The Value of Occupational Health Nursing

By

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ABSTRACT

Occupational Health Nurses (OHNs) work in a variety of industries to keep employees healthy and safe. Approximately 29% of OHNs work in hospitals and medical centers followed closely by 23% of OHNs who work in manufacturing and production (American Board for Occupational Health Nurses [ABOHN], 2011). OHNs bring considerable value to organizations, although their contributions cannot always be measured and tracked in dollars. They advocate for employees and are fiscally responsible to the organizations that hire them. Many employers fail to understand how OHNs can positively contribute to their organizations' productivity and decrease the financial bottom line. Instead, OHNs are often viewed as an expense in the budget, hired to meet Occupational Safety and Health Administration (OSHA) regulations and treat medical emergencies.

Evaluation tools are described that measure the value OHNs provide an organization (i.e., cost-benefit analysis, cost-effective analysis, return on investment, and workers' compensation costs). A cost comparison of Army National Guard (ARNG) and workers' compensation was completed to compare sites that have OHNs to those with vacant OHN positions, as well as sites who hire a non-nurse in the Occupational Health (OH) position. This comparison demonstrates the value OHNs provide in managing workers' compensation costs and shows cost containment when OHNs were involved in appropriate case management.

Different employment options of OHNs are presented with important considerations for organizations that choose to hire OHNs as full-time members of their staff compared with those that hire contracted OHNs. There are advantages and disadvantages to both hiring practices;

however, when these are practices are analyzed, organizations that employ OHNs demonstrate a greater overall investment in employee health and safety.

Key Words: cost-benefit analysis, OHNs, demonstrating value

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I have benefitted personally and professionally and am so glad that I found this program. I will continue to recommend this program to other Occupational Health Nurses who are looking to advance their education.

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CHAPTER I

INTRODUCTION

The American Association of Occupational Health Nurses (AAOHN) defines occupational health nursing as a “specialty practice that focuses on preventive healthcare, health promotion, and health restoration within the context of a safe and healthy work environment" (AAOHN, 2012c, “Definition of Occupational and Environmental Health,” para. 6). “Occupational Health Nurses (OHN) promote the health of the nation’s workforce by preventing injury and illness and promoting safe, healthful behaviors” (McCullagh, 2012, p. 167). “Seven major practice roles exist in occupational and environmental health nursing: clinician/practitioner, case manager, health promotion specialist, manager, consultant, educator, and researcher” (Randolph, 2003, p. 84). OHNs can have a beneficial impact on the corporate environment, as well as employees, their families, and the community’s health and safety. They also contribute “positively to the [corporation’s] financial bottom line” (AAOHN, 2012b, “History,” para. 2).

Value of Occupational Health Nurses

“OHNs provide value to an organization by assisting with operational efficiency, loss control, and injury/illness and disability management” (Dyck, 2015, p. 18). OHNs positively impact the organization, workplace, employees, and the community (Dyck, 2015). It is imperative that OHNs demonstrate positional value to their respective organizations and establish themselves as an essential and contributing member of the management team. The primary goal of an occupational health service is to protect and improve the health of the workforce through preventive programs in occupational health and safety. However, many

organizations “do not view occupational health services as a core process” (Nunez, 2009, p. 942) and may not adequately understand the value of the OHN. OHNs must communicate to management the need for effective occupational health services in the organizations’ overall business plan.

Improve Health and Safety of Employees

OHNs provide health and safety education and training to employees to prevent workplace injuries. They “track and analyze employees’ absences days and reasons” (Dyck, 2015, p. 19) and workers’ compensation claims to identify and develop programs/strategies to decrease claims and to improve the health and safety of the employees.

Decrease Health-Related Costs and Increase Productivity

Employers can “control costs and increase employees’ productivity with a worksite program that provides both health protection and health promotion services to improve workers’ quality of life and the company’s profitability” (Graeve, McGovern, Nachreiner, & Ayers, 2014, p. 37). OHNs demonstrate their value to an organization by reducing lost work days, managing sick absences, returning employees to work, increasing productivity, and positively impacting the organization’s bottom line. OHNs need to continue to evaluate the connection between employees’ health risks and costs of occupational health (OH) wellness programs to demonstrate return on investment (ROI) (Kelly et al., 2010).

Reduce Workers’ Compensation Claims/Costs

OHNs can more effectively manage workers’ compensation cases by monitoring open cases, closing cases, returning employees to work, and maintaining a healthy workforce. Careful management of these cases will reduce the costs to the organization that impacts the organization’s bottom line (Graeve et al., 2014).

Metrics to Demonstrate OHNs' Value

"In 2004, health-related absence rates translated into an annual cost to U.S. employers of more than $253 billion, according to the Bureau of Labor and Statistics" (Graeve et al., 2014, pp. 36-37). OHNs' must document and track their organizations' medical expenses to inform and advise management on strategies to control costs. Some challenges that may prevent OHNs from collecting, analyzing, and applying metrics in their occupational health programs may consist of the following. OHNs may practice in a single nurse setting and be the only nurse providing occupational health services, and may lack the time to adequately track metrics and process data into meaningful reports for management. They may lack the knowledge to analyze and use the data collected or know how to apply the results to their particular worksites. OHNs may lack the resources to conduct research or develop studies to address specific concerns. OHNs can demonstrate their value by identifying hazards, keeping employees healthy and safe, and reducing the organizations' medical expenditures in lost work time, injuries, and illnesses.

Purpose of Paper

The purpose of this paper is to discuss the value OHNs bring to employees and management of organizations that employ them. Many employers fail to understand how OHNs positively contribute to their business productivity and increase the financial bottom line. Instead, OHNs are often seen as an expense in the budget, hired to meet OSHA regulations, and treat medical emergencies. Different tools utilized to demonstrate the value of the OHNs are discussed in this paper such as cost-benefit analysis, cost-effective analysis, and return on investment. A comparison of Army National Guard (ARNG) sites with and without OHNs will be analyzed using workers' compensation costs to determine if the ARNG can demonstrate the value OHNs bring to their organization.

Organizations can provide occupational health services to their employees in different methods such as hiring OHNs on a full-time or part-time basis, or utilizing contract OHNs. A comparison of these options demonstrates that employing OHNs is a greater overall investment in employee health and safety and an organizations' fiscal health.

CHAPTER II

LITERATURE REVIEW

Practice of Occupational Health Nursing

"Occupational and environmental health nursing is a subspecialty of public/community health nursing, with unique knowledge and skill sets not found in other nursing specialties" (AAOHN, 2015a, p. 484). The practice of occupational health nursing is diverse and programs may vary from organization to organization. "OHNs use their knowledge and skills to improve the health and safety of the working population; however, companies increasingly face budget constraints and may eliminate health and safety programs" (Graeve et al., 2014, p. 36).

Promotion and Restoration of Health Programs

"OHNs design programs and support positive lifestyle changes and individual efforts to lower risk of disease and injury and the creation of an environment that provides a sense of balance among work, family, personal, health, and psychosocial concerns" (AAOHN, 2012b, para. 7). These educational programs cover a variety of health promotion or prevention classes designed to maintain the health and wellness of employees, their families, and communities. OHNs focus on restoration of health by coordinating and managing the ongoing care of ill and injured workers, returning employees to work at their previous level of function, and coordinating appropriate functional job accommodations as necessary.

Prevention of Injuries and Illnesses

"In 2009, the U.S. Bureau of Labor Statistics reported 1,238,490 workplace injuries and illnesses, a 9% decrease in nonfatal occupational injuries and illnesses that required days from work" (Parks, Chikotas, & Olszewski, 2012, p. 37). "These reductions may be due to economic

factors, including a decrease in employment and total hours worked" (Parks et al., 2012, p. 39). OHNs possess the knowledge and skills to develop strategies and action plans to not only support but also ensure the success of the organizational and national objectives and initiatives (Parks et al., 2012).

Protection from Work-Related and Environmental Hazards

The Occupational Safety and Health Act of 1970 is the federal law requiring employers to provide their employees with working conditions that are free of known hazards (Occupational Safety and Health Administration [OSHA], 2014). OSHA establishes and enforces protective safety and health standards (OSHA, 2014). OHNs must know the OSHA regulations and standards that apply to their work setting and work with an interdisciplinary team to ensure the employer is OSHA compliant.

