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A study of on-site employee health care clinics and their possible return on investment

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A STUDY OF ON-SITE EMPLOYEE HEALTH CARE CLINICS AND THEIR POSSIBLE RETURN ON INVESTMENT.

By

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DEDICATION

With infinite love and immense gratitude, I dedicate this work to my adorable daughter Elizabeth Claire, my charming son, Dale William III, and my loving wife Jill Margaret. Thank you for your understanding and tolerance.

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Five years ago, when I set out to complete my bachelor's degree, I had no inclination of rolling right into a Masters program. In fact, had it not been for the encouragement to "go for it" by my wife Jill this would have never become my reality. Jill, you selflessly raised our two children, maintained the house, worked your job, and still found time to encourage me throughout this entire process. I cannot put into words how deeply grateful and fortunate I am to be married to such a giving women. Thank you for everything!

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Chapter 1

Introduction to the Problem

Introduction

When one thinks of the challenges facing mankind over the next half-century, issues that may come to mind are global warming, war, gas prices, education and health care costs. Health care costs have accelerated at alarming rates for the last decade, outpacing wage growth and inflation according to The Kaiser Family Foundation (2005) (Appendix A-1). These costs have an impact on everyone. Since 2000, premiums have grown by 73 percent, yet wages have only grown by 15 percent (The Kaiser Family Foundation, 2005).

Likewise, according to PricewaterhouseCoopers, 2006 health care spending represented 16 percent of the gross domestic product (GPD) and is projected to increase to 21 percent by 2020. Based on third quarter actuals released by the Bureau of Economic Analysis, 16 percent of the GDP equates to $21,316.2 billion dollars.

Organizations and employees are feeling the bite of this colossal enigma. The majority of business executives consider medical costs their biggest concern (Anderson, 2005). Likewise, employees feel that health insurance is of more concern than outliving their retirement money, having money for their children's education, and financial security in the event of their spouse's death ("MetLife," 2005).

One alternative being evaluated by organizations is the on-site employee health clinic or OSHEC. The in-house doctor is not a new concept; however, the new approach is more comprehensive, delivering a myriad of services to employees beyond treatment

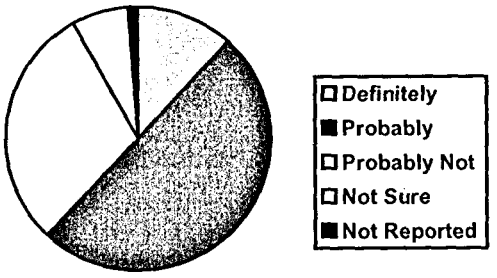
of workplace injuries. The OSHEC has emerged as a more holistic approach to providing employees with quality-affordable health care in a convenient package. According to Dr. Alan Spiro, head of health-care-management practice for Towers Perin, "this area is exploding in terms of corporate interest...it's a back-to-the-future phenomenon" (Andrews, 2005, para. 2).

Statement of Problem

Today, organizations are confronted with a very real problem - - how to deal with escalating health care costs. Conventional approaches, HMOs and PPOs over the past decade have had little to no impact; "many employers are tempted simply to shift more cost to employees in the form of high-deductible plans that result in increased out of pocket costs" (Marlowe, 2006, para. 2). In fact, according to PricewaterhouseCoopers' 2005 publication *Take Care of Yourself: Embrace Consumerism*, nationally employees pay 18 percent of the premiums for single coverage and 31 percent for family coverage. As an example, 55 percent of American Standard's employees pay 20-25 percent of earnings, $8000-$9000, per year towards health insurance premiums (PWC "Take Care", 2005). The results of this cost shifting have far reaching implications. Adding insult to injury, 25 percent of executives surveyed indicate that health care increases may result in lower wage increases for employees (PRNnewswire, 2005).

Employees feeling the pinch of escalating costs being shifted to them will respond in one of four ways. One, thought by two-thirds of employers, is that employees will defer needed care, due to high deductibles, resulting in greater risk of long-term more expensive health problems (Figure 1) (PWC "Take Care", 2005, p. 3).

Figure 1
Do you believe that health care plans that require employees to pay higher deductibles will cause employees to defer needed care and risk long-term problems?



A second option, for employees not able to afford their share of the premiums, is to drop coverage altogether, resulting in increased plan costs, undiagnosed health problems, and a drain on public services (ibid). A third option, expressed by 72 percent of executives surveyed, is that high deductible plans will reduce spending by employees on discretionary health care, such as annual physicals (ibid). Lastly, employee's fourth option is to shop around for a better benefits package at other organizations. Employees who cannot afford the benefits offered at their current employer may speak with their feet and find a better deal elsewhere. Citing a recent MetLife employee's benefits survey, PWC wrote in their 2005 publication *Take Care of Yourself: Embrace Consumerism*:

> Among the 36 percent of full-time employees who are highly satisfied with their companies' employee health benefits, overall job satisfaction is nearly three times as high as it is for employees who are not satisfied with their benefits. Benefits satisfaction is strongly correlated with both employee loyalty and job satisfaction (p. 13).

"Employers cannot keep shifting costs indefinitely" to employees, says Blaine Bos, a Minneapolis-based principal with Mercer Human Resource Consulting (Sosnin, 2005, p. 99). "Salaries just aren't keeping pace with this, and low and even mid-level employees can't afford the out-of-pocket expenses" (ibid, p. 99). Likewise, organizations cannot keep absorbing the costs either.

Organizations desiring to avoid any of the above, need to evaluate and maximize every opportunity to improve health care quality while reducing the cost burden on employees. They must look at new ideas and ways of delivering health care benefits that develop lasting relationships between the organization and the employees.

Purpose of the Study

This research investigations purpose is to review the concept of the on-site employee health clinic (OSHEC) and evaluate the possible return on investment into such a clinic. This study will provide a qualitative analysis of the OSHEC concept.

Research Questions

This research investigation focuses on answering the following primary and subsidiary questions:

Primary Question:

1. Do OSEHCs provide a possible return on investment?

Subsidiary Questions:

1. Is there a link between the return on investment and the size of the organization?
2. What is the ideal model for an OSEHC?

Operational Definitions

The following terms are defined for this research investigation.

OSEHC: a health care facility within close proximity to the sponsor organization that provides health care services to the employees of the sponsor organization.

Self-managed: an OSEHC that is staffed, managed and operated by the sponsor organization.

Contract managed: an OSEHC that is staffed, managed and operated by a contract vendor on behalf of the sponsor organization.

Sponsor organization: the organization/company that has invested in an OSEHC.

Significance of Study

Worldwide health care costs are spiraling out of control. Organizations are faced with ever increasing premiums and daunting decisions. The cost of providing health care benefits to employees ranked as the number one priority in 2005 for companies according to Deloitte ("Top Five", 2004). According to Halvorson, (2005), CEO of Kaiser Foundation Health Plan, Inc., most consumer goods/services over time typically improve in quality and decrease in cost, as for example a DVD player; health care however, is moving in the opposite direction with increasing cost and "questionable quality."

This increased cost must be funded in one of three ways: (1) the employer pays for the increase, (2) the employee pays for the increase, or (3) they both share a portion of the increase. The majority of U.S. companies are choosing option number two and passing the cost increases to employees. According to Sandy Lutz, director of research for PricewaterhouseCoopers Health Research Institute, "Shifting a greater share of spiraling health care costs to employees is a trend that is likely to continue," ("PR Newswire US," 2005, p. 2). Likewise, in a 2005 *Business Insurance* article, Gloria Gonzalez stated, "more than 75 percent of large U.S. employers may ask their employees to pay a greater share of the increasing cost of health insurance" (p. 1). But experts warn that these efforts have gone about as far as they can go, and employers will have to search for other ways to reach long-term cost-containment success (Sosnin, 2005, p. 99).

Chapter 2

Review of Literature

Introduction

The concept of the on-site health clinic is not a new one. Earliest U.S. records of medical services, organized around labor pools, trace back to just after the Revolutionary War (Abrams, 2001). Formal clinics were opened by various unions in the early 1900s (ibid). The services these early clinics offered were often viewed as less than adequate and did little to prevent illness or educate workers (ibid). These early practitioners also failed to support workers injured on the job giving rise to the lack of trust that sometimes lingers today in regards to the "company doctor" (ibid).

Unions were the main driving force delivering and negotiating for health benefits for their workers. "In 1913, in recognition of the high rate of tuberculosis and other diseases in sweatshops the ILGWU (International Ladies Garment Workers Union) established its first health center in New York City" (Abrams, 2001, p.66). Other unions would soon follow and open their own health centers to include clothing workers unions, meat cutters unions, hotel workers unions, and building services unions (ibid).

The on-site clinic concept can also be found as far back as the 1860s with the mining industry (Krajcinovic, 1997). The company doctor, funded by payroll deductions, provided basic care that was often criticized for not being timely (ibid). The fee for service in the 1930s amounted to $1.80 per month for married miners and $1.30 for single miners (ibid). These fees were collected by the mine operators in advance each month, a system of pre-payment not unlike the modern system used by most plans today.

Some care was better then no care; however, these clinics were not without their faults. Doctors were hired by mine operators, not based on their skills, but typically based on who they knew, their social viewpoints, and corrupt financial deals (Krajcinovic, 1997). Standards of care, although consistent across most mining communities, were often substandard; but miners had no recourse, despite the fact they were paying for the services (ibid). Miners would argue that doctors hired by the operators gave the operators total control over the doctors' practices (ibid). What resulted is the very mistrust of the company doctor that exists today. Krajcinovic (1997) writes:

> Company doctors were known to side with management in evaluations to determine workers' compensation, to suspend their services during strikes, to perform physical examinations to find grounds to discharge miners active in the union, and even to serve as spies for operators....Although his salary is paid out of deductions from the miners' wages, the doctor works for the company, not the employees...He does the company's bidding. (p. 20)

Today the company doctor is seeing a resurgence. With health care costs rising each year by double-digit percentages, companies are looking for ways to slow the increases in premiums and to provide better health care options for their employees. Recent survey results from Watson Wyatt show that "22 percent of large companies – those with 2,000 workers or more – have health clinics for their employees either at or near the workplace" (Wessel, 2006, para. 6). That same survey also reported that by the end of 2007 an additional 5 percent of large companies will invest in on-site employee health clinics (ibid).

Chief Executive Officer Dixon Thayer of CHD, a national third party provider of on-site medical clinics, says that over the past three years, services at on-site clinics,

which have been around for decades, are expanding. Thayer added that, "employers have come to realize there's no difference between a worker who hurts his back on the job and a worker who hurts his back playing softball. Productivity suffers either way" (Wessel, 2006, para. 23).

This is a trend that is certainly on the rise. More and more organizations are looking to on-site employee health clinics; by 2007 it is projected that 25 percent of all Fortune 1000 companies will have an on-site clinic (Joyce, 2006). Ironically, the idea has exploded so quickly that there is little comparative date, according to David Beech of Watson Wyatt Worldwide (ibid).

The typical on-site medical clinic is very reminiscent of a small family practice or primary care facility (Marlowe, 2006). Similarly, patients/employees will find equipment for diagnosis and lab-work similar to that being used by their primary care doctor (ibid). The on-site clinic is usually staffed with a doctor, part-time or full-time, and an array of nurse practitioners and technicians (ibid). The hours that the on-site clinic is open will vary depending on the population it is serving (ibid). According to Marlowe (2006, para. 4) the typical clinic will offer the following services:

- Routine medical care
- Immunizations
- Basic radiology and laboratory testing
- Physical examinations
- Preventive screenings
- Health education, consultations, and wellness (nutrition counseling, cholesterol screening, prenatal programs)
- Basic adolescent and child care, including back-to-school and sports physicals
- Chronic disease management
- Case management
- Sponsored pharmacy

Marlowe further adds that an on-site clinic requires a local concentration of about 2,000 employees to be a feasible option; even then not all organization with 2,000 employees will realize a maximized benefit with an on-site clinic.

Opening an on-site clinic, regardless of how many employees an organization has, will always generate some concerns for both the organization and the employee. An organization's concerns, while legitimate and daunting, are not insurmountable.

Concerns

Employee mistrust of doctors working at on-site health clinics still exists today. Some employees are concerned about their personal medical information being made available to the company. Others are concerned that the on-site clinic staff, doctors or nurses, are in the company's pockets and loyal only to the company. To mitigate the concerns employees have about the "company doctor" sharing their medical information and being in the pocket of management, some organizations have decided to contract out the on-site clinic. In an April 2006 article titled *Concerns Loom Around Onsite Clinics*, Gloria Gonzalez quoted Ronald Wyse, director of employee benefits for Harris Corp., who said, "when we first announced the center, we made clear that nobody there is a Harris employee and Harris is not going to have access to the medical records and that seemed to be satisfactory" (par. 3). He further added that despite their clinic being contract managed and staffed, some portion of the workforce will still not utilize the clinic "because they're paranoid about that" (Gonzalez, 2006).

Absent of contract management, those responsible for running the clinic must make every effort to communicate with employees that their medical records are

confidential. Employers need to illustrate to employees that laws and regulations, such as the Health Information Privacy Protection Act or HIPPA, apply equally to all medical providers, regardless of who is paying the bills. In all situations, the best advice is to be open about how medical records will be kept, used, and accessed. Communication with employees about such concerns is essential to having a successful clinic.

Another concern, expressed by the organizations considering an on-site health clinic for employees, is the liability associated with such an endeavor, especially with the total dollar amount paid in the United States for malpractice claims; in 2003 this figure reached $4.5 billion or $322 thousand per claim (Kaiser Family Foundation, May 2005). Likewise, to mitigate this concern Gloria Gonzalez states that organizations might consider contract management with a vendor that assumes all liability for malpractice as opposed to self management ("Concerns," 2006). This was also the findings of Joseph Marlow; his research suggested that more and more employers are contracting with vendors and management companies as opposed to self-management because of liability concerns (2006).

The last concern noted by Gloria Gonzalez ("Concerns," 2006) was the impact opening a clinic might have on relationships with local health care providers. Some employers may feel that local providers may view an OSEHC as competition for clients. Gonzalez adds that her experience has been positive opening these facilities; they have been accepted by local providers because they realize that OSEHCs will still need to refer patients out for specialist care and treatments that the OSEHC can't provide ("Concerns," 2006). This has also been the experience of Juliet Vestal, director of health care

management for Harrah's Entertainment Inc.; she claims that other vendors have been very supportive of their eight on-site clinics (Gonzalez, "Employers," 2006).

