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A Study of Student Health Services in Four-Year Post-Secondary Institutions

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A STUDY OF STUDENT HEALTH SERVICES
IN FOUR-YEAR POST-SECONDARY INSTITUTIONS

A Thesis
Presented to
the Faculty of the Department of Public Health
Western Kentucky University
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In Partial Fulfillment of
the Requirements for the Degree
Master of Science

By
Timothy Lee Laugh
May 1996
A STUDY OF STUDENT HEALTH SERVICES
IN FOUR-YEAR POST-SECONDARY INSTITUTIONS

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[Signatures]

Dean, Graduate Studies and Research Date
The purpose of this study was to address any changes in select organizational and director or CEO attributes between 1989 and 1994, as well as, to determine whether or not college student health services are systematically evaluating their programs and incorporating efficiency measures used in other health care settings.

The population of study was student health services at four-year institutions of post-secondary education in the United States.

This researcher resurveyed the sample used by Kevin E. Charles in 1989 in order to allow the evaluation of temporal trends. The sample was a stratified, random sample of 400 institutions. Data were collected via a mail survey. A questionnaire was mailed to student health service directors.

The findings of this study revealed that significant changes have occurred in the organizational and leadership characteristics of Student Health Services. However, they do not appear to be restructuring or adapting quality/efficiency enhancements as rapidly as the health
care industry.
TABLE OF CONTENTS

LIST OF TABLES ......................................................... vi

Chapter 1. INTRODUCTION ............................................. 1

    Definition of Terms ............................................. 4
    Purpose of the Study ............................................ 4

Chapter 2. LITERATURE REVIEW ....................................... 6

Chapter 3. METHODS .................................................... 24

    Population ...................................................... 24
    Sample .......................................................... 25
    Variable Definition ............................................ 26
    Organizational Attributes ..................................... 26
    Director or CEO Attributes .................................... 28
    Student Health Service Evaluation Attributes ................. 29
    Instrumentation .................................................. 30
    Variable Measurement .......................................... 31
    Data Collection .................................................. 32
    Statistical Analyses ............................................ 33
    Summary .......................................................... 33

Chapter 4. RESULTS .................................................... 35

    Research Question 1 ............................................. 36
    Research Question 2 ............................................. 58
    Research Question 3 ............................................. 61

Chapter 5. DISCUSSIONS AND CONCLUSIONS ............................. 65

    Recommendation .................................................. 70

REFERENCES .......................................................... 72

APPENDIX A. QUESTIONNAIRE ......................................... 75
APPENDIX B. STATE BY REGION ....................................... 79
<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.0  Comparison of Population, Sample, and Respondent by Institution Type and Control</td>
<td>37</td>
</tr>
<tr>
<td>4.1  Percentage of Students On or Off Campus</td>
<td>40</td>
</tr>
<tr>
<td>4.2  Number and Percentage of Respondents Operating Medical Schools</td>
<td>41</td>
</tr>
<tr>
<td>4.3  Overall Operating Budgets, Frequencies and Percentages</td>
<td>43</td>
</tr>
<tr>
<td>4.4  Frequencies and Percentages for Operating Budgets by institution Type and Control</td>
<td>44</td>
</tr>
<tr>
<td>4.5  Descriptive Statistics for Percentages of Funding by Source</td>
<td>46</td>
</tr>
<tr>
<td>4.6  Overall Service Capabilities, Frequency, and Percentages</td>
<td>47</td>
</tr>
<tr>
<td>4.7  Inpatient Capability by Institution Type and Control</td>
<td>48</td>
</tr>
<tr>
<td>4.8  Outpatient Capabilities by Institution Type and Control</td>
<td>50</td>
</tr>
<tr>
<td>4.9  Professional Staffing Patterns in SHS</td>
<td>51</td>
</tr>
<tr>
<td>4.10 Physicians by Specialty</td>
<td>53</td>
</tr>
<tr>
<td>4.11 Successfully Able to Recruit Professional Staff by Institution Type and Control</td>
<td>55</td>
</tr>
<tr>
<td>4.12 Components of the Health Promotion Program</td>
<td>57</td>
</tr>
<tr>
<td>4.13 Director's or Chief Executive Officers' Age</td>
<td>60</td>
</tr>
<tr>
<td>4.14 SHS Modification of Services in Last Five Years</td>
<td>63</td>
</tr>
</tbody>
</table>
CHAPTER 1
INTRODUCTION

College and university health services have survived in various forms for over a century. These services are part of the overall effort of institutions of post-secondary education to meet the basic needs of their students. Roemer wrote in 1981, "although ... the scope (and nature) of these services is highly variable, college (and university) health programs clearly constitute a significant source of organized ambulatory care for young adults" (132). This organized ambulatory care for young adults is unique in comparison to the standard, mainstream, medical clinics that now exist for ambulatory patients. The student health services' role is both to provide ambulatory care and to enable its customers to live a healthier lifestyle by emphasizing prevention and health education. This role is in contrast to community clinics whose missions are acute clinical care.

The uniqueness of many college and university health services comes from their philosophy to educate and to encourage self-treatment and wellness. This philosophy differs significantly from the larger health care system whose focus is primarily diagnosis and treatment.
The modern health care system often looks for breakthrough technologies or drugs instead of focusing on the prevention of disease. Modern health care focuses on the ailing part or parts and the selection of the best modality of treatment for cure or palliation. In contrast, many campus student health services have gone one step further by practicing holistic health care. The practice of holistic health care requires a broad scope of health service capabilities and health promotion programs. This broad scope is needed in order to provide treatment and wellness to the whole body or person. It takes into account the following six dimensions: intellectual, emotional, physical, social, occupational, and spiritual (Hettler, 1984).

Unfortunately, a definitive description of the prototypical college or university health service remains obscure due to the broad range that exists between treatment oriented and holistic or wellness oriented health care. The descriptions' obscurity is further complicated by the variability among post-secondary institutions in terms of size, clientele, funding sources, and missions. Many changes in higher education, health care, and society may have altered student health services' organizational attributes and director or CEO characteristics in recent years. These changes have occurred as a result of increasing health care costs, increasing demands for accountability, changing societal health awareness, and
cutbacks in state and federal funding. Therefore, a definitive description of the prototypical college or university health service remains unclear.

It is clear, however, that colleges and universities provide settings for a population of adolescents and young adults in which priority health issues can be addressed through health education and services. By changing the lifestyles of adolescents during these impressionable years, we can aspire to decrease the chronic, debilitating diseases that plague this nation.

Unfortunately, this country has a health care crisis which may undermine the scope and survival of student health services. Like mainstream hospitals and clinics, student health services are being forced to evaluate their cost effectiveness. They may need to look for ways to improve staff productivity and efficiency through new techniques such as critical paths or total quality management which are being increasingly used in the health care industry.

It is impossible to put a price tag on the wellness influence a student health service can make on its clientele. However, depending upon the philosophy of the institution, cutbacks or dissolving of the student health service may occur if the philosophy of the institution is focused exclusively on the classroom (Cage, 1992). Consequently, many student health services may be discontinuing, privatizing, and/or forced to seek
contractual arrangements for some health care services due to health care reform, market forces, and/or cutbacks in state and federal funding.

**Definition of Terms**

**Institution Type** - the category of post-secondary institution as delineated by the Carnegie Foundation for the Advancements of Teaching (1987).

**Wellness** - the proactive process through which individuals modify their lifestyle to achieve a more successful existence. Wellness can be divided into these six dimensions: social, occupational, spiritual, physical, intellectual, and emotional (Hettler, 1984).

**Holistic Health Care** - the concern for the whole person. Health care which takes into account the mind, body, and spirit as well as environmental forces impinging on the person (Van Ness, 1981).

**Attributes** - the specific facts that describe the college or university student health services.

**Purpose of the Study**

The purpose of this study is to address any changes in
select organizational and director or CEO attributes between 1989 and 1994, as well as, to determine whether or not college student health services are systematically evaluating their programs and incorporating efficiency measures used in other health care settings.

This study will be built upon the work of Charles (1990) and will determine if significant changes have occurred in the organizational attributes of college health services during this five year time interval. The study results will also assess whether changes in the economic and political environment have resulted in changes in the characteristics of the director or CEO of the student health services and caused student health services to adopt efficiency enhancement and evaluation methods currently being used in the health care system.
The American College Health Association estimates that the majority of four-year and graduate institutions of post-secondary education in this country provide some level of direct health care for their students. Direct health care coverage provided to students would approximately equate to ten million individuals or 80% of all U.S. college students (Patrick, 1988). As the number of students in post-secondary education increased during the 1970s, the number of institutions of higher learning also increased. The number of college and university health services has grown along with the number of colleges and universities.

Unfortunately, during the period of increase, many college and university health services apparently did not adhere to American College Health Association (ACHA) guidelines to help structure health services on campus. Otherwise, all college and university school health programs would be influencing, enabling and reinforcing student health behavior. ACHA provides a useful delineation of student health services in its publication entitled "Recommended Standards and Practices for a College Health Program" (1984). These Standards and Practices recommend
the establishment of goals and objectives through the needs assessment process and the representation of four major activity areas: community health education, patient education, student orientation and relations, and formal health instruction. Each of these areas should have statements of goals, strategies, and measurable objectives according to the ACHA report.

Some topics suggested by ACHA for college health education and promotion programming included: stress management, eating patterns and nutrition, smoking of various substances, sexual relationships, fitness/exercise and emergency care.

The ACHA lists the following main areas of responsibility for college and university health services:

1. "Personal health services. These services include medical, dental, and surgical care, encompassing preventive, diagnostic, therapeutic rehabilitative services for both physical and emotional problems. It is important that these services focus attention not only on individuals, but upon total community health and welfare."

2. Environmental surveillance and control. This includes occupational medicine.

3. Education for health. This should include educational programs for individuals through which they may be motivated to healthful individual and community behaviors" (137-138).

Although most professionals concur on these three functions, they may strongly disagree on their respective
value or emphasis. Charles (1990) states that there may be
major differences in the extent to which those areas are
addressed, and some may not be addressed at all.

One practice at some colleges is to separate the
Student Health Program into a SHS directed toward
traditional ambulatory services and a wellness center
designed to encourage health education. Another practice is
to funnel the whole student body through a personal health
course and then have the SHS focus on ambulatory care with
only targeted health education as it applies to particular
problems at that college or university. An example of the
former practice as described by Sarvela et al (1990) shows
the importance of the Wellness Center.

A nominal group process conducted by Sarvela et al
(1990) of their Student Health Program which consisted of
two divisions, SHS and the Wellness Center, was very
informative in light of the ACHA main areas of
responsibility. The top four responses to the question,
"What do you think should be the goals of the Wellness
Center?" were:

"(1) to promote wellness or holistic health,
to increase awareness of healthy lifestyles; (2) to
provide resources and be a library of up-to-date
information and research; (3) to provide counseling
and support groups; (4) to establish networking and
referral with the student health programs, the
university programs and departments and local and
regional organizations and agencies" (Sarvela et
al, 1990 p. 29).

