The Occupational Health Nurse Role in the Total Worker Health® Model

by

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ABSTRACT

Total Worker Health® is a copyrighted program developed by the National Institute for Occupational Safety and Health to assist employers in protecting their workforce from workplace hazards as well as to advance employee health and wellbeing. This paper aims to provide a structure for occupational health nurses to implement Total Worker Health® in the context of their own employment setting whether directly with the employer, as a consultant to the employer, or working with multiple employers. Although the evidence demonstrating the monetary value of integration is still in the theoretical phases, the body of research is growing as more employers are opting to holistically support the health and wellbeing of those in their care.

Key words: total worker health, integrated health, occupational health nursing, social determinants of health

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CHAPTER I

INTRODUCTION AND BACKGROUND

For nearly half a century, the Occupational Safety and Health (OSH) Act has been in place driving governmental, public, and private employers to account for the health and safety of their employees in the day-to-day and long-term operations of their businesses. Passed in 1970 under President Richard Nixon, this important act mandated the Occupational Safety and Health Administration (OSHA) to "assure so far as possible every man and woman in the nation safe and healthful working conditions and to preserve our human resources" (OSH Act, 1970, section 2(b)). Under this same act, the National Institute for Occupational Safety and Health (NIOSH) was created as the education and research branch in the United States (US) Department of Health and Human Services (DHHS) committed to the study of worker safety and health in an effort to empower employers and workers to create safe and healthy workplaces. For the first three decades after the OSH Act passed, great strides have been made in ensuring workplaces are safer than ever before. Regulations and voluntary best practices have decreased on-the-job fatalities from 13,870 in 1970 to 5,190 in 2016 (OSHA, 2018), but there is still significant work to be done.

To this end, NIOSH has developed a fundamental model in Total Worker Health® (TWH®). TWH® is a copyrighted program developed to assist employers in protecting their workforce from workplace hazards as well as to advance employee health and wellbeing. This paper aims to provide a structure for occupational health nurses to implement TWH® in the context of their own employment setting whether directly with the employer, as a consultant to the employer, or working with multiple employers. Chapter I describes the historical context

while the remainder of the paper delves into the details that encompass TWH®. Chapter II provides a birds-eye view of TWH® from various perspectives and describes the benefits and barriers to the program. Chapter III describes the meaning of true integration and provides real-world examples of what integration can look like while Chapter IV turns heavily to how the occupational health nurse may be a key driver in the successful implementation of TWH®. Finally, Chapter V summarizes the next steps for TWH®, demonstrating the continued efforts to implement the model that can lead to a healthier population in the workplace and beyond.

Historic Overview of "Work-related" vs. "Non-work-related" Healthcare

Many illnesses and injuries that are commonly considered work-related are caused by multiple factors, including personal risk factors, occupational risk factors, and psychosocial issues (Lax, 2016; Schulte, Pandalai, Wulsin, & Chun, 2012). For example, a diagnosis of a lateral meniscus tear in the left knee may be compounded by an individual's co-morbidities of obesity, diabetes, and smoking history. An individual without these comorbidities is expected to reach pre-injury status in 52-67 days, while the obese, diabetic counterpart who smokes is expected to require 97-228 days (Official Disability Guidelines [ODG], 2018). Additionally, personal risk factors may make a worker more prone to injury on the job. A worker with comorbidities of obesity, diabetes, and positive smoking status may be more susceptible to a back injury and will require a longer recovery time compared to a healthy worker. In effect, the co-morbidities both increase the likelihood of injury and compound the severity of an injury.

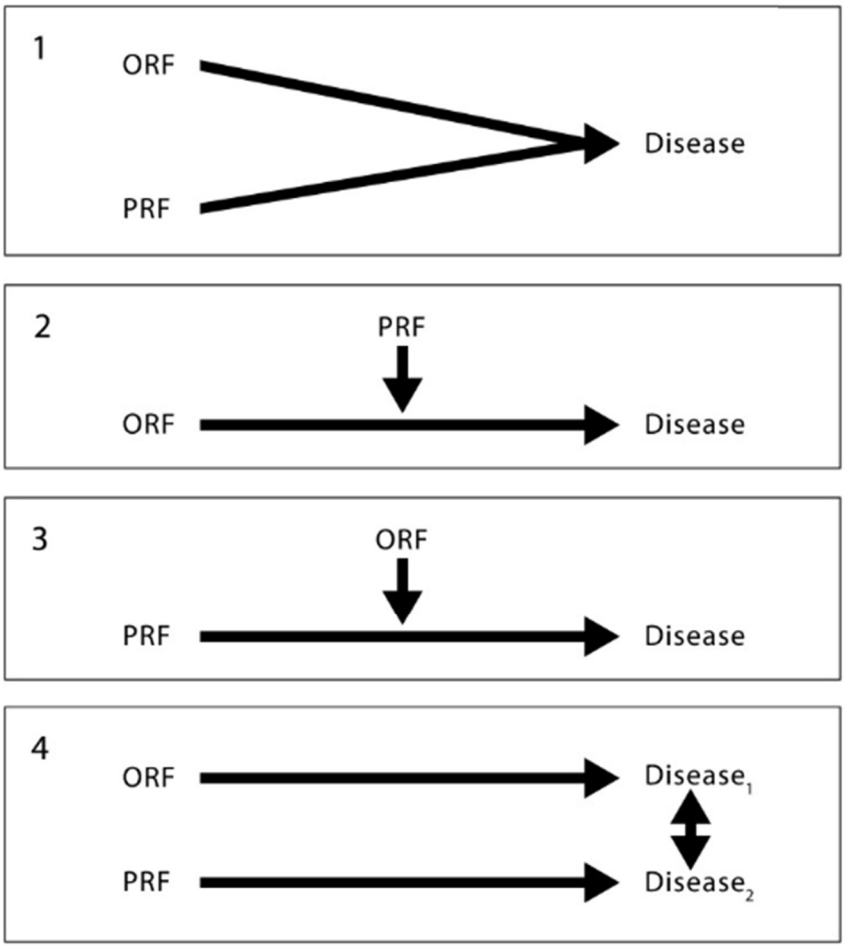
The compartmentalization of work apart from other activities that affect health has been perpetuated, in part, by the legal system of Workers' Compensation. Historically, attempting to limit an employer's liability from certain health attributes has made it increasingly difficult to address the multifaceted, interconnected causes of poor health. This is certainly not to say that

certain worksite exposures do not directly affect a worker's health. There was a time when workplaces and their exposures were inherently dangerous and little to no regulation existed to ensure the safety of those who set foot within the walls. As time as gone by and regulations like the OSH Act were enacted, workplaces have changed. So too has the population changed.

Determining what injuries or illnesses are caused (or worsened) by occupational and personal risk factors is not something that can ever fully be accomplished (Schulte et al., 2012). Occupational risk factors (ORF) and personal risk factors (PRF) can affect health in different ways. As illustrated in Figure 1.1, in some cases, occupational risk factors (ORF) work independently from personal risk factors (PRF) (Model 1). An example of Model 1 would be the interaction of age (PRF) and working outdoors (ORF). Both inputs may independently lead to macular degeneration, but one may cause the condition regardless of the other as there is no interaction between them. In other cases, the interaction of occupational and personal risk factors contributes to a disease state (Models 2 and 3). For Model 2, the risk of injury due to a job's physical demands increases as an employee ages. Age, in this case, is the compounding factor. Compared to Model 3, hearing loss may occur with aging but, if there is also an ORF of organic solvents, the hearing loss may be worse. In the instance of Model 3, age is the independent factor and the occupational exposure is the compounding factor. Finally, there are cases where two different diseases—one caused by an occupational risk factor and another linked to a personal risk factor—interact with one another with compounding effect on an individual's health (Model 4). As an example of Model 4, working in a healthcare setting may carry an ORF for exposure to Hepatitis B. Personally, a healthcare worker may use non-steroidal anti-inflammatory medication which is a PRF for liver injury. These two conditions, Hepatitis B and liver injury, then interact to compound the severity of the employee's disease state (Schulte et al., 2012).