Despite these concerns, interest in on-site health clinics is on the rise. A growing number of companies are opening an OSEHC or evaluating the possibility of opening an OSEHC. Helen Darling, president of the National Business Group on Health in Washington, recently said, "interest in on-site clinics appears to be increasing because it is a promising way to provide access to quality health care" (Gonzalez, "Concerns," 2006, para. 7). Other experts, in the field of medicine or on-site clinics, have expressed their opinions about on-site clinics as detailed in the following section.

Expert Opinions

On-site employee health clinics have been around for decades; however, very little scientific study has been conducted or written regarding their ability to save money. What are in abundance are statements and claims by industry experts, to include corporate executives and on-site clinic providers.

> Sean Sullivan, president, CEO and co-founder of the Institute for Health and Productivity Management, a nonprofit corporation in Scottsdale, Arizona states "I think it's a modern model that is indeed proving to be cost-effective. Not only does it pick up health issues earlier, but it doesn't require time away from work and at the same time creates a culture of caring. (Wells, 2006, p.48)

Susan Wells (2006), author of "The Doctor is In-House," believes employers can expect on-site clinics to help manage health care costs, save time employees spend visiting doctors and recovering, and encourage employees to seek a healthier way of life which is a long-term benefit for the company and the employee (2006).

In regards to opening an on-site employee health clinic, Ray Tomlinson, president of The Crowne Group, an insurance service and consulting group in Ocoee, Florida said, "This is a very big cost savings. Savings can be immediate" (Norbut, 2006, para.8). He added that all the clients his organization has assisted with opening a clinic have saved enough money in claims during their first year of operation to cover all start up cost

WeCare TLC- LLC, a disease and utilization management subsidiary of Alliance Underwriters, states in their promotional literature that implementing an on-site clinic through them yields savings of 5 percent to 10 percent on medical expenses. Additionally, clients can expect a decline in prescription drug costs of 10 percent to 20 percent. They further state that "actual savings may be significantly more and in rare situations actually less" (WeCare, 2006, Savings section). Judy Garber, president of WeCare and MedWatch LLC states, "costs have escalated to such an extreme that it's tough to raise salaries, and they [their clients] don't want to cut benefits (Norbut, 2006, Opportunities section). The clinic arrangement can help municipalities balance the ability to raise pay for workers with the need to control costs (ibid).

James Hummer, The CEO of Whole Health Management an on-site health clinic contract management firm, states that the start up costs to establish a clinic range between $200,000 to $400,000 (Norbut, 2006). He estimates the direct and indirect savings/returns to be 2-1 to 5-1 (ibid). Additionally, Sara Crate, Vice President of business development for Whole Health, states that companies opening on-site clinics typically see a return within 12-18 months (Gonzales, "Employers," 2006, para. 9)

Case Studies

On-site employee health clinics, a new trend being implemented by numerous organizations, are yielding some positive returns in terms of hard savings and intangible rewards. Companies are opening sophisticated, technological driven clinics staffed with top quality physicians, nurse practitioners and ancillary staff. These clinics provide services ranging from basic first aid to disease management. Information and data regarding the types of structures and staffing methods used by companies to run their clinics, along with information about the hard and soft savings generated by their clinics is scattered throughout various sources of literature. The following are case studies of several companies' efforts towards implementation of OSEHCs and the results they achieved.

SRA International Inc.

In 1993, SRA International, a Fairfax, Virginia based information technology service company, hired its first medical practitioner, a part-time nurse, to render services to its 4,800 employees (Wells, 2006). According to Kay Curling, director of work/life solutions, the main goal was to offer assistance to employees with insurance claims resulting from devastating illness (ibid). In 1999 they opened their first on-site health clinic at their headquarters. This clinic was staffed with three nurses and two supporting doctors serving as medical directors (ibid). SRA's on-site employee health clinic offers an array of services to include: flu shots, pharmacy services, first-aid, treatment of minor ailments and injuries (O'Connell, 2004). According to Curling, "the largest investment

for us [SRA] is the salaries we pay. Incidental expenses are liability insurance and equipment" (Wells, 2006, p. 54).

Results have enabled SRA to offer lower insurance premiums and to reduce the number of workdays lost to illness and doctors' appointments (ibid). Curling also stated that due to the clinic, SRA's medical claims have dropped to around half the national average (O'Connell, 2004). Additionally, a savings of $3.50 in costs have been realized for every dollar SRA has spent on the program (ibid)

Regarding employee satisfaction with the clinic Curling stated, "Employees love it" (O'Connell, 2004, para. 10). SRA feels that the on-site clinic is a win-win for the company and the employees; employees gets the convenience of having medical staff and a pharmacy on-site and the company gets the cost savings of employees being at work instead of driving to their doctor's office (ibid). According to Curling, "It's becoming one of our most beloved employee benefits" (ibid, para. 11).

American Retirement Corporation

American Retirement Corporation of Brentwood, Tennessee is also joining the growing number of companies opening on-site employee health clinics. The company operates 67 retirement communities in 14 states and has 3,500 employees. American Retirement Corporation realized they had a problem in 2002 when they exceeded their health care budget by $4 million (Sosnin, 2005).

They decided to attack the problem by offering an alternative with easier access to their employees. They targeted the two locations that were most over budget, Tampa, Florida and Peoria, Arizona, and opened on-site clinics at each location (ibid). American

Retirement Corporation decided to contract out for their on-site clinic services. CareHere, of Franklin, Tennessee, won the contract to establish the clinics and to staff them with board-certified family practice physicians (ibid).

CareHere's doctors serve, at each location, two days a week, four hour per day and offer the following services: physicals, primary care and health monitoring for employees with specific conditions (ibid). They typically see about 12-13 patients in that four-hour period. Employees have access to the clinic for the purpose of scheduling an appointment via the internet or the toll-free number during clinic hours (ibid)

CareHere charges American Retirement $90 per hour in Tampa and $100 per hour in Peoria. Additionally, CareHere covers all the malpractice insurance, a main driver for contract management and staffing (ibid). According to senior director of benefits, Laurie Mathis, "The cost of setting up the on-site approach last year- -which involved arranging for physicians and other health specialist as well as supplies- - came in $8000 under the $100,000 that was budgeted" (ibid, p. 104). In fact, American Retirement underestimated just how cost effective opening their clinic would be. Mathis stated, "The company's goal was to break even the first year and reap savings over time, but actual results are better than expected" (ibid, p. 104). Prior to Tampa's clinic opening they were $450,000 over budget, in just six months of operation that figure plummeted to only $50,000 over budget (ibid).

The employees of American Retirement have embraced the clinics. 95 percent of employees stated that they are very pleased with having on-site care (ibid). Mathis

stated, "We think this has been good for employee morale and feel sure it will result in considerable cost savings downstream" (ibid, p. 104).

Freddie Mac

Freddie Mac, headquartered out of McLean, Virginia opened their on-site employee health clinic in 2004 (Joyce, 2006). Freddie Mac, with 4,300 employees at its headquarters, contracted with Whole Health Management, an Ohio based company that designs, establishes, staffs, and manages on-site employee health clinics (ibid). Employees visiting the clinic will be seen by a full-time nurse practitioner; a part-time doctor provides oversight (ibid). The clinic, which is centrally located in the headquarters building, offers employees the following services: free physicals, allergy shots, pregnancy tests, a pharmacy and general consultations (ibid). The clinic averages 17 visits per day (ibid). Freddie Mac is self insured and spends about $30 million a year on health care costs (ibid).

Freddie Mac's clinic cost $565,000 per year to run (ibid). According to representatives at Freddie Mac, the clinic generates savings of $900,000 a year from medical cost ($686,000) and lost time avoided ($314,000) (McQueen, 2006 & Joyce 2006). On the medical side, Freddie Mac claims to save $117 for each visit that is diverted from an employee's primary care to the on-site employee health clinic (ibid). Regarding the productivity savings, Andrea Thrasher, a lawyer with Freddie Mac, reads work documents while waiting for her allergy shot (Joyce, 2006). She stated, "prior to this [the clinic opening] I drove to the allergist never knowing if there would be a big

crowd. It was really disruptive during the day. When this opened, it was like a god-send" (Joyce, 2006, para. 19).

Darden Restaurants Inc.

Darden Restaurants, Inc., the world's largest casual dining restaurant company, opened its on-site employee health clinic 10 years ago (Wessel, 2006). Services are available and free to all employees who work at the Darden campus in Orlando, Florida (ibid). The clinic is staffed by a nurse practitioner, Darlen Fritsma, and is managed by senior medical director Dr. Scott Brady of Florida Hospital Centra Care (ibid).

Fritsma, who runs the day-to-day operations of the clinic, including patient care, says that about 15-20 employees will visit the clinic each day. She also stated that just in the past year alone employees seeking treatment at the clinic have been diagnosed with serious illnesses that otherwise would have gone undiagnosed, these include: 12 employee with diabetes, three cases of breast cancer, three cases of sleep apnea and one employee with a bladder mass (ibid).

Harris Corporation

Harris Corporation, an international communications information Technology Company, headquartered in Melbourne, Florida, has 14,000 employees. In 1997, Harris opened its health clinic; however, their clinic is not on-site (Wessel, 2006). According to Ron Wyse, director of employee benefits, the clinic, which is located near Melbourne Square Mall, is centrally located for 95 percent of Harris' employees (ibid). Another reason for selecting an off-site location was that it would be convenient for worker's dependants to use (ibid). Wyse stated that an increasingly number of companies are

contacting him seeking information about how to open an on-site employee health clinic (ibid). Wyse further added that Harris' clinic generates $11 million per year in direct savings (Gonzalez, "Employers," 2006).

Florida Power & Light

> Andy Scibelli, manager of health-management programs for Florida Power & Light, thinks a full-time, on-site clinic can work with as few as 700 workers. FPL has on-site clinics at three of its South Florida Locations, the smallest of which has 800 workers. The clinics pay for themselves, Scibelli added, with every dollar spent returning $1.50 in direct and in-direct cost (Wessel, 2006, para.18)

Cerner Corporation

Cerner Corporation opened their first on-site clinic in the summer of 2004 (Butcher, 2004). To minimize time spent away from work they built their clinic without a waiting room (ibid). Employees can work right up to the moment they are e-mailed or paged letting them know the doctor is ready (ibid). To further aid in savings, all records are completed and stored electronically and all claims are processed and paid the same day of service (ibid). According to Julie Wilson, Cerner's chief people officer, "we're viewing this as the clinic of the future" (ibid, para 4).

Cerner is approach is to eliminate the estimated 30 percent of health care costs which is known to be administrative (ibid). Cerner expects the clinic will cost $700,000 a year to operate; however, it is expected to save money in increased productivity (ibid). The clinic was physically designed with amenities to entice employees to make use of it; some of the amenities include oversized exam rooms, bathrooms in each exam room and exam tables more akin to dental chairs then beds (ibid). Regarding the clinics design and goals, Jeff Towsend, Cerner's Chief of Staff, said, "we're trying to shoot for an

experience that, once people get in there they never want to go anywhere else" (ibid, para. 11).

Abbott Laboratories

Abbott Laboratories, based in North Chicago, opened their first clinic in 1999 with the intent to provide occupational health care for work related injuries (O'Connell, 2004). However, they have recently decided to expand the services to include more comprehensive care (ibid). The clinic now offers such services as physicals, nutrition consulting, mammograms, flu shots, and cholesterol screenings (ibid).

According to Laura Bein, director of health and wellness for Abbott, the clinic has generated positive impacts in employee health and wellness (ibid). Additionally, the clinic has helped boost morale and increased productivity; employee absenteeism is down and so is turnover (ibid). Bein adds that employees feel the clinic offers quality health care and understand that confidentiality is not an issue (ibid).

Scotts Miracale-Gro Company

In December of 2005, Scotts Miracle-Gro Company opened their Wellness Center at their world headquarters in Marysville, Ohio for use by its 6,000 associates and dependants (Crate, 2005). Scotts Wellness Center comprises 24,000 square feet and includes a health clinic and a fitness center. According to CEO Jim Hagedorn, Scotts is committed to providing the necessary resources to its employees to enable them to live a healthy lifestyle (ibid). He further stated that, "the Scotts Wellness Center is part of an integrated and comprehensive approach we are taking to help our workforce better

manage their health risk, which in the long term we believe will help lower medical costs" (ibid, para. 2).

Scotts' clinic is operated by Whole Health Management of Cleveland, Ohio and is open Monday through Friday from 7:00 a.m. to 7:00 p.m. Services are provided free of charge to employees, their dependants and eligible retirees. The clinic is staffed with a medical director, nurse practitioners, registered nurses, physical therapists, medical technicians and registered dietitians (ibid). According to Sara Crate of Whole Health, services being made available include:

- Adult and pediatric care
- Health screenings and annual physicals
- Treatment of injury and illness
- International travel preparations
- Laboratory services
- X-ray services
- Pre-employment screenings
- Flu shot programs and other immunizations
- Physical therapy
- Nutrition services
- Drive-thru pharmacy (generics are free)
- Physical fitness center (personal trainers, exercise specialists, and kinesiologists (ibid, section "Medical Services)

Southern California Edison

One of the oldest on-site clinics systems can be found at Southern California Edison, one of the largest electric utilities in the United States, and the largest subsidiary of Edison International. SEC opened its first clinics in 1903 (Kenkel, 1993). Additionally, Edison has had an on-site pharmacy for over 45 years (ibid). Their clinics are open to employees, dependants and retirees totaling 56,000 (ibid). Seventy-one

percent of this group makes use of the 10 on-site clinics which are staffed by 16 doctors (ibid).

Over the past 4 years, Edison claims to have saved over $100 million by operating their on-site clinics. Margaret H. Jordan, Vice President of Health Care for Edison stated, "I'm proud of what the clinics have done (to maintain quality and produce savings)" (ibid, para. 24).

Quad/Graphics

The 11,000 employees of Quad/Graphics have access to four clinics, the first of which opened in 1990 (Liddick, 2005). John Neuberger, the privately held company's director of business development, states that the clinics "have had a major impact on the company's cost of health care" (ibid, Health Savings section). He also claims that the company saves millions and that they spend "18 percent less than the benchmark companies" in their market" (ibid). Recently they opened up the clinic's services to cover dependents (ibid). In total, the four clinics recorded 65,000 visits each year (ibid).