The ACHA exists because the membership espouses the
notion that post-secondary institutions have the responsibility to provide health services, direct or indirect, to their clientele (Charles, 1990). Health services are critical to the attainment of institutional objectives. As a result, they are tied to the academic missions of the institution: "The health program of the institution should recognize and support the goals of the institution in its pursuit of teaching, research, and service" (ACHA, 1984 p. 137). According to Boyer (1987), the importance and growth of health/wellness programs is to meet institutional goals and objectives:

"Most encouraging is the emerging emphasis on wellness. More and more colleges see health and body care as important educational objectives. This, in our opinion, should be a high priority on every campus.... Leaders of students' health centers [should] work directly with their counterparts in food service, intramural athletics, residence hall supervision, student government, and even the academic administration to assure that the institution's "wellness" program has the resources and endorsement of the whole campus" (186-187).

For example, at the University of Wisconsin Stevens Point, a Wellness Coordinator emphasizes the relationship between excellence in academic performance and the pursuit of individual physical excellence (Weston, 1984). Wisconsin's extensive, integrated wellness program helps students learn about the physical, emotional, occupational, spiritual, intellectual, and social dimensions of health.

This University has Lifestyle Assistants who are trained in the six dimensions of wellness. Their purpose
is to provide workshops, resources, programs, and support to students in the residence hall where they are assigned.

The key to the development and implementation of a successful health education and health services program is strategic planning (Sarvela et al, 1990). The results of a comprehensive strategic planning project conducted in 1988 for a university wellness center were based on a multiple measure approach in the assessment of future program needs. Sarvela et al (1990) measures included

"an epidemiological analysis of local, state, and national age-specific morbidity and mortality trends; a nominal group process which involved the collection of data from 12 different groups concerning their recommendations for Wellness Center programs goals; a student questionnaire designed to obtain student perceptions of the Wellness Center; and a review of the Surgeon General's Health Goals for 1990 and projected year 2000 priority areas" (24).

Since a national interest is emerging for proactive health programs and wellness activities in governmental agencies, industry and communities (Leafgren 1984), it should be the aim or responsibility of every student health program to facilitate responsible decision making by students in preparation for achieving a healthy lifestyle. Patrick (1988) suggests that such a responsibility holds implications for influencing the future of our country:

"Perhaps the greatest strength of student health care is the opportunity to favorably alter risk factors for many causes of premature morbidity and mortality. There is little question that we are becoming more adept at behavioral and lifestyle change. The integration of behavior change processes into the ambulatory care arena and into-
community-based health promotion programs is the ultimate goal of many. To achieve this in a medical environment with a continually renewing cohort of young adults is to favorably influence the health of future generations. It is difficult to imagine a more suitable system in which to achieve these ends than one of health care facilities easily available to a sizable -- and influential -- percentage of this nation's youth" (3305).

Based on a review of the literature, it appears that suitable systems exist to achieve the ends mentioned above. Since many college students rely on the Student Health Service for treatment (Lipnickey 1988, CHO 1994), these services have the opportunity to be proactive and favorably alter risk factors for many causes of premature morbidity and mortality. This proactiveness is very much needed in light of a study done by Palmer (1994) using the Health Knowledge Inventory to assess general health knowledge of college students.

"The results of this study confirm that college-aged students are not well informed about health. Of the 11 health topic subscales, percentage of correct responses ranged from 45% for communicable disease to 78% for nutrition" (89).

It is easy to see in light of these findings why existing college health services are increasing their emphasis on more "holistic" approaches to health care. These approaches are more in line with wellness/development philosophies. The five assumptions which characterize the holistic health movement as described by Kopelman and Muskop (1981) will provide a foundation for the discussion of the
director's or chief executive officer's attributes, as well as, changes that may be occurring in SHS. The five tenets of holistic health movement include:

1. "Health should be defined positively in terms of well-being, rather than negatively in terms of the absence of disease the disruption of function, or departure from some norm. Health is defined in terms of the goals of integrated physical, mental, social, and (most but not all include) spiritual well-being;

2. Individuals ought to be encouraged to take responsibility for their own health or illness. The primary responsibility for well-being falls to the individual and not to the physician or health provider;

3. Providers ought to serve as teachers to educate or work with people who, though able, may not want to take responsibility for their own lives, or may not have a clear view about what their well-being is or how to secure it;

4. Health care delivery systems ought to be changed to address behavioral, social, and environmental causes of illness more effectively;

5. Natural or non-invasive means of promoting well-being should be stressed. An emphasis is on nurturing the body's natural healing process" (211-215).

A SHS stand on holistic health care verses traditional health care may depend on the administrator or director. Their view of these principles may depend on their specific training. For example, Kalma (1983) suggests that nurse/nurse practitioner administrators' "grounding in nursing assures an orientation toward health teaching and holistic treatment of clients" (326). In contrast, Klotz (1974) contends that traditional physician-oriented health
services are unresponsive to student needs due to physicians usually non-holistic training and background:

"The typical student health service is almost invariably set up by physicians trained in the diagnoses and treatment of illness and disease (medical care). Their training took place in an inpatient hospital rarely frequented by teenagers and young adults who frankly need "health" care and counseling more often than they need "medical" care" (6).

A SHS philosophical stand on holistic health care verses traditional health care may become clouded if it becomes necessary to hire a business or health care administration oriented director or CEO in response to the rapidly changing health care climate. The philosophical emphasis of many health services is only one of several obstacles facing SHS across this country. The need for an administrator who is better qualified to handle the economic challenges effecting college SHS may become paramount.

There are six major trends effecting SHS across this country. Monat (1985) outlined five major trends: competition for enrollments, quality consciousness, fiscal constraints, influx of nontraditional students, and accountability. In addition to these, which still exist, health care reform must be added in the 1990s. Depending upon the institution, each of these trends impact the health services to varying degrees and may require new SHS leadership.

Competition for students has been brought about by a
half-century of expansion of American higher education. According to Ostling (1992), the emphasis was on bigger and better with "more course offerings, bigger and better paid faculties, new graduate schools and elaborately equipped laboratories and more diverse student bodies" (61). However, with demographic changes and a changing economic climate, contraction is now the name of the game. As state, federal, and private sources of funds contract, and bills from the fast-spending 1980s came due, even the most elite colleges are facing a financial "crunch" that promises to reshape the contours of higher education (Ostling, 1992). With both private and public colleges retrenching in an effort to stay afloat, the competition for enrollments can only increase as college expenses continue to rise; high school graduate numbers decline in almost all areas of the country (Beckley and Grace, 1991); college tuition and living expense increases further shrink the pool of applicants; and birthrates decline reducing the pool of applicants in the decades to come.

Ultimately, the financially weakest colleges will fail despite cutbacks. The decision for some colleges will be to consolidate or shut down. According to Ostling (1992), "such decisions promise to make the coming decade the most difficult ever faced by America's institutions of higher learning. By the year 2000, many educators predict, the country will have leaner universities and a smaller system of higher education. But that may be appropriate. In the past 20 years, too many colleges over built, too many aspired to do too much, and as a result, too
many are competing frantically and wastefully for the same students" (63).

Both quality consciousness and fiscal constraints have forced student health services to try to increase productivity and efficiency while improving or maintaining existing quality levels. Maintaining or improving quality levels is extremely difficult given rising health costs, decreased reimbursement rates, and the push to provide medical coverage to all. These challenges are compounded by budget cutbacks that have faced colleges in recent years. Support services are frequently targeted first for cutbacks, for elimination, or for developing other means of providing them with fewer resources (Cage, 1992). For example, a health service system using a holistic approach which emphasizes health education and prevention may seem too costly.

The number of high school graduates has been decreasing since the early 1980s, and colleges and universities have responded to the decrease by shifting to nontraditional-aged and international students (Beckley and Grace, 1994). Dodge (1991) reports the surge of students from Asia and Eastern Europe lifted foreign enrollments in the United States to a record level of 407,500 in 1990.

The area of accountability involves various constituencies and "shareholders" in higher education which includes students, parents, community people, faculty and staff, regulatory and accrediting agencies, etc. (Charles,
1990). Each of these have expectations for any given institution. Each has their own viewpoint about what the role and mission of the health services should be. The area of accountability is very complex and difficult to manage with so many players.

The final challenge facing Student Health Services in this country is health care reform. Under national and state reform, college health professionals need to be concerned about their role in meeting the unique health care and health education needs of college students. Beckley and Grace (1994), in proposing a solution to this potential problem, think this may be an "all or nothing" proposition.

"Either colleges and universities will have exclusive control of health care delivery for the college student population or else college health will not be a major force in health care reform. If college health is to play a meaningful role in future government-controlled health insurance programs, it must first demonstrate that current health services and insurance financing programs meet minimum quality standards. This proposal calls for expanding existing federal laws to create qualified student health plans and integrating the college health model into a reform package based on employer-sponsored health insurance. The concept of qualified student health plans ... would ultimately eliminate the current situation in which large numbers of college students are uninsured or underinsured" (139).

With 43% of 19 to 34 year old persons uninsured and countless others underinsured (Beckley and Grace, 1994), college health services are faced with a dilemma. This dilemma, funding indigent care, is exacerbated since parental health insurance coverage through employers has
become less available and inadequate. Even more problematic is the rise in underinsured students due to increasing health care costs. Rising health care costs have forced large numbers of employers to reduce benefits, to implement managed care programs, or to do both (Harris, 1992). Managed care plans create severe problems for colleges and universities because students usually have only life-threatening emergency medical care coverage while away at school. They must return to the managed care plan service area to receive insurance reimbursements for other health care services, thereby creating an uninsured status for most of their medical and mental health care needs (Beckley and Grace, 1994). The dilemma of funding indigent care is complicated by decreased or stagnant institutional funding, funding from prepaid fees, and increased fee for service charges (Patrick, 1993). According to Beckley and Grace (1994), "some colleges and universities have mitigated funding difficulties for student health services by using the student health insurance plan as a revenue source" (140).

The student health insurance plan has become mandatory in some form in 40% of major public universities. Unfortunately, only a few universities with voluntary plans have been able to move to mandatory insurance (ACHA, 1992). The current systems of student health care delivery and financing are dysfunctional. The system would be better
served by a single institution-based student health care
delivery and financing system (Beckley and Grace, 1994).

Putting the funding issue aside, student health
services can serve as a model for our nation's health care
system because of their emphasis on wellness and health
promotion. According to Bergy (1985), "the world is just
catching up to something we've emphasized for at least 15
years" (54). He mentions that the emphasis on wellness and
health promotion is one method for constraining future
health care costs. With the growth of managed care,
physician income will decrease and less medical care will be
furnished on a fee-for-service basis. The result will be a
larger number of physicians available for health service
work and they will view salaried employment much less
critically than in the past (Bergy, 1985). Bergy (1985)
concludes that

..."health care in the 1990s will be more
competitive, and there will be a great deal more
concern about cost. However, for our field this is
an opportunity because we are cost effective and
can be the preferred providers. We will have a
greater opportunity to secure the best of staff,
and we will have a great deal more support for
wellness, health promotion, and health education"
(54).