Standards of Practice

Standards of occupational and environmental health nursing are developed by the profession "to define and advance practice and provide a framework for evaluation. These authoritative statements describe the accountability of the practitioner and reflect the values and priorities of the profession" (Buckheit, Jones, & Ostendorf, 2010, p. 468). OHNs utilize the framework to evaluate and ensure they are providing a professional, ethical occupational health service for the workforce.

> The foundation for occupational and environmental health nursing is research-based. Recognizing the legal context for occupational health and safety, this specialty practice derives its theoretical, conceptual, and factual framework from a multidisciplinary base including, but not limited to: nursing science, medical science, public health sciences such as epidemiology and environmental health; occupational health sciences such as

toxicology, safety, industrial hygiene (IH), and ergonomics; social and behavioral sciences; and business management and administration practices. (AAOHN, 2012c, p. 3)

Competencies

AAOHN has established competencies (Table 2.1) for occupational and environmental health nursing "to define and establish reasonable and customary standards of care" (AAOHN, 2012c, para. 2). These competencies serve as a framework for OHNs to master skills, abilities, and manage a scope of practice. Competent OHNs adhere to the principles of professional nursing practice while implementing practices to improve the organizations' bottom line.

OHN Scope of Practice

"OHNs collaborate with workers, employers, members of occupational health and safety team, and other professionals to identify health and safety needs, prioritize interventions, develop and implement interventions and programs, and evaluate care and service delivery" (AAOHN, 2015b, p. 4). OHNs utilize collaborative or integrated approaches to manage health risks, improve workers' well-being, and increase morale and productivity. "These integrated approaches use health promotion initiatives (e.g., general health care, short/long-term disability, and workers' compensation), insurance benefits, paid sick leave, employee assistance and occupational health and safety programs" (Graeve et al., 2014, p. 37). Occupational health services align with the goals and strategies of the organization, thus garnering the organizations' support of the OH program.

OHNs are the primary advocates for employees' safety and health issues while ensuring confidentiality of their health information; they balance this requirement by communicating with supervisors and management in regard to employees' job restrictions and ability to complete

TABLE 2.1

AAOHN COMPETENCIES IN OCCUPATIONAL HEALTH NURSING

Manages Total Worker Health Independently and With Other Team Members
• Promotes a culture of health and safety by creating an environment that supports clients' optimal physical and mental health using best practices and evidence-based techniques
• Uses data to identify trends and control health and safety risks, and to inform and implement policy decisions at the department, organizational, and systems levels
• Identifies hazards and exposures and recommends effective controls for their mitigation
• Plans, implements, and evaluates programs and services designed to improve health and safety for target populations
• Coordinates client care to effectively promote health, manage illness and injury, prevent disability, and facilitate return to work
Adheres to Principles of Professional Nursing Practice
• Practices nursing ethically, competently, and within the legal scope of practice, ensuring compliance with all requirements of local, state, and federal laws; obtains and maintains necessary licenses and certifications required to practice
• Demonstrates professional competence and lifelong learning throughout career
• Advocates for issues related to nursing, the environment, and worker health and safety
• Critically reviews relevant literature and other credible resources to develop evidence-based interventions and occupational health nursing strategies
• Establishes and maintains records within state and federal laws, ensuring confidentiality and privacy of health and personal information
Demonstrates Understanding of the Business Climate and its Impact on the Health of the Community
• Demonstrates current knowledge of and compliance with applicable laws and regulations that impact nursing practice, workers, workplaces, and the environment
• Advises employers of regulations that may affect occupational and environmental health operations
• Advocates for ethical decision-making in regard to worker, business, and community concerns and rights
• Describes the broad impact of economics on a target population’s health and well-being
• Uses data to plan and implement evidence-based occupational health programs, services, and new initiatives, and to evaluate them for both health and economic impact
• Serves as a good steward of budget dollars allotted and practices within budgetary constraints
• Communicates the direct and indirect consequences of injury and illness on worker productivity, employee engagement, and quality of life
• Participates on and/or leads interdisciplinary teams, including those that plan for and respond to emergencies, pandemics, and disasters
Practices Culturally-Appropriate, Evidence-Based Nursing Care Within Licensed Scope of Practice
• Gathers an occupational and environmental health history, conducts assessment and applies knowledge of work processes and hazards/exposures for accurate clinical decision-making, including placement, and return-to-work decisions
• Educates, counsels, and coaches clients on identifying, reducing, and eliminating health and safety risks
• Collaborates with workers, management, the community, and other professionals to meet the health and safety needs of clients
• Analyzes and evaluates clinical service delivery using evidence-based strategies for continuous quality improvement

SOURCE: AAOHN (2015a)

their jobs. OHNs and their staff should be trained and ensure compliance with the Health Insurance Portability and Accountability Act (HIPAA). OHNs must safeguard employees' health information and advise supervisors regarding job restrictions e.g., if an employee is able/unable to wear a respirator. The OHN must be careful not to divulge medical diagnosis or treatments with supervisors, HRO, or other employees and restrict access to health information on a need-to-know basis. They must ensure that medical records are under double lock and control access to the records and retire records per the organizational policy.

Identify Health and Safety Needs

OHNs must understand the origin of employees' exposures in the workplace. Periodic walk-throughs of the work environment need to be conducted. This demonstrates an interest in the employees, their jobs, as well as establishes credibility, enabling OHNs to assess the complete work environment. Effective communication at all levels is imperative to establish trust, support, and working relationships. OHNs can best direct resources and programs based on observations and assessments of the work environment, knowledge of employee health needs, and organizational objectives and policies. They work with supervisors and employees to improve working conditions, educate employees and employers on safety and health procedures, and more succinctly advise management.

Job hazard analysis (JHA) examines the processes or steps an employee must take while performing a task; the risks are identified and documented. JHAs should be completed collaboratively with new and experienced employees, supervisors, or anyone with knowledge about each job (Glenn, 2008). For example, if an employee's job requires repetitively changing a tire with an impact wrench, the identified hazards might be repetitive stress, awkward positions,

noise from the impact wrench, as well as lifting or potential back injuries. The JHA would enable supervisors and OHNs to develop and submit recommendations to reduce or eliminate hazards.

Prioritize Interventions

OHNs must educate employees and employers regarding exposures, OSHA, and other regulatory requirements. Walk-throughs and informal interviews assist OHNs in identifying hazards and prioritizing interventions based on needs, policies, regulations, and cost.

Develop and Implement Interventions and Programs

OHNs may collaborate with appropriate personnel and use resources to develop and implement interventions and programs that have been identified and prioritized. Some programs that OHNs implement include vision conservation, respiratory protection, health promotion, hearing conservation program, etc. For example, OHNs can work with safety to enclose equipment that produces noise exceeding the exposure limit and post warning signs to remind employees to wear hearing protection in that area. OHNs work with IH to determine which employees require enrollment in the hearing conservation program. They implement the OSHA hearing conservation program which outlines the requirements for annual audiometric testing and education.

Evaluate Care and Service Delivery

OHNs can administer satisfaction surveys to employees as one tool to evaluate occupational health services. These results will be useful for prioritizing, planning, and refining programs that are beneficial to the organization and employees. When developing and planning a program, it is important to determine how each program will be evaluated. The proper planning for evaluation of a program is frequently overlooked. According to Mastroianni and Machles

(2013), approximately “2%-5% of the total program time should be spent on evaluating a program” (p. 35).

Interdisciplinary Collaboration

“Occupational health nursing is multifaceted and is considered to be a highly collaborative practice, requiring a team of multidisciplinary practitioners at the worksite and in the community” (Thompson, 2012, p. 160). OHNs collaborate with members of interdisciplinary teams that optimally consist of occupational medicine, safety, industrial hygiene, human resources, supervisors, employees, and labor union personnel. This collaborative team provides the most efficient way to identify and prioritize needs, and develop and implement comprehensive programs to ensure healthy and safe work environments. Each of these disciplines will be briefly discussed.

Occupational Medicine

Occupational medicine physicians may serve as the medical director or provide medical oversight of the occupational health program. However, some organizations may not have a sufficient number of employees to justify the employment of a full-time staff physician and must rely on a contracted or part-time position. These physicians prevent and manage occupational and environmental injuries, illnesses, disabilities, and promote the safety and health of employees. They provide medical guidance and policy to the team as exposures and situations within the organization change, offer medical advice, and conduct employee health examinations. OHNs may serve as a liaison between a part-time or contracted physician, employees, supervisors, and organization’s management; they may also be a nursing advisor for changes in organizational and occupational health policies.