Pitney Bowes

The world's leading provider of mailstream solutions, Pitney Bowes has eight on-site clinics that are run by contractors (Liddick, 2005). The clinic's services and prescriptions drugs are available to employees at no cost (ibid). Five of the eight clinics see a total of 30,000 patients per year (ibid). Pitney Bowes' clinics have a utilization rate of 73 percent and a satisfaction rating of good to excellent by 96 percent of employees visiting the clinics (ibid). Additionally, amongst all employee benefits, the clinics are constantly rated as the number one thing employees value most (ibid).

Regarding savings, Bowes pays $276 per employee for care at the clinics in comparison to the $645 for the same care offered at personal doctors. Other savings have also been realized by Pitney Bowes to include time savings; with the aid of the clinic, lost work hours average only 10 per year, a significant savings when compared to the community average of 21 hours per year (ibid). According to J. Pawlecki, Associate Medical Director for Pitney Bowes, the on-site clinics are showing "a 2-to-1 return on investment" (PWC, "Take Care," p.18).

Conclusions Drawn from the Case Studies

All of the organizations claimed significant savings from operating their on-site clinics. No research was found regarding companies that have failed to save money from opening or operating on-site clinics.

Some common themes from the case studies are:

- Each is a large employer (2,000 employees or more).
- Most use nurse practitioners to provide care with a doctor's oversight.
- Most claim that employees are very happy with the clinic.
- Most claim to have about 12-20 visits per day.
- All claim that their OSEHC is centrally located near the largest group of employees.

Chapter 3

Research Methodology

Introduction

This descriptive research study seeks to review the concept of on-site employee health clinics and evaluate the possible return on an investment made in such a clinic. According to Gay (1987), descriptive research involves collecting information through data review, surveys, interviews, or observation. This type of research best describes the way things are; descriptive research answers the questions "who, what, where, when and how" (Wikipedia). Data collected will consist of "direct quotations from people about their experiences, opinions, feelings, and knowledge" of on-site employee health clinics and their possible return on investment (Patton, 1987, p. 7). The analysis of this information will seek to establish common patterns that provide answers to the primary and subsidiary research questions in a holistic perspective.

Research Questions

This research investigation focuses on answering the following primary and subsidiary questions:

Primary Question:

1. Do OSEHCs provide a possible return on investment?

Subsidiary Questions:

1. Is their a link between the return on investment and the size of the organization?
2. What is the ideal model for an OSEHC?

Validity and Variables

This study is concerned with showing that on-site employee health clinics do in fact provide a return on investment. The results will have potential implications for organizations evaluating the implementation of their own on-site clinic; therefore it is imperative that the results be valid.

According to Bartz (1981) validity is concerned with whether or not what the researcher intends to measure is really measured. The term validity refers to the extent to which a measure adequately reflects the real meaning of the concept under discussion (Babbie, 1995).

> However, some qualitative researchers reject the framework of validity that is commonly accepted in more quantitative research in the social sciences. They reject the basic realist assumption that their is a reality external to our perception of it. Consequently, it doesn't make sense to be concerned with the "truth" or "falsity" of an observation with respect to an external reality (which is a primary concern of validity). These qualitative researchers argue for different standards for judging the quality of research. (Torchim, 2006, section "Qualitative Validity")

According to Trochim (2006), "qualitative researchers do have a point about the irrelevance of traditional quantitative criteria" (Qualitative Validity section). Trochim argues that it is impossible to establish external validity of a qualitative study in which standardized sampling methods are not traditionally used (2006). He asserts that "no one has adequately explained how the operational procedures used to assess validity and reliability in quantitative research can be translated into legitimate corresponding operations for qualitative research" (Qualitative Validity section). He further adds that some qualitative researchers have addressed these concerns by establishing a set of criteria for judging qualitative research (ibid).

Guba and Lincoln established four measures for judging the reliability and validity of qualitative research (Trochim, 2006). They offered these as an alternative to more traditional quantitatively-oriented criteria (ibid). "They felt that their four criteria better reflected the underlying assumptions involved in much qualitative research" (ibid, Qualitative Validity section). Their proposed criteria and the "comparable" quantitative criteria are listed in the table 3.1. This study focuses on credibility, dependability and confirmability of the results.

Table 3.1

Traditional Criteria for Judging Quantitative Research	Alternative Criteria for Judging Qualitative Research
internal validity	credibility
external validity	transferability
reliability	dependability
objectivity	confirmability

Since the purpose of qualitative research is to determine or understand an issue or problem from the point of view of the participant, it is therefore important the participant be credible or believable (Trochim, 2006). The credibility criterion seeks to establish the credibility of the results by ensuring that the participants in the research are credible and relevant to the issue being studied.

In traditional quantitative research reliability is based on the ability to reproduce the study and obtain the same results (ibid). The concept of research dependability underlines the need to account for various perspectives within the context in which

research occurs (ibid). The researcher should therefore take into account these variations and account for them in the data collection methods.

"Confirmability refers to the degree to which the results could be confirmed or corroborated by others" (Trochim, 2006, Qualitative Validity section). For the results of the qualitative research to be confirmed, the researcher needs to elicit the opinions of multiple individuals viewed as experts in the subject matter.

Independent and Dependent Variable(s)

The dependent variable in this qualitative study is the possible return on investment generated by implementing an on-site employee health clinic.

The independent variables in this qualitative study are:

- The number of employees in a concentrated area which was defined as being within 15 miles of the OSEHC.
- The number, classification and salary of staff for the OSEHC.
- The number of primary care visits diverted to the OSEHC.

Operationalization of the Dependent Variable

In this qualitative study, the dependent variable is the possible return on investment generated by implementing an on-site employee health clinic. To operationalize this dependent variable, this study solicited from subject-matter experts in the fields of human resource management, healthcare, and on-site employee health clinics their opinions about the possible ROI generated by implementing an on-site employee health clinic.

Threats to Internal Validity

This qualitative study focused on an alternative set of criteria for judging internal validity. This study focused on the credibility of the subject-matter experts to validate the findings. These individuals are each knowledgeable-experienced members of one of three relevant groups to this study. It was their knowledge and experienced based opinions that were solicited, collected, and evaluated in this study; these opinions were ultimately the basis for the conclusions drawn in this study.

The manner in which their opinions were solicited included on-line questionnaires, e-mail questionnaires and on-site interviews. Each individual was asked similar questions. However, the variation of the methods may offer some threats to internal validity or creditability. This is due to the possible difference in the way an individual answers questions in a face-to-face interview versus an on-line or e-mail questionnaire.

External Validity Expectations

"Transferability is parallel to external validity in quantitative studies and describes the extent to which the research findings can be applied to other situations or settings. To allow readers to evaluate the transferability of a study the researcher must provide a thick description of the research findings" (Barnes, et al, 2005). The methods of the research have been purposely detailed as explicitly as possible so to provide "a thick description of the research findings" (ibid). The expectation is that this will allow for other researchers to apply the same methods to similar situations in their research studies. It is also expected that the researcher will take into account any differences in

the situation outlined in this study and their own. Likewise, it is important to understand that all results cannot always be transferred without some modification to the research process.

Data Collection for the Study

No one data collection strategy is best, they all have their pros and cons (Patton 1987). The use of multiple data sources helps to balance out differing strengths and weaknesses of the data sources (ibid). This use of multiple data collection strategies is known as data triangulation (ibid). "Triangulated evaluation designs are aimed at increasing the strength and rigor of any evaluation" (ibid, p.60). Examples of these data sources are personal interviews of individuals in varying positions or perspectives, surveys and observations (ibid). The methods chosen in triangulation to test the validity and reliability of a study depend on the criterion of the research (Golafshani, n.d.). This research study used "methodological triangulation" which is the study of a single program/issue by collecting data through multiple methods, i.e. interviews, observations, questionnaires, and documents (Patton, 1987).

This research investigation collected data from subject-matter experts in three different groups: managers/providers of on-site clinics, health care industry experts, and leaders of human resource departments. The methods used to collect the data were interviews, questionnaires, and observations. The use of subject-matter experts address three of the criteria established by Guba and Lincoln: credibility, dependability and confirmability.

STEP 1

During step one, one-hundred leaders of human resource organizations from across the United States were invited to complete an anonymous survey via e-mail (Appendix A-5). These individuals were selected from a list of Society of Human Resource Management members. The parameters for selection were 1) they must be a Director, Assistant Director, President, or Vice President of Human Resources or Benefits; 2) they must work for a company headquartered in the United States; 3) they do not have to have an on-site clinic to participate; the survey has a section asking for the opinion of those without an on-site employee health clinic.

STEP 2

Five subject-matter experts from the health care industry were identified by me and my thesis advisor Dr. Robert Kelley. These individuals were selected because of their overall knowledge of the health care industry, their years of experience within the medical community, and their knowledge of on-site employee health clinics (Appendix A-2).

The five subject-matter experts were invited by e-mail to participate in the study and were given the option of a face-to-face interview, a telephone interview or an e-mail interview. Each subject-matter-expert was given an informed consent about participating in the study (Appendix A-3). During each interview, the subject-matter expert was asked to respond to questions concerning their opinion about on-site employee health clinics (Appendix A-4).

Step 3

In step three, five subject-matter experts who manage and/or provide care in an actual on-site employee health clinic were identified by me. These individuals were selected based on their proximity to Richmond, Virginia to aid in site visits to their respective clinics (Appendix A-6). Each individual was invited to participate in the study and were asked for an on-site interview at their clinic location. Three of the five did not respond, so three alternative sites were selected; however, they were outside of the Richmond, Virginia area so interviews were conducted with these three individuals via e-mail. The other two individuals granted me access to their facilities for the purpose of the interview. All five individuals were given an informed consent form about participating in the study (Appendix 3). During each interview, the subject-matter experts were asked to respond to questions concerning their opinion and experience with their respective on-site employee health clinics.

Limitations of the Study

This research study is concerned with showing evidence that on-site employee health clinics offer a return on investments. The conclusions of this research study are derived from the knowledge based opinions offered by those working in the health care industry, the medical community, on-site employee health clinics and leaders in human resource management. This study may not be reflective of the experiences, opinions and knowledge of all persons working in health care, medicine, on-site employee health clinics, or human resource management. This study did not include any research into

wellness programs operated by organizations in conjunction with their on-site employee health clinic.

Chapter 4

Analysis of Findings

Introduction

Over a period of five months, data was collected from three different groups of subject-matter experts about on-site employee health clinics. Their knowledge based opinions were used to determine if organizations can realize a return on an investment in an on-site employee health clinic. This chapter reviews the findings from the data collection and serves to answer the primary and first subsidiary questions:

Primary Question:

1. Do OSEHCs provide a return on investment?

Subsidiary Questions:

1. Is their a link between the return on investment and the size of the organization?
2. What is the ideal model for an OSEHC?

Review of the Findings

Step 1: The Knowledge of HRM Leaders

One-hundred human resource management executives from across the United States were sent an e-mail asking them to complete the survey. A response rate of 43 percent was received. However, in reviewing the responses, it was discovered that 17 respondents only completed the demographic section of the survey; those were excluded from the result. Therefore, the response rate was 26 percent of which the majority of

those, 73 percent, had on-site employee health clinics. The results from step 1 are summarized in table 4.1 below and graphically expressed in appendix A-7.

On-site employee health clinics were predominantly reported in manufacturing or government organizations. Seventy-four percent of the respondents with OSEHCs employ over 3500 people each. The smallest responding organization with an OSEHC employs between 500 and 1500 people. This lends support to the belief that OSEHCs are more often found in large organizations.

The majority of respondents staff their OSEHC with a doctor, a nurse practitioner and a medical technician. The majority of the doctors work part-time and provide oversight to a full-time nurse/nurse practitioner. The top five most popular services offered are: pre-employment drug testing, random drug testing, wellness programs, urgent care and pre-employment physicals. Eighty-four percent of respondents self manage their OSEHC.

Regarding clinic performance and utilization, respondents offered the following opinions about their OSEHCs. Eighty-four percent felt or strongly felt that their OSEHC aided in reducing health care costs for their organization. Likewise, 84 percent felt or strongly felt that their OSEHC aided in reducing lost time from work. Regarding whether or not they would recommend OSEHCs as a means to lower health care cost, 84 percent stated they would. 92 percent felt that OSEHCs were a worthwhile investment. Additionally, 100 percent felt that their employees utilize their organizations OSEHC and are satisfied to some extent or to a great extent.

Table 4.1

Number of clinics by industry type.	
Mining	1
Service	1
Health Care	2
Government	6
Manufacturing	9
Percentage of respondents offering each type of service.	
Immunizations	3%
Surveillance Exams	6%
Behavioral Health	11%
Pharmacy	16%
Physical Therapy	16%
EAP	26%
Fitness Center	32%
Primary Care	53%
Fitness/Nutrition	53%
Pre-Emp. Physicals	58%
Urgent Care	63%
Wellness Programs	68%
Work Comp.	74%
Random Drug Testing	79%
Pre-Emp. Drug Testing	79%
Percentage of respondent clinics employing/contracting with particular provider classification.	
Psychiatrist	5%
Pharmacist	16%
Physical Therapist	16%
Nutritionist	26%
Lab Tech	63%
NP	84%
Doctor	89%
Percentage of respondents that indicated that they agree or strongly agree that their OSEHC aided in reducing their health care cost: 84%.	
Percentage of respondents that indicted that they agree or strongly agree that their OSEHC aided in reducing lost time from work: 84%.	

Percentage of respondents that felt their employees utilized their OSEHC to some or a great extent: 100%

Percentage of respondents that positively responded that they recommend or strongly recommend OSEHCs as a means to lower health care cost: 84%

Percentage of respondents that felt their employees were satisfied with their OSHEC to some extent or a great extent: 100%

Percentage of respondents, with OSEHCs, that felt they were a worthwhile investment: 92%

Percentage of respondents who self-manage their OSEHCs: 84%

Percentage of respondents who contract with a vendor for management services of their OSEHC: 16%

Respondents with OSEHCs also provided their opinion about the advantages and disadvantages to operating an OSEHC. Their comments can be found in appendix A-8. An analysis was conducted of the comments offered by the respondents. They were grouped into categories based on similarity. The categories and the number of comments per category are summarized in Table 4.2 below.

Table 4.2

ADVANTAGES		DISADVANTAGES	
Category	*Number of Related Comments*	*Category*	*Number of Related Comments*
Quality Care/Services	10	Initial Cost	2
Programs Offered	10	Employee Confidence	2
Savings	6	Mismatch of Services	2
Administration	6	Finding Staff	2
Employee Morale	2		

Step 2: Validation by Medical Industry Experts

The five subject-matter experts representing the health care industry completed step 2. A 100 percent response rate was achieved; questionnaires were returned within five days of receipt by the subject-matter experts. Their opinions are detailed in Table 3 below.