This opportunity also exists because the strengths of
the college model have stood the test of time by blending
primary medical care, mental health services, and health
education with prepaid financing. In short, "college health
was among the nation's first managed care plans" (Beckley

"The future of the college health field can only be assured if (1) college health services are at the center of solving the problem of uninsured and underinsured college students; and (2) college health is a distinct entity with the side responsibility for providing health care delivery and financing/insurance to all students" (139).

The future of the college health field can only be achieved by integrating college health into national health care reform by modifications to existing federal laws that deal with employee benefit plans and health maintenance organizations (Beckley and Grace, 1994).

The threat of health care reform has caused the administrative structure of most health care organizations as well as some SHS to enact their own restructuring. Health care costs are rising, reimbursement rates are decreasing, and pressure exists to eventually provide medical coverage to all citizens. This restructuring is aimed at bringing costs under control--while at the same time improving quality in order to create a more efficient and productive system for the providers, consumers, patients, and payers.

System restructuring has taken many different forms. Whether it is continuous quality improvement (CQI) or total quality management (TQM), many health care providers are adopting quality improvement methods to improve clinical
quality while simultaneously reducing the cost that results from poor quality (McCabe, 1992). This issue has become a very important one in the transition to a health care system that is demanding both higher quality and lower cost (Bender, 1993). In order to improve on the quality of care while reducing costs, TQM principles must be adopted and incorporated into the structure of doing things through every level of management in the health care facility.

Another area of restructuring in both the private health care sector and SHS is modifying services. Modifying services includes discontinuing services, privatizing services, and/or entering contract management arrangements to provide services. These modifications represent attempts to make the facility more economically viable in these rapidly changing times.

Health maintenance organizations (HMOs), like SHS, are leading the way to a greater emphasis on wellness/health promotion. With the growth of HMOs as an alternative option for health care insurance, the health care industry is seeing a shift in focus from tertiary care to a focus on primary care. This scenario is both good and bad. It is good in that it models SHS by having a primary care focus. It is potentially bad because managed care networks in communities will be suddenly competing for the same medical personnel that SHS need to hire. With the shortage of primary care physicians, physician assistants, and nurse
practitioners that already exists, SHS trouble in recruiting qualified personnel may be exacerbated since they are frequently unable to offer competitive salaries.

In summary, the literature on college and university health services is somewhat limited. In this review the researcher has sought to highlight their general natures and purposes—as well as, the impending changes caused by scarce federal, state, and organizational resources.

Two evident themes derived from the literature are that most student health services practice a "wellness" model of care and that colleges and universities are undergoing significant changes.

Colleges and universities have grown and developed paralleling this country's hospital system. However, college and university health services are unlike hospitals or typical health clinics because "many college health professionals espouse a holistic, educational philosophy, often referred to as a "wellness" model of care" (Charles, 1990 p. 43). With this special philosophy, student health services are an example of the proactive health programs and wellness activities that are occurring in governmental agencies, industry, and communities. Student health services need to lead the charge to encourage our nation's students to adopt healthier lifestyles.

"The fact that the federal government spends more than 75% of its health care dollars caring for
people with chronic diseases, such as heart disease, strokes, and cancer while at the same time, less than half of 1% is spent to prevent these same diseases from occurring" (Witmer and Sweeney, 1992 p. 140).

This fact is especially true since much of this morbidity and premature mortality originates from specific behaviors which frequently are established during youth (Parcel, 1988).

Along with the difficulties that arise from trying to provide a wellness model of care comes the college and university cutbacks that are occurring. Colleges and universities are facing some of the same challenges as hospitals. Excess capacity may lead to downsizing, merging or closing of some institutions. The pressure on colleges and universities is bound to impact their student health services.

This study was designed to explore changes in college or university health services in various types of institutions over the last five years since Kevin E. Charles' study in 1989. Specifically, it explores changes that have occurred in the organizational attributes and director's or CEO's attributes in light of changes in the operational environment. It also explores the SHS evaluation and restructuring processes that are occurring in order to stay economically viable.

The general research questions that will be addressed in this study are as follows:
1. Have there been any significant changes in select organizational attributes of college health services between 1989 and 1994?

2. Have characteristics of the chief executive officer or director of the SHS changed between 1989 and 1994?

3. Are SHS systematically evaluating their programs in selected areas or implementing selected efficiency/quality improvement measures?
CHAPTER 3
METHODS

The purpose of this study is to address any changes in select organizational and director or CEO attributes between 1989 and 1994, as well as, to determine whether or not college student health services are systematically evaluating their programs.

My study built upon the work of Charles (1990) and seeks to determine if significant changes have occurred in the organizational attributes of college health services during this five year time interval. I evaluated whether changes in the medical and political environment have resulted in changes in the characteristics of the director or CEO of the student health services and resulted in the adoption of some evaluation and efficiency measures currently being used in the health care system.

This chapter is a presentation of the research methods employed. The chapter includes the following components: population, sample, variable definition, instrumentation, variable measurement, data collection, and statistical analyses.

Population

The focus of this study was student health services at
four-year institutions of post-secondary education in the United States. There are approximately 1,380 (Carnegie, 1987) four-year institutions. The population included health services in six categories of institutions: doctorate-granting institutions (public and private); comprehensive universities and colleges (public and private); and liberal arts colleges (public and private) as classified by the Carnegie Foundation for the Advancement of Teaching (1987).

**Sample**

This researcher resurveyed the sample used by Charles (1990) in order to allow the evaluation of temporal trends. Charles' (1990) original sample was a stratified, random sample of 400 institutions. These institutions were abstracted based on a sampling fraction of 29% overall, and approximately 29% by institution type and control. This percentage should be large enough for the resultant data to be generalized to health services at four-year institutions of similar type and control. "Proportional allocation produced a sample which mirrored the population: 10% public doctorate-granting institutions; 6% private doctorate-granting institutions; 24% public comprehensive universities and colleges; 19% private comprehensive universities and colleges; 2% public liberal arts colleges; and, 39% private liberal arts colleges" (Charles, 1990).
Research Questions

Variable Definition

The survey questionnaire (Appendix A) addresses three sets of variables: organizational attributes, director or chief executive officer attributes, and student health service evaluation and efficiency attributes. The first two variables were included based on a prior study by Charles (1990) in order to evaluate student health service changes over the last five years. The third variable was designed to assess select program evaluation and efficiency enhancement activities. An expert panel consisting of Wayne Higgins Ph.D., Thomas Nicholson Ph.D., and Kevin Charles D.Ed. reviewed and approved the questionnaire. Data relative to all the variables were collected using a mailed questionnaire sent to health service directors.

Research Question #1
Organizational Attributes

Organizational attributes can be divided into post-secondary college and university variables and individual organizational variables. The institutions of post-secondary education were grouped by institutional type, institution control, and institutional region.

Institutional type is the classification assigned to institutions based on the Carnegie Foundation for the
Advancement of Teaching (1987) classification system. This classification consists of three categories: doctorate-granting institutions; comprehensive universities and colleges; and liberal arts colleges. An institution's control refers to its status as public or private (Carnegie 1987). The Carnegie classification system is used to compare and contrast various aspects of institutions of post-secondary education. The institutional region refers to the region of the country where the institution is located. For the purposes of this study, the regions (Appendix B) identified by the American College Health Association (1984) were used. They are Region I, South-Southwest; Region II, Central; Region III, Mid-America; Region IV, Mid-Atlantic; Region V, Northeast; and, Region VI, West.

The individual school's organizational variables were assessed using a mailed questionnaire (Appendix A). The variables of interest are specified in questions 1-18 of the questionnaire. They were used to assess changes in select organizational attributes of college health services between 1989 and 1994. The specific research questions as they relate to this broad research question are as follows:

1. Have there been changes in the population served?
2. Have there been changes in the total student enrollment?
3. Have there been changes in the percentages of students living on campus versus off campus?
4. Have there been changes in the student health fee?
5. Have there been changes in the total operating budget for the SHS?
6. Have there been changes in the payer mix?
7. Have there been changes in health service capabilities?
8. Have there been changes in the total number of FTE positions?
9. Have there been changes in the number of physicians in each specialty?
10. Is the SHS able to recruit physicians, physician assistants, and nurse practitioners?
11. Have there been changes in the number of SHS that have a formal health promotion program?
12. Have there been changes in the components of the health promotion program?
13. Have there been changes in the number of SHS accredited?

**Research Question # 2**

**Director or Chief Executive Officer Attributes**

The director or CEO attribute questions were slightly modified from Charles' survey questions based on experience gained in that survey and input from the other members of
the thesis committee. The questions sought information to address the broad research question: "Have characteristics of the chief executive officer or director of SHS changed between 1989 and 1994?" More specific research questions which relate to this broad research question are as follows:

1. Have there been changes in academic training?
2. Have there been changes in the highest academic degree?
3. Have there been changes in age?
4. Have there been changes in gender?

**Research Question # 3**

**Student Health Service Evaluation and Efficiency Enhancement**

The final area of the survey instrument was the student health service evaluation and efficiency enhancement survey. This section was incorporated into the survey to evaluate changes that may be occurring in student health services due to health care reform, budgetary cutbacks, the growth of managed care and SHS restructuring across the country. A baseline set of data was not available. This section was designed to determine whether or not SHS are systematically evaluating their program and adopting efficiency enhancements in select areas. The more specific research questions which relate to this broad research statement are as follows:
1. Have you tried to evaluate the cost-effectiveness of your health service?
2. Have you evaluated staff productivity and, if so in what ways?
3. Do you have contractual arrangements for other levels of health care?
4. Do you have plans to expand, downsize or maintain the SHS in the next three years?
5. Within the last five years, has your institution modified your services by discontinuing, privatizing, and/or contract management?

Instrumentation

The survey instrument was derived in part from the instrument used by Charles (1990). Charles' survey instrument was developed by him with input from a panel of experts. His survey item pool was reduced from over 150 items to 80. He then developed a questionnaire containing the remaining 80 items and pilot tested it on 20 institutions of post-secondary education in Pennsylvania. Based on health service directors' inputs, the final survey instrument contained 57 items.

Charles' instrument served as the foundation for the instrument used in this survey. Three of the five content areas of Charles' study were incorporated. They were
Organizational Attributes, Institutional Attributes, and Director or Chief Executive Officer Attributes. The first two content areas were combined under the heading of Organizational Attributes. The order, wording, and some of the content of the questions were changed based on experience Charles gained in his study and advice from two other members of the thesis committee. The director or CEO attribute section contained the same four questions with a slight change in the wording. A blank space for the director/CEO age was used instead of three age groups in order to get a more accurate measure of age. For this last section of the survey instrument, Student Health Service Evaluation and Efficiency, there was no existing instrument appropriate to gather the necessary data. These questions were developed with input from the research committee. The survey instrument is presented in Appendix A.