Safety

Safety personnel are trained to assess, identify, and evaluate hazardous work environments, make recommendations, and ensure OSHA compliance. They participate in the development of hazard control designs, methods, procedures, and programs (Greenberg & Rogers, 2011). Occupational health nurses and safety personnel make an efficient and collaborative team. Coordinated workplace inspections offer another set of eyes to identify, evaluate, and analyze hazards or risks to employees.

Industrial Hygiene

Industrial hygiene (IH) is defined as the science and art devoted to the anticipation, recognition, evaluation, and control of environmental factors or stresses arising in the workplace (Greenberg & Rogers, 2011). Industrial hygienists collect samples and assess the amount of hazardous materials/environmental exposures in the workplace. IH personnel collaborate with the team to educate the organization regarding exposures in the workplace and develop action plans to protect the employees. The OHN collaborates with IH to identify educational needs, enroll employees in medical surveillance programs, and assess occupational exposures.

Human Resources

The Human Resource Office (HRO) maintains documentation on all prospective and current employees, which may be useful to OHNs. OHNs should be notified when employees are hired or planning to leave the organization so that preplacement or exit exams can be scheduled. OHNs should participate in new employee orientation to educate employees about safety and occupational health policies and procedures. HRO may manage and track workers' compensation claims regarding medical costs, lost work days, and associated workers' compensation

expenditures. OHNs should collaborate with HRO to obtain pertinent data to perform trends analysis of injuries or illnesses, identify hazards, and recommend solutions.

Others

OHNs also collaborate with management, supervisors, employees, and labor unions (if present) in their respective areas. These groups directly benefit from the occupational health service. By communicating with employees and supervisors, OHNs may learn about concerns and suggestions to ensure the safety and health of all employees.

Programs and Services

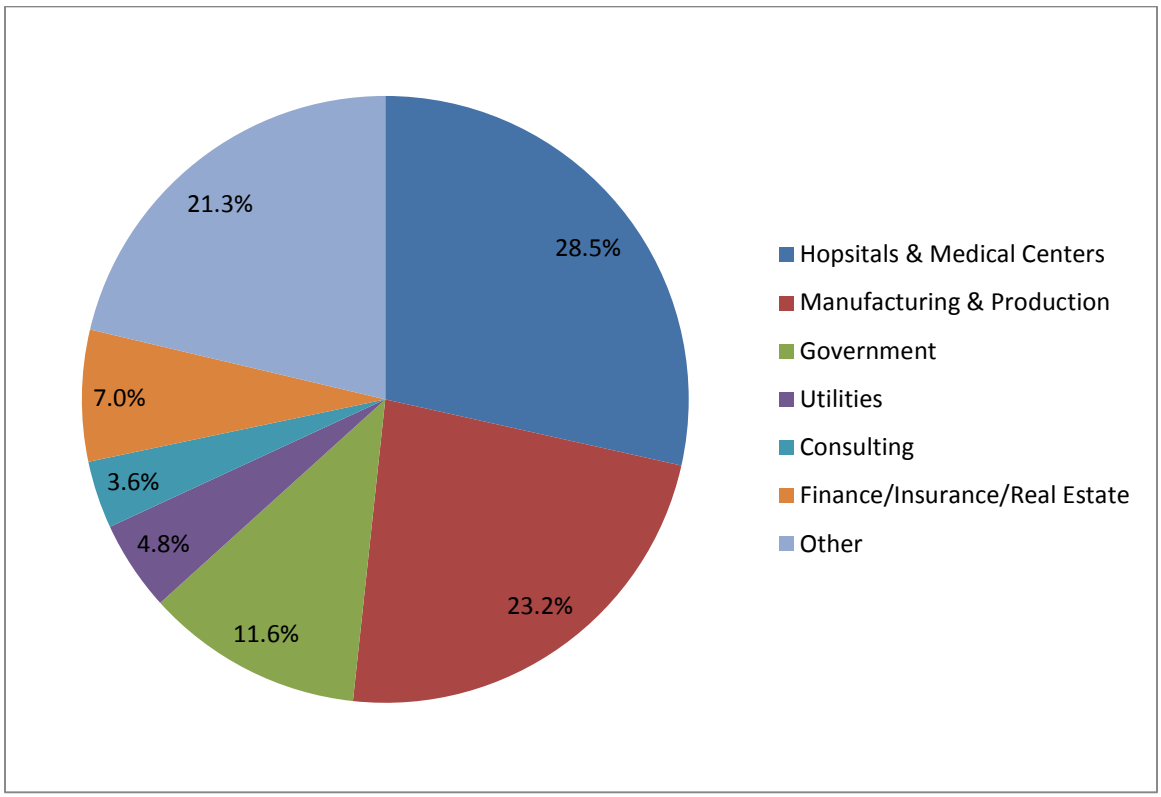
Occupational health nurses work in a variety of settings and offer a wide range of programs based on their organizational needs. In 2011, the American Board for Occupational Health Nurses (ABOHN) reported where OHNs work (Figure 2.1), with the 28.5% working in hospitals and 23.2% in manufacturing and production. Depending on the industry, nurses have clinical skills as well as knowledge of ergonomics; chemical and biological hazards; safety and industrial issues; standards and regulations; disease management; health education; record keeping; and business management concepts (ABOHN, 2011). OHNs ensure the services and programs they implement and manage are research and evidence-based as well as OSHA compliant. OHNs typically administer a variety of programs and services as described below (AAOHN, 2012c).

Clinical and Primary Care

OHNs may provide primary care to employees as well as first aid or emergency services. This includes “assessment, nursing diagnosis, management and documentation of occupational and non-occupational illness and injuries” (AAOHN, 2015b, p. 1). Nurses provide education and

FIGURE 2.1

INDUSTRIES WHERE OCCUPATIONAL HEALTH NURSES WORK



SOURCE: ABOHN (2011)

guidance and may refer workers for follow-up with their primary physician as required based on findings. On-site clinical and primary care services developed for a particular organization can help meet the goals for a healthy workforce and reduce employees' time away from work for off-site appointments.

Case Management

Case management is defined as a "collaborative process of assessment, planning, facilitation, care coordination, evaluation, and advocacy for options and services to meet an individual's and family's comprehensive health needs through communication and available resources to promote quality, cost-effective outcomes" (Case Management Society of America [CMSA] n.d., Definition of case management). OHNs serve as coordinators of health services, return-to-work, and case management which are key roles in managing workers' health care quality and cost containment strategies (AAOHN, 2012a). Reducing the number of injuries, lost work days and medical and compensation costs will ultimately save the organization money.

Health Hazard Assessment and Surveillance

Identification and evaluation of exposures to the worker population provides information about the hazards in the workplace and need for surveillance programs. "The purpose of medical surveillance is to detect and eliminate the underlying causes such as hazards or exposures of any discovered trends and thus has prevention focus" (Rogers, 2003, p. 303). Medical/health surveillance is clinically focused (e.g., medical and work histories, physical assessment, biological testing) (Burgel, 2006).

Compliance with Laws, Regulations, and Standards

OHNs must ensure they are compliant with several regulations and standards that regulate occupational health programs such as OSHA, Department of Labor, Department of

Transportation, Federal Aviation Administration, Department of Defense, as well as additional regulations or standards that may be industry dependent. Since regulations and standards are continually updated, OHNs must review the Federal Registers periodically and maintain professional subscriptions and membership in professional organizations to keep informed and updated on the latest changes.

Management and Administration of Programs

OHNs design, administer, and manage occupational health programs. They supervise occupational health staff, evaluate of OH programs, and report effectiveness to the organization's management. OHNs are frequently the sole nurse in an occupational health setting, and must be able to assess, develop, implement, and evaluate all aspects of the OH programs. Regular reports and requests to management for continued funding and resources for various OH services are necessary to ensure value of OH programs in the workplace.