FIGURE 1.1

CONCEPTUAL MODELS DELINEATING PERSONAL RISK FACTORS AND OCCUPATIONAL RISK FACTORS EFFECTS



Key: ORF—Occupational Risk Factor; PRF—Personal Risk Factor

Source: Schulte et al., 2012

Work as a Determinant of Health

It has never been argued that if an individual did not work, their health would be perfect. In fact, if individuals did not work, they would experience different exposures, illnesses, and injuries. Social determinants of health are the conditions in which individuals are born, grow, live, work, and age (World Health Organization [WHO], 2018b). The nature of work as a determinant of health means the work a person has or does not have is a key factor in shaping health. Not only is the health of the worker affected by having access to meaningful work, the health of the family is also shaped by this work (Benach, Muntaner, & Santana, 2006).

Dual Nature of Work to Enhance and Threaten Health

Work can both promote and threaten health. From the promotion side, working is supportive for the psyche and allows individuals to support themselves and those they love to live a life they love. On the other hand, work is hard and exposes employees to hazards and stimuli they may not otherwise be exposed to in non-work life. These are both physical exposures (e.g., heat, repetition, noise) and chemical exposures (e.g., metals, solvents, fumes,). Work provides the family social status, income, and meaning to life which improves the psyche. Alternatively, work can threaten the health of the family. A worker who is exposed to lead, for example, may bring home lead dust on clothing or in a vehicle if protective measures are not in place and inadvertently place family members at risk.

In 2011, the National Conference on Occupational Health Disparities discussed the intersection of work and working conditions with social determinants of health (e.g., race, ethnicity, immigration status, income, gender) and how they interact with worker safety and health. They concluded that unequal power in the workplace as well as society leads to health inequities (Ahonen, Fujishiro, Cunningham, & Flynn, 2018). The authors explain how these

social determinants can affect employment options for various people. As with other aspects of life, women and minority workers tend to have lower paying jobs with higher workplace hazards, less advancement opportunities or job control, and may face harassment in various contexts (Ahonen et al., 2018).

There is an inherent duality of health on work: health is valuable in and of itself. Being healthy is both an end goal and also a means to an end of a stable economy. Health allows individuals to engage in society, contribute to the workforce, and contribute to a nation's economy (Marmot, 2007). Work influences other areas of life (e.g., income, access to health care) and other areas of life can affect available work (e.g., gender, immigrant status, race). In the American College of Occupational and Environmental Medicine (ACOEM) position statement, *Optimizing Health Care Delivery by Integrating Workplaces, Homes, and Communities,* McLellen et al., (2012) contend that health behaviors extend across multiple environments and cannot be artificially separated. "Individuals do not leave the impacts of their personal health risks on the doorstep when they leave for work just as they cannot leave the impacts of their workplace exposures when they return home" (McLellan et al., 2012, p. 505).

Health also affects the workplace. Chronic conditions like diabetes and heart disease affect employee health and productivity in the workplace (McLellan et al., 2012). When an employee is sick, either acutely or chronically, the individual does not perform well at work and the output of work (i.e., the product) may be delayed. If the employee continues to be ill, the worker may be completely absent from the work environment which either further delays the output of work or puts additional stress on colleagues to get the job done. Ultimately, if the employee is ill for an extended period of time, the individual may be lost from the workforce altogether.

CHAPTER II

LITERATURE REVIEW

The body of evidence to support the theories behind TWH® is growing. Companies that integrate health protection with health promotion and create a culture of health, safety, and wellness have been shown to decrease direct healthcare costs (Fabius et al., 2016). The indirect costs are not so easy to prove causality. As more employers move towards a holistic culture, the theory behind TWH® provides a promising future for employers, employees, and families.

A comprehensive, but not exhaustive literature review is presented in this chapter. The chapter begins with outlining key definitions and continues describing the development of TWH® to its current state. The benefits and barriers to TWH® for different stakeholders are also presented.

Total Worker Health®

Definitions

In the context of occupational health, health protection is primarily concentrated on ensuring that work is safe and that workers are protected from the harms that arise from work itself (Centers for Disease Control and Prevention [CDC], 2017). In a larger context of public health, health protection is concerned with preventing the spread of communicable diseases (WHO, 2018b). In more simple terms, this phrase can be defined as protection from hazards that cause injury or illness.

Health promotion (aka Wellness, aka Wellbeing) enables individuals to increase control over their own health. It covers a wide range of social and environmental interventions that are

designed to benefit and protect an individual's health and quality of life by addressing and preventing the root causes of ill health, not just focusing on treatment and cure (WHO, 2018b).

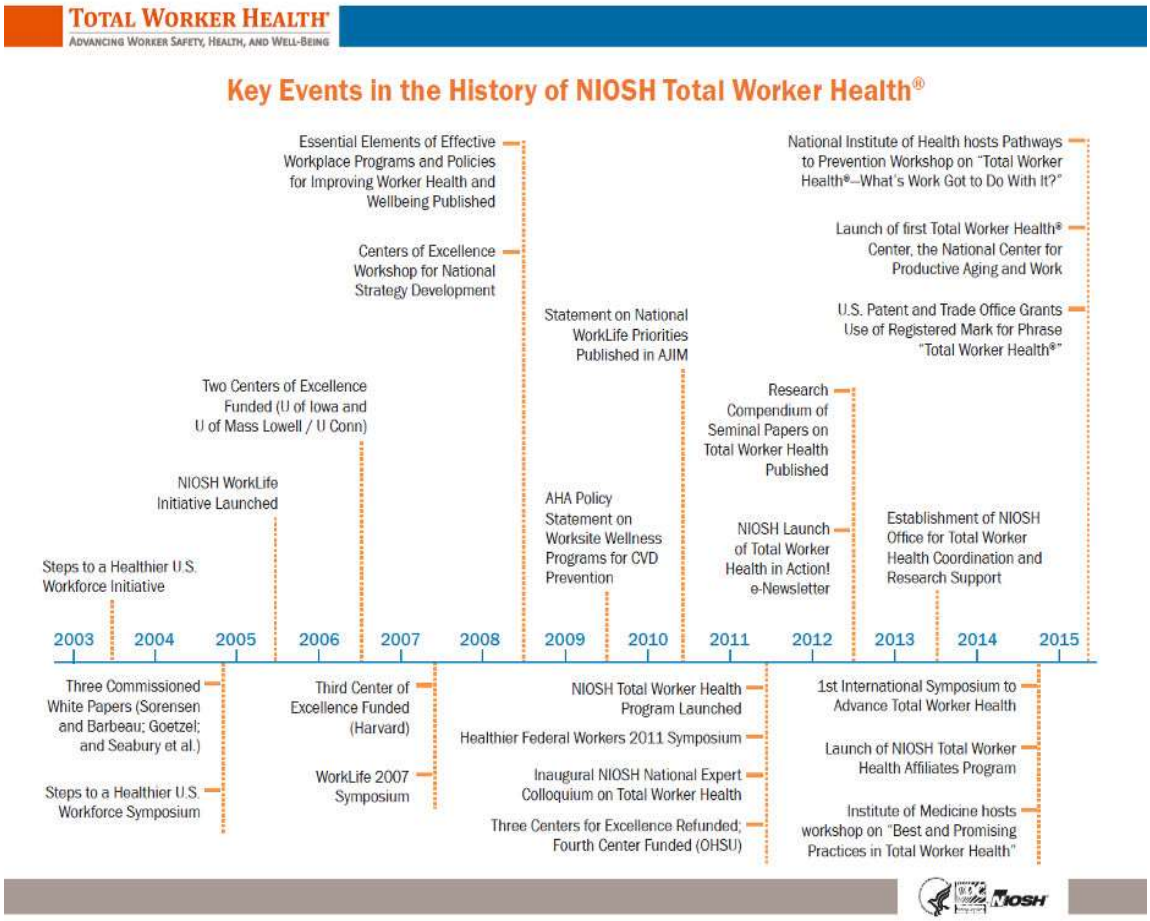
Social determinants of health are the conditions in which people are born, grow, live, work, and age. These circumstances are shaped by the distribution of money, power, and resources at global, national, and local levels. The social determinants of health are mostly responsible for health inequities—the unfair and avoidable differences in health status (WHO, 2018b).