**Variable Measurement**

Organizational attributes, director or CEO attributes, and student health service evaluation attributes were primarily categorical variables for which frequencies, percentages, and means served as appropriate summary measures. Significance tests are used for those organizational variables that both Charles (1990) and this researcher measured. The above mentioned attributes were
included in sections I, II, and III of the questionnaire respectively.

Data Collection

The questionnaire was mailed to the student health service directors at each of the institutions in the sample on April 27, 1994. The cover letter was the first page of the four page survey. It asked the directors to complete the questionnaire and return it by May 25, 1994, in the self-addressed, stamped envelope provided.

There were three additional mailings to those who had not responded before the end of May. First, a postcard reminder was mailed on June 1, 1994 extending the May deadline to June 16, 1994. One-hundred and sixty-two postcard reminders were sent to nonresponding directors. Second, another questionnaire with an attached note on colorful, watermelon bond paper was sent with a self-addressed, stamped envelope. This second questionnaire was sent to 154 institutions on June 24, 1994. Finally, another postcard reminder was sent a week later extending the deadline to July 15, 1994. Although the complete span of time for the survey was two months, the vast majority of returns arrived after the first mailing and before July 15, 1994. A few surveys came in months after the deadline and were included in the results.
Statistical Analysis

Returned questionnaires were coded and prepared for analysis using the Statistical Analysis System (SAS). In order to answer research question 1, descriptive statistics and Chi Square tests were calculated for the set of organizational variables. The Chi Square tests were used to compare Charles' study results with the current study results. For research question 2, descriptive statistics were utilized to evaluate the CEO or director attributes. A Chi Square test was used to compare the changes in gender over this five year period. Otherwise, general comparisons were made with Charles' study results. For the final research question, which asked about student health service evaluation characteristics, descriptive statistics were calculated.

Summary

This chapter presented the methodology utilized to accomplish the purposes of the study. Descriptions of the population, sample, variable definition, instrumentation, variable measurement, data collection procedures, and statistical analyses were specified. The population was student health services in the 1,380 four-year public and private colleges. A random, proportional sample of 400 of
these institutions stratified by type and control was drawn. Three sets of variables were measured: organizational attributes, director or chief executive officer attributes, and student health service evaluation activities. Data were collected using a survey questionnaire mailed to the directors or chief executive officers of the student health services at the institutions in the sample. Descriptive statistics and significance tests were used to answer the three research questions.
CHAPTER 4

RESULTS

The purpose of this study was to address any changes in select organizational and director, or CEO, attributes between 1989 and 1994, and to determine whether or not college student health services are systematically evaluating their programs and incorporating efficiency measures used in other health care settings. The study built upon the work of Charles (1990) in order to determine if significant changes have occurred in the organizational attributes of college health services during this five year time interval. This study also includes assessment of whether or not changes in the economic and political environments have resulted in changes in the characteristics of the director or CEO of the student health services and caused student health services to adopt efficiency enhancement and evaluation methods currently being used in the health care system.

The results of the resurveyed, stratified, random sample of 400 institutions used by Charles (1990) are presented for each of the research questions. Of the 400 institutions receiving questionnaires, 293 responded (for a response rate of 73.2%). Of those, 18 institutions reported
having no health service. Thus, the usable sample totaled 275 (68.8%). In the analysis by institution type, the usable sample was 272 (68%) due to three respondents who obliterated the code number on the questionnaire. A comparison of the population, sample, and respondents by institution type and control is shown in Table 4.0. Proportional allocation produced a sample which mirrored the population. As can be seen in Table 4.0, a comparison of the respondents to the population showed that the stratified sample matched the target population very closely. This chapter is organized in the form of a summary analysis relative to each of the three main research questions.

Research Question #1

Organizational Attributes

The individual school's organizational variables were assessed using a mailed questionnaire (Appendix A). The variables of interest specified in questions 1-18 of the questionnaire were used in order to discover changes in select organizational attributes of college health services between 1989 and 1994. The specific research questions as they relate to this broad research question are as follows:

1. Have there been changes in the population served?
2. Have there been changes in the total student enrollment?
3. Have there been changes in the percentages of
Table 4.0
Comparison of Population, Sample, and Respondent by Institution Type and Control

<table>
<thead>
<tr>
<th>Institution Type</th>
<th>Population</th>
<th></th>
<th></th>
<th>Sample</th>
<th></th>
<th></th>
<th>Respondents</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Public</td>
<td>Private</td>
<td>Public</td>
<td>Private</td>
<td>Public</td>
<td>Private</td>
<td>Public</td>
<td>Private</td>
<td></td>
</tr>
<tr>
<td>Doctoral</td>
<td>134(10%)</td>
<td>79(6%)</td>
<td>40(10%)</td>
<td>24(6%)</td>
<td>36(13%)</td>
<td>17(6%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comprehensive</td>
<td>331(24%)</td>
<td>264(19%)</td>
<td>96(24%)</td>
<td>76(19%)</td>
<td>68(25%)</td>
<td>50(18%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liberal Arts</td>
<td>32(2%)</td>
<td>540(39%)</td>
<td>8(2%)</td>
<td>156(39%)</td>
<td>4(2%)</td>
<td>97(36%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>1380</td>
<td>400</td>
<td>272</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Actual respondents totaled 293; 18 reported no health service; 3 obliterated the code number, eliminating those institutions from classification.*
students living on campus versus off campus?

4. Have there been changes in the student health fee?

5. Have there been changes in the total operating budget for the SHS?

6. Have there been changes in the payer mix?

7. Have there been changes in health service capabilities?

8. Have there been changes in the total number of FTE positions?

9. Have there been changes in the number of physicians in each specialty?

10. Is the SHS able to recruit physicians, physician assistants, and nurse practitioners?

11. Have there been changes in the number of SHS that have a formal health promotion program?

12. Have there been changes in the components of the health promotion program?

13. Have there been changes in the number of SHS accredited?

Changes in the population served does not have a reference base in the Charles (1990) study; therefore, a comparison cannot be made. The SHS served students in 275 (100%) of the usable sample. Faculty/Staff were served by 147 (53.4%). The remaining populations served were campus guests 87 (31.6%), students' dependents 37 (13.4%), faculty dependents 25 (9.1%) and other 18 (6.5%). A small portion
of the respondents mentioned that staff are only treated for workman's compensation 10 (3.6%) and emergency only 12 (4.4%). Campus guests were treated only on an emergency basis or first aid in 10 (3.6%) of the respondents.

The mean total student enrollment has increased 10.7% from 6165.4 in 1989 to 6901.1 in 1994. The standard deviation of total student enrollment has decreased by 0.16% from 8434.4 in 1989 to 8420.8 in 1994. The percentage of students on or off campus is depicted in Table 4.1. The mean percentage of students on campus has decreased by 5.9% from 1989 to 1994.

A total of 131 respondents provided information for the health fee question. The range for the replies was $1 to $999. This was skewed by one respondent's reply of $999. If this reply is omitted, the range would be $1 to $449. The mode was $25 and $50 with each having 7 respondents. The mean was $85.14 with a standard deviation of $116.64.

The student health fee varied among respondents. Eighty-two (30%) per semester reported the collection of fees, 27(10%) per academic year, 15(5%) per quarter, 10(4%) per year, and 8(3%) per credit hour.

The respondents data, in regards to a medical school operated on campus question, were similar to Charles' 1989 data. The comparison is in Table 4.2 with 530 respondents. There was no significant difference between the two studies.

The overall operating budgets for the SHS surveyed in
Table 4.1

Percentage of Students On or Off Campus

<table>
<thead>
<tr>
<th>Student's Descriptive Statistic</th>
<th>Charles 1989¹</th>
<th>Laugh 1994</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ON</td>
<td>OFF</td>
</tr>
<tr>
<td>Mean</td>
<td>53.1%</td>
<td>34.4%</td>
</tr>
<tr>
<td>Range</td>
<td>97%</td>
<td>99%</td>
</tr>
</tbody>
</table>

¹ Charles' (1989) data had a commuters section and off campus section which were combined for the descriptive statistics.
Table 4.2
Number and Percentage of Respondents Operating Medical Schools

<table>
<thead>
<tr>
<th>Study</th>
<th>Medical School</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>35 (13%)</td>
<td>235 (87%)</td>
</tr>
<tr>
<td>Charles (1989)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laugh (1994)</td>
<td></td>
<td>29 (10.7%)</td>
<td>241 (89.3%)</td>
</tr>
</tbody>
</table>

\[ \chi^2 (1, N = 530) = .0201, \text{ ns.} \]
the Charles (1990) study and in this study are displayed in Table 4.3. Although the Laugh study asked specifically what the operating budget was from each SHS, the respondents' data were grouped into the same ranges as Charles' 1989 data so a comparison can be made. For the purpose of performing a statistical significance test, the resultant data were reduced to four categories in order to perform a 2x4 Chi Square calculation. The ranges are <$50,001, $50,001-$500,000, $500,001-$1,500,000 and >$1,500,001. The Chi Square test measurement showed that the data from the two studies were different at the .001 level, $X^2 (3, N = 503) = 45.16.$

Since there is a statistically significant relationship between the studies of SHS and the overall operating budgets reported in the two studies, a Cramer's phi was done to measure the strength of association. The result was a Cramer's phi value of .30. Since the value is fairly small, the relationship between the two studies and the operating budgets of SHS seems to be small to moderate.