Health Promotion and Disease Prevention

Health promotion and disease prevention programs consist of multifaceted approaches to provide service and educate employees about healthy living, and injury and illness prevention to advance employee well-being (Campbell & Burns, 2015). Wellness programs are one approach to provide interventions and educate employees about incorporating healthy behaviors, which will lead to enhanced productivity and reduced absenteeism (Centers for Disease Control and Prevention [CDC], 2011). The method and focus of delivery are just two dimensions that characterize wellness programs (Baicker, Cutler, & Song, 2010). The method of delivery (Table 2.2) describes how the intervention was implemented with health risk assessments being the most frequent method of delivery. Employees typically complete health risk appraisals on a voluntary basis. Baicker et al. (2010) found that "seventy-five percent of programs focused on

TABLE 2.2

SUMMARY OF CHARACTERISTICS OF WORKSITE WELLNESS PROGRAMS STUDIED

Characteristic	Percent of Firms
Method of Delivery	
• Health Risk Assessments	81
• Self-help Education Materials	42
• Individual Counseling	39
• Classes, Seminars, Group Activities	36
• Added Incentives for Participation	31
Focus of Intervention	
• Weight Loss and Fitness	66
• Smoking Cessation	50
• Multiple Risk Factors	75

Average sample size of comparison groups was approximately 4,500 employees over an average of three years.

SOURCE: Baicker et al. (2010)

more than one risk factor, including stress management, back care, nutrition, alcohol consumption, blood pressure, and preventive care in addition to smoking and obesity" (p. 3).

As reported by Baicker et al. (2010, p. 5), studies (Table 2.3) have demonstrated that "medical costs decrease approximately $3.27 for every dollar spent on wellness programs and that absenteeism costs decrease about $2.73 for every dollar spent." These studies were completed on companies that averaged 4,500 employees over 3 years. Further studies are required to determine if smaller employers would be able to demonstrate the same amount of savings due to lack of resources to implement wellness programs at the same level as larger companies (Baicker et al., 2010).

Individual Counseling

OHNs may offer individual counseling as an approach to health education. Baicker et al. (2010) calculated that individual counseling was used about 39% of the time. Occupational health staffing ratios may impact the ability to effectively schedule individual counseling when a class approach on similar wellness topics may reach more employees in a resource limited work environment.

Research

Occupational and environmental health nursing research is required to ensure occupational health nursing remains relevant and current by using evidence-based practices, and keeping up-to-date on regulations and policies (AAOHN, 2012c). "Research is essential to support and expand the knowledge base for occupational and environmental health nursing practice" (Rogers, 2006, p. 519).

The purposes of research in occupational and environmental health are to: help identify and solve problems relevant to nursing practice; improve the effectiveness of nursing care

TABLE 2.3

SUMMARY OF EMPLOYEE WELLNESS STUDIES ANALYZED

Study Focus	No. of Studies	Average Sample Size		Average Duration (Years)	Average Savings[a]	Average Costs[a]	Average ROI[b]
		Treatment	Comparison				
Health Care Costs	22	3,201	4,547	3.0	$358	$144	3.27
Absenteeism	22	2,683	4,782	2.0	$294	$132`	2.73

[a]Per employee per year, costs in 2009 dollars.

[b]Average of the individual return-on investment (ROI) figures for each study.

SOURCE: Baicker et al. (2010)

> through scientific inquiry using a systematic process; and advance the body of knowledge in the occupational and environmental health nursing discipline. (Rogers, 2006, p. 520)

OHN research needs to be continuously conducted, reviewed, and shared to advance the OHN profession, establish evidence-based care, and develop best practices for organizational environments.

Need for Programs/Services to Demonstrate Value

Many organizations increasingly face budget constraints which may reduce or eliminate health and safety programs. Quantitative and qualitative tools are required to demonstrate OHNs' value to their respective organizations (Mastroianni & Machles, 2013). OHNs need to implement the appropriate evaluation tools to demonstrate the value the programs offered in occupational health services and prevent them from being eliminated.

Evaluation

Ongoing fiscal challenges may adversely affect occupational health and safety programs. OHNs must evaluate their occupational health programs regularly to ensure they are meeting required standards, achieving the desired results, and recommending any necessary corrective actions. OHNs may garner data while they implement their programs, allowing for continued evaluation of programs, for example, OHNs may analyze quarterly workers' compensation claims data to determine how much money or lost work days was reduced by implementing back injury prevention programs, and seeing a decrease in back injury claims. Evaluating data continually will enable OHNs to determine if changes are needed or to continue the programs as planned.

The AAOHN evaluation standard provides guidance for OHNs to develop metrics to measure their OH program. The costs of hearing loss, back injuries, amputations, or loss of life

must be brought to the organization's attention. Showing the cost analysis to management, who are focused on the organizations' bottom line, is more valuable than just reporting the number of annual injuries. OHNs must report and explain their evaluation results to management to garner their support, budget, and resources for the OH program. Management needs to know what interventions can be implemented to prevent or reduce injuries and how much it will provide in cost avoidance, thus saving money over a period of time.

Resource Management

Occupational health budgets should be carefully planned, executed, and evaluated to ensure regulation compliance and cost-effectiveness. Regular reports to management about the cost of occupational health programs and any cost avoidance should be included, for example, OHNs may provide to management a report demonstrating cost savings after implementation of a health promotion program. Demonstrating how OHNs can save the organization money in preventable costly injuries will demonstrate the value of the occupational health nurse.

Demonstrate Business Climate

OHNs plan and implement evidenced-based occupational health programs and evaluate them for health and economic benefits. Nurses must serve as good stewards of fiscal affairs and ensure occupational health programs are cost-effective in economic constraints. They also must be competent in business and leadership skills to communicate the direct and indirect consequences of injury and illness on worker productivity, employee engagement, and quality of life. Controlling these direct and indirect consequences ultimately produce a positive effect on the organizations bottom line.

Cost-Effectiveness/Metrics

Cost-effective analysis can be used to "determine if a particular intervention is more cost-effective than another intervention" (Chenowith, 2014, p. 2). OHNs need to document their services and outcomes, and use quantitative tools to demonstrate the value they bring to their respective organizations. Cost-effectiveness tools measure effective use of resources. This enables OHNs to track how much money is expended on workers' compensation and then implement programs designed to return injured employees back to work quickly, in possibly a light or restricted duty position temporarily to reduce the amount of time an employee is absent from the workplace.

Trends Analysis

Tracking injuries and illnesses will enable OHNs to identify if any equipment, material, or environmental factors may be contributing to injuries or illnesses, identify possible solutions, and suggest improvements to make the workplace a safe and healthy environment (National Institutes of Health [NIH], n.d.). OHNs should collaborate with the human resources, safety, and supervisors to track and trend injuries and illnesses in the workplace. "This information is used to target occupational health and safety education, work redesign, work station redesign to prevent or reduce future employee work-related injuries and illnesses" (NIH, n.d., para 1). Trends analysis of OSHA 300 logs, workers' compensation claims, and tracking visits to the occupational health center can assist OHNs in identifying trends that may require further evaluation.

Benchmarking

Benchmarking is defined as a diagnostic tool to "measure and manage productivity, demonstrate results, and justify the resources used to reach desired outcomes" (Denniston &

Whelan, 2005, p. 93). This is performed by comparison or measurement of results to existing internal or external standards as appropriate. The advantage is in identifying best practices within the occupational health program to determine which programs to sustain, eliminate, or revise. OHNs may benchmark lost work days, workers' compensation claims, and individual costs to total claim costs; comparing costs with industry and organizational standards then implementing or adjusting programs to reduce lost productivity. Conversely, acceptable standards may vary between organizations and industries and requires common definitions of process and criteria.

As a guide to identifying and establishing benchmarks, OHNs should be familiar with the Healthy People 2020 objectives to ensure their OH objectives are aligned with national goals and relevant to current practices (Table 2.4). Healthy People is published every 10 years by U.S. Department of Health and Human Services and provides a "systematic approach to health improvement that involved setting goals and objectives, identifying baseline data, setting 10-year targets, and monitoring progress" (Parks et al., 2012, p. 34). "Occupational health nurses possess the knowledge and skills to develop strategies and action plans to not only support but also ensure the success of the nation's Healthy People 2020 initiative" (Parks et al., 2012, p. 37). OHNs collect data on various occupational health programs and track injuries and illnesses to and establish benchmarks. For example, health promotion and emergency preparedness are national objectives that may assist OHNs in establishing benchmarks in their organizations.