History of Development

Figure 2.1, Key Events in the History of NIOSH Total Worker Health® (CDC, 2017) provides a visual overview of the timeline of the journey to TWH® through 2015. In October 2004, NIOSH hosted a symposium called "Steps to a Healthier US Workforce" to start the development of programs that integrate health protection and health promotion within US companies. The next year, using outcomes from the symposium, NIOSH launched a program entitled the WorkLife Initiative. This precursor to TWH® was initiated to expand the research, education, and training meant to focus on a holistic approach to the health and wellbeing of American workers. Based on the growing body of evidence supporting the integration of health promotion with health protection, both the symposium and the building-block program set the foundation for this emerging field. Historically, workplace policies and practices around worker health focused on the occupational risk factors and exposures of the workforce. At the same time, personal health issues were addressed by either individual or government insurance, but the whole person was not easily addressed in either system. As health conditions traditionally dubbed as "personal" or "not-work-related" have been shown to compound work-related health issues (or vice versa), relying on private insurance to address one part of a person's health while

FIGURE 2.1

KEY EVENTS IN THE HISTORY OF NIOSH TOTAL WORKER HEALTH®



Source: CDC, 2017

work addressed another, has become unsustainable.

In 2011, the program was given a new title, Total Worker Health® (CDC, 2017). The copyrighted term was created to build on the approaches of the previous programs, recognize that work is a social determinant of health, and safeguard the construct of the program. By copyrighting the phrase, it was NIOSH's intention to prohibit employers or workplaces from loosely using the term to describe a wellness program if they failed to integrate the prerequisites of health protection and health promotion (Schill & Chosewood, 2013).

Current State

Today, TWH® is defined as "the policies, programs, and practices that integrate protection from work-related safety and health hazards with promotion of injury and illness prevention efforts to advance worker wellbeing" (CDC, 2017, para 1). TWH® continues to prioritize creating or maintaining a safe workplace. Programs and policies that encourage healthy, individual behaviors will never outweigh the detriments of an unsafe or unhealthy workplace. Employers who implement wellness programs without addressing blatantly hazardous workplaces are not applying the principals of TWH® (CDC, 2017). Health promotion cannot be implemented in the absence of health protection, and the best practice is an integration of the two. Combined with a safe work environment, TWH® supports policies, programs, and practices in a holistic fashion, shifting the focus from solely a workplace to a comprehensive look that includes work-related factors and circumstances beyond the workplace that act to threaten or enhance the wellbeing of workers (Chari et al., 2018).

NIOSH captured the key issues relevant to advancing worker wellbeing through TWH® in published graphics as it has progressed over the years: 2013 and 2015. In 2013, relevant issues were clearly designated in silos, defining attributes and accountabilities specifically for 1) the

workplace, 2) human resources, and 3) the workers (see Figure 2.2). In the latest iteration released in 2015, the authors continue the emphasis on a fully integrated model initially designed earlier. The changes in the graphics show a visual representation of the journey of TWH®. By redesigning the layout and organization of the published graphics, NIOSH de-emphasizes the silos and moves towards further integration (see Figure 2.3).

Figure 2.3 creates categories where there once was a single bullet point. For example, Organization of Work was a single bullet in the 2013 model, placed under the silo of "Workplace" and in the subheader "Control of Hazards & Exposures." Organization of Work is a significant compendium of factors, not one single factor, and not something that can be physically controlled like the other topics included in the list such as chemicals or biological agents. By expanding this bullet into its own category, NIOSH demonstrated recognition for the interconnectedness of worker, employer, and healthcare provider accountabilities that are necessary to address this section.

Benefits of TWH® from Various Perspectives

The US spends more on healthcare than any other country. In fact, it is estimated that healthcare costs make up 18% of the gross domestic product (GDP) and costs have increased 76% in the last decade (Fox & McCorkle, 2018). In comparison, the second highest spender, Norway, spends 11.9% of its GDP on healthcare. Another way to look at this exorbitant increase is to compare it to the rate of income growth of 30% (Fox & McCorkle, 2018). To combat these rising costs, the Centers for Medicare & Medicaid Services (CMS) have designated three goals to optimize the healthcare system. These three goals, referred to as the Triple Aim, focus on three concepts:

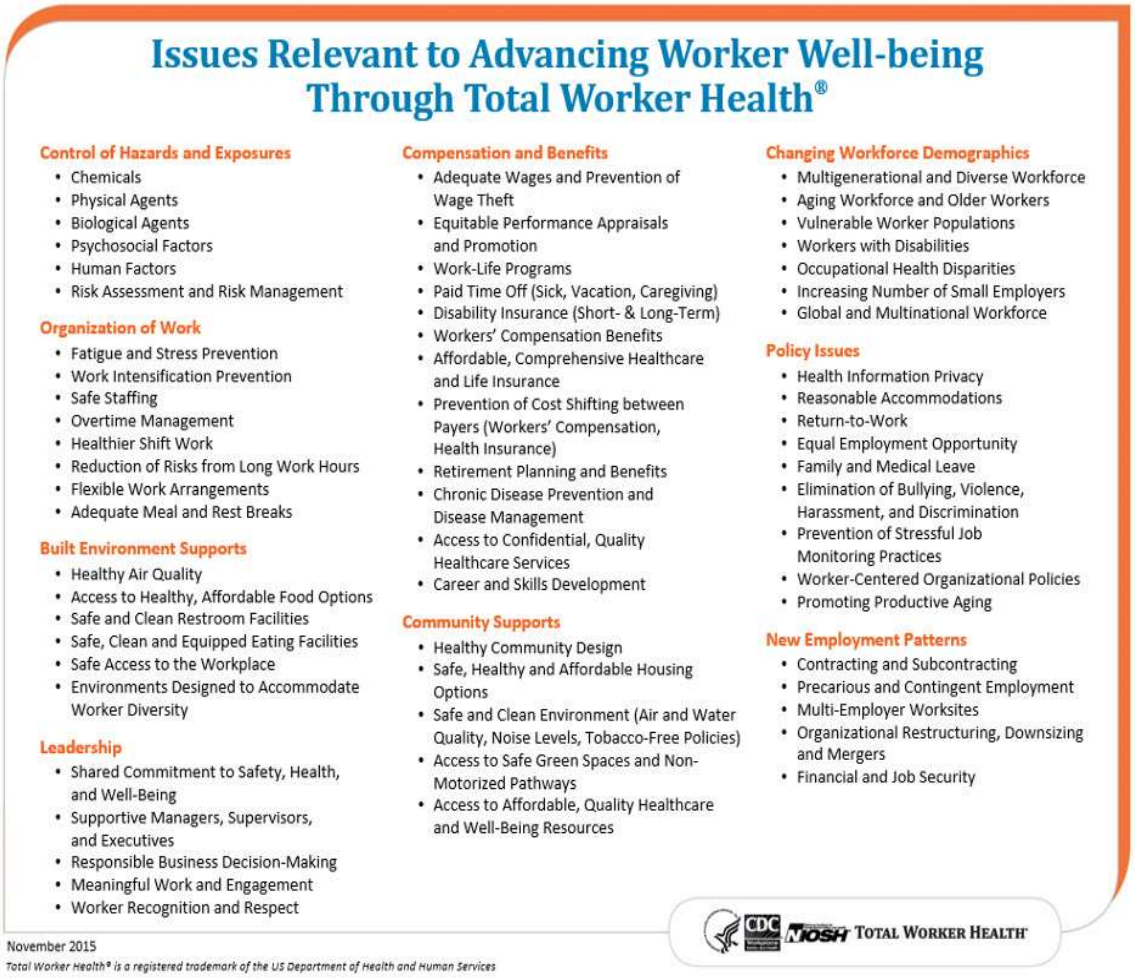
FIGURE 2.2

2013 ISSUES RELEVANT TO A TOTAL WORKER HEALTH® PERSPECTIVE

Source: Schill & Chosewood, 2013

FIGURE 2.3

2015 ISSUES RELEVANT TO ADVANCING WORKER WELLBEING THROUGH TOTAL WORKER HEALTH®



Source: Schill, 2017

1. Improving satisfaction,
2. Reducing healthcare costs, and
3. Improving the health of the population (Fox & McCorkle, 2018).