The frequencies and percentages for operating budgets by institution type and control is depicted in Table 4.4. In combining both studies, it is interesting to note that doctoral institutions have 69 (64%) respondents with operating budgets greater than $1,000,000 versus comprehensive institutions with 17 (7.2%) and liberal arts institutions with 0.
Table 4.3

Overall Operating Budgets

Frequencies (N) and Percentages (%)

<table>
<thead>
<tr>
<th>Amount</th>
<th>Charles</th>
<th></th>
<th>Laugh</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1989</td>
<td>1994</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N  (%)</td>
<td>N  (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;$50,001</td>
<td>15 (5.6)</td>
<td>60 (25.3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$50,001 - $100,000</td>
<td>85 (32.0)</td>
<td>39 (16.5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$100,001 - $150,000</td>
<td>46 (17.3)</td>
<td>15 (6.3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$150,001 - $250,000</td>
<td>23 (8.6)</td>
<td>28 (11.8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$250,001 - $500,000</td>
<td>22 (8.3)</td>
<td>24 (10.1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$500,001 - $1,000,000</td>
<td>30 (11.3)</td>
<td>25 (10.6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$1,000,001 - $1,500,000</td>
<td>20 (7.5)</td>
<td>14 (5.9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$1,500,001 - $2,000,000</td>
<td>16 (6.0)</td>
<td>6 (2.5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$2,000,001 - $3,000,000</td>
<td>2 (.8)</td>
<td>10 (4.2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$3,000,001 -</td>
<td>7 (2.6)</td>
<td>16 (6.8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td>11 (4.0)</td>
<td>38 (16.0)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Total percentages do not equal 100 due to adding % of missing frequencies (N)
Table 4.4

Frequencies (N) and Percentages (%) for Operating Budgets by Institution Type and Control

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Private Doctoral</td>
<td>17(31)</td>
<td>10(23)</td>
<td>15(27)</td>
<td>11(26)</td>
<td>13(21)</td>
<td>9(15)</td>
<td>54(52)</td>
<td>40(48)</td>
</tr>
<tr>
<td>Public Doctoral</td>
<td>0(0)</td>
<td>0(0)</td>
<td>0(0)</td>
<td>0(0)</td>
<td>0(0)</td>
<td>0(0)</td>
<td>0(0)</td>
<td>0(0)</td>
</tr>
<tr>
<td>Private Comprehensive</td>
<td>8(15)</td>
<td>4(9)</td>
<td>8(15)</td>
<td>4(9)</td>
<td>6(10)</td>
<td>5(8)</td>
<td>8(8)</td>
<td>5(6)</td>
</tr>
<tr>
<td>Public Comprehensive</td>
<td>1(5)</td>
<td>1(8)</td>
<td>2(6)</td>
<td>2(6)</td>
<td>11(18)</td>
<td>8(13)</td>
<td>4(4)</td>
<td>6(7)</td>
</tr>
<tr>
<td>Liberal Arts</td>
<td>54(52)</td>
<td>40(48)</td>
<td>10(16)</td>
<td>10(17)</td>
<td>20(19)</td>
<td>18(22)</td>
<td>8(8)</td>
<td>5(6)</td>
</tr>
<tr>
<td>&lt;$50,000</td>
<td>0(0)</td>
<td>0(0)</td>
<td>0(0)</td>
<td>0(0)</td>
<td>0(0)</td>
<td>0(0)</td>
<td>0(0)</td>
<td>0(0)</td>
</tr>
<tr>
<td>$50,001 - $100,000</td>
<td>1(5)</td>
<td>0(0)</td>
<td>0(0)</td>
<td>0(0)</td>
<td>15(27)</td>
<td>11(26)</td>
<td>10(16)</td>
<td>10(17)</td>
</tr>
<tr>
<td>$100,001 - $150,000</td>
<td>1(5)</td>
<td>1(8)</td>
<td>0(0)</td>
<td>0(0)</td>
<td>8(15)</td>
<td>4(9)</td>
<td>6(10)</td>
<td>5(8)</td>
</tr>
<tr>
<td>$150,001 - $250,000</td>
<td>1(5)</td>
<td>0(0)</td>
<td>2(6)</td>
<td>2(6)</td>
<td>4(7)</td>
<td>12(28)</td>
<td>11(18)</td>
<td>8(13)</td>
</tr>
<tr>
<td>$250,001 - $500,000</td>
<td>5(24)</td>
<td>2(17)</td>
<td>2(6)</td>
<td>3(8)</td>
<td>4(7)</td>
<td>2(5)</td>
<td>11(18)</td>
<td>7(12)</td>
</tr>
<tr>
<td>$500,001 - $1,000,000</td>
<td>4(19)</td>
<td>2(17)</td>
<td>4(12)</td>
<td>4(11)</td>
<td>3(5)</td>
<td>2(5)</td>
<td>5(8)</td>
<td>11(18)</td>
</tr>
<tr>
<td>$1,000,001 - $1,500,000</td>
<td>2(10)</td>
<td>3(25)</td>
<td>11(32)</td>
<td>4(11)</td>
<td>0(0)</td>
<td>0(0)</td>
<td>3(5)</td>
<td>7(12)</td>
</tr>
<tr>
<td>$1,500,001 - $2,000,000</td>
<td>0(0)</td>
<td>0(0)</td>
<td>2(6)</td>
<td>3(8)</td>
<td>0(0)</td>
<td>0(0)</td>
<td>0(0)</td>
<td>1(2)</td>
</tr>
<tr>
<td>$2,000,001 - $3,000,000</td>
<td>3(14)</td>
<td>1(8)</td>
<td>3(9)</td>
<td>8(22)</td>
<td>1(2)</td>
<td>0(0)</td>
<td>0(0)</td>
<td>1(2)</td>
</tr>
<tr>
<td>&gt;$3,000,000</td>
<td>4(19)</td>
<td>3(25)</td>
<td>10(29)</td>
<td>12(33)</td>
<td>0(0)</td>
<td>0(0)</td>
<td>1(2)</td>
<td>1(2)</td>
</tr>
<tr>
<td>Missing</td>
<td>0</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>7</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 4.5 presents the SHS funding by source for both the Charles' 1989 data and for this study's data. The two primary funding sources are general funds and prepaid health fee for both studies. There is no difference between the two groups, $X^2 (4 \ N = 821) = 8.45, \ p < .05$.

The student health services capabilities for Charles' 1989 and Laugh's 1994 data are displayed in Table 4.6. First aid and referral was the most popular service among SHS with 247 (90%) respondents selecting this service, up from 178 (64.3%) respondents in 1989.

A statistically significant difference existed between the two studies and SHS first aid and referral service, $X^2 (1, \ N = 552) = 50.98, \ p < .001$. This Chi Square value converted to a Phi Coefficient of .30. Therefore, the strength of the relationship between the two variables is weak to moderate.

The remaining service capabilities studied specifically in this study and their respected frequencies and percentages are displayed in Table 4.6. The general medical clinic 209 (76%) and women's health clinic 170 (62%) were the most popular services following first aid and referral. The most popular responses written in the other service capability section were counseling center 9 (3.3%), allergy 6 (2.2%), psychological services 4 (1.4%) and dental 4 (1.4%).

Table 4.7 presents the inpatient capability by
Table 4.5

Descriptive Statistics for

Percentages of Funding by Source

<table>
<thead>
<tr>
<th>1994 Source</th>
<th>1994 N</th>
<th>(%)</th>
<th>1989 N</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Out Of Pocket</td>
<td>74</td>
<td>26.7</td>
<td>89</td>
<td>32.4</td>
</tr>
<tr>
<td>Prepaid Health Fee</td>
<td>135</td>
<td>48.7</td>
<td>119</td>
<td>43.3</td>
</tr>
<tr>
<td>Third Party Payers</td>
<td>21</td>
<td>7.6</td>
<td>30</td>
<td>10.9</td>
</tr>
<tr>
<td>General Funds</td>
<td>138</td>
<td>49.8</td>
<td>162</td>
<td>58.9</td>
</tr>
<tr>
<td>Other (^1)</td>
<td>18</td>
<td>6.4</td>
<td>35</td>
<td>12.7</td>
</tr>
</tbody>
</table>

\(^1\) grants, gifts, etc.

\(\chi^2 (4, N = 821) = 8.45.\)
### Table 4.6

**Overall Service Capabilities**

<table>
<thead>
<tr>
<th>Service Capability</th>
<th>1989</th>
<th></th>
<th>1994</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(N)</td>
<td>(%)</td>
<td>(N)</td>
<td>(%)</td>
</tr>
<tr>
<td>First Aid and Referral&lt;sup&gt;1&lt;/sup&gt;</td>
<td>178</td>
<td>64.3</td>
<td>247</td>
<td>89.8</td>
</tr>
<tr>
<td>In-Patient Service</td>
<td>61</td>
<td>22.0</td>
<td>54</td>
<td>19.6</td>
</tr>
<tr>
<td>Other</td>
<td>43</td>
<td>15.5</td>
<td>58</td>
<td>21.1</td>
</tr>
<tr>
<td>Full Outpatient Service&lt;sup&gt;2&lt;/sup&gt;</td>
<td>162</td>
<td>58.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women's Health Clinic</td>
<td></td>
<td></td>
<td>170</td>
<td>61.8</td>
</tr>
<tr>
<td>Lab</td>
<td></td>
<td></td>
<td>153</td>
<td>55.6</td>
</tr>
<tr>
<td>Pharmacy</td>
<td></td>
<td></td>
<td>128</td>
<td>46.6</td>
</tr>
<tr>
<td>General Medical Clinic</td>
<td></td>
<td></td>
<td>209</td>
<td>75.6</td>
</tr>
<tr>
<td>Athletic Medicine</td>
<td></td>
<td></td>
<td>94</td>
<td>34.2</td>
</tr>
<tr>
<td>X-Ray</td>
<td></td>
<td></td>
<td>50</td>
<td>18.2</td>
</tr>
<tr>
<td>PT</td>
<td></td>
<td></td>
<td>39</td>
<td>14.2</td>
</tr>
</tbody>
</table>

**Note:** Respondents could check more than one

<sup>1</sup> $\chi^2 (1, N = 552) = 50.98$, $p < .001$

<sup>2</sup> Outpatient Service are broken down into specific capabilities in Laugh's 1994 data, but not in Charles' 1989 study.
Table 4.7

Inpatient Capability
by Institution Type and Control

<table>
<thead>
<tr>
<th>Institution Type</th>
<th>1989</th>
<th>1994</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private Doctorate-Granting</td>
<td>10 (48)</td>
<td>10 (59)</td>
</tr>
<tr>
<td>Public Doctorate-Granting</td>
<td>10 (29)</td>
<td>7 (19)</td>
</tr>
<tr>
<td>Private Comprehensive</td>
<td>13 (24)</td>
<td>11 (22)</td>
</tr>
<tr>
<td>Public Comprehensive</td>
<td>12 (19)</td>
<td>10 (15)</td>
</tr>
</tbody>
</table>
| Liberal Arts (Public and Private)
  | 16 (15) | 16 (16) |

1 Liberal Arts Colleges are presented combined since the respondent pool included only 3 under public control

\[ \chi^2 (1, N = 552) = .4783, \text{ ns.} \]
institution type and control for both the Charles' 1989 data and this study's data. There is no statistically significant difference between the two groups, $\chi^2 (1, N = 552) = .4783, p < .05$.

The mean number of beds utilized between the two studies did decline. Charles (1990) found a mean number of beds of 11.9 with a standard deviation of 21.41 while this researcher found an average of 10.8 with a standard deviation of 17.45. The mean number of beds from Charles' 1989 data and Laugh's 1994 data per institution type and control are as follows, respectively: Private Doctorate-Granting 13.7 and 11.6, Public Doctorate-Granting 13.0 and 7.7, Private Comprehensive 16.3 and 13.2, Public Comprehensive 9.5 and 7.9, and Liberal Arts 8.3 and 8.2.

Table 4.8 displays the outpatient capabilities by institution type and control. First aid/referral is broken down by institution type and control between both studies. Full outpatient services in Charles' (1990) study was divided into specific capabilities for this study. Only the top three outpatient health service capabilities are shown.