Reporting Results to Management

OHNs must provide regular, relevant, clear, and concise reports to management. This important step can influence the amount of funding/resourcing the occupational health department will receive. Managers require a simple report that is well organized and demonstrates the information in a comprehensive format. It is important not only to provide

TABLE 2.4

***HEALTHY PEOPLE 2020* OBJECTIVES FOR OCCUPATIONAL SAFETY AND HEALTH**

Number	*Occupational Safety and Health Objectives*
OSH-1	• Reduce deaths from work-related injuries OSH-1.1 All industry OSH-1.2 Mining OSH-1.3 Construction OSH-1.4 Transportation and warehouse OSH-1.5 Agriculture, forestry, fishing, and hunting
OSH-2	• Reduce nonfatal work-related injuries OSH-2.1 Injuries in private sector industries resulting in medical treatment, lost time from work, or restricted work activity, as reported by employers OSH-2.2 Injuries treated in emergency departments OSH-2.3 Adolescent workers aged 15 to 19 years
OSH-3	• Reduce the rate of injury and illness cases involving days away from work due to overexertion or repetitive motion
OSH-4	• Reduce pneumoconiosis deaths
OSH-5	• Reduce deaths from work-related homicides
OSH-6	• Reduce work-related assaults
OSH-7	• Reduce the proportion of persons who have elevated blood lead concentrations from work exposures
OSH-8	• Reduce occupational skin diseases or disorders among full-time workers
OSH-9	• (Developmental) Increase the proportion of employees who have access to workplace programs that prevent or reduce employee stress
OSH-10	• Reduce new cases of work-related noise-induced hearing loss

SOURCE: U.S. Department of Health and Human Services (2011)

these reports to the OHNs' supervisors but also to top management, as they make the decisions on the overall finances of their organization. The frequency of reports to management varies on the culture of the organization; however, OHNs should learn how to effectively communicate the results of OH services to their management.

CHAPTER III

METRICS

Metrics are tools that measure health outcomes, efficient use of resources, performance, progress, or quality of a plan and process (Centers for Medicare & Medicaid Services, n.d). This chapter will discuss different tools that can measure and demonstrate the value of the occupational health nurse.

Types of Metrics

Cost-Benefit Analysis (CBA)

Cost-benefit analysis (CBA) "compares two or more different types of programs to compare program costs against benefits" (Chenowith, 2014, p. 2). CBAs "compare the investments in, or cost of a program to the worth or benefit of that program" (Mastroianni & Machles, 2013, p. 36).

CBAs have been a "dominant method of systematic analysis for evaluating government policy" (Bronsteen, Buccafusco, & Masur, 2013, p. 1605). They are a popularly used quantitative analysis and used in many different settings, from government policy to program analysis of a small privately owned organization. "Cost-benefit analysis considers both inputs and outcomes, converts them to a standard monetary element and then produces a cost-benefit ratio" (Mastrioanni & Machles, 2013, p. 36).

Advantages. CBAs provide an "objective, quantifiable evaluation of a program in terms of dollars expended (costs) and dollars saved (benefit) while disregarding any subjective judgments on the outcomes (Mastroianni & Machles, 2013, p. 36). These types of analyses provide valuable input into the selection of an appropriate intervention strategy and in

discussions concerning who should take the responsibility and meet associated costs (Meijster et al., 2011). The cost-benefit analysis determines the monetary value of short and long-term costs and benefits (Myerson & Parker-Conrad, 2006).

The cost-benefit analysis determines a return on investment (ROI). ROIs are a measure of financial impact or profitability that indicates the impact on how effectively an organization is managing its resources (Mastroianni & Machles, 2013). OHNs must develop and maintain accurate records of program costs, the frequency of usage, and the outcomes and benefits provided to the organization. For example, initial evaluations of on-site clinics demonstrate a poor ROI over an initial implementation period. However, these clinics demonstrate an approximate 40% greater return on investment over community health expenditures after that initial period (Tao et al., 2009).

Disadvantages. It can be difficult to assign monetary values to some occupational health programs such as indirect costs including presenteeism, over-the-counter pocket medical expenses, and staff morale. Sick absences are difficult to track as there are many reasons that an employee may call in sick but not be sick, such as, care for sick family members. On average 1.8% lost time at work is because of health reasons (Boles, Pelletier, & Lynch, 2004; Burton et al., 2005).

Presenteeism is defined as a loss of productivity due to an employee being sick at work (Mastroianni & Machles, 2013). Some studies demonstrate that presenteesim can reduce productivity up 6.6% because of health reasons, translating into an average of 2.5 hours of lost work per employee per week (Boles et al., 2004; Burton et al., 2005). The number of risk factors correlates directly with increased loss of productivity; those with the greatest number of known health risk factors (6-8) experience an average loss productivity of 5-9.5 hours of lost

performance per employee during a standard work week estimating an annual cost of lost productivity is $1,400-$2,600 per employee (Boles et al., 2004; Burton et al., 2005). Since CBAs vary across studies as well as industry to industry, it is difficult to develop a standard model to follow. CBAs are “difficult to assess wellness programs for which projected dollar amounts may be difficult to assign” (Mastroianni & Machles, 2013, p. 38).

Some ROI assessment tools are unable to measure the on-the-job productivity savings when employees use an on-site versus off-site clinic. Prevention programs provided by on-site clinics may reduce future illnesses but they cannot be measured as a ROI.

Cost-Effectiveness Analysis (CEA)

Cost-effectiveness analysis is “designed to compare one program against an alternative strategy to determine which option produces the greatest benefit for the least expense” (Chenowith & Garrett, 2006, p. 85). CEA is used to “compare programs based on outcomes that may or may not have a monetary value” (Mastroianni & Machles, 2013, p. 38).

Advantages. CEAs are used to determine alternative methods or objectives to achieve goals. They can be used to determine how to effectively manage costs and benefits and determine outcome measures (Myerson & Parker-Conrad, 2006). For example, OHNs can analyze back injury trends in workers’ compensation claims. Nurses may want to gather more data to determine the cause of the back injuries and explore other alternatives to decrease back injuries. A robotic arm could be designed for $1000 to reduce awkward or repetitive processes. Another option is to install an automatic lift costing $750 to place a part on an assembly line. These alternatives may have an initial upfront cost but would ultimately save the organization money by decreasing workers’ injuries which reduces workers’ compensation claims. OHNs can

educate employees on safe lifting techniques until new work designs can be engineered to avoid the injuries.

Disadvantages. CEAs explore alternatives to reduce injuries and illnesses which can be time-consuming and expensive. Consultants may need to assess, evaluate, and make recommendations to reduce injuries. Management may be resistant to making any changes to the design of the workflow and may accept that back injuries are a certain expectation of doing business (Mastroianni & Machles, 2013). They may also believe that "cost avoidance is not actual cost data" (Mastroianni & Machles, p. 37).

Well-being Analysis (WBA)

Well-being analysis is different from CBA in that it "directly analyzes the effects of regulations on people's quality of life" (Bronsteen et al., 2013, p. 1617). Instead of assigning dollar values, it uses employee self-assessments. These self-assessments are useful in attempting to obtain an overall idea of employee morale or what programs employees might be interested in being offered by occupational health services. "This is similar to the quality-adjusted life years (QALYs) that are increasingly popular in health economics" (Bronsteen et al., 2013, p. 1618).

Advantages. Employees complete self-assessment surveys to determine how they perceive their health and happiness. These assessments have consistently been found to be valid and reliable (Bronsteen et al., 2013). Results are converted into well-being units which are "intended to be subjective, hedonic, cardinal, and interpersonally comparable units that indicate the degree of a person's happiness for a given time" (Bronsteen et al., 2013, p. 1618).

Disadvantages. Critics argue that WBAs are subjective as they rely on employees to complete self-assessments. Participants may not interpret the scale the same in that, "what may be a rating of 5 to one person may be another rating to someone else" (Bronsteen et al., 2013, p. 1625). Management may think that self-assessments are difficult to repeat and the results can be ambiguous if a participant gives different ratings on the same assessment at a later date. Data can also be easily manipulated to support a particular program or objective. Participants may not be honest in their self-assessments that can lead to costly implementations (Bronsteen et al., 2013).

Workers' Compensation Metrics

OHNs are instrumental in reducing absenteeism and providing disability management. The CDC (2011) reported that musculoskeletal disorders correlate with high costs to employers from absenteeism, lost productivity, and increased healthcare, disability, and workers' compensation (Parks et al., 2012). OHNs can analyze the workers' compensation claims and costs to make comparisons and conduct a trends analysis to effectively implement plans to lower these costs.

