18	.26	.04*	.14	.07	.00*	.01*	.05*	.43	.18	.12	.01*	.01*	.02*	.08	.96	.02*	.01*
B4	r	-.01	.09	-.26	-.01	-.09	.19	-.06	.15	.05	-.17	.15	.10	.04	.04	-.07	-.05	.01	.04	.02	.08
	p	.07	.43	.02*	.94	.46	.10	.59	.21	.70	.14	.19	.39	.74	.76	.54	.64	.94	.76	.87	.50
B5	r	-.02	-.08	-.35	.06	-.06	.03	.03	.00	-.01	-.03	-.03	.03	-.02	-.11	-.10	.03	-.10	-.18	-.16	-.16
	p	.86	.51	.00*	.63	.61	.78	.78	.98	.91	.80	.83	.81	.84	.35	.42	.78	.39	.13	.17	.16

*p<.05

Table 27

Correlations and Probability Levels:
Training Practices by Resources

		Training practices																		
		T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	T15	T16	T17	T18	T19	T20
R1	r	.21	.21	-.08	.05	-.06	.05	-.01	.09	.05	.00	.15	-.02	.13	.05	-.01	-.03	.15	-.02	.12	-.03
	p	.07	.07	.50	.64	.61	.67	.91	.42	.65	.98	.21	.84	.26	.66	.92	.82	.21	.85	.30	.81
R2	r	.31	.21	.11	.15	.08	.14	-.03	.13	.11	.14	.28	-.01	.27	.10	.19	.02	.22	.04	.26	.13
	p	.01*	.07	.33	.20	.51	.22	.80	.25	.33	.21	.02*	.90	.02*	.40	.10	.86	.06	.70	.02*	.27
R3	r	.31	.30	-.02	.07	-.02	.16	-.19	.12	.12	.14	.26	-.06	.14	.12	.05	-.02	.19	.12	.12	.17
	p	.01*	.01*	.89	.56	.85	.16	.10	.33	.32	.24	.03*	.61	.24	.31	.65	.85	.10	.30	.32	.15
R4	r	.11	.00	-.11	.10	-.08	.01	-.03	.08	.09	-.06	.01	-.01	.11	.08	-.03	-.07	.10	-.05	.12	-.07
	p	.35	.10	.37	.38	.51	.92	.79	.48	.45	.59	.90	.91	.35	.50	.83	.56	.38	.66	.32	.52
R5	r	.06	.09	-.20	.18	.03	.13	-.08	.02	.13	-.04	.11	.08	.19	.11	.00	-.10	.19	-.04	.14	.06
	p	.59	.43	.08	.12	.81	.27	.47	.85	.28	.70	.36	.49	.10	.35	.97	.40	.11	.76	.24	.61
R6	r	.16	.11	-.21	.09	-.06	.18	.02	.00	.03	-.09	.22	.13	.08	.22	.13	.01	.17	-.06	.19	.06
	p	.16	.34	.07	.46	.61	.11	.90	.98	.82	.45	.06	.27	.47	.05*	.26	.91	.16	.63	.10	.60

*p<.05

Table 28

Correlation and Probability Levels:
Design of Work Practices by Barriers

		Design of work practices																		
		W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14	W15	W16	W17	W18	W19	W20
B1	r	-.05	.01	-.10	-.04	-.13	-.13	-.14	-.23	-.23	-.13	-.15	-.16	-.25	-.23	-.10	-.03	-.17	-.05	-.04	.01
	p	.70	.89	.39	.71	.25	.26	.23	.05*	.16	.27	.20	.17	.03*	.04*	.40	.82	.14	.69	.70	.95
B2	r	-.12	-.06	-.04	.13	.11	.24	.08	-.15	-.15	.01	-.14	-.30	.07	-.05	.02	.00	-.16	.09	-.08	-.07
	p	.30	.61	.71	.26	.37	.04*	.50	.20	.90	.90	.23	.01*	.56	.64	.87	.98	.17	.45	.50	.54
B3	r	-.05	-.20	-.18	-.08	-.10	-.10	-.18	-.09	-.09	-.21	-.18	-.26	-.28	-.05	-.02	-.01	-.15	-.06	-.07	.06
	p	.69	.09	.11	.50	.40	.38	.12	.43	.13	.06	.13	.02*	.01*	.65	.87	.91	.19	.59	.52	.62
B4	r	.06	.04	-.01	-.13	.17	.15	.17	.02	.02	.16	-.07	-.00	-.01	-.02	-.10	.02	.02	.18	.01	.00
	p	.63	.75	.92	.26	.13	.19	.15	.88	.78	.17	.53	.99	.96	.85	.40	.87	.84	.12	.94	.97
B5	r	.10	-.24	-.06	-.16	-.07	-.05	.01	-.10	-.10	-.05	-.04	.03	-.24	-.06	-.05	.09	-.10	-.17	.01	-.01
	p	.38	.04*	.58	.18	.52	.69	.95	.42	.98	.68	.76	.78	.04*	.62	.70	.43	.38	.15	.92	.91

*p< >05

Table 29
Correlations and Probablity Levels:
Design of Work Practices by Resources

		Design of work practices																			
		W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14	W15	W16	W17	W18	W19	W20
R1	r	.12	.03	.02	.11	.04	-.09	-.11	.03	.03	.08	-.07	.05	-.13	.02	.01	.12	.08	.07	.10	-.09
	p	.29	.82	.89	.37	.75	.43	.36	.78	.11	.51	.53	.68	.27	.84	.92	.31	.51	.57	.49	.44
R2	r	.08	-.05	.10	.06	.07	.05	-.00	-.03	-.03	.10	.03	.13	-.09	.03	.05	.24	.10	.11	.14	-.11
	p	.49	.64	.39	.63	.55	.65	.99	.81	.17	.37	.78	.27	.46	.79	.65	.04*	.39	.34	.22	.34
R3	r	-.01	-.04	-.06	-.05	.14	.11	-.06	.13	.13	-.02	.06	.08	-.02	-.09	.00	.14	.02	.08	.06	-.12
	p	.95	.74	.64	.70	.25	.37	.64	.26	.76	.84	.64	.61	.46	.50	.95	.60	.91	.68	.87	.05*
R4	r	.01	-.09	.00	-.13	-.01	-.02	-.16	-.05	-.05	.08	-.02	.06	-.09	-.08	-.01	.06	-.01	-.05	.02	-.23
	p	.94	.44	.10	.27	.93	.84	.16	.65	.40	.51	.85	.61	.46	.50	.95	.60	.90	.68	.87	.05*
R5	r	.07	-.11	-.10	-.17	-.04	-.07	-.14	-.11	-.11	.02	.01	.10	-.00	-.08	-.00	.00	-.08	-.06	-.05	-.04
	p	.53	.36	.40	.15	.73	.56	.21	.35	.46	.85	.95	.40	1.0	.49	.97	.98	.52	.58	.68	.72
R6	r	.09	-.08	-.01	-.10	-.03	.07	.06	-.14	-.14	.25	.09	.24	.23	.06	-.06	-.02	.09	.07	-.03	.17
	p	.42	.49	.95	.38	.78	.55	.62	.22	.63	.03*	.43	.04*	.05*	.61	.58	.84	.43	.55	.77	.15

*p<.05

Table 30 Correlation and Probability Levels:
Performance Assessment-Feedback Practices by Barriers