Table 4.9 displays the staffing patterns in SHS. There has been a decrease in the number of SHS with registered nurses and an increase in the number with nurse practitioners and health educators. Interestingly, the average number of health educators and nurse practitioners has remained constant for those SHS that have those
<table>
<thead>
<tr>
<th></th>
<th>N (%) with Various Outpatient Capabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N (%) with</td>
</tr>
<tr>
<td></td>
<td>First Aid/</td>
</tr>
<tr>
<td></td>
<td>Referral</td>
</tr>
<tr>
<td>Private Doctorate</td>
<td>11 (52)</td>
</tr>
<tr>
<td>Granting</td>
<td>13 (76)</td>
</tr>
<tr>
<td>Public Doctorate</td>
<td>9 (26)</td>
</tr>
<tr>
<td>Granting</td>
<td>31 (86)</td>
</tr>
<tr>
<td>Private Comprehensive</td>
<td>43 (78)</td>
</tr>
<tr>
<td></td>
<td>46 (92)</td>
</tr>
<tr>
<td>Public Comprehensive</td>
<td>39 (63)</td>
</tr>
<tr>
<td></td>
<td>62 (91)</td>
</tr>
<tr>
<td>Liberal Arts (Public and</td>
<td>75 (72)</td>
</tr>
<tr>
<td>Private)(^1)</td>
<td>92 (91)</td>
</tr>
</tbody>
</table>

\(^1\) Liberal Arts colleges are presented combined since the respondent pool included only 3 under public control.

\(^2\) These are the top three out-patient health service capabilities. Outpatient Services are broken down into specific capabilities in Laugh's 1994 data, but not in Charles' 1989 study.
Table 4.9
Professional Staffing Patterns in SHS

<table>
<thead>
<tr>
<th>Position</th>
<th>Charles 1989</th>
<th>Mean</th>
<th>SD</th>
<th>Laugh 1994</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurses (RN)¹</td>
<td>245 (88.4)</td>
<td>3.3</td>
<td>3.5</td>
<td>222 (80.7)</td>
<td>3.8</td>
<td>5.3</td>
</tr>
<tr>
<td>Nurses (LPN)</td>
<td>47 (17.0)</td>
<td>2.3</td>
<td>1.9</td>
<td>53 (19.3)</td>
<td>2.8</td>
<td>4.4</td>
</tr>
<tr>
<td>Nurse Practitioners²</td>
<td>83 (30.0)</td>
<td>2.6</td>
<td>2.7</td>
<td>106 (38.5)</td>
<td>2.6</td>
<td>3.4</td>
</tr>
<tr>
<td>Physicians' Assistants</td>
<td>27 (9.7)</td>
<td>2.0</td>
<td>1.1</td>
<td>24 (8.7)</td>
<td>1.8</td>
<td>0.9</td>
</tr>
<tr>
<td>Health Educators³</td>
<td>54 (19.5)</td>
<td>1.7</td>
<td>1.2</td>
<td>76 (27.6)</td>
<td>1.7</td>
<td>1.3</td>
</tr>
<tr>
<td>Pharmacist</td>
<td>*</td>
<td></td>
<td></td>
<td>43 (15.5)</td>
<td>1.9</td>
<td>1.1</td>
</tr>
<tr>
<td>Pharmacy Tech.</td>
<td>*</td>
<td></td>
<td></td>
<td>14 (15.1)</td>
<td>1.6</td>
<td>0.8</td>
</tr>
<tr>
<td>Radiologic Tech.</td>
<td>*</td>
<td></td>
<td></td>
<td>35 (12.7)</td>
<td>1.4</td>
<td>0.6</td>
</tr>
<tr>
<td>Laboratory Tech.</td>
<td>*</td>
<td></td>
<td></td>
<td>46 (16.7)</td>
<td>2.0</td>
<td>1.5</td>
</tr>
<tr>
<td>Medical Asst./Aides</td>
<td>*</td>
<td></td>
<td></td>
<td>52 (18.9)</td>
<td>2.9</td>
<td>3.4</td>
</tr>
<tr>
<td>Medical Tech.</td>
<td>*</td>
<td></td>
<td></td>
<td>31 (11.3)</td>
<td>1.9</td>
<td>1.4</td>
</tr>
</tbody>
</table>

* Not specifically inquired in the Charles 1989 study.

¹ ë² (1, N = 552) = 6.25, p < .02
² ë² (1, N = 552) = 4.48, p < .05
³ ë² (1, N = 552) = 5.09, p < .02
positions, despite more places having them. In contrast, although the number of SHS with registered nurses has declined, the average number of registered nurses has gone up 0.5 in those SHS that have that position.

The Chi Square test was statistically significant at the .02 level for the decline in registered nurses, $\chi^2 (1 \ N = 552) = 6.25$. This Chi Square value converted to a Phi Coefficient of .11 which indicates the strength of the relationship between the two variables is weak.

The Chi Square test was statistically significant at the .05 level for the increase in nurse practitioners, $\chi^2 (1 \ N = 552) = 4.481$. This Chi Square value converted to a Phi Coefficient of .09 which indicates the strength of the relationship between the two variables is weak.

The Chi Square test was statistically significant at the .02 level for the increase in health educators, $\chi^2 (1 \ N = 552) = 5.086$. This Chi Square value converted to a Phi Coefficient of .10 which indicates the strength of the relationship between the two variables is weak.

Table 4.10 displays the physicians by specialty in 1989 versus those contracted and employed in 1994. The use of Family/General Practice and Internal Medicine physicians has increased from 1989 to 1994, indicated by the next two paragraphs.

In 1989, 126 (45%) of the SHS utilized a Family/General Practice physician versus 64 (23.2%) contracted and 78 (28.4%)
### Table 4.10

**Physicians by Specialty**

<table>
<thead>
<tr>
<th>Specialty</th>
<th>1989 N (%)</th>
<th>1994 N (%)</th>
<th>1994 N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Staff</td>
<td>Contracted</td>
<td>Employed</td>
</tr>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
</tr>
<tr>
<td>Family/General Practice</td>
<td>126 (45.0)</td>
<td>2.0 1.8</td>
<td>64 (23.2)</td>
</tr>
<tr>
<td>Int. Medicine</td>
<td>61 (22.0)</td>
<td>2.2 3.3</td>
<td>30 (10.9)</td>
</tr>
<tr>
<td>Ophthalmology</td>
<td>*</td>
<td>2 (0.7)</td>
<td>3.5 3.5</td>
</tr>
<tr>
<td>Pediatrics</td>
<td>23 (8.3)</td>
<td>1.8 1.7</td>
<td>5 (1.8)</td>
</tr>
<tr>
<td>Orthopedics</td>
<td>19 (6.9)</td>
<td>0.8 0.9</td>
<td>13 (4.7)</td>
</tr>
<tr>
<td>Dermatology</td>
<td>*</td>
<td>9 (3.3)</td>
<td>1.2 0.4</td>
</tr>
<tr>
<td>Psychiatry</td>
<td>32 (11.6)</td>
<td>1.7 2.2</td>
<td>12 (4.4)</td>
</tr>
<tr>
<td>Gynecology</td>
<td>35 (12.6)</td>
<td>1.0 1.0</td>
<td>11 (4.0)</td>
</tr>
</tbody>
</table>

* Not specifically inquired in the Charles (1990) Study.

**Note.** The 1994 study inquired about contracted and employed physicians, the 1989 study did not make this distinction.

1 $\chi^2 (1, N = 552) = 2.09$, ns.
2 $\chi^2 (1, N = 552) = 2.33$, ns.
employed in 1994 for a total of 142 (51.6%). Assuming the physicians staffed in 1989 were both contracted and employed physicians, the 1994 data was combined for contracted and employed physicians so that a comparison could be made. A Chi Square test measurement was not statistically significant, $\chi^2 (1, N = 552) = 2.09$, ns.

In 1989, 61 (22%) of the SHS utilized an Internal Medicine physician versus 30 (10.9%) contracted and 46 (16.7%) employed in 1994 for a total of 76 (27.6%). Assuming the Internal Medicine physicians staffed in 1989 were both contracted and employed physicians, the 1994 data was combined for contracted and employed physicians so a comparison could be made. A Chi Square test measurement was not statistically significant, $\chi^2 (1, N = 552) = 2.33$, ns.

The remaining physician specialty's statistics are relatively unremarkable. It was interesting to observe a drop of 8 Gynecology physicians since the literature reports a steady increase in sexually transmitted diseases (STDs).

A Likert scale question was used to evaluate the successful recruitment of physicians, physician assistants and nurse practitioners. The response ranged from 1 to 5, one being strongly agree and 5 being strongly disagree. The median score for the three SHS positions were as follows: physicians 2.1, physician assistants 3.0, and nurse practitioners 2.6.

Table 4.11 displays the median score for each of the
Table 4.11
Successfully Able to Recruit Professional Staff by Institution Type and Control

<table>
<thead>
<tr>
<th></th>
<th>M.D.</th>
<th>P.A.</th>
<th>N.P.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private Doctorate</td>
<td>2.1</td>
<td>3.0</td>
<td>2.2</td>
</tr>
<tr>
<td>Private Comprehensive</td>
<td>1.9</td>
<td>2.7</td>
<td>2.3</td>
</tr>
<tr>
<td>Public Doctorate</td>
<td>1.8</td>
<td>2.5</td>
<td>2.2</td>
</tr>
<tr>
<td>Public Comprehensive</td>
<td>2.5</td>
<td>3.4</td>
<td>3.2</td>
</tr>
<tr>
<td>Public Liberal Arts</td>
<td>2.5</td>
<td>0</td>
<td>2.0</td>
</tr>
<tr>
<td>Private Liberal Arts</td>
<td>1.9</td>
<td>3.2</td>
<td>2.8</td>
</tr>
<tr>
<td>Combined Median</td>
<td>2.1</td>
<td>3.0</td>
<td>2.6</td>
</tr>
</tbody>
</table>

Note. Median score calculated based on Likert scale question (5 - strongly agree thru 1 - strongly disagree)
professional staff by institution type and control. Physicians were difficult to recruit for all institution types and control. Public Comprehensive SHS appear to be the only institution type and control that is close to neutral on recruiting nurse practitioners. The remaining institution types and controls appear to have difficulty recruiting nurse practitioners.

Both studies inquired whether a formal health promotion program exists at their SHS. Charles' 1989 data revealed 154 (58.6%) yes responses and 109 (41.4%) no responses. Likewise, Laugh's 1994 data revealed 149 (58.7%) yes responses and 105 (41.3%) no responses. A Chi Square test measurement was not statistically significant, $\chi^2 (1, N = 517) = .00032$, ns.

Table 4.12 displays the components of the health promotion programs from Charles' 1989 data and Laugh's 1994 data. The data reveals a growth in all components of the SHS health promotion programs except cardiopulmonary resuscitation (CPR).