In December 2014, an analysis of U.S. Army National Guard Workers' Compensation costs was conducted to determine if states with OHNs have lower workers' compensation claim costs compared to states with vacant or non-OHN positions. The Army National Guard (ARNG) Workers' Compensation costs were reported from 50 states, three territories, (Puerto Rico, Guam, and the Virgin Islands) and the District of Columbia. Data were collected from calendar years 2010-2014 and included the number of workers' compensation cases, number of employees, number of claims per capita, total dollars spent in medical and compensation, as well as the total dollars paid in workers' compensation claims. Three states had data outside the

aggregate range, incomplete data, or no workers' compensation claims reported. These data were omitted from the analysis.

National Guard Sites with OHNs

OHNs are employed by the ARNG in GS-12 positions; they are typically dual status employees and must maintain their military membership to be employed full-time as state OHNs. These positions can be difficult to fill as the ARNG does not have a specific career field for OHNs in the military. Therefore, ARNG must hire civilian-educated OHNs for these positions, or make exceptions that allow new hires to be trained in occupational health nursing after they are employed. They typically are the sole OHN for the entire state ARNG population dispersed across the state. Most ARNG OHNs are employed in an office setting and do not provide health care to employees but refer them to their private physicians and manage OH programs. When the cost data were obtained, only 40 States had an OHN in the position. Table 3.1 shows those states with OHNs, the number of claims, the number of per capita claims, and the average claim costs.

National Guard Sites with Vacant OHN Positions

There were four National Guard sites that had vacant OHN positions. Table 3.2 shows those states with vacant OHN positions, the number of claims, the number of per capita claims, and the average claim costs. Due to vacancies, a non-nurse employee is delegated the additional duty of covering some of the non-nursing duties such as audiograms, spirometry, budget management, etc. The nursing duties may need to be covered by using contract nursing services.

There were also seven sites that had personnel in the OHN positions that were non-nurses. The study group had a variety of work experiences, but none of them had degrees in nursing and only some had OSHA training. For the purpose of this paper, these positions and

TABLE 3.1

2010-2014 PER CAPITA WORKERS' COMPENSATION COSTS/100 EMPLOYEES

IN STATES WITH OHNS

State	Claims	Per Capita	Average Claim Cost
AL	361	9	$92,219
AR	160	5	$44,957
AZ	193	6	$30,188
CT	170	8	$12,958
DC	78	8	25,449
DE	43	4	$48,206
IA	204	7	$42,150
ID	255	9	$485
IL	589	17	$9,079
IN	252	7	$47,450
KS	187	6	$1,360
LA	333	10	$61,416
MA	284	12	$42,543
MD	160	8	$49,084
ME	142	10	$17,494
MN	350	9	$31,431
MO	290	6	$38,636
MT	201	11	$31,431
NC	375	8	$56,934
ND	83	4	$8,028
NE	128	7	$10,463
NH	57	5	$7,542
NM	115	9	$22,692
NV	136	8	$3,218
OH	298	8	$43,886
OK	204	8	$41,394
OR	435	14	$22,810
PA	448	8	$75,960
PR	147	6	$82,992
RI	144	13	$18,977
SC	254	6	$63,128
SD	95	6	$27,664
TN	240	6	$88,643
UT	222	8	$21,552
State	**Claims**	**Per Capita**	**Average Claim Cost**

VI	19	3	$7,709
VT	128	10	$18,498
WA	291	12	$30,518
WI	287	10	$20,172
WV	94	5	$41,412
Total:	**8624**		**34,997**

Source: ARNG (2014)

TABLE 3.2

2010-2014 PER CAPITA WORKERS' COMPENSATION COSTS/100 EMPLOYEES IN STATES WITH OHN VACANCIES

State	Claims	Per Capita	Average Claim Cost
AK	94	7	$33,329
GA	192	5	$115,908
HI	122	7	$33,302
TX	434	7	$98,193
Total:	**842**		**$70,183**

Source: ARNG (2014)

will be identified as non-nurse positions. Table 3.3 shows those states with non-nurses in OHN positions, the number of claims, the number of per capita claims, and the average claim costs.

Comparison of Findings

An analysis of ARNG sites with and without OHNs, demonstrated that sites with OHNs average approximately $35,000 in workers' compensation total claim costs per capita (Figure 3.1). Sites with vacant OHN positions averaged $70,000 in workers' compensation total claim costs per capita. Graphpad Statistical Guide, an online tool for performing statistical analysis and review of statistical principles (Graphpad.com, 2015), was utilized to perform an unpaired *t*-test and calculate *p*-values. The calculated *p*-value of .0132 ($p<.05$) indicates statistical significance in comparing sites with OHNs against sites with vacant nursing positions (Table 3.4). Utilizing OHNs in the management of workers' compensation cases can reduce the claim costs by providing appropriate case management and cost controls. OHNs have the skills and knowledge to prevent further injury or illness, monitor progress, and provide intervention to effectively manage cases to successful outcomes. This significant finding demonstrates a need for OHN oversight of workers' compensation programs in those states without an OHN to manage costs expended for employee injuries. However, a limitation is that workers' compensation programs are typically a collaborative approach involving OHNs, HRO, supervisors, medical personnel, and employees, and the data do not indicate the non-OHN participation in this process. Also the number of sites with vacant OHN positions is small for data comparison.

Sites with non-nurses filling OHN positions averaged $46,699 in workers' compensation total claim costs per capita. When OHNs were compared to non-nurse positions, the data calculated a *p*-value of .2637 ($p > .05$) or not significant (Table 3.5). There are confounding

TABLE 3.3

2010-2014 PER CAPITA WORKERS' COMPENSATION COSTS/100 EMPLOYEES

IN STATES WITH NON-NURSES

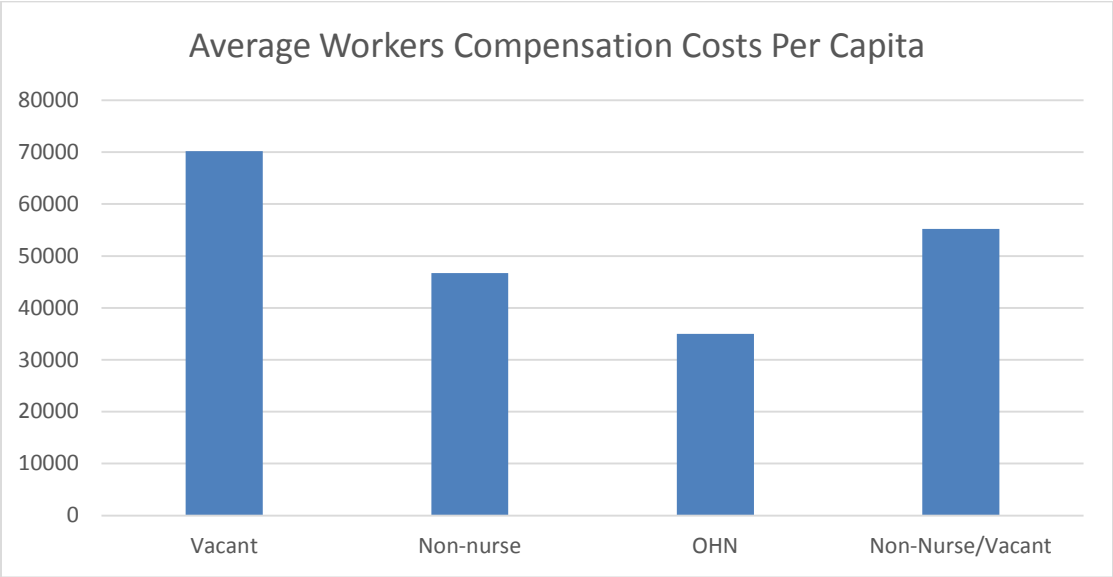
State	Claims	Per Capita	Average Claim Cost
CO	198	9	$43,018
FL	424	12	$51,565
KY	309	11	$18,771
MI	242	7	$65,140
NJ	246	11	$36,809
NY	530	14	$103,585
WY	69	5	$8,008
Total:	**2,018**		**$46,699**

Source: ARNG (2014)