		Performance appraisal-feedback practices																			
		P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15	P16	P17	P18	P19	P20
B1	r	-.18	.01	-.11	-.23	-.19	-.14	-.16	-.35	-.20	-.09	-.20	-.31	-.14	-.26	-.29	-.31	-.24	.01	-.10	-.02
	p	.11	.43	.36	.05*	.10	.21	.17	.00*	.09	.43	.08	.05*	.22	.02*	.01*	.01*	.04*	.93	.40	.85
B2	r	.03	-.08	-.01	-.26	-.08	-.19	-.23	-.15	.12	.13	.01	-.32	.03	-.14	-.17	-.15	-.24	-.06	-.17	.09
	p	.77	.48	.95	.03*	.51	.09	.04*	.20	.29	.27	.91	.07	.78	.23	.15	.22	.04*	.63	.14	.42
B3	r	-.26	-.04	-.07	-.12	-.17	-.17	-.08	-.29	-.15	-.02	-.13	-.10	-.32	-.30	-.23	-.31	-.26	-.10	-.18	-.21
	p	.03*	.76	.58	.29	.14	.14	.50	.01*	.20	.85	.27	.71	.01*	.01*	.05*	.01*	.03*	.40	.13	.07
B4	r	.09	.05	.15	-.21	-.17	.11	.10	-.13	-.09	.18	.18	-.10	.04	.01	-.01	-.10	-.03	-.08	-.16	-.11
	p	.46	.65	.20	.07	.15	.35	.38	.27	.44	.11	.12	.48	.74	.95	.94	.39	.81	.51	.17	.35
B5	r	-.14	-.01	.04	-.02	-.17	-.03	.00	-.21	-.12	.06	-.13	-.09	-.10	-.21	-.18	-.23	-.27	-.07	-.22	-.10
	p	.24	.95	.74	.89	.14	.82	.97	.07	.30	.63	.28	.54	.42	.07	.12	.05*	.02*	.54	.06	.39

*p<.05

Table 31

Correlation and Probability Levels:
Performance Assessment-Feedback Practices by Resources

		Performance assessment-feedback practices																			
		P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15	P16	P17	P18	P19	P20
R1	r	-.22	-.16	-.08	-.17	-.09	-.05	.15	.06	.05	.06	.12	-.05	.06	.07	.12	-.05	-.08	-.05	-.00	-.10
	p	.06	.17	.52	.14	.44	.65	.20	.63	.70	.61	.31	.88	.61	.55	.29	.66	.47	.65	.99	.36
R2	r	-.04	-.07	-.12	-02	-.06	-.02	.11	.02	.13	.34	.19	-.03	.07	.23	.22	.12	-.03	.05	.06	.05
	p	.74	.52	.29	.89	.58	.83	.35	.90	.25	.00*	.10	.73	.57	.04*	.06	.33	.78	.65	.59	.68
R3	r	.00	-.10	-.06	-.20	-.20	.01	.06	.01	.19	.16	.34	-.12	.08	.21	.11	.09	-.08	-.10	.02	-.02
	p	.98	.40	.63	.09	.09	.94	.64	.93	.10	.17	.00*	.85	.51	.07	.35	.45	.50	.42	.88	.93
R4	r	.06	-.04	-.13	-.20	-.20	-.04	-.06	.02	-.07	.07	.00	-.12	.06	.19	-.03	.04	-.18	-.03	-.04	.03
	p	.63	.73	.28	.08	.08	.72	.61	.84	.58	.57	.99	.22	.60	.10	.77	.71	.12	.80	.71	.82
R5	r	.15	-.04	-.01	-.37	-.16	-.03	-.01	.10	-.02	.03	.04	-.24	.07	.04	.12	.17	-.23	-.16	-.00	-.05
	p	.19	.75	.93	.00*	.16	.81	.93	.39	.88	.80	.71	.06	.52	.76	.31	.16	.04*	.18	.99	.68
R6	r	.30	.23	.18	-.24	-.10	.10	.00	.11	.08	.06	.22	-.13	.12	.26	-.08	.27	.16	.03	.01	-.06
	p	.01*	.05*	.11	.04*	.39	.38	.99	.36	.52	.63	.06	.73	.32	.02*	.49	.02*	.18	.79	.93	.59

*p<.05

lower frequencies in training for staff leadership seen in T2, T6, and T11. The lack of funds was also related to less frequent training in analyzing work flow (T10) and team building (T9). Other training practices that had a significant negative relationship to levels of barriers were T13, T14, T15, T16, T19, and T20; all these practices encompassed training activities for developing staff and improving agency processes.

Another barrier that also was negatively related to the frequency of training practices was lack of public/political support (B3). Training in techniques to improve the agency performance, measured by T5, T8, T9, and T10, were all less frequent where community support was low. Other training practices for staff development and assessing client satisfaction, measured by T14, T15, T16, T19, and T20, were seen less frequently when the lack of public/political support was high. Inflexible personnel systems (B2) were negative influences on skill development (T3 and T7). Skill training for using new technology (T3) was negatively related to lack of qualified candidates (B4) and lack of training in performance-focused leadership (B5).

Table 27 provides a review from tests of training practices by levels of resources. Several training practices were positively related to the level of resources seen in support from the board of health (R2) and staff loyalty (R3). The frequency of training practices T1, T2, and T11 reflected staff development in problem solving, decision-making and in training for presentation skills. All these practices showed a positive relationship to levels of resources seen in staff or local boards. T17 and T19 measured training practices for quality improvement skills and these practices were also shown to be significantly related

to board of health support (R2). Training in measuring client satisfaction (T14) was shown to be related to the effect of training resources at the School of Public Health.

Design of Work Practices. Design of work practices in Table 28 was related to levels of barriers in only limited areas. The lack of funds (B1) had a negative relationship to improving information systems (W8), assessing client feedback (W13), and to measuring unit performance (W14). Inflexible personnel systems (B2) was negatively related to job analysis for assessing training needs (W12) but had a positive relationship with assigning staff to problem-solving committees (W6). The lack of political support (B3) was negatively related to completing job anlysis for training (W12) and assessing client feedback (W13). Lack of training offered in performance-focused leadership (B5) was negatively related to providing cross training (W2) and to assessing feedback from clients (W13).

Results of tests in Table 29 reveal the level of resources had a very limited relationship to the frequency of design of work practices. Training at the School of Public Health at the University of North Carolina (R6) was positively related to these service improvement practices: W10 and W12. Support from the board of health (R2) was related to involving the staff in identifying and solving problems (W16). Reviewing procedures of other agencies (W20) had a negative relationship to state-local partnership (R4).

Performance assessment-feedback. The correlation matrix in Table 30 illustrates the relationships between barriers and the frequency of performance assessment-feedback practices. Lack of funds to reward good performance (B1) was negatively related to

several workplace practices that encompassed financial incentives (P4, P8, P12) and setting goals and measuring client satisfaction (P14, P15, P16). Only giving clear expectations about how job performance related to agency goals (P17) was positively related to the lack of funds.

Inflexible personnel systems (B2) were negatively related to giving financial rewards for performance (P4 and P7) and giving clear expectations about how job performance related to agency goals (P17).

The lack of political/public support (B3) was negatively correlated with providing information from client surveys (P1) and giving team bonuses for productivity (P8). This political barrier was also negatively related to other reward practices including giving non-monetary recognitions (P13), setting goals with supervisors (P14), giving promotions based on skill development (P15), and giving information on service quality (P16, P17).

The lack of training offered in performance-focused leadership (B5) was negatively correlated with performance-related practices to employ quality improvement techniques (P16, P17). It was seen that those health directors who indicated a lack of leadership training was a barrier were less likely to initiate performance improvement practices.