All the subject-matter experts responded favorably when asked if on-site employee health clinics provide savings on health care costs and in saved lost time from work. Additionally, all but one would recommend them to organizations as a means to lower health care costs.

Some other themes discussed were the need to have management support, that budget issues could be a problem, the need to market the clinic early and often, to answer employee's questions and concerns, and that finding staff could be difficult. Two subject-matter experts indicated that a company would need a large number of employees to maximize the returns on investment. One subject-matter expert feels that savings of lost time from work may be over inflated due to an increase in presentism because clinic services are convenient.

Table 4.3

Question 1	**In general, what is your opinion of OSEHC (on-site employee health clinics)?**
SME 1	Good.
SME 2	I have a very favorable opinion of OSEHC's. I feel they can be beneficial and cost-effective if set up and managed properly.
SME 3	Organizations, with the right approach, can save money.
SME 4	Such clinics require a large number of concentrated

	employees to be economically feasible.
SME 5	Favorable. I have personally staffed and managed such clinics. I have seen such on-site clinics that rival the best local community-based clinics for broad-based complete healthcare, both in the U.S. and elsewhere, and I have seen such on-site clinics that provided little more than basic acute injury care. Properly structured and managed, and with the right personnel, these types of clinics can be a tremendous asset to an organization, both with respect to direct health issues as well as to organizational productivity and well-being in general.
Question 2	**In your opinion, how has the OSEHC concept evolved over the past 10 years?**
SME 1	Becoming proactive in diagnosing problems pre-hire
SME 2	I think on-site medical clinics were quite popular about 15-20 years ago. They seemed to be in existence more for employee and company convenience than for cost savings at that time. Then, as overall medical (and other company) expenses rose sharply, the clinics became expendable for many companies. However, as health insurance premiums and worker's comp. costs have continued to skyrocket (with no end in sight), many companies have revisited the idea of OSEHCs. I think now they are being thought of as more as cost-saving tools than they were years ago.
SME 3	I hear more and more about them. Many larger organizations are opening them up.
SME 4	The idea has become much more widely promoted, and much more widely contemplated by employers. I am unaware of changes in the underlying concept.
SME 5	In the past, many such clinics were created to serve merely as a "perk" to key management personnel and without much regard to the workforce as a whole. They existed physically in out-of-the-way facilities and typically dealt with clinical issues only in a reactive mode. Over the past 10 years, that old paradigm has essentially evaporated. Today's state-of-the-art on-site clinics are highly visible, well equipped, and staffed with competent personnel. Further, the scope of services has expanded greatly in the fully expressed model, to include acute injury/illness care (personal and occupational), chronic condition management, wellness and health promotion, case and disability management, safety and ergonomics integration,

	risk management activities, etc. In other words, the best clinics today are an integral part of an organization's overall activities, and complement other management practices working towards achievement of the organization's goals.
Question 3	**Do you see the current trend of the number of OSEHCs being opened in U.S. organizations on the decline or rise?**
SME 1	Outsourced, on decline
SME 2	On the rise
SME 3	On the increase.
SME 4	Prevalence is very low, but the trend is in the direction of increased prevalence.
SME 5	Overall I think it is stable; however, there has clearly been a shift in the nature and scope of such clinics. For instance, there is an increasing use of mid-level practitioners (NPs, PAs). Physicians must still be engaged, but often more so in a consulting or managerial context, and then for secondary/tertiary clinical issues, depending on the nature of the business. There is a stronger focus on holistic care, with wellness and well-being a primary area of attention in addition to traditional "employee health". Integration of such clinics (and their personnel) with the community medical delivery systems at large is also increasing, as well as integration with non-occupational benefit structures...so that all opportunities to improve health at the individual level are fully leveraged, whether the intervention is at the primary, secondary or tertiary level of prevention.
Question 4	**What are the challenges you see with opening an OSHEC?**
SME 1	Budgetary
SME 2	I feel that getting company executives/management to agree with the necessity and value of the OSEHC would be the biggest challenge. Other challenges would include cost, liability issues and contractual arrangement with physicians and other medical personnel.
SME 3	Marketing (sending out the right message to employees answering their questions and concerns)
SME 4	Physical space, equipment, insurance, convenience, privacy and employee acceptance.
SME 5	Examples: adequate physical space that is equipped and

	maintained to a level that is similar to what could be accessed in the general community; sustained management commitment; skilled practitioners that are able to be effective and thrive in a "management system"; some lack of autonomy of on-site practitioners vis-à-vis what they are used to in private practice; funding; failure to establish short and long term objectives. On-site healthcare personnel must be oriented and continuously re-oriented to the organization's policies, procedures, key personnel, strategic goals, etc. Participation in appropriate management discussions by the on-site healthcare personnel is a catalyst for enhanced effectiveness of the on-site program.
Question 5	**To what extent do you feel on-site clinics aid in reducing health care cost?**
SME 1	To some extent
SME 2	To a great extent (mostly for Occupational Medicine clinics, but also for Employee Health clinics)
SME 3	To some extent
SME 4	For employers with >1000 concentrated employees, I think the answer may be to some [modest] extent. For all others, I think it's to no extent.
SME 5	To a great extent – YES; no question they can reduce direct healthcare costs for episodic care and maintenance. Indirect costs (e.g., productivity, time management for accessing care off-site, absenteeism) are more difficult to measure. And the big wild card is whether or not sustained on-site integrated healthcare delivery can favorably impact on chronic disease incidence and severity.
Question 6	**To what extent do you feel on-site clinics aid in reducing lost time from work?**
SME 1	To some extent
SME 2	To a great extent (for both types of OSEHC)
SME 3	To a great extent
SME 4	To some extent
SME 5	To a great extent – YES, no question about this.
Question 7	**What other benefits do you feel are obtainable by opening an OSEHC?**
SME 1	Limit lost time accidents. Prevent employees getting huge time off from their primary care doctors.
SME 2	I believe that properly operated OSEHC could actually

	improve employee satisfaction scores and boost employee morale. If employees feel that their employer cares about their overall health and well-being, they could be more content and therefore more productive.
SME 3	Increased employee wellness through education and being proactive with diagnosis.
SME 4	Not answered.
SME 5	Tremendous good will among the workforce can be established by opening such clinics, if properly marketed and managed. Direct and indirect cost savings are attainable. Reduction in unnecessary disability days through effective and aggressive return-to-work programs are clearly a significant benefit of on-site healthcare personnel. Injury statistics – OSHA total recordable, restricted workday and lost workday rates – can be better managed (and reduced), and as a result workers' compensation premiums may go down. "Presenteeism" (being at work physically, but with reduced productivity due to the subtle effects of one's personal illness or concern over a family member) can also be better managed. Other opportunities exist, such as integrating on-site physical therapy.
Question 8	**What are the disadvantages of opening an OSHEC?**
SME 1	Cost finding competent staff
SME 2	Costs/liabilities/medical employee contracts
SME 3	Constant questions about confidentially of information
SME 4	Distraction from the core mission and business priorities. Dysfunctional economics if too few employees/too little volume.
SME 5	The organization must have the space, management commitment, a pledge to provide all necessary initial and on-going training, capital and operating cash. Creating and maintaining credibility and excellent rapport with the workforce takes time. Perceptions by the employees that the on-site staff is 'in the pockets' of management can be a challenge to overcome; however with the right staff and service delivery structure (and adherence to accepted standards of ethical practice in such a setting) this can be addressed and minimized.
Question 9	**What types of savings can organizations obtain from opening an OSHEC?**
SME 1	Limit lost time accidents, preventive care (vaccinations),

	job description review, limit exposure to workers comp payments for pre-existing conditions.
SME 2	A large company with thousands of employees could save hundreds of thousands or perhaps even a few (or several) million dollars.
SME 3	Decreased future cost with proactive screenings (early detection of future major health issues)
SME 4	Depends on the size and circumstances
SME 5	There are a number of reports in the literature of savings in the 1.5:1 to 3:1 range, comparing program costs to direct benefit. Indirect savings are generally assigned an additional $4-5$ for every $1 spent
Question 10	**I would recommend on-site clinics to organizations as a means to lower health care cost?**
SME 1	Agree
SME 2	Strongly agree(if the company size can support the clinic)
SME 3	Agree
SME 4	Except in special circumstances, I would disagree
SME 5	Agree – YES, but clearly depends on the demographics of the site, anticipated or known health and safety risks/hazards, availability of competent professionals to staff such a clinic, goals/objectives of the organization, union environment, etc
Question 11	**Please offer any general comments you have about OSEHC**
SME 1	Great, if the company can afford the cost. Returns are largely intangible and therefore not attractive to accountants.
SME 2	To fully maximize their return on investment in an OSEHC [an organization would need to be] probably at least 4-5 thousand
SME 3	Need about 3,000-5,000 employees and be self insured to maximize returns.
SME 4	Look at both debit and credit sides of the ledger. For example work time missed to get medical attention might be 1 hour instead of 3 hours per encounter, but before crediting full savings consider how many extra encounters might be induced by opportunity and convenience. Additionally, more than 100, maybe much more than 1000 employees would be required for an organization to be able to generate a ROI.

SME 5	Again, depending on the factors in #10, a site with about 250 employees can typically justify a nurse/NP/PA, and a physician can typically be justified when the number approaches 500+.

Step 3: Validation by Care Providers/OSEHC Administrators

In step three, five subject-matter experts who oversee or provide care in their organization's on-site clinic were interviewed in person or via e-mail, three of the five were alternatives. The response rate for the group, including the alternatives, was 100 percent. Three of the five were local to Richmond, Virginia, two of which granted me access to their facilities for the purpose of the interview and a tour.

During each interview, the subject-matter experts were asked to respond to questions concerning their opinion and experience with the on-site employee health clinic. Their responses are noted in table 4.4.

A majority of these subject-matter experts indicated that their OSEHC aids, to a great extent, in reducing their health care costs. Additionally, it has been their experience that their OSEHC has reduced to some or to a great extent lost time from work. All the subject-matter experts felt positive that the employees of their organizations utilize the clinic and are satisfied with the services they receive at the OSEHC. All the subject-matter experts agreed or strongly agreed that they would recommend OSEHCs to other organizations as a means to lower health care costs; likewise, they felt that OSEHCs are a worthwhile investment.

Table 4.4

Question 1	**To what extent has your on-site clinic aided in reducing your health care cost?**
SME 1	Unknown
SME 2	To a great extent
SME 3	To a great extent
SME 4	To a great extent
SME 5	To a great extent
Question 2	**To what extent has your on-site clinic aided in reducing lost time at work?**
SME 1	Unknown
SME 2	To some extent
SME 3	To a great extent
SME 4	To a great extent
SME 5	To a great extent
Question 3	**To what extent has your employees utilized the on-site clinic?**
SME 1	To some extent
SME 2	To a great extent
SME 3	To some extent
SME 4	To some extent
SME 5	To a great extent
Question 4	**What other benefits has your on-site clinic provided your organization?**
SME 1	Decreased the cost of outsourcing pre-placement and periodic surveillance evaluations and screenings. Providing an on-site option for work-related injury evaluation and treatment.
SME 2	Better preventative care for employees and their families. Lowered medical cost. Fewer billing problems. Employees feel better taken care of. Expedites pre-employment physicals.
SME 3	Our return to work programs have greatly reduced our lost time from work. Employees no longer abuse sick leave.
SME 4	If staffed with a medical provider (MD, NP) who is willing to see employees for non-work related issues, an employee saves co-pay cost, and the employer reduces insurance cost.
SME 5	Reduced sick leave, reduced presenteeism, lower long term disability costs. Quality of work life.

Question 5	**What are the disadvantages of having an on-site clinic?**
SME 1	Employees want to use it as an ER provider which could delay timely treatment (e.g. coming to the clinic for chest pain rather than going to call 911).
SME 2	Initial expense. It may take years to "pay-off" the expense of building a clinic. Administrative/maintenance cost.
SME 3	We do not provide primary care. We do see employees for mild illnesses such as headaches or minor cuts. However, some employees think that the clinic should handle illnesses and injuries.
SME 4	Staffing, medical records-keeping, regulatory compliance, and deciding how comprehensive a program is desired.
SME 5	Battle of the budget. Getting management buy-in (a challenge more than a disadvantage).
Question 6	**I would recommend on-site clinics to other organizations as a means to lower health care cost?**
SME 1	Strongly agree
SME 2	Agree
SME 3	Agree
SME 4	Strongly agree
SME 5	Strongly agree
Question 7	**To what extent are employees satisfied with the clinic?**
SME 1	To a great extent
SME 2	To a great extent
SME 3	To some extent
SME 4	To some extent
SME 5	To a great extent
Question 8	**Based on my knowledge, I feel on-site clinics are a worthwhile investment**
SME 1	Strongly agree
SME 2	Agree
SME 3	Agree
SME 4	Strongly agree
SME 5	Strongly agree
Question 9	**What other general comments do you have about your experience with on-site clinics?**
SME 1	See above
SME 2	We are saving money in the form of pre-employment

	physicals. Because the building is only two years old, we're not in cost-savings mode yet, but the intent is to save money and promote wellness
SME 3	It is important to communicate with the employees so that there are not unrealistic expectations or misunderstandings about the clinic's purpose.
SME 4	Savings realized especially in case management or medial leaves, acute care visits, and overtime reduction. A benefit to the employees and a cost savings to an employer.
SME 5	Important relationships are formed between clients and care-givers which build trust and reinforce teaching goals. Positive outcomes are more likely to occur in this environment. Clients are less likely to confide in "screening providers" when they have concerns and/or questions.

Research Questions

The purpose of this research investigation was to review whether or not a return on investment could be realized by organizations opening an on-site employee health clinic (OSHEC). This study focused on one primary and two secondary questions. The primary question was answered after the data from steps 1-3 was collected and reviewed the data.

To answer the first subsidiary question a math model was developed that looks at a calculated estimate of the ROI for organizations ranging in size from 1,000 employees to 1,0000 employees. The last subsidiary question is discussed in the final chapter.

Primary Question: Do OSEHCs provide a return on investment?

To answer this question the responses from the HR leaders, with OSEHCs, where reviewed and compared to the responses of the other two groups of subject-matter experts.