FIGURE 3.1

ARNG AVERAGE WORKERS' COMPENSATION COSTS PER CAPITA

P-value =.0132 P-value =.2637 P-value =.0322



P-values calculated using Graphpad.com 2010-2014 Army National Guard Average Workers' Compensation Claim Costs per 100 Employees.
OHN compared to vacant data were statistically significant at .0132. OHN compared to non-nurse data were not statistically significant at .2637 OHN compared to non-nurse and vacant data were statistically significant at .0322

SOURCE: Army National Guard (2014)

TABLE 3.4

COMPARISON OF OHNS TO VACANCIES

Group	OHNs	Vacancies
Mean	34997.43	70,183
Standard Deviation	24107	43,181
Standard Error of the Mean	3812	21,590
N	40	4
t-value 2.5867		
p-value .0132 is statistically significant		

P-values calculated using Graphpad.com

SOURCE: Army National Guard (2014)

TABLE 3.5

COMPARISON OF OHNS TO NON-NURSES

Group	OHNs	Non-Nurses
Mean	34997.43	46,699
Standard Deviation	24107	3,1591
Standard Error of the Mean	3812	11,940
N	40	7
t-value 1.1319		
p-value .2637 in not statistically significant		

P-values calculated using Graphpad.com

SOURCE: Army National Guard (2014)

issues that may explain this finding:

1) a hired dedicated full-time position (versus an additional duty) to provide oversite and guidance of workers' compensation expenditures is a greater benefit than a vacant position;
2) non-nurses without medical credentials assigned to the OH program must rely on contracted services and structured guidelines to conduct medical surveillance programs and advise on medical management of worker's compensation. Further research in this particular area is necessary to determine why the findings demonstrated that OHN vs non-OHN positions were not significant and what practices could be compared to evaluate effectiveness in the profession findings; and
3) limitations may be the small numbers in comparing the data.

Finally, when OHNs were compared to the combined non-nurse and vacant positions group, the computed *p*-value of .0322 ($p < .05$) was determined which is statistically significant (Table 3.6). Combining the non-nurse and vacant positions provided an increased comparison (N=11). The reasons as previously stated before demonstrates that the practice of hiring OHNs results in lower workers' compensation costs then when hiring non-nurse or leaving positions vacant.

Utilization of Findings

Analysis of these data demonstrates that the average state expenditures in workers' compensation costs is approximately $210,000 annually. Thus, an occupational health nurse on a GS-12 pay scale, employed at ARNG sites with vacancies would potentially result in a cost avoidance of approximately $130,000 per year. This cost savings is only focused on the OHNs

TABLE 3.6

COMPARISON OF OHNS TO VACANCIES/NON-NURSES

Group	OHNs	Vacancies/Non-Nurses
Mean	34997	55,239
Standard Deviation	24107	36,036
Standard Error of the Mean	3812	10,865
N	40	11
p-value .0322 is statistically significant		

P-values calculated using Graphpad.com

SOURCE: Army National Guard (2014)

value within the context of workers' compensation programs. These results are consistent with studies in the civilian sector that demonstrate ratios for every "$1 spent in injury prevention organizations saves $2-$6" (Morrison, 2014, p. 6). OHNs can demonstrate value and benefit to their organizations by utilizing findings from studies and appropriate metrics established for existing programs, researching other methods of existing successful programs, and reviewing ROI. This enhances nurses' credibility, and expertise, and creates awareness of the value provided to the organizations. Once management is informed and aware of these studies and metrics, they may elect to fill vacant OHN positions with nurses' versus leaving the positions vacant or hiring unqualified personnel.

CHAPTER IV

DELIVERY OF OCCUPATIONAL HEALTH SERVICES

"Management's goal for developing or maintaining occupational health services and programs is often to contain costs" (Myerson & Parker-Conrad, 2006, p. 246). Organizations may decide to hire a full-time or part-time OHN to provide occupational health services or contract for an OHN to provide these services, depending on population, occupational exposures, and resource requirements. AAOHN published a staffing tool that allows users to base specific staffing needs on a worksite's needs, including tasks performed, time to complete each task, required provider skill level objectively, and documentation of time and tasks to effectively determine specific staffing needs (Shaffer, 2015).

OHNs Hired by Employer

OHNs should have input into the location and layout of the OH service. The space should be easily accessible to the employees, and be accessible for medical emergencies. There should be adequate space, secure location for medical records, sink for handwashing, and a private area appropriate for confidential conversations with employees.

Advantages

OHNs can perform on-site assessments of the workplace and prioritize programs to meet the organization's needs. Organizations would benefit from having OHNs on-site, enabling employees to visit the OH service without having to travel off-site. If work processes or hazards change, the nurses can revise or implement needed health or surveillance programs. OHNs can provide or direct health promotion programs that reduce health costs. OHNs may assist

organizations in reduction of force strategies while still ensuring the remaining workforce are still healthy and safe (Tompkins, 2009).

OHNs are able to serve on committees such as workers' compensation, safety, ergonomics, and facilities' design review committees. These committees allow OHNs to assist with job accommodations to return employees to work, depending upon the type of position.

Disadvantages

Staff OHNs are sometimes viewed by employees as a member of management and thus perceived as only serving management. OHNs must work with management to ensure health and safety policies are followed, but this could be misconstrued into working with management to remove employees, "this can lead to mistrust by employees" (Tompkins, 2009, p. 216). Management may not fully understand the importance of OHNs and the services provided; thus, they may not adequately fund or approve necessary resources for the occupational health department.

OHNs Hired Under Contract

Employers may contract with an organization that employs OHNs to provide occupational health services. Consultants from a potential contractor will work with an organization to determine what OH services the organization wants or needs and what they can provide at a cost per service negotiation. Each contract varies depending upon needs of the organization. Some organizations provide clinic space for OHNs to work on-site while others may send their employees to an off-site occupational health clinic.

Advantages

Organizations only pay for the services negotiated with the contracting agency. A statement of work detailing the services required is drafted, and both parties enter a legally

binding contract. The purchasing organization is not required to pay for services not authorized under the contract and may remove a contractor for violating the contract at any time. The purchasing organization can also stipulate that the contractor provide supplies required to perform OH services. It may be beneficial to hire a third party OHN consultant to make recommendations based on the organization and specific job hazards, especially if there is no occupational health knowledge within the organization.

Disadvantages

Any changes to the OH program will require modification to the contract. Modifications to the contract can be limiting as changes may require a delay or increased expense until the contract renewal period arrives. Contracted OHNs may make recommendations to the organization, but do not have the same autonomy or authority that staff OHNs have to change occupational health services as necessary. It could be considered an ethical dilemma if the contractor is making recommendations to organizations about expanding or eliminating occupational health services since the contractor could be benefitting from the changes in services offered.

Full-Time Versus Part-Time OHNs

An organization must determine if full-time or part-time OHNs need to be hired. This case-by-case decision is determined by the number of employees and the hazards associated within the work. For example, a chemical plant may have high hazards and require the services of a full-time nurse to be on-site 24/7. A smaller organization that has fewer employees and fewer hazards may be able to benefit from a nurse on-site 2-3 days a week or on-call.

Steps to Justify Position/Demonstrate Value

OHNs must be able to demonstrate to management the value and cost savings provided by the occupational health service. OHNs must show business skills and must provide services that target employees' respective need(s). The steps to demonstrate value are 1) create a business plan, 2) communicate the business plan to management, 3) develop statements of work for contracting, 4) develop quality controls to evaluate OH programs, and 5) communicate evaluation results to management (Myerson & Parker-Conrad, 2006). Each will be discussed.

1. **Create a Business Plan**

   OHNs should develop a business plan to set up programs and monitor their success. A business approach to health and safety program is more easily understood by management (Myerson & Parker-Conrad, 2006). A business plan is:

   > A set of documents prepared by a firm's management to summarize its operational and financial objectives for the near future (usually one to three years) and to show how they will be achieved. It serves as a blueprint to guide the firm's policies and strategies and is continually modified as conditions change and new opportunities and threats emerge. (Businessdictionary.com, 2015a)

   Creating a business plan identifies startup costs (supplies, staff, space), annual expenses, any revenue costs, as well as cost avoidance measures such as managing medical expenses (Myerson & Parker-Conrad, 2006).