The last correlations examined were between resources and frequency of performance assessment-feedback practices as shown in Table 31. Limited significant correlations at the $p<.05$ level were detected. Support from the board of health (R2) was positively related to giving supervisory feedback to employees (P10, P14). Levels of staff loyalty (R3) were related to giving feedback through review of critical incidents (P11). Those health directors who rated the School of Public Health at the University of North

Carolina (R6) as an effective resource had a greater frequency in several performance related practices for using and sharing customer information (P1, P2, P16) and setting or rewarding performance goals (P14, P4). The effect of the health directors association (R5) was negatively correlated with providing merit pay (P4) and other reward practices (P17).

Further Analysis of Barriers

The examination of the correlations between the frequency of workplace practices and barriers and resources revealed that barriers B1, B2, and B3 had the strongest relationship to workplace practices. In nearly every correlation significant at $p<.05$, higher levels of these barriers were related to lower frequencies of high performance workplace practices. In order to further examine these relationships, barriers B1, B2, and B3 were selected as independent variables and regressed against training practices, work design practices, and performance assessment-feedback practices. The analysis of variance statistics from the multiple regression procedures are summarized in Tables 32, 33, and 34. Parameters for the individual regression coefficients for each barrier are summarized in Appendix B.

Training practices and barriers. In Table 32, the analysis of variance report provides information about the overall relationship between the three barriers tested as a group (B1, B2, B3) and the frequency of each training practice (T1 . . . T20). The values of R^2 range from .05 to.20, revealing weak correlations between these barriers and diminished training practices. The F statistic and the related probability measure p show where significant differences are found in the frequency of training practices when tested

Table 32

Analysis of Variance:
Training Practices by Barriers
B1 B2 B3

Analysis of variance

Variable	R^2	DF	Sum of squares	Mean squares	F	p
T1	.15	3	13.12	4.37	3.56	.02*
T2	.14	3	12.55	4.18	3.51	.02*
T3	.08	3	4.32	1.44	2.01	.12
T4	.06	3	2.95	.98	1.41	.25
T5	.12	3	13.31	4.44	3.05	.03*
T6	.15	3	10.36	3.45	3.81	.01*
T7	.12	3	11.85	3.95	3.17	.03*
T8	.19	3	13.12	4.37	5.32	.00*
T9	.14	3	12.94	4.31	3.43	.02*
T10	.13	3	9.46	3.16	3.14	.03*
T11	.09	3	5.32	1.77	2.16	.10
T12	.09	3	4.97	1.66	2.01	.12
T13	.11	3	7.80	2.60	2.66	.06
T14	.20	3	14.06	4.69	5.35	.00*
T15	.10	3	9.51	3.17	2.67	.06
T16	.11	3	8.69	2.90	2.77	.05
T17	.05	3	4.98	1.66	1.23	.30
T18	.07	3	4.10	1.37	1.51	.22
T19	.14	3	11.95	3.98	3.56	.02*
T20	.16	3	15.15	5.05	4.00	.01*

*p< .05

Table 33

Analysis of Variance:
Design of Work Practices by Barriers
B1 B2 B3

Analysis of variance

Variable	R^2	DF	Sum of squares	Mean squares	F	p
W1	.02	3	1.29	.43	.49	.69
W2	.05	3	1.88	.63	1.16	.33
W3	.04	3	3.38	1.13	.90	.45
W4	.06	3	4.05	1.35	1.35	.27
W5	.10	3	5.61	1.87	2.30	.09
W6	.20	3	16.65	5.55	5.47	.00*
W7	.09	3	8.55	2.85	2.16	.10
W8	.09	3	5.45	1.82	2.12	.11
W9	.08	3	6.05	2.02	1.78	.16
W10	.07	3	4.10	1.37	1.57	.21
W11	.04	3	2.79	.93	.96	.42
W12	.14	3	10.16	3.39	3.50	.02*
W13	.23	3	13.37	4.46	6.40	.00*
W14	.08	3	5.80	1.93	1.82	.15
W15	.03	3	1.50	.50	.57	.64
W16	.01	3	.22	.07	.11	.96
W17	.05	3	2.11	.70	1.18	.33
W18	.04	3	1.63	.54	.85	.47
W19	.01	3	.37	.12	.13	.94
W20	.02	3	.70	.23	.33	.81

*$p<.05$

Table 34

Analysis of Variance:
Performance Assessment-Feedback Practices
by Barriers B1 B2 B3

Analysis of variance

Variable	R^2	DF	Sum of squares	Mean squares	F	p
P1	.13	3	9.33	3.11	3.44	.02*
P2	.01	3	.63	.21	.30	.83
P3	.02	3	.95	.32	.33	.80
P4	.08	3	14.82	4.94	2.06	.11
P5	.05	3	3.92	1.31	1.10	.37
P6	.06	3	5.36	1.79	1.32	.27
P7	.05	3	5.27	1.76	1.28	.29
P8	.19	3	6.76	2.25	5.17	.00*
P9	.10	3	13.98	4.66	2.57	.06
P10	.07	3	3.08	1.03	1.78	.16
P11	.07	3	6.28	2.09	1.79	.16
P12	.15	3	16.65	5.55	4.03	.01*
P13	.11	3	8.59	2.90	3.06	.03*
P14	.12	3	10.13	3.38	3.14	.03*
P15	.10	3	7.97	2.66	2.40	.08
P16	.15	3	10.41	3.47	3.81	.01*
P17	.10	3	6.66	2.22	2.36	.08
P18	.01	3	.97	.32	.32	.82
P19	.04	3	3.69	1.23	1.03	.38
P20	.09	3	7.57	2.52	2.26	.09

*$p<.05$

against levels of barriers. These tests revealed that several training practices initiating staff development for high performance were less frequent when barriers of funding, inflexible personnel systems and lack of political support were high. These diminished practices included training in problem solving, participation, and leadership (T1, T2, T6, T9,T20) and in skill development for quality improvements (T5, T7, T8, T10, T19). Also, differences were shown in the frequency of training to measure client satisfaction (T14).

Design of work practices and barriers. Similar multiple regression tests using B1, B2, and B3 as independent variables tested as a group against the frequency of work design practices (W1 . . . W20) provide the analysis of variance summary in Table 33. Correlations between the levels of barriers and the frequency of design of work practices were very low. Significant tests of differences in the frequency of design of work practices by level of barriers were seen in assigning staff to problem-solving committees (W6); one of the few examples where higher levels of barriers were related to increased frequency of a workplace practice. In analyzing jobs for training needs (W12), and in assessing client feedback (W13), higher barriers were related to less frequent workplace practices.

Performance assessment-feedback practices and barriers. Table 34 provides information from analysis of variance which tested differences in the frequency of performance assessment-feedback practices by levels of barriers B1, B2, and B3. The three barrier variables were regressed again as a group against the frequency of workplace practices in performance assessment-feedback. Correlations shown as R^2 range from .01 to .19 with several notable findings. In workplace practices related to staff receiving

feedback from clients (P1, P16), and in setting goals with the unit supervisor (P14), lower frequencies were seen where levels of barriers were higher. Also, rewards in the form of financial incentives (P8, P12) were less frequently provided when barriers were higher. Finally, the tests also revealed that receiving non-monetary rewards (P13) was related to the level of barriers measured by the agency leader.

Summary of Results

The research questions in this study were addressed with the administration and analysis of a survey of health directors in the state of North Carolina. Using an instrument developed by the author and his academic advisor to measure the frequency of workplace practices leaders initiate for high performance, the total population of 86 local health directors was assessed. Seventy six health directors responded giving a response rate of 88.4%. Responses were initially analyzed using univariate and frequency procedures in SAS and SPSS (Schlotzhauer & Littell; SPSS Inc., 1994) Demographic information about the directors was tabulated. The frequency and rank of workplace practices was tabulated for the entire group of health directors. Also tabulated and ranked were levels of resources and barriers the health directors experienced in initiating high performance practices.