The final area to be addressed in research question #1 is health service accreditation. It was found that 209 (86.7%) of the respondents are not accredited. Those SHS that are accredited were 13 (5.4%) JCAHO and 19 (7.9%) AAAHC. Nine (30%) of those became accredited in 1989 and 1990.
Table 4.12
Components of the Health Promotion Program

<table>
<thead>
<tr>
<th>Components</th>
<th>Charles 1989 N (%)</th>
<th>Laugh 1994 N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nutrition</td>
<td>127 (82.5)</td>
<td>140 (94.0)</td>
</tr>
<tr>
<td>Weight Loss/Control</td>
<td>114 (74.0)</td>
<td>113 (75.8)</td>
</tr>
<tr>
<td>Smoking Cessation</td>
<td>92 (59.7)</td>
<td>110 (73.8)</td>
</tr>
<tr>
<td>Exercise/Fitness</td>
<td>92 (59.7)</td>
<td>98 (65.8)</td>
</tr>
<tr>
<td>Stress Management</td>
<td>114 (74.0)</td>
<td>119 (79.9)</td>
</tr>
<tr>
<td>Alcohol Use/Abuse</td>
<td>136 (88.3)</td>
<td>149 (100)</td>
</tr>
<tr>
<td>&quot;Other&quot; drug use/Abuse</td>
<td>101 (65.6)</td>
<td>119 (79.9)</td>
</tr>
<tr>
<td>Sexuality/Contraception</td>
<td>140 (90.9)</td>
<td>145 (97.3)</td>
</tr>
<tr>
<td>Safety Education</td>
<td>38 (24.7)</td>
<td>54 (36.2)</td>
</tr>
<tr>
<td>CPR</td>
<td>69 (44.8)</td>
<td>60 (40.3)</td>
</tr>
<tr>
<td>Self Care</td>
<td>90 (58.4)</td>
<td>110 (73.8)</td>
</tr>
<tr>
<td>Wellness</td>
<td>119 (77.3)</td>
<td>127 (85.2)</td>
</tr>
<tr>
<td>Other 1</td>
<td>39 (25.3)</td>
<td>29 (19.5)</td>
</tr>
</tbody>
</table>

1 HIV Counseling and testing n = 8 and Sexual Abuse and Assault n = 9 accounted for 58.6% of the responses in the 1994 study.
Research Question # 2

Director or Chief Executive Officer Attributes

The director or CEO attribute questions were slightly modified from Charles' survey questions based on experience gained in that study and input from the thesis committee. The questions sought to address the broad research question have characteristics of the director or chief executive officer of SHS changed between 1989 and 1994? The specific research questions which relate to this broad research question are as follows:

1. Have there been changes in academic training?
2. Have there been changes in the highest academic degree?
3. Have there been changes in age?
4. Have there been changes in gender?

The academic training of the directors or CEOs has realized little change from 1989 to 1994. There has been a minor decrease in physician leadership from 81 (30.7%) in 1989 to 74 (27.8%) in 1994. A 2x2 Chi Square test measurement was not statistically significant for the physician, director or CEO leadership change in the last 5 years, $\chi^2 (1 N = 530) = .5266$. A significance test could not be performed on the other academic training categories due to pairing of the categories or absence of comparable data from the 1989 study. It is worth noting that a
comparison of health administration or business background versus clinical background has realized little change. The number of directors or CEOs with a clinical academic training background was 216 (81.8%) in 1989 versus 218 (81.9%) in 1994. Likewise, health or business background was 9 (14.7%) in 1989 versus 35 (13.1%) in 1994.

The highest academic degree earned by the director or CEO of the SHS showed a decrease of those holding a bachelor's degree from 76 (33.3%) in 1989 to 70 (29.4%) in 1994, a decrease of 3.9%. Likewise, those directors or CEOs with a doctorate degree declined from 95 (41.7%) in 1989 to 88 (37.0%) in 1994, a decrease of 4.7%. Lastly, the directors or CEOs with a master's degree showed an increase of 57 (25.0%) in 1989 to 80 (33.6%) in 1994, an increase of 8.6%. A 2x2 Chi Square measurement test was statistically significant, \( \chi^2 (1, N = 466) = 4.137, p < .05. \) This Chi Square value converted to a Phi Coefficient of .09.

Table 4.13 displays the director's or CEO's age comparison between Charles' 1989 data and Laugh's 1994 data. Three age ranges were used in Charles' study. Therefore, the present study results were grouped into the same ranges so a comparison could be made of the descriptive statistics. It appears that more directors or CEOs are now over age 40. In fact, the combined mean for all the respondents in the 1994 study was 47.5 years old.
Table 4.13

Director's or Chief Executive Officers's Age

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Charles 1989 N (%)</th>
<th>Laugh 1994 N (%)</th>
<th>Mean¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 40</td>
<td>53 (19.9)</td>
<td>38 (16.1)</td>
<td>35.4</td>
</tr>
<tr>
<td>40-55</td>
<td>140 (52.6)</td>
<td>158 (65.3)</td>
<td>46.9</td>
</tr>
<tr>
<td>&gt; 55</td>
<td>73 (27.4)</td>
<td>84 (34.7)</td>
<td>60.2</td>
</tr>
</tbody>
</table>

Note. ¹ The Mean for the 1995 study was 47.5 year old.
The final question in section II of the survey dealt with the directors' or CEOs' gender. Charles' 1989 data revealed 102 (38.4%) of the respondents were males and 164 (61.6%) females. Laugh's 1994 data revealed 73 (27.9%) males and 189 (72.1%) females.

The increase in females and decrease in male directors or CEOs was tested for statistical significance using a 2x2 Chi Square significance test. The Chi Square test measurement was statistically significant, $\chi^2 (1, N = 528) = 6.5113$, $p < .02$. This Chi Square value converted to a Phi Coefficient of .11.

Research Question # 3

Student Health Service Evaluation

The final area of the survey instrument was the student health evaluation survey. Changes measured in this section of the questionnaire may be occurring in student health services due to health care reform, budgetary cutbacks, the growth of managed care and SHS restructuring across the country. A baseline set of data was not available. This section was designed to determine whether or not SHS are systematically evaluating or trying to improve efficiency of their program in select areas. The more specific research questions which relate to this broad research question are as follows:
1. Have you tried to evaluate the cost effectiveness of your health service?

2. Have you evaluated staff productivity and, if so, in what ways?

3. Do you have contractual arrangements for other levels of health care?

4. Do you have plans to expand, downsize or maintain the SHS in the next three years?

5. Within the last five years, has your institution modified your services by discontinuing, privatizing, and/or contract management?

The SHS cost effectiveness was evaluated by 154 (57.5%) of the respondents. The respondents that replied no were 114 (42.5%) with 7 respondents not answering the question. The SHS staff productivity was evaluated by 107 (44.2%) of the respondents. A no reply was given by 135 (55.8%) of the respondents with 32 failing to answer the question. Methods of staff productivity evaluation had a low respondent rate, with 204 (74.2%) missing. Of those respondents who did answer the question, 6 (8.4%) identified critical path, 48 (67.6%) identified quality improvement/assessment or CQI and 17 (23.9%) wrote in other responses. Some of these other responses (n=1) included surveys, management by objectives, TQM, and outside consultants. "Tracks stats daily" and "comparative workload analysis using negotiated standard" were both written by two
respondents.

SHS in this survey have few contractual arrangements for other levels of health care. Of the 256 respondents, 37 (14.4%) answered yes to contractual arrangements and 219 (85.6%) answered no. Seventeen respondents left it blank. The most common contractual arrangements were lab (n=4), radiology (n=4), and insurance (n=4).

SHS plans in the next three years in regards to their services appears to be one of maintenance or expansion. The respondents replies to plans for the next three years were as follows: expand 91 (34%), downsize 14 (5.2%), and maintain 163 (60.8%).

Table 4.14 displays the SHS' modification of services in the last five years. This question had a very low response rate which was as follows: discontinuing 57 (20.7%), privatizing 26 (9.4%), and contract management 54 (19.6%). Fifty-three of the respondents have discontinued some of their services. The two most popular cited examples were a reduction of in-patient beds (n=6) and decrease in hours of service (n=5).

The services selected to be privatized were only mentioned by one school each in the cited examples and they are x-ray, housekeeping, worker's compensation, and custodians.

The final area of modification of service, contract management, had almost 20% of the respondents cite an
Table 4.14
SHS Modification of Services in Last Five Years

<table>
<thead>
<tr>
<th>Modification</th>
<th>Some</th>
<th>All</th>
<th>No Response</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N (%)</td>
<td>N (%)</td>
<td></td>
</tr>
<tr>
<td>Discontinuing</td>
<td>53 (19.3)</td>
<td>4 (1.4)</td>
<td>218</td>
</tr>
<tr>
<td>Privatizing</td>
<td>19 (6.9)</td>
<td>7 (2.5)</td>
<td>249</td>
</tr>
<tr>
<td>Contract Management</td>
<td>40 (14.5)</td>
<td>14 (5.1)</td>
<td>221</td>
</tr>
</tbody>
</table>
example. The two most popular responses were lab (n=4) and physicians (n=6). The rest of the cited examples had only one respondent (n=1). There is a discrepancy on contract management data between SHS that have contractual arrangements and those that considered them in the past five years. This discrepancy may have resulted from some institutions considering modifying services by contract management but never implementing it.
A definitive description of the prototypical college or university health service remains obscure due to the broad range that exists among different types of health services. There is also much variability among post-secondary institutions in terms of size, clientele, funding sources, and missions. Many changes in higher education, health care, and society may have altered student health services' organizational attributes and director or CEO characteristics in recent years. These changes have occurred as a result of increasing health care costs, increasing demands for accountability, changing societal health awareness, and cutbacks in state and federal funding.

The purpose of this study was to address any changes in selected organizational and director or CEO attributes between 1989 and 1994, as well as, to determine whether or not college student health services are systematically evaluating their programs and incorporating efficiency measures used in other health care settings.

This study built upon the work of Charles (1990) and determined if significant changes have occurred in the organizational attributes of college health services during
this five year time interval. It assessed whether changes in the economic and political environment have resulted in changes in the characteristics of the director or CEO of the student health services and caused student health services to adopt efficiency enhancement and evaluation methods currently being used in the health care system.

The general research questions addressed in this study were as follows:

1. Have there been any significant changes in select organizational attributes of college health services between 1989 and 1994?
2. Have characteristics of the chief executive officer or director of the SHS changed between 1989 and 1994?
3. Are SHS systematically evaluating their programs in select areas?

This chapter is a presentation of the conclusions based on the findings presented in Chapter 4.

The changes in select organizational attributes of college health services between 1989 and 1994 have been minor. While the mean total student enrollment has increased by 10.7%, the mean percentage of students on campus has decreased by 5.9%. Most people realize a college education in the future will be a necessity. However, in our dynamic society, it is cheaper to commute from home. Thus, I would expect a continued trend in this
direction.

The differences in operating budgets between the two studies were statistically significant with a small to moderate strength. SHS with operating budgets at the low end of the spectrum (<$50,001) have increased in number by 19.7%, and those SHS with operating budgets greater than $2,000,001 have increased by 8%. These percentages may indicate that the middle ground providers are either cutting back services or expanding services to become more comprehensive.