The industry experts and the OSEHC operator's responses closely match the responses from the HR leaders in step 1. The comparison of each group's response is summarized in table 5 below. The majority of respondents in all three groups agreed that OSEHCs aid in reducing health care costs and lost time from work. Additionally, the majority agreed that they would recommend an OSEHC to other organizations as a means to lower health care cost.

Table 4.5

Gave Favorable Response to:	**HR Leaders**	**Medical Industry SME**	**OSEHC Providers or Administrators**
OSEHCs aid in reducing health care cost	84%	100%	80%
OSEHCs aid in reducing lost time	84%	100%	80%
Would recommend to other organizations as a means to lower health care costs	84%	80%	100%

Two key conclusions are drawn from this analysis. The first conclusion is that this study shows face validity. The responses from the three groups triangulated, that is to say they are closely matched. Additionally, the response's from the three groups support the findings in the literature review. The second conclusion is that on-site employee health clinics do in fact offer organizations a return-on-investment. This point was overwhelmingly supported by the responses from all three groups.

Subsidiary Question #1: Is their a link between the return on investment and the size of the organization?

To answer this question a math model was developed to estimate what level of savings could be realized from an on-site health care clinic (table 4.6). This model allows for manipulation of several variables to include: size of organization, utilization rate, cost structure, and clinic staffing. This model uses data provided from leaders in the health care industry and from research conducted for this investigation.

In this model the following assumptions were made:

- That 60 percent of an organization's work force lives within 15 miles of the facility.
- That only 45 percent of the total employee population, within 15 miles of the clinic, will utilize the clinics service as opposed to going to their PCP.
- That 20 percent of the work population will experience a work place injury that requires medical attention. Of those 20 percent, only 50 percent will utilize the clinics services as opposed to another provider listed on the panel of providers offered.
- Avoided time away from work was calculated assuming a two and a half hour round trip, to include wait time and the doctor's consultation, to community providers at an estimated $35 per hour employee cost factor.
- As the number of employees decrease so to decreases the type and number of medical staff; i.e., an organization with 2,000 employees would only need a part-

time MD, full-time NP, a part-time radiological technician/medical assistant and a part-time medical secretary.

- Benefits were calculated at 40 percent of salary for full-time employees only.
- With the exception of organizations with 1,000 or more employees, it was assumed that the clinic would operate Monday – Friday, 8 hours per day. For the organization with fewer than 1,000 employees a part-time operation schedule was assumed.
- This model does not include any savings generated by moving pre-employment physicals from a contract vendor to the OSEHC.

Data used in the math model was obtained from the following:

- Staffing costs were taken from Richmond Virginia salary data found for each position on www.onetcenter.org and information obtained from local physicians
- Cost of equipment, insurance and supplies were obtained through research of multiple on-site facilities and vendors.
- PCP cost per unit and number of PCP units per member per year was supplied by Larry Colley of Dominion Benefits and reflect actual data from Anthem BC/BS of Virginia.

Table 4.6 Math Model

Direct Cost Avoidance / Efficiency Savings

Acute Visits

Total Number of Employees	10,000	8,000	6,000	4,000	2,000	1,000
Total Within 15 Miles of Clinic	**6,000**	**4,800**	**3,600**	**2,400**	**1,200**	**600**
PCP Cost Per Unit	$83	$83	$83	$83	$83	$83
Units Per Member/Year (PCP)	2.0	2.0	2.0	2.0	2.0	2.0
Total PCP Units Per Year	12000	9600	7200	4800	2400	1200
Projected Utilization Rate	45.0%	45.0%	45.0%	45.0%	45.0%	45%
Projected Units	5,400	4,320	3,240	2,160	1,080	540
Total Value of Services	$448,200	$358,560	$268,920	$179,280	$89,640	$44,820
Avoided Time Away from Work	$472,500	$378,000	$283,500	$189,000	$94,500	$47,250

Work Related Visits (OTJ Injuries)

Total Units	2000	1600	1200	800	400	200
Unit Cost	$83.00	$83.00	$83.00	$83.00	$83.00	$83.00
Projected Utilization Rate	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Projected Units	1,000	800	600	400	200	100
Total Value of Services	$83,000	$66,400	$49,800	$33,200	$16,600	$8,300
Avoided Time Away from Work	$87,500	$70,000	$52,500	$35,000	$17,500	$8,750
Total Cost Avoidance/Time Savings	**$ 1,091,200**	**$ 872,960**	**$ 654,720**	**$ 436,480**	**$ 218,240**	**$ 109,120**

Annual Cost

The proposed staffing model below can efficiently deliver worksite health and wellness to an organization. The author has assumed certain staffing level based on the number of employees (demand) and research data of multiple on-site facilities.

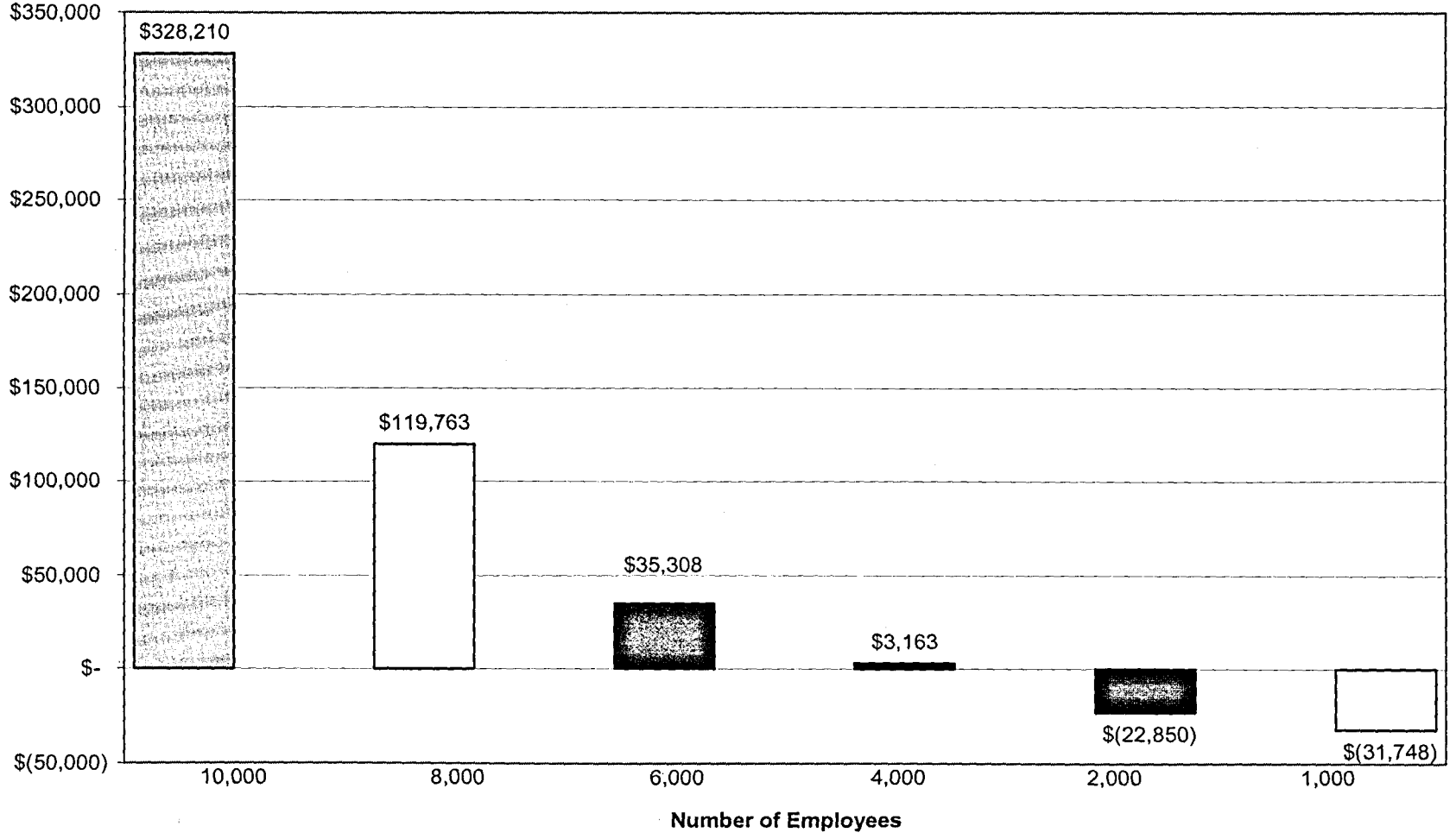
Total Number of Organizational Employees		10,000		8,000		6,000		4,000		2,000		1,000	
Staffing	**Salary**	Number of each		Number of each		Number of each		Number of each		Number of each		Number of each	
Physician	$145,600	1.00	$145,600	1.00	$145,600	1.00	$145,600	0.50	$72,800	0.25	$36,400	0.15	$21,840
Nurse Practitioner	$88,100	1.00	$88,100	1.00	$88,100	0.00	$0	1.00	$88,100	1.00	$88,100	0.75	$66,075
Occupational Nurse	$72,000	2.00	$144,000	2.00	$144,000	2.00	$144,000	0.50	$36,000	0.00	$0	0.00	$0
Rad. Tech./Med. Assistant	$56,600	1.00	$56,600	1.00	$56,600	1.00	$56,600	1.00	$56,600	0.25	$14,150	0.15	$8,490
Medical Secretary	$34,300	1.00	$34,300	1.00	$34,300	1.00	$34,300	1.00	$34,300	0.75	$25,725	0.75	$25,725
Total Wages			$468,600		$468,600		$380,500		$287,800		$164,375		$122,130
Benefits			$187,440		$187,440		$152,200		$86,000		$35,240		$0
Total Staffing Costs			**$656,040**		**$656,040**		**$532,700**		**$373,800**		**$199,615**		**$122,130**
Contract Fees	**Unit Cost**	Number of units		Number of units		Number of units		Number of units		Number of units		Number of units	
Lab Services (drug screens)	$20	2000	$40,000	1600	$32,000	1200	$24,000	800	$16,000	400	$8,000	100	$2,000
Med. Equipment Maint. Agreement	$1,000	1.00	$1,000	1.00	$1,000	0.75	$750	0.65	$650	0.50	$500	0.25	$250
IST Maint. Agreement	$1,000	1.00	$1,000	1.00	$1,000	0.75	$750	0.65	$650	0.50	$500	0.25	$250
Hazardous Waste Removal	$1,200	1.00	$1,200	0.85	$1,020	0.75	$900	0.65	$780	0.50	$600	0.25	$300
Laundry Services	$750	1.00	$750	0.85	$638	0.75	$563	0.65	$488	0.50	$375	0.25	$188
Supplies													
Medical	$6,000	1.00	$6,000	0.85	$5,100	0.75	$4,500	0.65	$3,900	0.50	$3,000	0.25	$1,500
Office	$2,000	1.00	$2,000	0.85	$1,700	0.75	$1,500	0.65	$1,300	0.50	$1,000	0.25	$500
Liability Insurance	$50,000	1.00	$50,000	1.00	$50,000	1.00	$50,000	0.65	$32,500	0.50	$25,000	0.25	$12,500

Miscellaneous												
Patient Education Material	$2,000	1.00	$2,000	0.85	$1,700	0.75	$1,500	0.65	$1,300	0.50	$1,000	0.25	$500
Continuing Education	$1,000	1.00	$1,000	1.00	$1,000	0.75	$750	0.65	$650	0.50	$500	0.25	$250
Dues and Licenses	$1,000	1.00	$1,000	1.00	$1,000	0.75	$750	0.65	$650	0.50	$500	0.25	$250
Uniform Allowance	$1,000	1.00	$1,000	1.00	$1,000	0.75	$750	0.65	$650	0.50	$500	0.25	$250
Total Expenses (-salaries/benefits)			**$106,950**		**$97,158**		**$86,713**		**$59,518**		**$41,475**		**$18,738**
Total Operating Expense			**$ 762,990.00**		**$ 753,197.50**		**$ 619,412.50**		**$ 433,317.50**		**$ 241,090.00**		**$ 140,867.50**
Medical	$6,000	1.00	$6,000	0.85	$5,100	0.75	$4,500	0.65	$3,900	0.50	$3,000	0.25	$1,500
Office	$2,000	1.00	$2,000	0.85	$1,700	0.75	$1,500	0.65	$1,300	0.50	$1,000	0.25	$500
Liability Insurance	$50,000	1.00	$50,000	1.00	$50,000	1.00	$50,000	0.65	$32,500	0.50	$25,000	0.25	$12,500
Miscellaneous													
Patient Education Material	$2,000	1.00	$2,000	0.85	$1,700	0.75	$1,500	0.65	$1,300	0.50	$1,000	0.25	$500
Continuing Education	$1,000	1.00	$1,000	1.00	$1,000	0.75	$750	0.65	$650	0.50	$500	0.25	$250
Dues and Licenses	$1,000	1.00	$1,000	1.00	$1,000	0.75	$750	0.65	$650	0.50	$500	0.25	$250
Uniform Allowance	$1,000	1.00	$1,000	1.00	$1,000	0.75	$750	0.65	$650	0.50	$500	0.25	$250
Total Expenses (-salaries/benefits)			**$106,950**		**$97,158**		**$86,713**		**$59,518**		**$41,475**		**$18,738**
Total Operating Expense			**$ 669,270.00**		**$ 659,477.50**		**$ 543,312.50**		**$ 433,517.50**		**$ 229,045.00**		**$ 206,307.50**

Balance Sheet

Organization Size (# of employees)	10,000	8,000	6,000	4,000	2,000	1,000
Total Cost Avoidance/Time Savings	$1,091,200.00	$872,960.00	$654,720.00	$436,480.00	$218,240.00	$ 109,120.00
Total Operating Expense	$ 762,990.00	$753,197.50	$619,412.50	$433,317.50	$241,090.00	$ 140,867.50
Net Return on Investment	**$ 328,210.00**	**$119,762.50**	**$ 35,307.50**	**$ 3,162.50**	**$ (22,850.00)**	**$ (31,747.50)**

Net Return on Investment by Organization Size



Chapter 5

Discussion and Implications of the Results

Introduction

Deciding to open and on-site clinic is not an easy one to make; typically medical care is not the organizations main focus, unless you are a health care company. If an organization decides to go it alone, that is to say they plan to self manage the clinic, they should do so advisedly. The success of the clinic heavily depends on how thoroughly the organization researches this option, how committed management is to its success, how comprehensive a plan is developed, how well it is implemented, how the OSEHC is marketed/communicated to employees, and the perceived quality of the services and staff of the OSEHC. This final chapter will answer subsidiary question 2; what is the ideal model for an OSEHC?