Correlations tests were then conducted to measure the relationship of demographic variables to the frequency of workplace practices leaders initiate. Analysis of variance and Duncan's Multiple Range post hoc tests (SPSS Inc., 1994: Ott, 1988) were

used to further analyze significant relationships between demographic variables and workplace practices. Correlations were also tested for barriers and resources by demographic factors. Final correlation tests were then completed to measure the relationship of barriers and resources to workplace practices. As a followup to findings concerning the negative relationship of barriers to the frequency of workplace practices, multiple regressions were conducted for a group of three barriers by workplace practices. Results, conclusions, and recommendations are provided in Chapter 5.

CHAPTER 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary of Procedures

Purpose and Procedures

The primary problem investigated in this study is the need for improving the performance and effectiveness of leadership in public health.

The purpose of the study was to investigate workplace practices leaders initiate for developing high performing public health agencies. The frequency of workplace practices which public health directors initiate for developing high performance was measured.

To achieve this purpose, a survey instrument "Leadership Practices Survey" was developed and administered to local health directors. Demographic information about the agencies and the health directors was collected as a part of the study. Three scales measured the frequency of workplace practices health directors initiated for high performance in the agency. These practices included training practices, design of work practices, and performance assessment-feedback practices. The instrument also measured levels of resources and barriers the health directors experienced in initiating high performance workplace practices.

To gather data for this study, 86 local health directors in the state of North Carolina were surveyed. These individuals represented the entire population of local

health directors in that state. Local health directors responding numbered 76, giving a response rate of 88.4%.

The data were entered into a spreadsheet (Lotus 1-2-3 Spreadsheet for Windows) and then analyzed with the statistical programs in SAS and SPSS (Schlotzhauer & Littell, 1987; SPSS Inc., 1994).

The research questions posed in the study were first answered by summarizing the responses by frequency and rank of workplace practices. Data were further tested for differences in the strength of relationships with analysis of variance and Duncan's Multiple Range post hoc test. Other correlation tests were conducted to measure the relationship between demographic variables and barriers/resources. Final tests of barriers and workplace practices were performed with correlation tests and multiple regression analysis.

Research Question One

The first research question asked was: What are the high performance workplace practices initiated by leaders that are most often used in North Carolina public health agencies? To answer this question, the study analyzed the frequency and rank of workplace practices initiated in training, design of work, and performance assessment-feedback (Tables 5 through 10).

Training

Giving information about agency programs, values, goals and objectives, and providing skill training in new technology or in the use of computers were the most frequent types of training provided. Quality control-quality assurance and continuous improvement techniques were also highly ranked as training activities. However, training through mentoring and to implement self-directed, continuous improvement activities including training in decision-making, in presentation skills, in benchmarking, or in applying statistics to quality measures, were seldom initiated.

Design of Work

Workplace activities in problem-solving, working in planning groups, and applying advanced skills to improve the quality of services were highly rated. Also frequently initiated practices were independent decision-making and working toward group achievement. Less frequent were workplace practices related to reduced management layers or decentralized quality control. Also less frequent were practices related to analyzing jobs for training needs and appointment to self-directed teams.

Performance Assessment-Feedback

Information and feedback were frequently provided to health department staffs about the agency's performance and about the individual performance of the employees. Feedback was frequently provided from supervisors to teams or to individuals. Financial rewards for high performance were seldom available. Merit pay, flexible benefits, or pay raises based on skill advancement were also ranked low in frequency. Practices related to self-monitoring performance, including using statistical tools to measure quality or

analyzing critical incidents, were only sometimes initiated, indicating that feedback was more often given in supervisory conferences than through self-assessment practices seen in autonomous work teams.

Research Question Two

The second research question asked: How are the frequency and type of high performance workplace practices initiated by leaders related to agency demographics? The demographic variables of years employed as a local health director and total years in public health were selected for testing. These variables were chosen to represent the experience level of the director. The variables of total employees in the agency and total population served by the agency were also selected for testing. These variables were chosen to represent the complexity or size of the agency the health director leads.

Tests of Correlation

Tests of correlation using the Pearson's correlation procedure provided a correlation matrix for each demographic variable by frequency of workplace practices. The probability of significant relationships between demographic variables and the frequency of workplace practices was calculated and presented for review in Tables 12, 13, and 14.

Leader experience and workplace practices. The tests of correlation revealed that experience variables were related to the frequency of a very limited number of workplace practices. The demographic variables of total experience and experience as a health

director were significant only to these practices: providing training in computer usage; improving performance through employee monitoring of data and applying new job skills; and giving performance rewards through promotions or pay. For all the other workplace practices, there was little correlation to experience.

Agency size and workplace practices. The demographic factors of number of employees and total population served were shown to be related to a scattered group of workplace practices in the correlation matrix seen in Tables 12, 13, and 14. The number of employees was the demographic variable most often correlated to the frequency of workplace practices.

Agency size and training. The number of employees was shown to be related to frequency of training practices in the following areas: problem solving, leadership skills, communication skills, decision making, measuring client satisfaction, and coaching and developing staff. Population served was similarly related to staff development practices. Number of employees was also shown to be related to the frequency of the following design of work practices: employees serving on planning groups, assigning staff to problem solving committees, input from employees to suggestion programs, designing a job differently, completing job analysis for training needs, and using different skills to complete work assignments.

Agency size and performance assessment-feedback. Number of employees was related to the frequency of the following performance assessment-feedback practices: providing annual performance reviews, giving choices of flexible benefits, providing non-monetary rewards and recognitions for solving agency problems, and giving awards or

recognitions from peers or professional groups. Similarly, population served was related to the frequency of the following: giving merit pay and annual performance reviews, giving flexible benefits, and providing financial and non-financial rewards for performance.

Analysis of Variance and Duncan's Multiple Range Test

Further analysis of the demographic variables that showed significant correlations to frequency of workplace practices was conducted. The analysis of variance documented significant differences between the levels of demographic variables tested by frequency of workplace practices. The Duncan's post hoc provided a means test for these differences.

Differences in workplace practices by experience of director. The tests illustrated that only in a few instances did the experience of the leader demonstrate significance differences in the frequency of workplace practices: training staff in computer usage, in the application of new job skills, in training to improve service quality, and in providing promotions based on skill development (Tables 15, 18, and 20).

Differences in workplace practices by number of employees and population served. ANOVA tests on the size-related demographic variables revealed where differences were found between the demographic variable levels tested by frequency of workplace practices. Training practices for problem solving, communications, leadership skills and decision-making revealed significant differences (at $p<.05$ level) when tested by number of employees. The Duncan's Multiple Range tests illustrated how the frequency of specific practices increased with number of employees. Differences in the frequency of training for coaching and developing staff and for communications skills were also found when tested by the population served by the agency (Tables 16 and 17).

Work design practices that were different in frequency when tested by the levels of agency employees included: assigning staff to problem solving committees, providing employee suggestion programs, completing job analysis for assessing training needs, and employees using a variety of skills for job assignments (Table 19).

ANOVA tests also revealed that performance assessment-feedback practices differed in frequency when tested by the number of employees in the following practices: providing annual individual performance reviews, employees receiving non-monetary rewards for solving agency problems, and in employees gaining recognition from peers or professional groups (Table 21).

Research Question Three

The third research question asked: What are the barriers and resources in public health for initiating high performance workplace practices and how do these factors relate to demographic factors and to the workplace practices leaders initiate? The survey assessed the level of barriers and resources and these responses were summarized and ranked in ascending order. The lack of funds was the highest rated barrier, followed by inflexible personnel systems, and the lack of public/political support. Support from the local board of health, followed by staff loyalty and community support were the highest-rated resources for initiating high performance workplace practices (Tables 23-24).