TWH® has similar objectives. If an organization can truly integrate health protection with health promotion, the theory suggests that employees will be more satisfied in their work and health, cost their organization less, and realize an improvement in overall population health (Chari et al., 2018). Additionally, should employers succeed in achieving triple aim success, the potential exists for a healthier, more productive population of retirees as they enter into the Medicare system. If working adults can attain an improved level of health, the benefits initiated in the workplace under TWH® will continue not only for the employer for whom they currently work, but for any subsequent employer and, ultimately, the US Medicare system (Tryon, Bolnick, Pomeranz, Pronk, & Yach, 2014).

Worker Perspective

Work benefits an individual's health and wellbeing more than it causes harm. Long periods of unemployment are linked to poor health and higher utilization of healthcare services (Allen, Nobel, & Burton, 2012), yet accessing the appropriate level care can be difficult for some workers. For example, emergency departments and urgent care facilities may be over-utilized due to ease of convenience (Chari et al., 2018). The typical primary care physician office is open only during the traditional business hours many employees work: 8 am to 5 pm. It may be difficult to access healthcare when working multiple jobs, as many low-income earners do. Low-wage earners may therefore forego annual prevention visits or establishing care with a primary care provider, delay treatment for acute and chronic issues, and, when treatment is sought, utilize

high-cost options like urgent care or emergency departments. Continuing in this manner only perpetuates the high cost of healthcare.

Under TWH® integration of health protection and health promotion, more appropriate access to care during all shifts and at the worksite is possible. The occupational health nurse (OHN) has managed onsite clinics for decades and, with the increase in telemedicine opportunities, additional services that require physician input are boundless. Additionally, more employers are offering onsite acute care for dependents. With this additional service, the employer is integrating family care into their business practice, making it more convenient for employees with less time lost from work and higher satisfaction.

In 2015, healthcare premiums increased 4% compared with income growth of only 1.9% (Fox & McCorkle, 2018). Workers have an incentive to lower healthcare costs and can do so by participating in preventative services at the recommended schedule (e.g., colonoscopy at age 50) and seeking care for health problems before they become chronic.

Employees who are healthier tend to have higher job satisfaction, stay with their employer a longer amount of time and are more productive while they are working (Allen et al., 2012; McLellen et al., 2012). It is also important to recognize the changing demographics of the workforce: employees are working longer and continue to work well into their seventies, eighties, and even nineties. If workplace initiatives are implemented now, safety prevention trainings and health promotion activities have the potential to allow workers to age productively, eventually retiring in a state of wellbeing.

Employer Perspective

By going above the regulatory compliance standards for creating a safer workplace, employers who look upstream to address root causes of on-the-job injuries and personal illnesses

could reap the benefits of increased worker satisfaction, lower healthcare costs, and a healthier working population. Factors that lead to comorbidities that make an employee more susceptible to injuries and illnesses or that delay healing can be addressed when looking at the whole person as opposed to the traditional view of separating occupational and personal risk factors.

TWH® will always benefit individual workers. However, employers will also holistically benefit by addressing the health, safety, and wellbeing of workers. These benefits can be direct (e.g., decreasing healthcare costs) or indirect (e.g., increased employee engagement, increased job satisfaction). When employees are engaged and satisfied, they are less likely to leave an employer. Therefore, the cost of employee turnover and subsequent training decreases leading to an organization becoming an employer-of-choice in a competitive market during times of low unemployment (Loeppke et al., 2009).

Employers have a significant incentive to control or lower healthcare costs. Employer-based insurance covers 55% of the US population (McLellan et al., 2012), and health insurance premiums are increasing at a rate faster than income (Fox & McCorkle, 2018). Depending on the source of information, some suggest healthcare premiums have doubled in a 10-year span between 2001-2011 (Kaiser Family Foundation, 2011). Lax (2016) describes an increase of 69% for family coverage, from $9,950 in 2004 to $16,834 in 2014. Regardless of the source, there is agreement that the cost of health care coverage is increasing at a rate that is undesirable on all fronts.

Over and above the cost of insurance premiums, for every dollar spent on medical and pharmacy costs, it is estimated that employers spend another two to three dollars in lost productivity (Fox & McCorkle, 2018). The indirect healthcare costs of absenteeism, presenteeism, Workers' Compensation, and short- and long-term disability significantly

contribute to worker health and timely access to care (Fox & McCorkle, 2018). If employers chose to shift their healthcare spending from treatment to prevention, estimated currently at only 2% of total employer healthcare expenditures (Tryon et al., 2014), imagine the possibilities toward a healthier population.

Employers have been fighting an uphill battle to control the rising cost of healthcare for their populations for years. With the passing of the Patient Protection and Affordable Care Act in 2010 (ACA), some employers eliminated healthcare coverage for their employees justifying that employees could obtain insurance through healthcare exchanges. Others have shifted the cost of healthcare premiums or increased the employee's deductibles to save costs. These practices only temporarily decrease the cost of healthcare and, overall, expenses will go up. If employers truly want to gain control of healthcare costs, improving the health of their population should be a long-term goal.

Labor Perspective

NIOSH has consistently maintained that health promotion in the absence of health protection is not fulfilling the key philosophies of TWH®. Eliminating hazards must remain the priority. There is a perspective, however, that if the corporate desire is to decrease healthcare costs to avoid affecting an organization's bottom-line, many of the resources used to implement health promotion programs come from shifting them away from already limited health protection funds. According to Lax (2016), unions and union-based individuals have not responded in a united way to the fear that employers will lose their focus on this priority. Some unions encourage their members to participate in integrated projects offered by their employers while others have not. Those that discourage participation are doing so with two different rationales (Lax, 2016). First, they argue that many workplaces remain dangerous and expose their

workforce to detrimental health conditions. Shifting financial resources to develop wellness programs takes valuable, limited resources from the basic safety efforts. Second, employers who implement health promotion programs may do so at the employee's expense. For example, an employee who chooses not to participate or participates and fails to achieve a health promotion goal, may pay higher insurance premiums than under the current model. Many employers have already implemented different premium tiers for employees who smoke or have a certain BMI (Lax, 2016). If employers consistently implement TWH® as intended, the labor perspective will support integrated efforts.

Healthcare Provider Perspective

With all the changes in healthcare regulation in the last decade, many primary care physicians are seeking ways to show the value they provide their patients. With reimbursements at risk if outcomes are not measured or demonstrated appropriately, physicians are incentivized to develop an outcomes-based approach to care. Employers, as the payers for more than 50% of the nation's healthcare, would benefit from a partnership with physicians who look after their employees. Whether insured or self-insured, employers (or the insurance as a proxy) can contract with physicians to document and follow metrics for items that directly save costs (e.g., ensuring availability of same-day or after-hours visits to avoid emergency room visits) or indirect costs (e.g., returning temporarily disabled employees to work earlier than expected). Agreements can be reached for shared savings between the employee health plan and the treating physicians (Allen et al., 2012).

New conceptual models for healthcare have emerged in the era of the ACA. One pertinent model, the patient centered medical home, emphasizes the partnership between a primary care provider and the individual in addition to all other stakeholders of that person's

care. These additional stakeholders are generally defined as family members and other caregivers, and the occupational health practitioners should also be included (McLellan et al., 2012). There is an inextricable connection between a individual's home, community, and workplace, and the individual may spend equal amounts of time in each environment. The overall health of an individual can be maintained and promoted within the context of any of these environments. In Figure 2.4, the occupational health professional, working under the TWH® model, can be seen as the connecting link for community- and employer-based healthcare (McLellen et al., 2012).

Barriers to TWH®

Limited Resources

When considering the cost of any disease or injury, it is important to consider both the direct costs (e.g., medical treatment) as well as the indirect costs (e.g., productivity loss in both the workplace and at home). Leigh (2013) estimated the total costs of occupational injuries and illnesses to be $250 billion per year. In contrast, he found the cost of certain non-occupational diseases—cancer, chronic obstructive pulmonary disease, and diabetes—to be significantly less than that. For example, the total of direct and indirect cost of cancer was found to be $31 billion less ($219 billion a year). One would expect national funding should be greater for the injuries and illnesses causing the greatest economic burden, but this is not the case. Leigh (2013) found that the annual budget for NIOSH is $300 million compared to a staggering $50 billion budget for the National Cancer Institute.