The Model Clinic

The research conducted showed that there is no one perfect model that works for all organizations. Each organization must go through a detailed process to open their own OSEHC. A team, made up of the major stakeholders in the organization, should be formed to manage the entire process. Additional team members, with specific related skills, should be added or called upon as needed. This process should include the following steps:

1. Creating alignment with the organization's mission and goals.
2. Building readiness
3. Executing the plan
4. Measuring the performance
5. Making adjustments

Creating Alignment. Alignment, according to Gerard Abraham (2006), generates four significant advantages to the organization; these are:

1. It allows an efficient use of usually scarce resources.
2. It results in increased speed of execution
3. It promotes team efforts toward common goals
4. It boosts motivation by giving people a keener sense of contribution to the results of their groups and the corporations as a whole.

Towards this end, the team's first task is to completely define the reasons behind opening the on-site employee health clinic. The team should define the OSEHCs mission, goals, expectations, and implementation strategy. Once the team has a complete understanding of these issues, they can then check for alignment. This can be accomplished by use of the following alignment checklist found in chapter five of *Strategy: Create and Implement the Best Strategy for Your Business* by Harvard Business Essentials:

Table 5.1

		Yes/No
People	Our people have the necessary skills to make the strategy work They support the strategy Their attitudes are aligned with the strategy They have the resources they need to be successful	
Incentives	Our rewards system is aligned with the strategy	
Structure	Units are optimally organized to support the strategy	
Supportive Activities	The many things we do around here-pricing, the way we handle customers, fulfill orders etc.-support the strategy	
Culture	Our culture and strategy are well matched	

If the answer to any of these questions is "no" then alignment is not achieved; the team will need to determine why they are not aligned and what modifications can be made to align them. Once alignment is achieved, then the team is ready to move to the next step of the process, building readiness.

This researcher has chosen not to delve further into the alignment process as that topic would require extensive research and further analysis which could distract from the main topic. Suffice it to say that the alignment process varies amongst the research; teams should avail themselves of the latest research and decide upon a process that works best for them.

Building Readiness. It is important to shop the idea around, at this juncture, to the key decision makers and the employee population. This will aid in determining if sufficient support exists to move forward with this endeavor. The effort must also have total management buy-in if the clinic is going to be a success. Failure to obtain this support will cause budgetary and operational issues further into the process.

To gain the support of management and employees, the project champions need to provide concrete proof of three items: 1) that this is a great benefit for the employees; 2) it will save money for both the organization and the employees; and 3) it will provide for a healthier workforce.

The team should conduct extensive research to include site visits and interviews of organizations with OSEHCs in operation. Other decisions will need to be made such as where to locate the clinic, what services to provide, and how to staff the facility. From this research, the next step is to develop a comprehensive business plan to include financials, staffing recommendations, market analysis, implementation guidelines, and a return-on-investment.

Executing the Plan. Locating the clinic is an important part of its success. If the clinic is placed too far away from the greatest concentration of employees, then the

utilization rate will be low thus impacting the clinics savings. Organizations should try to locate the clinic in a location that is convenient for the majority of their workforce. The target should be to locate the facility within 15 miles of 60 percent of the workforce.

Determining what services to provide can also be a difficult task. As listed by many of my survey respondents, the level of services provided is a concern of some employees. Some noted that they liked the services offered while others felt that the services offered and the services desired were different (see appendix A-7.4). During the planning phase of the clinic program, organizations should determine what level of services they can afford to offer and which services logically make the most sense to offer. Smaller organizations will have to tailor their services and hours of operation carefully. Offering too many services to a small group of employees may lead to under utilization of those services and a waste of resources. Likewise, offering too few may not provide much of an incentive for employees to utilize the clinic. Larger organizations may be able to offer higher level services; however, they also need to be concerned with trying to be all things to all people.

This research investigation has shown that staffing is the most difficult component. According to Susan Wells (2006) regarding staffing employers have three options: "Enlist a third-party vendor who provides and manages all the services and staff. Contract directly with outside health care professionals to staff and manage the facility. Hire health care professionals as employees to staff the on-site facility" (p.52). The research thus far is unclear as to the preferred method; all three have their pros and cons. As addressed earlier, contracting with a vendor to staff and manage the clinic

alleviates liability issues for the organization. However, these vendors charge substantial management fees that subtract from potential savings and may not offer consistency of care if the vendor changes staff frequently. Similarly, contract fees for health care professionals are typically higher then the rates being paid to bring them on as an employee. David Beech of Watson Wyatt Worldwide, an HR consulting firm, offers the following advice to organizations regardless of which method they choose to staff their OSEHC:

> You should thoroughly vet the medical professionals you intend to use before inking an agreement. Clinic practitioners should be interviewed by HR and medical or occupational health staff to assess personality and fit with the company culture and with rank-and-file employees. Beyond that, he says, employers should ensure that the clinicians are board-certified in their fields, have a clean history of complaints and malpractice litigation, and have appropriate experience in an acute-care clinic setting... [Beech] Perhaps the most important glue that holds the whole strategy together is to staff your clinic with people who are highly competent and with whom employees are going to be comfortable (Wells, 2006, p. 54).

Measuring the Performance. The number of employees necessary to open an OSEHC and generate a ROI seems to be up for some debate. Most experts suggest a minimum of 1,000 employees. However, David Beech states that "most companies that pursue this option are self-insured and have at least 700 employees – an informal threshold of size for supporting a basic clinic" (ibid). The basic clinic would provide limited services and even limited hours. Another expert in the field, Stuart Clark, executive vice president for I-Trax a health clinic management vendor, stated that companies that benefit the most from on-site clinics are those with 1,000 employees in a location central to the clinic (Liddick, 2005). Beech went on to say that a more comprehensive OSEHC that offers high end services such as "acute care, preventive exams...physical therapy or basic radiology" would need the support of 2,500 to 3,000

employees to generate a ROI (Wells, 2006, p. 54). Beech's assertions are supported by the math model developed by this researcher. Based on my model a high-end OSEHC requires over 4,000 employees to generate a ROI. Organizations that fall short of having enough employees to feasibly offer higher levels of service may consider partnering with neighboring-like minded organizations and share the benefits and costs associated with having an OSEHC.

At appropriate intervals, the team should evaluate the performance data to determine if the expected savings are being generated. Likewise, during this part of the process the team will want to assess the services being offered, the general satisfaction level of employees towards the OSEHC and any areas for improvement or additional services. A tool that may be useful to the team is to conduct a SWOT analysis on the OSEHC.

Making Adjustments. As part of any process, it is important to make adjustments to drive the performance to the anticipated or desired outcomes. After a complete SWOT analysis, financial review, and satisfaction survey is completed, the team should develop recommendations for adjustments. These recommendations should follow the same process from inception to measurement as did the original concept of the organizations OSEHC.

Conclusion

With the multitude of organizations currently generating a ROI from their OSEHC and the research conducted for this study, it is very apparent to me that on-site employee health clinics, under the right circumstances, do provide a return on

investment. Organizations considering this concept should remember that the ROI heavily depends on three factors: 1) the number of employees located in a concentrated area near the OSEHC; 2) the level of services being offered along with the quality of the staff; and 3) employee utilization of the OSEHC vs. their primary care physician.

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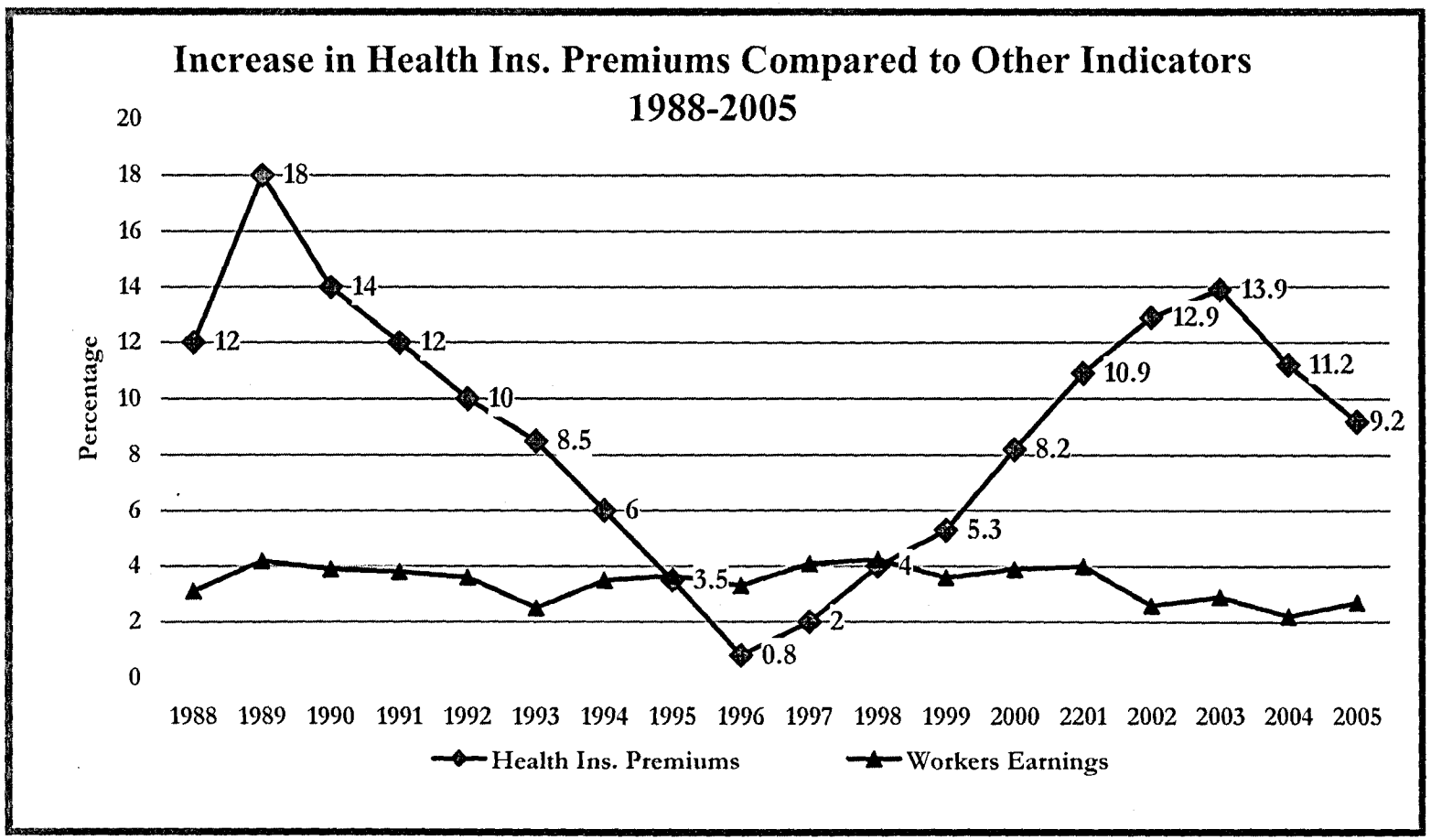
Appendix A-1



Note: The premium increases reflect the cost of health insurance premiums for a family of four. (Kaiser Emp. Health Benefits 2005 Annual survey).

Appendix A-2

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Health Care Industry

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Appendix A-3

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Public Safety University

INFORMED CONSENT FORM

HRM 540U: Thesis

The purpose of this study is to investigate the use of on-site health clinics and their potential return on investment. I am collecting data from organizations to determine if on-site clinics aid in reducing health care cost and/or lost time from work.

Your participation in this project involves completing the following interview questionnaire.

Your participation in this project is voluntary and you are free to withdraw your consent and discontinue in the project at any time without penalty.

The project involves no physical discomfort or risk to any participant.

The principle investigator in this study is me, Dale W. Carter. I am supervised by Dr. Robert Kelley in the School of Continuing Studies at the University of Richmond. Should you have any questions or concerns, please contact him at bob@pureculture.com. You can also reach me at 804-318-8051 or carterd@chesterfield.gov

This information will be included in a thesis paper and presentation to be shared with the class. The thesis will be copyrighted and published for inclusion in the library at the University of Richmond.

By completing this questionnaire you give consent to participate in the study. Should you have any questions or concerns, please contact me at 804-318-8051 or carterd@chesterfield.gov

NOTE: please print this page so you will have my contact information after completing the questionnaire.

Appendix A-4

1) In general, what is your opinion of OSEHC (on-site employee health clinics).

2) In your opinion, how has the OSEHC concept evolved over the past 10 years?

3) Do you see the current trend of the number of OSEHC being opened in U.S. organizations on the decline or rise?

4) What are the challenges you see with opening an OSEHC?

5) To what extent do you feel on-site clinics aid in reducing health care cost?

   a. To a great extent
   b. To some extent
   c. To no extent

6) To what extent do you feel on-site clinics aid in reducing lost time from work?

   a. To a great extent
   b. To some extent
   c. To no extent

7) What other benefits do you feel are obtainable by opening an OSEHC?

8) What are the disadvantages to opening an OSEHC?

9) What types of savings can organizations obtain from opening an OSEHC?

   Do you have any real world examples of savings realized by your organization or other organizations?

10) I would recommend on-site clinics to organizations as a means to lower health care?

   a. Strongly agree
   b. Agree
   c. Disagree
   d. Strongly disagree

11) Please offer any general comments you have about OSEHC.

Appendix A-5

Hello,

My name is Dale Carter. I am a graduate student at the University of Richmond. I am compiling data for my master's thesis project and respectfully request your assistance.

The purpose of this study is to investigate the use of on-site health clinics and their potential return on investment. I am collecting data from organizations to determine if on-site clinics aid in reducing health care cost and/or lost time from work.

*For those being survived without on-site clinics I would like to obtain your opinion on the concept. Please follow the survey; it will lead you to the sections that are applicable to your opinion.

Your participation in this project involves completing an anonymous survey located at surveymonkey.com. The session should take approximately 10-15 minutes. During the session you will be asked to respond accurately and truthfully to the questions presented.

The project involves no physical discomfort or risk to any participant. Steps will be taken to ensure that all information gathered will be held in strictest confidence.

The principle investigator in this study is me, Dale W. Carter. I am supervised by Dr. Robert Kelley in the School of Continuing Studies at the University of Richmond. Should you have any questions or concerns, please contact him at bob@pureculture.com. You can also reach me at 804-318-8051 or carterd@chesterfield.gov.