Barriers-Resources by Agency Demographics

Correlation tests (Table 25) were performed to determine how barriers and resources relate to agency demographics of number of employees, population served, total public health experience of the health director, and years experience as a director. The tests revealed only two significant relationships that were shown in correlation tests; the only significant correlations to resources seen were between experience tested by levels of staff loyalty and by support from the board of health. No barriers were shown to be related to either experience or agency size.

Barriers by Training Practices

To test the relationships between barriers and high performance workplace practices that leaders initiate, tests of correlation were performed between the frequency of training practices and barriers; all of the correlation coefficients revealing significant tests of relationship were negative. These tests are shown in Table 26. The tests demonstrated the negative influence of agency barriers on the frequency of training practices initiated. Levels of resources measured in the study appeared to have fewer relationships to the frequency of training practice (Table 27). Support from the board of health and staff loyalty were related to a limited group of training practices.

Barriers by Design of Work Practices

Design of work practices were also negatively related to barriers in the following areas: improving information systems, assessing client data and unit performance, serving on problem solving committees, and analyzing jobs for training or cross-training (Table 28).

Barriers by Performance Assessment-Feedback Practices

Similarly, correlation tests on performance assessment-feedback practices and barriers revealed specific reward and feedback initiatives that were less frequent when barriers were high. Both monetary and non-monetary rewards were less frequent when barriers were high (Table 30).

Resources by Workplace Practices

Levels of resources (Table 27, 29, 31) were not often significantly related to the frequency of workplace practices. Levels of resources were only related to these work design practices: problem solving; reviewing procedures in other agencies; designing jobs differently; and assessing data about service quality. Levels of resources were related to the following performance assessment-feedback practices: supervisory conferences and goal setting, using critical incidents for training, providing merit pay, enplaning agency values and goals, and making use of client survey data and direct feedback. Levels of resources measured in board of health support were related only to the following training practices: skill training in problem-solving, making presentations, decision-making, and benchmarking.

Followup on Barriers and Workplace Practices

Frequent negative correlations were seen between the barriers of inadequate funds to reward employees (B1), inflexible personnel systems (B2), the lack of public/political support (B3), and the frequency of high performance workplace practices. To further document and analyze the importance of these barriers on performance in public health departments, multiple regression was employed to test the relationships of the three

barriers as a group against the workplace practices of training, design of work, and performance assessment-feedback. Tables 32, 33, and 34 provide the ANOVA data from these tests. Data from the coefficient parameters of the multiple regressions are given in Appendix B.

Training practices by barriers B1, B2, B3. Significant differences (at $p<.05$) in the frequency of training practices by three combined barriers were seen in these areas: problem solving, leadership, continuous improvement, communication skills, statistical measures of quality, planning-assessing, team building, analyzing work flows, measuring client satisfaction, training about agency values, benchmarking, and career development (Table 32).

Design of work practices by barriers B1, B2, B3. Significant differences (at $p<.05$) in the frequency of design of work practices by three combined barriers were seen in these areas: assigning staff to problem-solving committees, completing job analysis for training needs, and assessing client feedback (Table 33).

Performance assessment-feedback practices by barriers B1, B2, B3. Significant differences (at $p<.05$) in the frequency of performance assessment-feedback practices by three combined barriers were seen in these areas: giving information from client surveys, giving team bonuses, giving financial rewards for performance, and receiving direct feedback from clients about service quality (Table 34).

Conclusions

As a result of analysis of research data collected in this study, the following conclusions are made by the author.

Frequency of High Performance Workplace Practices

The study concludes that local health directors initiate some of the high performance workplace practices listed in the literature review and incorporated in the leadership model presented in this study. Most frequently initiated were those workplace practices that could be categorized as "high-involvement activities" including high levels of information sharing, goal setting, and participation in planning and assessment. Supervisory feedback was frequent, along with skill training in technical areas including computer usage. Quality control-quality assurance was also frequently employed.

Less frequent were workplace practices related to reorganizing workplaces for reduced supervisory levels and greater employee autonomy. The study revealed that workplace practices for continuous improvement skills including training staff in statistical quality measurement, job analysis, decision-making, or in analyzing work flows were not frequently initiated. Thus, the study showed that quality-related activities were more frequently administered through traditional quality assurance practices than through other decentralized methods. It can also be concluded that while information sharing was very high, performance was seldom reinforced with financial rewards or rewards in forms of promotions and benefits. Employees were given the benefit of a great amount of feedback and guidance but did not frequently receive additional compensation for good work.

Relationship of Demographics to Workplace Practices

The study concludes that the size or complexity of the agency was more frequently related to initiating high performance workplace practices than was the experience of the director. In a number of training practices and also in some design of work and performance assessment-feedback practices, the influence of agency size was documented. Larger health departments more frequently initiated leadership training, gave more rewards for performance through financial and non-financial incentives, and more frequently employed job enrichment techniques. Only in the areas of rewarding staff through pay and promotions and in training staff in quality control/data management did the experience of the director relate to the frequency of workplace practices initiated.

Barriers, Resources, and Agency Demographics

The study revealed how local resources were most important in the ability of the health directors to initiate high performance practices. The study concludes that support from the local board of health was the highest rated resource, followed by staff loyalty. Lack of funds for rewarding good performance and inflexible personnel systems were the greatest barriers. The study demonstrated how the level of administrative-policy support, the ability to pay for performance, and other human resource options for improving the agency, were determined by the local resources in hand. However, very few correlations were shown in the study between the levels of barriers or resources and the demographic variables for agency size or experience of the director.

The responses of the health directors in this study revealed that the agency size and their level of experience did not affect their measure of barriers and resources for

initiating high performance workplace practices. This seeming contradiction leads the author to conclude that the health directors place the same importance on local resources wherever they work, and rate barriers as equally important, regardless of their ability to overcome them.

Barriers, Resources, and Frequency of Workplace Practices

When the frequency of high performances practices was tested by the levels of barriers and resources, the study revealed that three barriers were most important to initiating workplace practices. These barriers were: the lack of funds to pay for good performance in workers, inflexible personnel systems, and the lack of public/political support. A number of training, design of work, and performance assessment-feedback practices were negatively related to the levels of these barriers. The conclusions in this study are similar to findings in the literature about problems in the leadership of public services. The study reveals that effective leadership practices in public health agencies were diminished by the lack of administrative flexibility, reward systems for employee performance, and political support that leaders encounter.

Discussion

The leadership model presented in this study illustrates practices that leaders initiate for high performance workplaces. A number of these practices were further documented in the literature review. These themes are repeated by business and government experts: (a) Government agencies (including public health) need better

leadership to elevate their performance and services; (b) high performance workplace practices can be applied in public agencies; (c) leading performance through human resource development is best seen as a system of reinforcing practices that leaders initiate and disseminate throughout the organization; and (d) implementing high performance practices in public agencies is a formidable challenge, requiring leaders who can surmount strong barriers of structure, culture, and the lack of support or resources.

The health directors in this study demonstrated that they implement many of the workplace practices that were compiled in the survey instrument. They seemed to be especially focused on leading through information sharing, goal setting, and supervisory practices that give purpose and feedback to employees. It was also clear, however, that they lacked resources to adequately reward good performance, and that larger agencies initiated high performance practices more frequently than smaller ones.

The study of the three most important barriers and the frequency of high performance workplace practices was especially revealing. The correlation between the lack of financial rewards for performance, low levels of political/community support, and diminished practices in assessing feedback from clients and the community was documented; these findings gave evidence of the interrelationship of elements that influence agency performance.