With such a relatively small budget designated to address a significant driver of injury and illness prevention, the idea that TWH® could expand efforts into the health promotion realm is challenging to comprehend. One could imagine that if TWH® were to also designate

FIGURE 2.4

CONNECTIONS BETWEEN THE WORKPLACE, THE COMMUNITY, AND THE HOME

Source: McLellan et al., 2012

additional funds, the labor concern could be assuaged. It is important for NIOSH to continue the research to validate the outcomes of TWH® and justify how the model keeps workers safe. Perhaps in partnership with occupational health professional organizations, lobbyists can use the growing body of NIOSH research to allocate additional funding to address occupational injuries and illnesses.

Employer Obligation vs. Individual Worker Behavior

The very nature of Workers' Compensation in the US is a bargain in compensation. For injuries caused on the job, an employee gives up rights to sue the employer for a potentially unsafe environment in exchange for an employer agreeing to pay all medical and disability costs, regardless of fault. In theory, this was a simple exchange meant to eliminate the timely, costly investigations into who is at fault for an injury. In practice, however, this bargain has created complications. The buckets of "work-related" or "not work-related" are increasingly defined as legislation attempts to keep certain diagnoses out of the Workers' Compensation realm. However, as the cost of non-Workers' Compensation health insurance is significantly more for most employers, it would benefit from a system that encourages integration of all health-related matters.

Workers are of free-will and may choose not to participate in health promotion activities. However, if an employer can create a structure where healthy choices are easier, the system will drive certain healthy behaviors. For example, an employer can choose not to offer fried foods at its cafeteria and instead opt for baked options of similar foods. Occupational health nurses within an organization can initiate a campaign for taking the stairs instead of the elevator. The cafeteria example narrows the choices while the stairs program may utilize peer-pressure encouraging employees to make different choices.

Workplace wellness programs, although addressed under the ACA, are not regulated to actually move the needle on employee health outcomes. Within the regulations, provisions exist that do not follow best-practice when encouraging actual changes in health. Tryon et al. (2014) point out that most employer-based wellness programs are participatory programs that do not require employees to obtain or maintain any sort of health metric. Systems based on evidence must be in place to encourage healthy behavior changes. So far, the ACA and employers are falling short on implementation of programs that help employees change their behavior (Tryon et al., 2014).

Payment Structure

Under the current US healthcare model, injuries and illnesses caused by work are covered under Workers' Compensation coverage provided by an employer. On the other hand, injuries and illnesses that are not caused by work would be covered under an employer-based insurance plan (if the employer offers group health insurance) or insurance offered through a private or governmental provider. Injuries and illnesses are not caused by a single factor and, more often than not, are attributed to multiple factors. The Workers' Compensation system recognizes this fact and lobbyists fight to include or exclude conditions for certain classes of workers under this system. How can one condition, like carpal tunnel, be accepted as "work-related" in one state but not in another? If the healthcare system (be it Workers' Compensation or group health insurance) were truly in place to assist an injured worker back to health, definitions of work-related or not-work-related would not come into the picture. If TWH® is widely adopted and recognition of this multifactorial causation takes hold, the payment structure for injuries and illnesses will be disrupted in one of two ways (Lax, 2016):

1. If TWH® considers multiple factors contributing to an employee injury, Workers' Compensation may deny benefits.
2. If TWH® broadens the definition of a work-related condition (e.g., sedentary job leading to obesity), more conditions will be considered for Workers' Compensation benefits.

This bifurcation of payment methods does not easily fit the nature of multifactorial causation. Instead of focusing on treating the illness or injury after it occurs, an employer would benefit greatly from shifting dollars in the budget to focus on holistic prevention to avoid the argument of which insurance covers the cost.

Privacy and Confidentiality of Personal Information

When considering work-related and non-work-related factors together as contributors of injuries and illnesses, there are valid concerns regarding what information (including health information) will be shared with employers (Chari et al., 2018). Without clear boundaries and safeguards protecting this information, employers could potentially access employees' protected health information. Under TWH®, employers and workers should communicate regarding what information will be used to assess for program design and how this information will be distributed. Under no circumstances should individual and identifiable health information be utilized, scrutinized, or evaluated to justify discrimination or penalties to individual workers. Instead, aggregate data should be compiled and evaluated to design appropriate workplace programs. If a worksite culture of distrust currently exists, a third party should be hired to reduce employees' fear of corrective action in response to a detail in their personal health records. For worksites that are starting this journey already in a culture of safety, health, and integrity,

transparent communication remains a key element to ensuring that health data are not being inappropriately handled (Lee et al., 2016).

The literature reviewed in this chapter includes the research and perspectives to date on the relatively new concept of TWH®. The benefits continue to outweigh the barriers which are steadily being addressed. Chapter III explores the integration of health protection and promotion and begins to illustrate how these concepts can be implemented in the workplace.

CHAPTER III

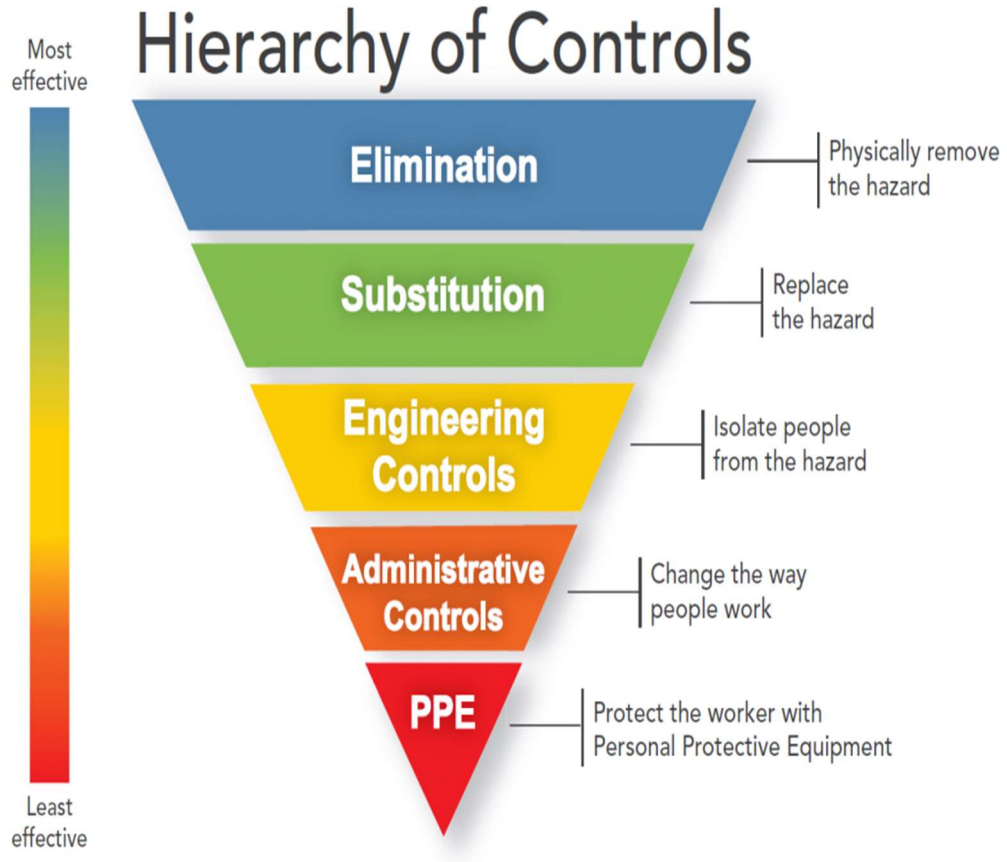
INTEGRATION OF HEALTH PROTECTION AND HEALTH PROMOTION

NIOSH has structured the TWH® design after a model all OHNs should be familiar: the hierarchy of controls. In the original hierarchy (Figure 3.1), NIOSH guides employers in implementing effective hazard control from the most-effective means to the least- effective means (top to bottom). Those at the top of the hierarchy are also generally the hardest to implement but contribute to inherently safer workplaces. NIOSH re-labeled the model to illustrate the key concepts of TWH® also in a top-to-bottom approach. The new model recognizes the elimination of hazards as the most effective means of prevention while individual-level changes are the last resort (Figure 3.2). The redesigned hierarchy builds on the foundation of the traditional hierarchy to include strategies that more broadly promote wellbeing. This new model is not focused solely on workplace hazards but instead provides a guide for expanding upon health protection and integration of health promotion. Figures 3.1 and 3.2 provide the visuals for the rest of this chapter and an example injury resulting in a musculoskeletal disorder (MSD) is described with each rung on the hierarchy to illustrate key points.