2. **Communicate the Business Plan to Management**

   Occupational health nurses must establish viable strategic business plans for their occupational health program which should be consistent with the organization's

overall strategic plan or blueprint and communicated to management. “A business plan should be tailored to the individual needs of the organization and the program” (Myerson & Parker-Conrad, 2006, p. 251).

3. Develop Statements of Work for Contracting

A Statement of Work (SOW) is a “detailed description of the specific services or tasks a contractor is required to perform/provide under a contract” (Businessdictionary.com, 2015b, para 1). This requires an employer or occupational health nurse to complete a needs assessment to determine what specific services are required for the organization. OHNs need to identify the desired outcomes of the program(s) offered, and how to achieve them. OHNs hired by the organization can develop the statement of work if some services need to be outsourced. If there are no nurses on staff, then the organization may use an OHN consultant service to make recommendations regarding OH services to the organization.

4. Develop Quality Controls to Evaluate OH Programs

An occupational health nurse will ensure that quality controls are in place to evaluate the OH program. OHNs may utilize employee/employer satisfaction surveys as one evaluation tool. Data must be collected, analyzed, and compared to existing standards. “It is important to determine not only the desired outcome but also the desired evaluation to demonstrate value” (Mastrioanni & Machles, 2013, p. 35). Evaluation plans should measure “financial impact or outcome that included on impact at the organizational level and ROI” (Mastrioanni & Machles, p. 35). OHNs need to determine whether to conduct cost-benefit analysis or cost-effectiveness analysis when applicable. “Methods of evaluation should be appropriate to program

goals and objectives as they have been defined" (Myerson & Parker-Conrad, 2006, p. 242).

5. **Communicate Evaluation Results to Management**

   The results of the evaluation and subsequent programs must be communicated with management. OHNs need to continually assess the various occupational health services they provide. Based on evaluations of program and processes, OHNs make recommendations to improve the safety and health of the employees while ensuring the occupational health services are efficient and appropriate for the exposures in the workplace. Management should understand the results of established programs to make decisions regarding funding and support for the overall occupational health program. Knowledgeable OHNs will be able to effectively communicate with management the results and continuation of the services provided.

Prioritize Programs

Typically budget and resource constraints may require OHNs to prioritize the occupational health programs and interventions. As illustrated in Table 2.4, U.S. Department of Health and Human Services provides Healthy People 2020 objectives for occupational health and safety. These objectives promote increased quality of life and safety in the workplace; encourage healthy lifestyles among all socioeconomic age groups; and establish equal access to health care for all. OHNs need to prioritize interventions to address specific hazards in their organizations.

Establish Goals

OHNs can utilize Healthy People 2020's foundation health measures to identify and set overarching goals and measures of progress in their occupational health programs (Table 4.1); some examples are provided.

TABLE 4.1

FOUNDATION HEALTH MEASURES

Overarching Goals of Healthy People 2020	Foundation Measures Category	Measure of Progress	OHS Objectives
Attain high-quality, longer lives free of preventable disease, disability, injury, and premature death	General health status	• Life expectancy • Healthy life expectancy • Physical and mental unhealthy days • Self-assessed health status • Limitation of activity • Chronic disease prevalence • International comparisons (where available)	• Provide smoking cessation, nutrition, fitness programs during work hours • Offer nutritional food choices at work at affordable prices
Achieve health equity, eliminate disparities and improve the health of all groups	Disparities and inequity	Disparities or inequity to be assessed by • Race or ethnicity • Gender • Socioeconomic status • Disability status • Lesbian, gay, bisexual, and transgender status • Geography	• Offer classes to all shifts at no cost to employee • Offer discounts on health insurance premiums if participate in health promotion programs
Create social and physical environments that promote good health for all	Social determinants of health	Determinants can include • Social and economic factors • Natural and built environments • Policies and programs	• Create a culture where it is safe, and encourage reporting of unsafe or unhealthy work conditions • Create employee teams where they are part of solution
Promote quality of life, healthy development, and healthy behaviors across all life stages	Health-related quality of life and well-being	• Well-being or satisfaction • Physical, mental, and social health-related quality of life • Participation in common activities	• Provide exercise and nutrition classes with various levels for people of all life stages • Offer chronic disease management classes

Adapted from: Parks et al. (2011)

These foundation health measures cover four basic issues with their benchmarks “to monitor progress toward promoting health, preventing disease and disability, eliminating disparities, and improving the quality of life” (Parks et al., 2012).OHNs must ensure that goals are specific, measurable, attainable, relevant, and time-specific (SMART) and align with the organization’s business plans. Aligned goals enable OHNs to focus efforts as well as metrics to evaluate their programs, such as, reducing workers’ compensation claims by 3% over the next year. This type of goal setting will require a robust, collaborative team to address the accident and injury rates, and implement safety and occupational health programs that will effectively reduce workers’ compensation claims.

Each organization objectively needs to assess its individual needs to determine the best OHN staffing. There is no one size fits all approach to how organizations employ OH services. OHNs could be direct hires by an organization, either full or part-time, or contracted to provide occupational health services.

CHAPTER V

CONCLUSIONS/ RECOMMENDATIONS

OHNs need to educate and demonstrate to their employers how investing in employee health and safety can positively contribute to their organizations' bottom line. Developing tools and metrics to evaluate occupational health programs are important measures for nurses to demonstrate their value. As previously discussed, OHNs are valuable to the ARNG to contain workers' compensation costs. OHNs should continue to track this data, conduct trends analyses, and communicate these finding to their employers and managers.

Conclusions

Due to "staggering and growing healthcare costs in the USA, the federal government is moving towards funding the best ways to design guidelines for treatment that are both beneficial and cost-effective" (Melhorn, Brooks, & Seaman, 2012, p. 509). Evaluation "approaches such as CEA and CBA will be the forefront of needs for future program evaluation of prevention and intervention methods in the workplace" (Melhorn et al., 2012, p. 509). Smaller organizations may not have the funds or budget to offer health promotion or occupational health program similar to those of large organizations. Subsidy programs may assist smaller organizations with implementing health promotion, disease prevention, and occupational health programs.

By integrating evidence-based care with systematic research and individual clinical expertise with best business practice, OHNs will develop a highly effective and economically valuable OH program within the organization. Additional research should evaluate if smaller organizations receive similar benefits as larger organizations; "every $1 spent on occupational health resulted in $3.27 saved in medical costs" (Baicker et al., 2010, p. 304). Studies have

demonstrated that a well-managed OH program can provide organizations interested in developing processes that ultimately conserve resources, invest in employees, and increase productivity, with a resource that enables an economic benefit.

Recommendations

Education

Development of business skills, appropriate business language, and practices enables OHNs to educate management and demonstrate cost-effective programs to their organizations. Occupational health nurses can benefit from education regarding business management practices as well as continuing education courses that emphasize developing metrics or evaluation processes to demonstrate the value of OHNs to an organization. “Organizations are looking for sustainable business practices that drive new ways to solve problems” (ABOHN, 2011). This may be accomplished through formal education such as a degree in business, courses on business evaluation methods or metrics, or via ongoing management practices and continuing education courses that emphasize developing metrics and evaluation processes. Another venue to increasing business knowledge would be to subscribe to and read business and human resources publications. This knowledge will assist the OHNs in promoting services and integrating themselves in the business realm.

Practice

OHNs must use evidence-based nursing care to ensure they are providing the most current practices and cost-effective programs. Employees can complete satisfaction surveys to provide ongoing evaluation of occupational health services and offer suggestions. OHNs can implement quality assurance programs to evaluate that OHNs’ program are using the most current evidence and practices in caring for their employees.

Research and Publish

OHNs need to demonstrate their value, competence, and professionalism by conducting and publishing OH research and program evaluation data. OHNs are a valuable member of the team to share knowledge and experience that is instrumental in improving the health and safety of the workforce. This also serves to provide OHNs and management with knowledge and ideas on implementation of lessons learned in other settings. It is of paramount importance that OHNs understand the work employees perform and their associated exposures, and be able to implement programs to reduce and prevent work-related accidents and injuries. This requires continued research to stay current on new discoveries or impacts exposures may have on employees. OHNs must be proactive and encouraged to publish results on any research they may conduct.

OHNs must take an active role in maintaining their competence, professionalism and continuously educating their respective organizations on OHNs value. Investing in occupational health nurses and programs improves employees' health and safety and positively impacts a organizations' bottom line.

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