Applying these findings to the leadership model reveals that only parts of the model were frequently applied in the population of health directors studied, and that in places where barriers were very high, directors were less likely to initiate key elements of workplace practices to elevate and reinforce performance.

Local health directors have a lot to do in their jobs, including a score of tasks and responsibilities not addressed in this research model. This gives more reasons, it seems, to improve structural difficulties that impede both the attentiveness of agency leaders to quality services and to reinforcing and rewarding high performance.

Recommendations for Future Studies

The findings of this study and the conclusions presented provide the foundation for the following recommendations for future studies.

1. The survey instrument for this study, "Leadership Practices Survey," proved to be useful in measuring the frequency of workplace practices initiated for high performance. However, this study was limited to health directors in one state. As public health searches for its role in reorganized community health systems, studies measuring performance leadership in larger or more diverse populations should be conducted to document how local health directors can lead their agencies to high levels of performance.

2. This study failed to document why barriers to initiating high performance workplace practices are higher in certain locations. The demographic variables did not differentiate between those agencies with high and low levels of barriers, although the importance of the barriers to the frequency of workplace practices was shown. Future studies could incorporate other agency or community factors to test against the levels of barriers and resources. Future studies could be directed at more diverse populations, perhaps comparing agencies in different states to assess the effects of organizations.

3. The literature review of leadership for high performance revealed that public agencies, including public health, are hampered by the absence of reliable performance data or common definitions about what constitutes high performance. In the age of continuous improvement in the workplace, performance is a moving target whose definition spirals upward with technical advances and competitive challenges. Public health, by tradition, focuses on population outcomes as its chief measure of success. These measures need to be augmented with quality management. Future studies in leadership practices can perhaps help leaders to seek common measures of quality and production as performance indicators.

4. The health directors in this study revealed that they initiate many of the practices for high performance workplaces. As a group, they made frequent use of high involvement techniques that are promoted in the literature about high performance workplaces. Public health, with its traditions of local initiatives and decentralized control, highly educated workers, and independent leaders, seems a natural place for these techniques to flourish. However, the barriers to leading agency performance were also high. Further research is needed to determine the means for overcoming these barriers. Leadership for strong, flexible, high performing, local public agencies is our ongoing need and challenge.

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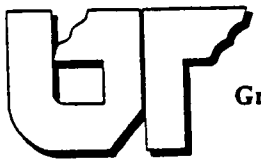
APPENDICES

APPENDIX A

LEADERSHIP PRACTICES SURVEY



Leadership Practices Survey

The University of Tennessee
Graduate Program in Human Resource Development

The University of Tennessee, in cooperation with the North Carolina Association of Local Health Directors, is conducting a survey of North Carolina Health Directors to determine the frequency and type of workplace practices initiated to create high performance in public health departments. The problem investigated with this study is to determine how leaders in public health agencies can take actions to effectively train, direct, and motivate staff for the provision of high quality services.

The survey is being sent to all North Carolina local health directors for their personal response to determine leadership practices conducted within the last 2 years. Your responses will be kept confidential. The survey is numbered to aid in follow-up efforts but the individual responses will not be released to anyone. The responses of all the participants will be combined for reporting in aggregate form. It is important to gain the input from all health directors and your individual response is important. The return of your completed survey constitutes your consent to participate.

The survey should take about 20 minutes to complete. Please return the completed survey in the enclosed stamped envelope within 7 days from receipt. If you have any questions, please call Gary Taylor at 423-974-8092.

The results of this survey will be shared with the North Carolina Association of Local Health Directors. Your association will be able to use the information gained to plan for training and leadership activities.

THANK YOU FOR YOUR PARTICIPATION

Gary A. Taylor

Gary A. Taylor, Project Director
385 HPER Bld., Department of Human Resource Development
University of Tennessee
Knoxville, TN 37996-2755

I. Background Information

Please answer the following questions to provide demographic information about yourself and your agency. Place one check only (✓) on the appropriate line.

1. Title of person completing this survey:
   - A. Local Health Director I _____
   - B. Local Health Director II _____
   - C. Local Health Director III _____
   - D. Local Health Director IV _____
   - E. Acting Health Director _____
   - F. Other, please state_____
2. Years employed in your present job as health director:
   - A. Less than 1 year _____
   - B. 1 year - 4 years _____
   - C. 5 - 9 years _____
   - D. 10 - 14 years _____
   - E. 15 + years _____
3. Total years experience in public health:
   - A. <5 years _____
   - B. 5 - 9 years _____
   - C. 10 - 19 years _____
   - D. 20+ years _____
4. Number of full-time employees in your agency (include total of all counties if district)
   - A. < 25 _____
   - B. 25 - 50 _____
   - C. 51 - 74 _____
   - D. 75 - 99 _____
   - E. 100 + _____
5. Total population your agency serves: (include total of all counties if district)
   - A. < 20,000 _____
   - B. 20,000 - 60,000 _____
   - C. 60,001 - 100,000 _____
   - D. 100,000 + _____
6. Makeup of your service area:
   - A. Largely rural _____
   - B. Largely urban _____
   - C. Mixed: urban, rural, suburban _____
7. Your educational preparation:
   - A. BS degree only _____
   - B. Graduate degree in public health _____
   - C. Graduate degree in area other than public health _____
   - D. Medical degree _____
   - E. Other, please state_____

II. Training Practices

This section of the survey asks questions about workplace practices that agency leaders initiate to increase the skills and abilities of employees. To the best of your ability, estimate the correct response for your agency. Remember there are no right or wrong answers.

Please indicate the approximate frequency of organized training your agency has provided to employees, within the last 2 years, in the following subject or skill areas. Indicate by placing one check (✓) only in the appropriate box.

Frequency of Organized Training Provided
(within the last 2 years)

Subject or Skill Area for Training	1 Never	2 Seldom	3 Sometimes	4 Usually	5 Always
1. Problem solving / participation skills					
2. Leadership skills					
3. Skills for using new technology					
4. Quality control / quality assurance					
5. Continuous improvement techniques					
6. Interpersonal / communication skills					
7. Statistical measures of quality					
8. Planning / assessment / organizing					
9. Team building					
10. Analyzing work flow / work process					
11. Presentation skills					
12. Information on agency programs, goals, and objectives					
13. Decision-making					
14. Measuring client satisfaction					
15. Coaching and developing staff					
16. Explanations of agency values and purposes					
17. Mentor / shadowing techniques					
18. Computer usage / info. management					
19. Benchmarking best practices					
20. Career development					

III. Design of Work

This section of the survey asks questions about workplace practices leaders initiate to improve the motivational content or efficiency of jobs. To the best of your ability, estimate the correct response for your agency. Remember there are no right or wrong answers.

Please indicate the approximate frequency of participation by **your agency employees** in the following work-place practices, during the last 2 years. Indicate by placing one check only (✓) in the appropriate box.

Frequency of Participation
(within the last 2 years)

Types of Employee Work Practices	1 Never	2 Seldom	3 Sometimes	4 Usually	5 Always
1. Rotated jobs					
2. Received cross training in job assignment					
3. Appointed to self-directed work teams					
4. Took more advanced responsibilities due to reduced management layers					
5. Served on interdisciplinary planning group					
6. Assigned to problem-solving committee					
7. Gave input to employee suggestion program					
8. Improved data processing or information system					
9. Implemented decentralized quality control					
10. Designed a job differently					
11. Analyzed work flows/work processes					
12. Completed job analysis to assess training needs					
13. Assessed feedback from clients about service quality, reliability or accessibility					
14. Monitored data to measure unit performance					
15. Used many different skills to complete assignments					
16. Were highly involved in identifying and solving problems					
17. Applied new job skills and training to improve service quality					
18. Were delegated more independent authority to make decisions on the job					
19. Were directed toward group achievement					
20. Reviewed procedures of other agencies to find improved techniques or processes					

IV. Performance Assessment and Feedback

This section of the survey asks questions about workplace practices that leaders initiate to provide assessments and feedback to employees on the job. To the best of your ability, estimate the correct response for your agency. Remember there are no right or wrong answers.