A major source of injury to healthcare workers is MSD caused in great part from the manual lifting and transferring of patients (OSHA, 2010). In 2010, the incident rate for MSDs among healthcare employees was 249 per 10,000 employees—more than seven times the rate for all other industries, including construction (OSHA, 2010). The cost of these injuries directly and indirectly affects both the employee who is injured and the employer. Not only is there a cost for medical treatment, there is also the cost of disability (either short- or long-term), potential litigation, potential chronic pain, and staff turnover. Twenty percent of nurses report leaving

FIGURE 3.1

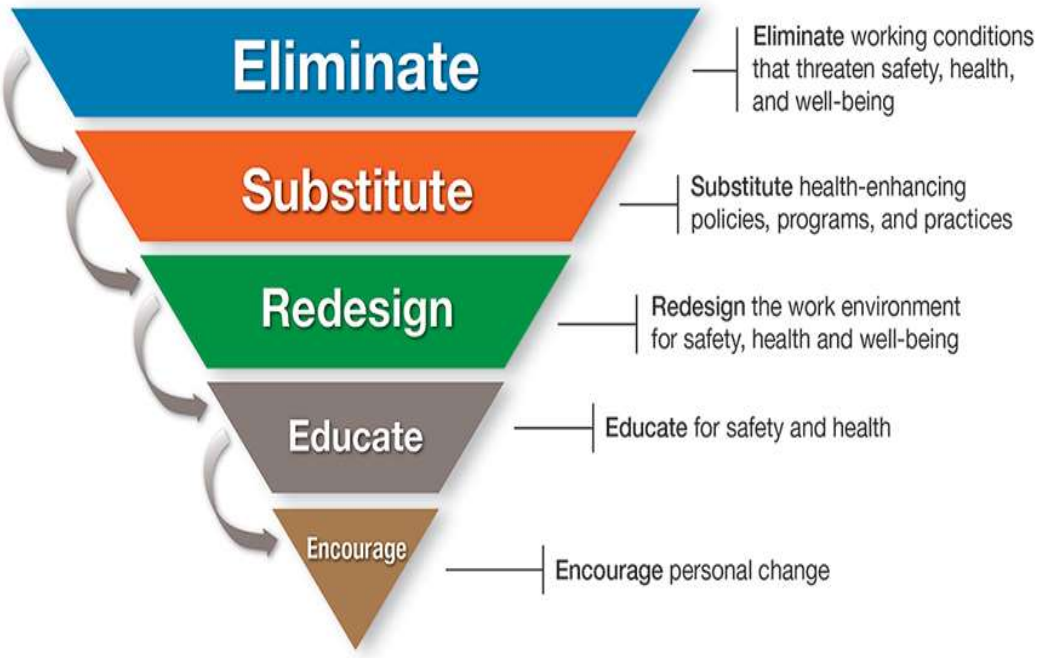
TRADITIONAL HIERARCHY OF CONTROLS



Source: CDC, 2018

FIGURE 3.2

THE HIERARCHY OF CONTROLS AS RELATED TO TOTAL WORKER HEALTH®



Source: CDC, 2016

bedside work due to the physical risks of the industry (OSHA, 2010).

Structure: Hierarchy of Controls and TWH®

Elimination/Eliminate

The traditional model starts with eliminating a hazard by physically removing it. Similarly, the NIOSH TWH® hierarchy begins with elimination of work conditions that threaten safety, health, and wellbeing. These work conditions must include the physical hazards that threaten worker health (e.g., chemical exposures) and should expand to include factors related to management, bullying, etc.

In the MSD example, the handling of patients will never completely be eliminated in the healthcare industry. However, there are options that can be implemented that fit the model of TWH®. Employers can provide equipment and training that eliminates the need for employees to lift over 35 pounds. Ceiling and mobile lifts at the bedside have proven to lower injury rates and the severity of the injuries that may still result (OSHA, 2010). Implementation of ceiling and mobile lifts is an example of elimination (or partial elimination) of a workplace hazard.

Substitution/Substitute

The second tier on both hierarchies involves substituting something undesirable for another item that is less-undesirable. The traditional structure calls for “replacing the hazard” with something less hazardous and this is repeated in the TWH® hierarchy. Although it might be difficult for an organization to admit, there are likely policies, programs, and practices that allow unhealthy, systematic choices to be made by employees. An organization should look at the policies and practices it currently has and ensure there are not underlying messages that threaten an employee’s health and wellbeing.

Looking at the example of patient handling in a healthcare setting, substitution of health-enhancing policies can promote a safer, health-promoting workplace. Moving and transferring patients will always be a part of direct patient care. However, traditional training expects MSDs to be part of the job. Healthcare workers are traditionally taught the best method of injury prevention to be proper body mechanics. This training effectively put the onus of injury prevention on individual workers—the lowest tier of the hierarchy of controls. Instead of body mechanics, the updated policies should reference utilizing patient handling equipment like lifts or items that reduce friction when laterally transferring a patient. By addressing the manual handling of patients higher up in the hierarchy, employees benefit from a more effective method of injury prevention.

Engineering Controls/Redesign

The third tier on the models is where the labels begin to change. In the traditional model, the third tier was designated for Engineering Controls where the focus was to isolate the employee from the hazard when the hazard itself could not be eliminated or substituted for something less hazardous. In the TWH® hierarchy, the third tier was renamed to expand organizational-level interventions that enhance employer-sponsored benefits. It is important to notice that this tier still places accountability on the employer to make a change, not on the employee. Throughout all of the tiers, although employee input is essential, the actual implementation is something required of the employer.

Continuing with the patient handling example, the work environment is redesigned by installing lift equipment to reduce the manual lifting and transferring of patients. The organization recognizes the importance of decreasing the physical lifting and transferring of patients for the health of their workforce. The leadership may authorize the implementation of

mobile and ceiling lifts and they may rewrite policies to reflect this implementation. However, employees may not use the devices if they are inaccessible or inconvenient such as stored in a closet or behind a door. Simply purchasing equipment and writing policy is not enough. The tools must be accessible for use in order to be effective. In this example, leadership should involve the front-line staff employees who use the equipment. The employees would be able to point to the access issues and would identify the ideal placement of the controls.

Administrative Controls/Educate

The next tier on the traditional hierarchy of controls, Administrative Controls, changes the way employees work. The most cited example of this control is "rotation" (CDC, 2018). Rotation works when the hazard cannot be eliminated or substituted or engineered out of the job. An example of this involves making medication bags for intravenous administration. The job requires a worker to manually squeeze a syringe into a bag of fluid. Instead of assigning a single individual to do this work for an eight-hour shift, four employees may be assigned 2-hour rotations in this station. As one can see on the hierarchy, this is one of the least effective means of hazard protection.

On the TWH® hierarchy, education, although extremely valuable, is not the most reliable form of ensuring the health and safety of the workforce. Solely relying on employees to take the education provided and make a healthy or safe choice assumes the employees have a health and safety literacy level comprehensive enough to do so. According to the Office of Disease Prevention and Health Promotion, over a third of US adults have difficulty with common health tasks such as reading a prescription label or following a childhood vaccination schedule (DHHS, 2008). Providing education is certainly important but cannot be relied upon to drive health and safety to the next level of efficacy.

Continuing with the patient handling example, there is an important phase of education in the implementation of a safe patient handling program. Installing lifts, rewriting policy, and redesigning the workplace will not protect the employee from injury if the tools are not properly utilized. Within the higher tier of substitution, program planning would include a comprehensive training program for all employees involved in direct patient care. This illustrates how the tiers are also interconnected and can be implemented in tandem, not necessarily step-by-step.