Your response is completely confidential, neither your name nor your email address is connected in any way to your responses. I will not know if you chose to participate or not.

Your response will be grouped with other responses and analyzed. Conclusions and recommendations will be drawn from that analysis. This information will be included in a thesis paper.

In order to ensure confidentiality, we will not ask you to sign a document indicating that you agree to participate. However, by completing this survey you give consent to participate in the study. Should you have any questions or concerns, please contact me at 804-318-8051 or carterd@chesterfield.gov.

Here is a link to the survey: https://www.surveymonkey.com/s.asp?A=163151324E93957

I appreciate your time and participation.

Sincerely,
Dale W. Carter

Please note: If you are not interested in participating in the survey, you may click on the link below:
http://www.surveymonkey.com/r.asp?A=163151324E93957

Appendix A-6

Subject-matter experts

OSEHC Administrators and/or Care Providers

Massey Energy
Marguerite Daniels
4 N 4th St.
Richmond, VA 23219
www.masseyenergyco.com

DuPont Spruance Plant
Linda Frye, RN
5401 Jefferson Davis Hwy.
Chesterfield, VA 23234
www.dupont.com/virginia/spruance/spruance.html

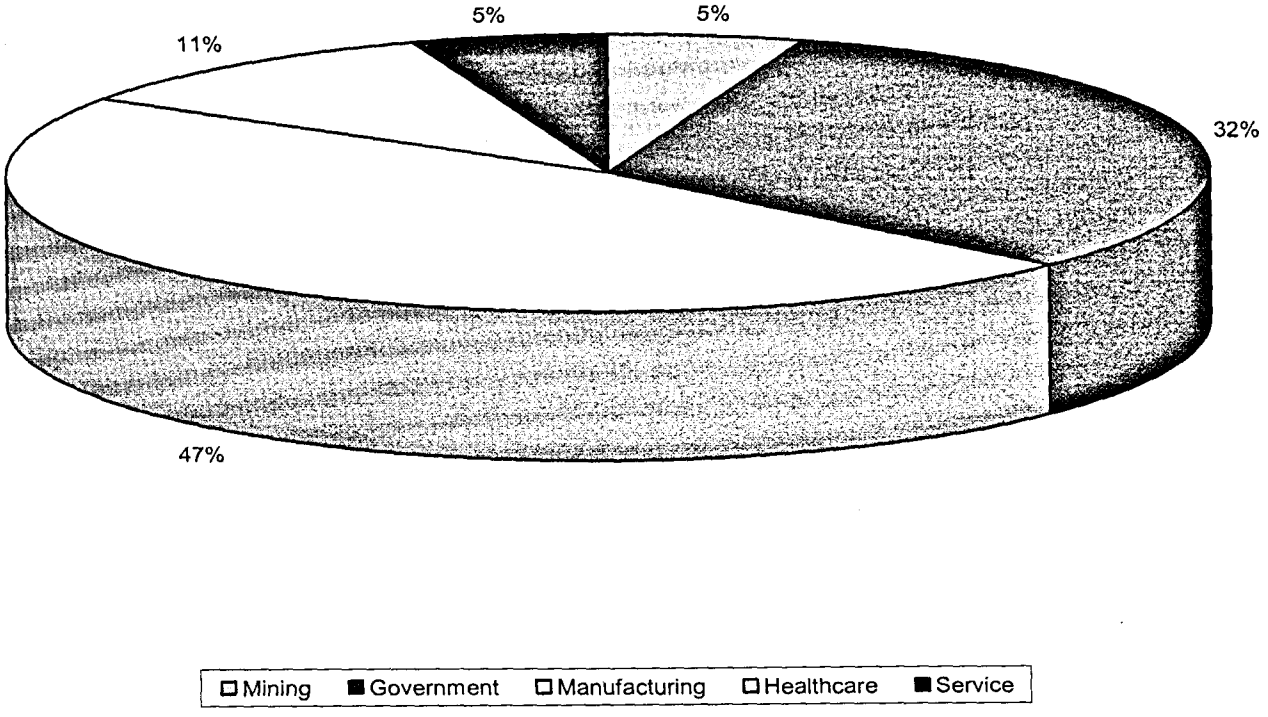
Honeywell
Chris Cosgrove, NP
4101 Bermuda Hundred Rd.
Chester, VA 23836
www.honeywell.com

City of Virginia Beach
Nancy Hughes, RN, COHN
Occupational Health Service Manager
2424 Courthouse Dr. Building 18, #183
Virginia Beach, VA 23456

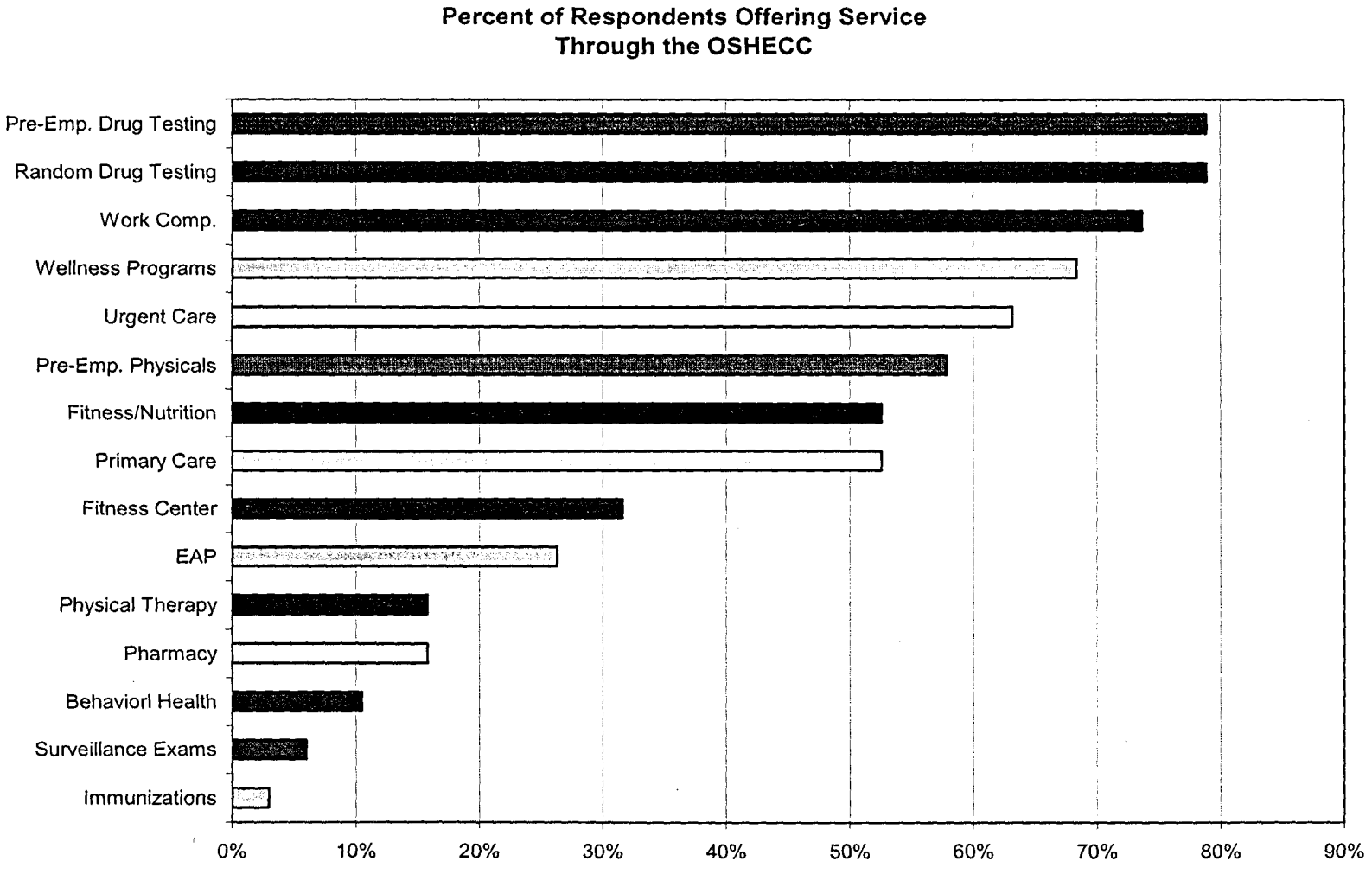
Henrico County
Carol Augsburger, LFNP
Clinic Director
Employee Health Services
County of Henrico

Appendix A-7.1

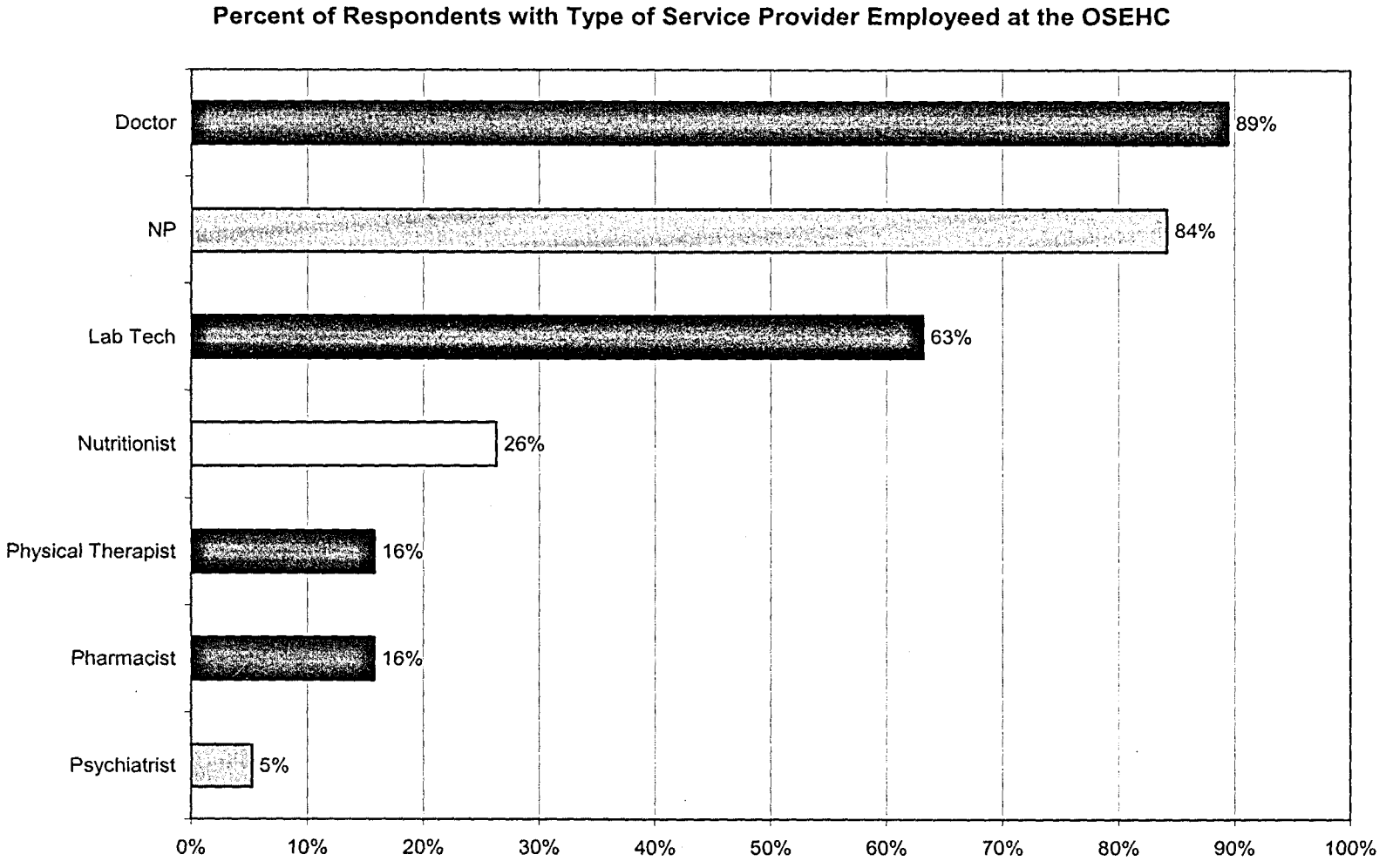
Respondents with OSHECC by Industry



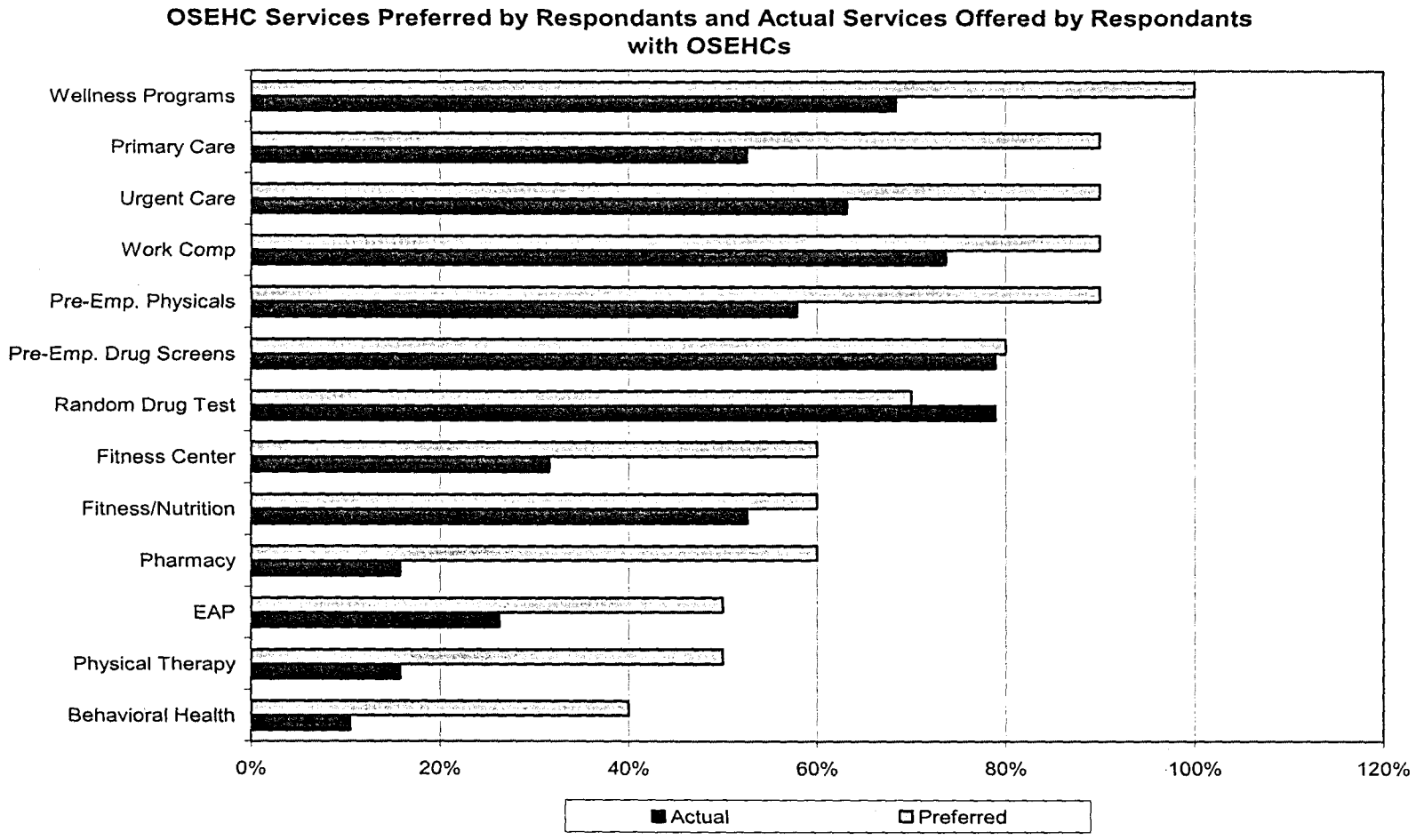
Appendix 7.2


Percent of Respondents Offering Service
Through the OSHECC
Pre-Emp. Drug Testing
Random Drug Testing
Work Comp.
Wellness Programs
Urgent Care
Pre-Emp. Physicals
Fitness/Nutrition
Primary Care
Fitness Center
EAP
Physical Therapy
Pharmacy
Behaviorl Health
Surveillance Exams
Immunizations
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%