Please indicate the approximate frequency of work assessment-feedback your agency has provided employees (within the last 2 years). Indicate by placing one check only (✓) in the appropriate box.

Frequency of Work Assessment-Feedback
(within the last 2 years)

Type of Work Assessment or Feedback Employees are Provided	1 Never	2 Seldom	3 Sometimes	4 Usually	5 Always
1. Given information from client or customer surveys					
2. Given information about agency goals and objectives					
3. Provided data to measure unit or team performance					
4. Provided merit pay					
5. Provided annual individual performance assessment					
6. Given information about overall agency performance					
7. Given pay raise for advancement in skills					
8. Given team bonus for gains in productivity					
9. Given choices for flexible benefits					
10. Provided frequent individual feedback from supervisor					
11. Employed critical incidents for feedback and training					
12. Were financially rewarded for high performance					
13. Received non-monetary reward or recognition for improving work process or solving problems					
14. Set unit performance goals with supervisor					
15. Received promotion based on skill development					
16. Received feedback directly from clients about service quality					
17. Given clear explanations about how performance of their job relates to agency values and objectives					
18. Won awards or recognition from peers or professional groups					
19. Used statistical tools to measure quality of services					
20. Were rewarded by membership in a cohesive team					

V. Barriers and Resources

This section of the survey asks questions about barriers and resources for initiating workplace practices for high performance. To the best of your ability, estimate the correct response for your agency. Remember there are no right or wrong answers.

A. Barriers. Please indicate the level of effect that the following **barriers** have on your ability to improve performance in your agency. Place one check only (✓) in the appropriate box.

Barriers to Improving Performance	Level of Effect on Improving Performance				
	1 No Effect	2 Seldom Effects	3 Sometimes Effects	4 Usually Effects	5 Always Effects
1. Lack of funds to reward good workers					
2. Inflexible personnel system					
3. Lack of public/political support					
4. Lack of qualified candidates for jobs					
5. Lack of training offered in performance-focused leadership					

B. Resources. Please indicate the effect of the following as **resources** for improving performance in your agency. Place one check only (✓) in the appropriate box.

Resources for Improving Agency Performance	Level of Effect on Improving Performance				
	1 Never Effects	2 Seldom Effects	3 Sometimes Effects	4 Usually Effects	5 Always Effects
1. Community Support					
2. Support from Board of Health					
3. Staff Loyalty					
4. State-local partnership					
5. Local Health Directors' Association					
6. Training at School of Public Health					

Thank you for your participation. Please return survey in enclosed envelope.

APPENDIX B

PARAMETER ESTIMATES FROM TESTS

OF MULTIPLE REGRESSION

WORKPLACE PRACTICES BY B1, B2, B3

Parameter Estimates from Tests of Multiple Regression:
Workplace Practices by Barriers B1, B2, B3

Dependent variable	Independ variable	DF	Parameter estimate	Standard error	T for HO: param=0	Prob>T
T1	B1	1	-.36	.16	-2.23	.03
	B2	1	.28	.17	1.61	.11
	B3	1	-.28	.15	-1.86	.07
T2	B1	1	-.40	.16	-2.52	.01
	B2	1	.20	.17	1.17	.25
	B3	1	-.18	.15	-1.21	.23
T3	B1	1	-.05	.13	-0.37	.71
	B2	1	-.18	.13	-1.33	.19
	B3	1	.09	.12	-.81	.42
T4	B1	1	.02	.12	.16	.87
	B2	1	-.09	.13	-.71	.48
	B3	1	-.17	.12	-1.49	.14
T5	B1	1	-.03	.18	-.19	.85
	B2	1	-.22	.19	-1.17	.24
	B3	1	-.30	.17	-1.81	.08
T6	B1	1	-.39	.14	-2.75	.01
	B2	1	.33	.15	2.15	.04
	B3	1	-.16	.13	-1.22	.23
T7	B1	1	.19	.16	1.15	.26
	B2	1	-.39	.18	-2.19	.03
	B3	1	-.24	.16	-1.52	.13
T8	B1	1	-.07	.13	-.50	.62
	B2	1	.11	.14	.79	.43
	B3	1	-.45	.12	-3.61	.00
T9	B1	1	-.26	.17	-1.57	.12
	B2	1	.13	.18	.75	.46
	B3	1	-.33	.16	-2.12	.04
T10	B1	1	-.17	.14	-1.15	.25
	B2	1	-.07	.16	-.47	.64
	B3	1	-.23	.13	-1.62	.11
T11	B1	1	-.30	.13	-2.22	.03
	B2	1	.11	.14	.79	.43
	B3	1	-.05	.12	-.43	.67

T12	B1	1	-.14	.13	-1.03	.30
	B2	1	-.10	.14	-.67	.51
	B3	1	-.11	.12	-.87	.39
T13	B1	1	-.27	.15	-1.87	.07
	B2	1	.06	.16	.37	.71
	B3	1	.16	.14	-1.16	.25
T14	B1	1	-.32	.14	-2.30	.03
	B2	1	.29	.19	2.00	.05
	B3	1	-.34	.13	-2.60	.01
T15	B1	1	-.17	.16	-1.08	.29
	B2	1	-.01	.17	-.03	.98
	B3	1	-.27	.15	-1.78	.08
T16	B1	1	-.17	.15	-1.13	.26
	B2	1	-.07	.16	-.43	.67
	B3	1	-.21	.14	-1.48	.14
T17	B1	1	-.06	.17	-.36	.72
	B2	1	-.01	.18	-.06	.95
	B3	1	-.24	.16	-1.49	.14
T18	B1	1	-.17	.14	-1.26	.21
	B2	1	-.14	.15	=.93	.36
	B3	1	.12	.13	.96	.34
T19	B1	1	.24	.16	-1.53	.13
	B2	1	.00	.17	.02	.98
	B3	1	-.26	.15	-1.81	.07
T20	B1	1	-.25	.17	-1.53	.13
	B2	1	.06	.18	.33	.74
	B3	1	-.34	.15	-2.21	.03
W1	B1	1	.07	.14	.56	.58
	B2	1	-.16	.14	-1.12	.27
	B3	1	-.03	.13	-.23	.82
W2	B1	1	.07	.10	.68	.50
	B2	1	-.03	.11	-.26	.80
	B3	1	.18	.10	-1.76	.08
W3	B1	1	-.10	.16	-.62	.54
	B2	1	.10	.17	.56	.58
	B3	1	-.19	.15	-1.27	.21
W4	B1	1	-.12	.14	-.81	.42
	B2	1	.28	.15	1.84	.07
	B3	1	-.15	.14	-1.07	.29
W5	B1	1	-.26	.13	-2.01	.05
	B2	1	.29	.14	2.13	.04
	B3	1	.09	.12	-.72	.48