PPE/Encourage

Finally, the lowest tier of the hierarchies is where employee behavior comes into play. Individual behavior and choice are important for employees to realize self-efficacy. From a legal standpoint, even when an employee chooses not to wear personal protective equipment (PPE) and is exposed to a health-threatening substance, the employer is still liable for any resulting injury or illness. The lowest tier of the TWH® hierarchy of controls is also about choice. The employer can encourage personal change for improvements in health, safety, and wellbeing but forcing employees to stop smoking or lose weight removes employees' empowerment over their own health. In the context of patient handling, regardless of the planning, training, and implementation of a safe patient handling program, employees must utilize the tools provided for their own health and the health of their patients. All tiers above this final tier build a comprehensive foundation for this final step: personal accountability.

An employee who chooses not to use safety equipment provided in the workplace may be subject to corrective action. Both hierarchies of control are not meant to serve as a means to punitive measures, but rather to provide a construct for all employers to follow in accepting accountability as they attempt to protect and promote the health of their employees. This bottom tier in both hierarchies is an important one. Employees are reminded they still have a role to play

in their health and wellbeing, yet it serves as a reminder that the more effective controls are on the employer.

Characteristics of an Integrated Approach

A model like the hierarchy of controls is beneficial as a foundation towards TWH®. Building on the hierarchy, an employer may begin to formulate an effective plan for an integrated approach that is essential for success. An integrated approach includes leadership commitment, employee participation, thorough review of policies and practices, strategic collaboration, adherence toward a better future, and data analysis to rationalize the continued path toward TWH®. Each of these components are explored in depth throughout the remainder of this chapter.

Leadership Commitment

Leadership plays an integral role in the sustainability of integrated health protection and promotion. TWH® is not a system that can be implemented, let alone sustained, without guidance, resources, and funding. These three components are not possible without leadership buy-in. Leadership is identified as an important subheading in the issues relevant to advancing worker wellbeing (refer to Figure 2.3). Within the topic of leadership, five key details are delineated:

1. Shared commitment to safety, health, and wellbeing,
2. Supporting managers, supervisors, and executives,
3. Responsible business decision-making,
4. Meaningful work and engagement, and
5. Worker recognition and respect (McLellen, Moore, Nagler, & Sorensen, 2017).

Participation

Although leadership commitment is usually the first aspect discussed when considering or implementing TWH®, garnering the worker perspective is just as instrumental in ensuring success. Participation and collaboration between employees, management, and leadership demonstrate a shared commitment to TWH®. Through this collaboration, the organization is more likely to identify safety and health issues most important to each rung in the organizational chart, identify barriers that hinder the program efficacy, potentiate the long-term sustainability of the program, and obtain buy-in from all key stakeholders (Lee, 2016).

Participation and collaboration do not function in a vacuum. If employees are to be engaged and the program is to be sustained over time, the organization must demonstrate commitment as well. If the work environment does not truly support the employees' safety and health, leadership cannot expect employees to choose healthier options that require behavior change. Lee (2016) described former smokers as being more likely to remain former smokers if the employer also showed a commitment to respiratory health with a smoke-free workplace policy and eliminated respiratory hazards from dust and fumes.

Policies, Programs, and Practices Focused on Positive Working Conditions

The crux of TWH® requires that the end objective is to integrate the policies, programs, and practices of an organization to improve the health of the workforce. This means departments and structures within an organization must collaborate to ensure policies are not in conflict with one another. The work being done and the environment in which it is being performed have the potential to, good or bad, shape an employee's health and wellbeing.

Integrating policies and practices is not a simple task. For example, most organizations have a written policy against sexual harassment in the workplace as is required by federal law.

Employers are not overtly going to admit that they do not follow this law and policy; however, there may be practices within the workplace that directly violate the policy whether it is a specific supervisor or a workgroup whose subculture allows the behavior to continue. Sexual harassment can become a pervasive problem within an organization which will increase stress of workers exposed to it or who feel they do not have a voice to change it. Integrating policies and practices takes effort and should not be seen as an exercise to check off the list on the way to TWH®. Written policies likely remain status quo with little substantial change over time. If there is a calendar for regular review, it is important to offer the review to a variety of individuals to assess necessary revisions as practices change.

Comprehensive and Collaborative Strategies

Integration is not solely for the benefit of the employer and its workforce, but for all recipients of the health and safety initiatives, including dependents. Current research attempts to produce results that could lead to best practices and be implemented in an even broader array of workplaces. NIOSH may be the venue to compile and distribute the studies, but the work is being done at the six NIOSH Centers for Excellence, dozens of affiliate programs, and the handful of professional organizations like the American College of Occupational and Environmental Medicine (ACOEM), American Association of Occupational Health Nurses (AAOHN), as well as others.

A recent ACOEM study calls to expand the current paradigm of occupational health to encompass the values of TWH® and create a framework for worker wellbeing. Chari and colleagues (2018) argue to include the four domains of TWH® (the physical work environment, workplace policies, employee health status, and satisfaction of work), along with a fifth domain that includes the home, community, and society at large. Using their ideas, TWH® would

comprehensively address wellbeing both at and outside of work, and consider subjective and objective aspects of health.

The subjective nature of wellbeing takes the employee's own perceptions and beliefs about health into account. Policies, programs, and practices can then be comprehensively and collaboratively designed to address these health beliefs. Starting with an employee's own health literacy level, a TWH® program builds upon it to provide structure and guidance for improving the health of themselves and their families. From the objective perspective, policies, practices, and programs that are designed and implemented to improve an employee's work environment and living conditions will further this support (Chari et al., 2018). Dissenters of TWH® may argue that this subjective and objective approach to employee wellbeing puts the onus of choice and behavior change on individual employees. NIOSH and the supporters of TWH® maintain that the primary responsibility to ensure the health and wellbeing of the workforce remains the accountability of the employer (Chari et al., 2018).

Adherence

Above all else, an organization that is on the journey to TWH® must ensure the safety of its workplace. Adherence to state and federal regulations, in addition to industry compliance bodies, is required. The integration of policies, programs, and practices will drive the workforce to better health outcomes. Sustaining this commitment year after year can improve market performance, increase productivity, increase worker satisfaction, and reduce employee turnover (McLellan et al., 2017).

Data-driven Change

There is a significant link between health and productivity (Loeppke et al., 2009). Considering that employers cover the health of over 50% of the US population through

employer-based insurance (Kaiser Family Foundation, 2011), they have a double-incentive to manage the increasing healthcare costs and the productivity of their organizations. It is estimated that health-related productivity costs (e.g., absenteeism, presenteeism, disability) are 2.3 times greater than medical and pharmacy costs of illnesses alone (Fabious, Glaze Frazee, Thayer, Kirshenbaum, & Reynolds, 2018; Loeppke et al., 2009).

Using the direct costs from an employer's health plan spend, TWH® can help an employer justify shifting program objectives (including necessary funds) to policies, programs, and practices that promote the health of their workforce. If the employer makes this shift in practice from a solely financial perspective, the evidence is mounting that maintaining a healthy workforce can significantly contribute to a more profitable bottom-line.

As with any public health program, regular evaluation of the program is necessary to ensure the organization stays on track. Using feedback from program utilizers, data from health and insurance records, and comparison to the strategic plan of the organization are all indicators to measure success.

Rationale of TWH®

The typical working adult spends one-third of the day in the workplace and employer-based health insurance accounts for more than 50% of the healthcare insurance available in the US (Kaiser Family Foundation, 2011). The relationship between health and work is bidirectional as one impacts the other (Fabius et al., 2018). As employers are concerned with the rising rates of healthcare spending, implementing a system that will address the safety and health of their workforce and their dependents makes business and ethical sense.

Although a company can realize immediate reduction in healthcare spending just in driving care to appropriate providers (i.e., primary care vs. emergency care), the direct cost of

medical treatment is not the only savings an employer will realize. Studies show that workers who are in a state of true health (not merely the absence of disease) are more productive while at work, miss fewer days away from work, and use healthcare resources appropriately (Chari et al., 2018). Additionally, the employer will see reduced waste and increased employee engagement leading to less turnover (Fabius et al., 2018). The workplace is an ideal location for integrating programs that address all aspects of health to ensure a healthy, productive workforce for today, and a healthy, productively-aging population in the future.