First aid and referral services realized a 25.7% growth over the last five years. This statistically significant difference reflects the niche where SHS fulfill the greatest need for the clientele they serve. Ninety percent of the SHS are now offering this service.

The number of SHS with registered nurses has declined significantly and may have resulted from the recent shortage of RNs in many areas of the country. The lack of noncompetitive salaries to attract and/or retain RNs could also be a factor. These FTE positions have been replaced by health educators and nurse practitioners. The growth in health educator positions may reflect an increased emphasis on prevention among SHS offering health promotion services. The growth in nurse practitioner positions may reflect a substitute for more costly, hard to recruit, physicians.

Physicians are still hard for SHS to recruit. This
condition may worsen as the growth of managed care increases demand for primary care physicians. Both entities will be in competition for the same type doctors. With SHS salaries for physicians, they will likely lose the battle.

While the number of SHS with a formal health promotion program remained constant, those that provide these services felt the need to expand in order to meet this growing need. CPR was the only service to show a decline (4.5%).

Lastly, accreditation has not been a high priority for SHS with 86.7% failing to become accredited. This shift in priority may be a result of the high cost of accreditation and/or concerns that the accreditation process is flawed (similar concerns have recently been voiced in the hospital industry).

Some characteristics of the director or CEO of the SHS have changed between 1989 and 1994. There has been a decrease in physician leadership. There appears to be a decline in nurse leadership and an increase in physician assistant leadership. This shift may reflect shortages, high salaries for physicians, or the availability of physician assistants.

The highest academic degree earned by the director or CEO has trended toward the master's degree. A decrease has been realized in the number of bachelor's degree and doctorate degree leaders along with the statistically significant rise of 8.6% in master's degree personnel.
The final area of statistical significance was the increase in female directors or CEOs and the decrease in males. The affirmative action that is taking place in the workforce as well as the increase of women in the workforce generally and in health professions specifically are possible reasons for this change.

This country's health care crisis does not appear to be affecting the scope and survival of student health services. Unlike mainstream hospitals and clinics, only 57.5% of SHS in this study were evaluating cost effectiveness and only 44.2% were evaluating staff productivity. It appears that very few SHS are looking for ways to improve staff productivity and efficiency through new techniques such as critical paths or total quality management. It may be, however, that critical paths, which are most commonly applied in sophisticated surgical and high technology care, are not well suited to the SHS service-mix.

Only 37 (14.4%) SHS have entered contractual arrangements with other levels of health care. This researcher would have expected this number to be higher. Another surprise was the SHS plans in the next three years. While most hospitals are streamlining and downsizing, most SHS plan to expand in (34%) or maintain (60.8%) services during the next three years. Some of this expansion may be explained by the growing numbers of uninsured college students as employment based health benefits are reduced or restructured.
Overall, the results of this study reveal only modest evidence of restructuring and efficiency enhancement among SHS. However, this picture could change if the turmoil that has engulfed the health care industry spills over into the college health environment.

**Recommendations**

In this study there are several findings that suggest a need for further research. They include the following.

1). Future studies involving more detailed examinations of the directors of SHS would be useful. Such surveys may give some insight into the trend observed in this study, such as the migration to masters level directors from doctorate and bachelor degree candidates. Future surveys may also give some insight to the growth of physician assistant leadership and women directors.

2). Future studies could provide more detailed examinations of the evaluation process of SHS by their directors. This survey only skimmed the surface of an area where baseline data was not available. Through further research and reporting, directors could acquire benchmark data from SHS instead of trying to draw inferences from mainstream hospital and clinic data.

3). Lastly, the researcher recommends that this study sample be reevaluated in five years to see how the rapidly changing health care climate of growing HMOs, PPOs, etc. has effected SHS.
Works Cited


CHO, P. "Utilization Patterns and Client Satisfaction with the Student Health Service of San Jose State University." *MAI-A*. 32/02 (1994): 612.


April 27, 1994

Dear Student Health Service Director:

Research is being conducted to determine the extent to which campus health services vary with regard to selected attributes. The purpose of this research is to reproduce a study done five years ago, in order to see how student health services have changed over time.

Your timely participation is urgently requested. Please take a few minutes to complete the enclosed questionnaire and return it in the self-addressed, stamped envelope provided by May 25, 1994. The information you provide will be kept strictly confidential and there will be no identification of your specific institutional responses. Only aggregate data will be reported.

This research will provide important new information about the changing orientation of college and university health services.

Thank you in advance for your time and cooperation. We look forward to receiving your completed survey. Meanwhile, if you have any questions or comments, please do not hesitate to contact us.

Sincerely,

_________________________  __________________________
Timothy Laugh             Kevin E. Charles, D. Ed.
Department of Public Health  Director, Student Health Service
(502) 781-2185             (502) 745-5643

pma
INSTRUCTIONS: The questionnaire is divided into three sections, each relating to objectives of the study. Unless otherwise indicated, most questions require you to place a check [ ] next to the appropriate response. Please try to answer all questions.

I. Organizational Attributes

1. What populations do you serve?
   - [ ] students
   - [ ] student dependents
   - [ ] faculty/staff
   - [ ] faculty dependents
   - [ ] campus guests
   - [ ] other

2. Approximately what is the total student enrollment at your campus?
   [ ]

3. Approximately what percentage of your students are:
   - [ ] % on campus
   - [ ] % off campus

4. What is the student health fee? $[ ] per student
   - [ ] per semester
   - [ ] per academic year
   - [ ] per trimester
   - [ ] per year
   - [ ] per quarter
   - [ ] per credit hour

5. Is a medical school operated on your campus, or by your institution in the same municipality?
   - [ ] yes
   - [ ] no

6. Approximately what is the total operating budget (salaries, supplies, equipment, and facilities costs) per year for your health service?
   [ ]

7. Approximately what percentage of your revenues are derived from the following sources? (sum=%100):
   - [ ] % general funds
   - [ ] % prepaid health fee(s)
   - [ ] % patient out of pocket
   - [ ] % third party payers
   - [ ] % other

8. Which of the following describe your health service's capabilities (check all that apply):
   - [ ] first aid and referral
   - [ ] general medical clinic
   - [ ] women's health clinic
   - [ ] athletic medicine
   - [ ] lab
   - [ ] x-ray
   - [ ] pharmacy
   - [ ] PT
   - [ ] in-patient service (if so, how many beds? [ ])
   - [ ] other
9. What is the total number of full-time equivalent (FTE) in each position?  
(Note: 1 FTE = 37.5 hours/week)  

- Pharmacist med. laboratory technician  
- Pharmacy technician medical assistants/aides  
- Radiologic technologist medical technologist  
- Certified physician assistants nurses(RN)  
- Certified nurse practitioners nurses(LPN)  
- Health educators  

10. Please indicate the number of (FTE) physicians in each specialty:  
(CONTRACTED)  

- Family/general practice  
- Pediatrics  
- Psychiatry  
- Internal medicine  
- Orthopedics  
- Gynecology  
- Ophthalmology  
- Dermatology  
- Other  

11. Please indicate the number of (FTE) physicians in each specialty:  
(EMPLOYED)  

- Family/general practice  
- Pediatrics  
- Psychiatry  
- Internal medicine  
- Orthopedics  
- Gynecology  
- Ophthalmology  
- Dermatology  
- Other  

12. We are able to successfully recruit physicians to meet our needs.  

1 2 3 4 5  
Strongly agree Strongly disagree  

13. We are able to successfully recruit physician assistants.  

1 2 3 4 5  
Strongly agree Strongly disagree  

14. We are able to successfully recruit nurse practitioners.  

1 2 3 4 5  
Strongly agree Strongly disagree  

15. Do you have a formal health promotion program?  

- Yes  
- No (skip to #17)  

16. Which components are part of the health promotion program (check all that apply):  

- Nutrition  
- Stress management  
- Self care  
- Weight loss/control  
- Alcohol use/abuse  
- Wellness  
- "Other" drug use/abuse  
- Sexuality/contraception  
- Smoking cessation  
- Safety education  
- Exercise/fitness  
- CPR  
- Other (please specify)  

17. Is your health service accredited by:  

- JCAHO  
- AAAHC  
- Not accredited (skip to Sec. II)
18. When was your first year of accreditation? ____________

II. Director or Chief Executive Officer

1. Which of the following best describes the principle academic training of your director/chief executive officer: (check one)
   ___physician ___health educator
   ___higher education administrator ___nurse
   ___business administrator ___health administrator
   ___physician asst./nurse practitioner ___other

2. The highest academic degree earned by the director/CEO is the:
   ___bachelor's ___master's ___doctorate

3. What is the director's/CEO's age: ____

4. What is the director's/CEO's gender: ___female ___male

III. Student Health Service Evaluation

1. Have you tried to evaluate the cost effectiveness of your health services?
   ___yes ___no

2. Are you taking steps to evaluate staff productivity?
   ___yes (please check below) ___no (skip to #3)
   ___critical path ___quality I/A(CQI) ___other, please explain

3. Do you have contractual arrangements for other levels of healthcare, such as outpatient surgery?
   ___yes ___no  If yes, please explain. (use separate sheet)

4. Within the next three years, which of the following best describes your plans your student health service?
   ___expand ___downsize ___maintain

5. Within the last 5 years, has your institution considered modifying services by:
   discontinuing: ___some ___all ___cite example
   privatizing: ___some ___all ___cite example
   contract management: ___some ___all ___cite example

5b. Have any of these modifications been adopted?
   ___yes ___no  If yes, please explain. (use separate sheet)

THANK YOU VERY MUCH FOR HELPING US COMPLETE THIS SURVEY!
APPENDIX B

State by Region

<table>
<thead>
<tr>
<th>Region 1; South-Southwest</th>
<th>Alabama, Florida, Georgia, Mississippi, North Carolina, South Carolina, Tennessee, Arkansas, Louisiana, New Mexico, Oklahoma, Texas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Region 2; Central:</td>
<td>Kansas, Missouri, Nebraska, Iowa, Minnesota, North Dakota South Dakota, Wisconsin, Colorado, Montana, Wyoming, Idaho</td>
</tr>
<tr>
<td>Region 3; Mid-America:</td>
<td>Illinois, Indiana, Michigan, Kentucky, Ohio</td>
</tr>
<tr>
<td>Region 4; Mid-Atlantic:</td>
<td>Delaware, Washington, D.C., Maryland, Pennsylvania, New Jersey, Virginia, West Virginia</td>
</tr>
<tr>
<td>Region 5; Northeast:</td>
<td>Connecticut, Maine Massachusetts, New Hampshire, Rhode Island, Vermont, New York</td>
</tr>
<tr>
<td>Region 6; West:</td>
<td>Alaska, Arizona, California, Hawaii, Nevada, Oregon, Utah, Washington</td>
</tr>
</tbody>
</table>