W6	B1	1	-.39	.15	-2.71	.01
	B2	1	.57	.15	3.72	.00
	B3	1	-.15	.14	-1.07	.28
W7	B1	1	.25	.17	-1.52	.13
	B2	1	.30	.17	1.17	.09
	B3	1	-.23	.16	-1.45	.15
W8	B1	1	-.25	.13	-1.84	.07
	B2	1	-.07	.14	-.52	.61
	B3	1	.01	.13	.11	.92
W9	B1	1	-.24	.15	-1.56	.12
	B2	1	.24	.16	1.47	.14
	B3	1	-.17	.15	-1.16	.25
W10	B1	1	-.12	.13	-.09	.37
	B2	1	.16	.14	1.16	.25
	B3	1	-.21	.13	-1.62	.11
W11	B1	1	-.05	.14	-.38	.71
	B2	1	-.06	.14	-.39	.69
	B3	1	-.14	.13	-1.06	.29
W12	B1	1	.05	.14	.34	.74
	B2	1	-.29	.15	-1.94	.06
	B3	1	.23	.13	-1.69	.10
W13	B1	1	-.29	.12	2.44	.02
	B2	1	.32	.13	-2.56	.01
	B3	1	.32	.11	-2.77	.01
W14	B1	1	-.34	.15	-2.32	.02
	B2	1	.13	.16	.83	.41
	B3	1	.07	.14	.51	.61
W15	B1	1	-.17	.14	-1.25	.22
	B2	1	.12	.14	.84	.41
	B3	1	.02	.13	.14	.89
W16	B1	1	-.02	.12	-.14	.89
	B2	1	.04	.13	.34	.73
	B3	1	-.05	.11	.47	.64
W17	B1	1	.10	.11	-.92	.36
	B2	1	-.04	.12	-.31	.76
	B3	1	-.08	.11	.78	.44
W18	B1	1	-.11	.12	-.92	.36
	B2	1	.18	.12	1.47	.15
	B3	1	-.07	.11	-.60	.55
W19	B1	1	.00	.14	-.01	.99
	B2	1	.03	.15	-.21	.83
	B3	1	.06	.13	-.43	.67

W20	B1	1	.02	.12	.17	.87
	B2	1	-.12	.12	-.94	.35
	B3	1	.05	.12	.45	.65
P1	B1	1	-.21	.14	-1.49	.14
	B2	1	.30	.15	2.07	.04
	B3	1	-.29	.13	-2.31	.02
P2	B1	1	.07	.12	.59	.55
	B2	1	-.11	.13	-.88	.38
	B3	1	-.01	.11	-.11	.91
P3	B1	1	-.12	.14	.86	.39
	B2	1	.09	.15	.60	.55
	B3	1	-.03	.13	-.03	.80
P4	B1	1	-.16	.22	-.70	.49
	B2	1	-.39	.23	-1.62	.11
	B3	1	.03	.21	.15	.88
P5	B1	1	-.15	.16	-.94	.35
	B2	1	.06	.17	.37	.72
	B3	1	-.16	.15	-1.07	.29
P6	B1	1	.00	.17	.02	.98
	B2	1	-.22	.18	-1.23	.22
	B3	1	-.12	.16	-.75	.45
P7	B1	1	-.04	.17	-.20	.84
	B2	1	-.27	.18	-1.53	.13
	B3	1	.02	.16	.15	.88
P8	B1	1	-.23	.10	-2.51	.01
	B2	1	.09	.10	.92	.36
	B3	1	-.17	.09	-1.91	.06
P9	B1	1	-.40	.20	-2.06	.04
	B2	1	.50	.21	2.26	.03
	B3	1	-.18	.18	-1.02	.31
P10	B1	1	-.18	.10	-1.63	.11
	B2	1	.25	.12	2.15	.04
	B3	1	-.05	.10	-.51	.61
P11	B1	1	-.29	.16	-1.87	.07
	B2	1	.25	.17	1.49	.14
	B3	1	-.12	.15	-.81	.42
P12	B1	1	-.22	.17	-1.31	.20
	B2	1	-.39	.18	-2.17	.03
	B3	1	.11	.16	.72	.48
P13	B1	1	-.07	.14	-.49	.70
	B2	1	.13	.15	1.01	.32
	B3	1	-.34	.13	-2.71	.01

P14	B1	1	-.18	.15	-1.37	.17
	B2	1	.06	.16	.40	.70
	B3	1	-.26	.14	-1.94	.06
P15	B1	1	-.24	.15	-1.55	.13
	B2	1	-.01	.16	-.07	.95
	B3	1	-.15	.14	-1.03	.31
P16	B1	1	-.26	.14	-1.85	.07
	B2	1	.11	.15	.74	.46
	B3	1	-.25	.13	-1.96	.05
P17	B1	1	-.11	.14	-.80	.42
	B2	1	-.12	.15	-.82	.42
	B3	1	.15	.13	-1.18	.24
P18	B1	1	.09	.15	.60	.55
	B2	1	.06	.15	-.40	.69
	B3	1	-.10	.14	-.77	.45
P19	B1	1	.01	.16	.02	.98
	B2	1	-.10	.17	-.59	.56
	B3	1	.17	.15	-1.19	.24
P20	B1	1	-.03	.15	-.16	.87
	B2	1	.27	.16	1.69	.10
	B3	1	.33	.14	-2.31	.02

APPENDIX C

LETTER TO PRESIDENT

N.C. LOCAL HEALTH DIRECTORS' ASSOCIATION

September 6, 1995

Mr. Russ Childers,
Director
Graham-Swain District Health Department
P.O. Box 546
Bryson City, NC 28713

Dear Russ:

Thanks for meeting with me to discuss the leadership study planned cooperatively with University of Tennessee and the North Carolina Association of Local Health Directors. Our purpose will be to determine the frequency and type of leadership practices local health directors initiate to create high performance in their agencies.

I plan to mail a brief survey to the entire population of North Carolina Health Directors in mid-October. Your assistance in securing a 100% return is much appreciated! The results of the research will be shared with your association and hopefully can be used in planning for your leadership training activities.

Thanks again for your help. You have a beautiful place to work there in the Smokies and I hope to return again soon.

Sincerely,

Gary Taylor
Ph.D. Candidate

APPENDIX D

PERMISSION FROM UTK

INSTITUTIONAL REVIEW BOARD

THE UNIVERSITY OF TENNESSEE
KNOXVILLE

Research Administration
Compliances
Grants & Contracts
Research Advancement
404 Andy Holt Tower
Knoxville, Tennessee 37996-0140
(615) 974-3466
FAX (615) 974-2805

09/12/95

IRB # : 4839 A

Title : Leadership Practices Survey

Taylor, Gary A.
Human Resources Development
385 HPER Bldg.
Campus

Petty, Dr. Greg
Human Resources Development
385 HPER Bldg.
Campus

The project listed above has been reviewed and has been certified as EXEMPT from review by the Institutional Review Board.

Unless there are major changes in the experimental methods or project design, no further reporting to this office is required. The responsibility for oversight of this project becomes that of the Principal Investigator, Student Advisor (if any), and the Departmental Review Committee.

We wish you success in your research endeavors.

Sincerely,

Steven B. Pulik
Coordinator of Compliances

cc: Dr. Peter Dean

Attachment: Form A

Vita

Gary A. Taylor was born in Cincinnati, Ohio on June 6, 1949. He graduated from Western Kentucky University with a B.S. degree in biology and agriculture in 1972. He taught high school science in Kentucky and then completed the Master's of Public Health degree at the University of Tennessee. He worked for the North Carolina Division of Health Services as a health education consultant in the Eastern counties of the state. During this period he also completed a Master's degree in Adult Education at East Carolina University.

Taylor served for eleven years as a local public health director in Beaufort County, North Carolina. He returned to the University of Tennessee in 1994 to complete the requirements for a Ph.D. in Human Ecology with a concentration in Human Resource Development. He currently resides in Knoxville with his wife Sue and two sons, Alex and Dylan. He enjoys music, travel, fishing and hiking for recreation.