Appendix 7.3


Percent of Respondents with Type of Service Provider Employeed at the OSEHC
Doctor
89%
NP
84%
Lab Tech
63%
Nutritionist
26%
Physical Therapist
16%
Pharmacist
16%
Psychiatrist
5%
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%

Appendix 7.4


OSEHC Services Preferred by Respondants and Actual Services Offered by Respondants with OSEHCs
Wellness Programs
Primary Care
Urgent Care
Work Comp
Pre-Emp. Physicals
Pre-Emp. Drug Screens
Random Drug Test
Fitness Center
Fitness/Nutrition
Pharmacy
EAP
Physical Therapy
Behavioral Health
0%
20%
40%
60%
80%
100%
120%
Actual
Preferred

Appendix A-8

Advantages noted by those with clinics

- Fewer billing problems
- Management of absenteeism cases
- Works extensively with workers comp for return to work
- Case management
- Disability third party administrator
- Excellent central clearing house for all agency's medical issues
- The clinical care for work-related illness and injury
- Flu shots
- Sick call
- Physicals
- Able to provide flu shot clinics
- Flu shots
- Various testing
- Flu shots
- Blood pressure checks
- Provide an on-site option for work-related injury evaluation and treatment
- Employees feel better taken care of
- Improved moral
- Health fairs
- Fitness center
- Exercise class
- Outside medical speakers
- First aid training
- Provide departments with stress reduction clinics
- Random drug screening
- Bi-annual physicals
- Return to work program
- Educational programs
- Lowered medical cost
- Expedites pre-employment physicals
- The savings are primarily driven by avoidance of time away from work.
- Employee discounts for Laski surgery and other medical services
- Reduced lost time for employees going to own doctor
- Improved attendance
- Critical resource for members and management

Disadvantage noted by those with clinics

- Initial expense
- Administrative/maintenance costs
- On-site clinics are expensive
- Reluctance of employees to use the facility
- Reluctance of employees to use the facility because of perceived confidentially issues
- Employees would like to use PT doctor as their primary care doctor
- Staffing difficulty- cannot always guarantee someone will always be there
- Staffing levels
- Interruption of medical home concept
- Limited benefit in heavily saturated areas (urban and suburban)

Appendix A-9

Job Description: Physician/Medical Director

Position Summary:

Provides direct care by performing examinations, diagnoses, counsels and prescribes treatments for patients and makes referrals as needed to other medical and clinical specialists. Responsible for supervision of clinic staff and overall clinic operation. Responsible for all medical aspects of the clinic, including, but not limited to, Occupational Health, MRO, physical therapy, case management and patient care. Work requires licensure by the Board of Medicine

Duties:

- Provides direct medical care, including conducting physical examinations, treatment and care for employees.
- Orders and interprets diagnostic tests; performs follow-up testing in more complex cases when required and seeks consultation and referrals as indicated.
- Provides case management of workers' compensation claims, including review of each case and evaluation of return to work status.
- Makes appropriate referrals and makes recommendations regarding employee's ability to perform job duties based on physical status.
- Conducts comprehensive physical examinations on applicants and employees for select positions.
- Serves as the MRO as called for in the drug/alcohol testing program.
- Oversee and manages the medical operations of the clinic including formal supervision of medical staff members.
- Works with the Wellness Coordinator and HR management to provide input and assistance with the development of a comprehensive wellness program.
- Oversees the content and delivery of presentations on a variety of health-related topics.
- May be placed in on-call status as required.

Qualifications:

- All mandated education requirements to obtain Board of Medicine licensure.
- Board certification in preventative medicine/occupational medicine.
- Certified Medical Review Officer preferred.
- 5 years prior experience in an occupational health setting.
- Knowledge of applicable Federal, State and Local regulations.

Job Description: Physician Assistant in Employee Health

Position Summary:

The Physician Assistant (PA) is a health professional who practices medicine with physician supervision. As a member of the health care team, the PA provides a broad range of medical services including diagnostic, therapeutic, and health promotion/disease prevention. This position will report to the Medical Director of the Employee Health Clinic. The PA will observes all applicable state laws and regulations, comply with appropriate recordkeeping requirements and help develop and implement health services and programs to provide for safety and health of employees.

Duties:

- Work cooperatively with the Medical Director in the identification, treatment, and management of epidemiological problems.
- Provide urgent care for conditions that would not reasonably require the PA to seek immediate management by the physician, including but not limited to, suturing superficial lacerations, immobilizing trauma victims prior to x-ray, or removal of a foreign body superficially embedded in the cornea. Initiate emergency treatment of cardiopulmonary arrest.
- Provide comprehensive pre-employment examinations and post-illness/injury return to work exams. Recognize and interpret signs and symptoms and initiate appropriate diagnostic and therapeutic measures.
- Function as a health care provider for employees with minor emergencies.
- Maintain medical records assuring confidentiality for all patients seen.
- Provide instruction in safety and good health practices.
- Delivers immunizations.
- Active involvement in the wellness program and any other projects under the supervision of the Employee Health Clinic Director. Work directly or indirectly with the referral agencies by initiating requests for consultations for problems out of the scope of the Employee Health Clinic.
- Other duties may be delegated by the physician depending upon experience and training as clinic privileges allow.

Qualifications:

- Minimum of a Bachelor's degree from an accredited university or college.
- A certificate from an accredited Physician Assistant Program.
- Certification by the National Commission on Certification of Physician Assistants.
- Certification in Occupational Medicine preferred.
- 3-5 years of experience in a medical setting, preferably occupational medicine.

Job Description: Nurse Practitioner

Position Summary:

Perform patient care with limited access to a physician for guidance and oversight. Performs physical exams, orders diagnostic tests, prescribes controlled substance, directly performs nursing assessments, may perform lab tests, take measurements, and develop and implement care plans including the administration of medication and case management.

Duties:

- Provides routine health care, treats uncomplicated episodic problems, manage some chronic problems and determines which patients need referral for physician management; provides or prescribes devices or medications as covered in the Practice Agreement for Prescriptive Authority.
- Obtains health history to include chief complaint, present illness, past history, family history.
- Including conducting physical examinations, treatment and care for employees. Orders and interprets diagnostic tests; performs follow-up testing in more complex cases when required and seeks consultation and referrals as indicated.
- Provides case management of workers' compensation claims, including review of each case and evaluation of return to work status. Makes appropriate referrals and makes recommendations regarding employee's ability to perform job duties based on physical status.
- Conducts comprehensive physical examinations on applicants and employees for select positions.
- Consults with the Medical Director if a condition is deemed to be beyond the Nurse Practitioner's scope of practice or in cases where experience and knowledge is limited or before taking an unfamiliar activity.
- Serves as the backup for the drug and alcohol screening collection process.
- Other duties as assigned by the Medical Director in accordance with policies, procedures and regulations.

Qualifications:

- All mandated education requirements to obtain Board of Medicine licensure as a Nurse Practitioner with Prescriptive Authority.
- Minimum of 3-5 years experience in a medical setting that provides occupational health services or family practice services required.
  Certification in occupational health nursing preferred.
- Demonstrated clinical knowledge of occupational health nursing and the analytical ability necessary to formulate effective nursing care plans.

- Familiarity/working knowledge of OSHA, HIPPA, and other federal and state occupational health requirements/regulations.

Job Description: Occupational Health Nurse

Position Summary:

Under direct supervision of the director, assists in all phases of occupational health care. Evaluates and treats work-related illnesses and injuries, conducts new hire physical exams, assists with health screenings and immunizations programs.

Duties:

- Assesses and evaluates all injuries/illnesses and medical complaints thoroughly and refers individual for appropriate medical treatment required that is beyond skill level.
- Treats and medicates according to doctor's directives, policies, and procedures.
- Ensures follow-up of work-related injuries and illness.
- Develops and implements a nursing care plan that provides for continued care and treatment, rehabilitation, and return to work.
- Provides education, explanation, and instructions to patients about condition and treatment.
- Provides education, support, and motivation in the areas of health, wellness and safety.
- Counsels and/or instructs troubled employees as necessary.
- Maintains confidentiality of medical records.
- Ensures that health records are maintained in compliance with OSHA, HIPPA and state and federal regulations. Releases medical information only to authorized personnel by appropriate procedures.
- Reviews physical exams, special exams, and physical assessments for accuracy and completeness.
- Ensures medical equipment, supplies, and drugs are properly maintained.
- Ensures that exam rooms are supplied and work areas are kept clean.
- Seeks guidance from supervisors when necessary.
- Performs other related duties as necessary.

Qualifications:

- Registered nurse with current licensure required.
- Minimum of 3-5 years experience in a medical setting that provides occupational health services or family practice services required.
  Certification in occupational health nursing preferred.
- Demonstrated clinical knowledge of occupational health nursing and the analytical ability necessary to formulate effective nursing care plans.
- Familiarity/working knowledge of OSHA, HIPPA, and other federal and state occupational health requirements/regulations.

Job Description

Medical Assistant/Radiological Technologist

Position Summary:

Performs radiological tests (x-rays) and maintains all x-ray files and records in accordance with policies and state regulations. Conducts drug and alcohol screenings in accordance with policy and DOT regulations. Assists providers with patient care, examinations and performing a variety of clerical functions.

Duties:

- Prepares patients for x-ray exams, positions patients based upon the type of procedure being performed and conducts the x-ray exam.
- Performs both DOT and Non-DOT drug/alcohol screens using proper chain of custody; ensure preparation for pick-up and shipment to appropriate laboratory.
- Performs ancillary testing, as requested by the Medical Director, to include audio and respiratory testing.
- Maintains radiological film files and storage, pulls x-rays as requested for referrals and/or copying.
- Maintains adequate stock of supplies and the condition of the equipment necessary to perform x-rays, drug/alcohol screenings, audio testing and respiratory testing.
- Maintains medical records related to x-ray exams, audio testing, drug/alcohol screenings and any other tests/examinations conducted.
- As needed, performs front office clerical duties such as check-in, check out, record processing and answering telephones.
- Performs any other tasks and duties reasonably requested by the Center's Medical Director in accordance with established polices and procedures.

Qualifications:

- Graduate of accredited school of radiological technology
- Certified Radiological Technician
- Certified to conducted DOT drug/alcohol screenings
- Certified to conducted audiometric and Spiro-metric testing
- 3 years experience as a radiological technologist/medical assistant; preferably in an occupational health setting.

Job Description

Medical Secretary

Position Summary:

Perform secretarial duties as related to a health care setting to include: appointment setting, billing, records maintenance, generating reports and correspondences.

Duties:

- Schedule and confirm patient appointments.
- Answer telephones; provide information to caller and/or direct calls to appropriate staff.
- Interview patients to complete documents, case histories, and forms.
- Compile and record medical charts, reports, and correspondence, using a personal computer.
- Greet visitors, ascertain purpose of visit, and direct them to appropriate staff.
- Receive and route messages and documents such as laboratory results to appropriate staff.
- Perform various clerical functions, such as ordering and maintaining an inventory of supplies and bill processing.
- Other reasonable duties as assigned by the Medical Director in accordance with policy and procedure.

Qualifications:

- High school diploma required.
- Course work in business application software desired (Microsoft Word and Excel).
- Two years experience in a clerical/receptionist role; medical setting preferred.
- Certification as a Medical Secretary preferred.

CURRICULUM VITAE

Dale W. Carter, Jr.
1701 Calais Trail
Powhatan, VA 23139
(804) 794-1713 or JDAJ00@aol.com

Educational Background

August 2005 – May 2007, University of Richmond, Richmond, Virginia
Masters of Human Resource Management

August 2002 – August 2005, University of Richmond, Richmond, Virginia
Bachelors of Arts in Human Resource Management & Leadership

Professional Experience

Chesterfield County Department of Human Resource Management, Chesterfield, Virginia

June 2006 – Present, HR Analyst and Background Investigator (employee relations)

Member of the Chesterfield County Employee Wellness Center Implementation Team

Chesterfield Sheriff's Office, Chesterfield, Virginia

January 2005 – June 2006, Sergeant of General District Courts and Inmate Programs

November 2002 – January 2005, Logistics Officer

November 1999 – November 2002, Corrections Deputy

Assistant Commander of the Special Operations Response Team & Dignitary Protection

P.P. Payne, Inc. (Filtronia) Ashland, Virginia

January 1996 – March 1999, Production Manager

February 1992 – January 1996, Group Leader/Machine Operator