OHNs play a key role in managing, coordinating, implementing, and evaluating such programs. Chapter IV reviews the roles of occupational health nurses, and provides a context for consideration in implementing TWH®.

CHAPTER IV

THE OCCUPATIONAL HEALTH NURSE ROLE IN IMPLEMENTING TOTAL WORKER HEALTH®

An occupational health nurse's scope of practice is broad and comprehensive with an overarching goal to protect and improve the health of the workforce (Rogers, 2003). The OHN is in the unique role of any organization, as a member of the management team, works closely with all workers at an organization. The OHN in a hospital setting, for example, will be involved in surveillance programs and health reviews for every employee from executive leadership to the kitchen staff to housekeepers to nurses. By having access to the entire workforce, the OHN has a direct line of sight to the health, wellbeing, and satisfaction of all involved. This unique viewpoint should be used to improve the health of the workforce which can in turn boost productivity, reduce employee turnover, and support the culture of the organization.

Several different OHNs roles have been identified by AAOHN, including clinician, case manager, healthcare navigator, educator, manager, and multidisciplinary team member. The rest of this chapter provides an in-depth look at how OHNs can use these roles on a path to TWH®.

Roles

Clinician

An essential role of the OHN is working as a clinician. Whether working onsite for an employer or working at a provider-based clinic, the OHN will most likely interact with employees suffering from acute healthcare issues. Under TWH®, this clinician role can be instrumental in addressing both occupational and non-occupational injuries and illnesses. The OHN must know the different jobs of the workers and their work environments. To truly

integrate health protection with promotion and work within the priorities of TWH®, the OHN should first assess the cause of a work-related injury or illness. Upon determination that the workplace hazards are under control, the OHN can continue or concurrently work with the worker to address the non-work-related health issues.

The OHN as a clinician does not work alone to assess and resolve all health issues presented. When it comes to integration, the OHN is a key member of the occupational health team that is comprised of other occupational health and/or safety-oriented professionals. An occupational health physician or mid-level provider is essential when providing an actual diagnosis. This physician could be affiliated with the employer in a variety of ways. For example, the physician may be hired full-time solely for one organization or may work with multiple organizations on a consultative basis. Other members of the safety team assist the OHN with worksite environment and hazard assessment. The industrial hygienist or other individuals are trained to conduct exposure studies such as noise or indoor air quality assessments and determine true exposure data. Using all the information gathered by this team of occupational health professionals, the OHN can create goals and project plans for how best to provide the care of the workers, prevent future exposures, and improve the baseline health of the workers in the workplace (Randolph, 2003).

Case Manager

According to the Commission for Case Manager Certification (CCMC), the definition of case management is "a collaborative process that assesses, plans, implements, coordinates, monitors, and evaluates the options and services required to meet the client's health and human service needs" (2018, para 1). The primary goal of case management is to cost-effectively

coordinate quality health services in a timely manner to meet an individual's medical and social needs (CCMC, 2018).

Under TWH®, the OHN has myriad opportunities to achieve this goal for both occupational and non-occupational injuries and illnesses. In either avenue, case management begins at the time of injury or onset of illness and does not conclude until the employee achieves an optimal level of functioning, ideally, a return to regular work. In some environments, the OHN's sole responsibility may be case management, but in others, it may be one of many parts of the job. In either capacity, case management is an instrumental role for the OHN. In TWH®, case management plays a key role in keeping costs low for the employer but, more importantly, returning workers to optimal health and productivity.

*Workers' Compensation Case Manager***.** Under the occupational umbrella, the primary goal of the Workers' Compensation case manager is to return an ill or injured worker to pre-illness or pre-injury function or to the highest level of functioning achievable (American Board for Occupational Health Nurses, 2018). As an illustration, a nurse may be exposed to blood or body fluids after irrigating a wound using saline flushes that results in wound exudate and/or blood being splashed in the face. Upon initial report of the exposure, the OHN will first assess and treat the employee in a clinician role and then transition into a case manager role. After addressing the immediate need for care, the OHN will order blood work on the source patient to determine if any communicable diseases are present (e.g., Hepatitis B, Hepatitis C, HIV). While the blood is being tested, an initial assessment of the exposed employee will provide detailed insight into the root cause of the incident. In this case, the employee reports that he/she was aware of the risk of splashing contaminated saline into the face yet reports personal protective equipment (e.g., a face shield) was not worn because the room was not stocked with this

particular equipment. The OHN can then communicate with the manager of the unit to determine the root cause of the lack of PPE available to the employee. In this example, the OHN has played a role as the clinician, the case manager, and the safety officer all with the objective of ensuring the employee is immediately safe, able to return to work, and that a similar incident does not occur in the future.

*Case Manager for Employees with Chronic Health Conditions***.** From a non-occupational health perspective, the OHN can use the same case management skills and expertise to help employees navigate the healthcare and social resources available to them for injuries and illnesses not typically deemed work-related. The concepts of case management in both realms are the same: advocacy, communication, and resource management. Traditionally, employers may not have understood the rationale of an OHN case manager assisting employees with personal, chronic health conditions or acute injuries. However, NIOSH and other organizations have conducted extensive research that links many non-occupational health conditions with occupational health issues (McLellen et al., 2017). Having a designated case manager available to employees to address these issues before they further affect the workplace could be a key cost-saving strategy for employers looking to control healthcare spending.

For example, an employee may have Type II Diabetes which is not an occupationally-caused condition. However, the nature of diabetes can certainly play into issues on the job. If the employee is not managing diabetes, he/she may suffer from sporadic unplanned absences from work or, if at work and not feeling well, productivity or ability to work safely may be compromised. An OHN case manager would play a key role in assessing the root cause of why the diabetes is not well managed. Perhaps the worker was not provided with the education relating dietary choices to blood sugar levels and to the physical symptoms that may result if

blood sugar is out of normal range. The OHN case manager can provide or reinforce this education with the employee, refer the worker to additional resources or make a return appointment with a primary physician. After referrals, follow-up conversations are important to ensure the employee's level of understanding and diabetes control are maintained. The OHN case manager is acutely aware of the complications from chronic, uncontrolled diabetes if this same employee is injured on the job later in his/her career. Although diabetes is usually not covered under Workers' Compensation or covered as an occupational illness, an injured worker with a comorbidity of diabetes is expected to have a longer recovery time for many occupational injuries. For example, if the employee with diabetes falls from a ladder on the job and sustains a knee injury, the disability time will be greater than for an employee without diabetes or with controlled diabetes (ODG, 2018).

As of 2017, it was estimated that 50% of American's have at least one chronic disease and that 25% have multiple chronic diseases (Schill, 2017). With 80% of health care dollars being spent on chronic disease (Schill, 2017), employers who understand the effects that non-occupational disease states can have on occupational injuries or illnesses would surely benefit the integration of the case manager's work.

*Healthcare Navigator for Employees and Dependents***.** Employees may not fully understand or be aware of the variety of benefits offered by their employer. Medical benefits today include more than just the ability to go to the doctor; preventative services, flexible spending accounts, wellness accounts, and disability programs can be overwhelming to even the most seasoned human resources professional, let alone an employee hired on an hourly basis. The OHN, even if not officially a part of the Human Resources (HR) team, could partner with their HR colleagues and learn the details of the employer's benefit package. A study by NIOSH

recently found that employees who have access to paid sick leave are 28% less likely to be injured than those who do not have this benefit (Schill, 2017). Although it might seem counterintuitive, there is a psychological benefit of knowing a safety net, like paid sick leave, is available which can keep workers working safely. The OHN could help an employee access whatever the benefit might be when needed. An example of this is helping a disabled employee access paid sick leave benefits or, in states where offered, state disability insurance.

The OHN can serve as a resource and navigator for dependent care as well. Just as with the worker benefits, employers struggle to communicate the full benefits package to their employees (Miller, 2016). Employee and dependent benefit packages may be slightly different and the OHN, again in partnership with HR, can help an employee navigate the nuances of each benefit when they are needed. HR certainly attempts to educate employees about benefits before they are needed but education is not always retained at the time offered. At minimum once per year, Open Enrollment is an event when employees may select new coverage or opt out of benefits they may not be utilizing. However, from the employee perspective, Open Enrollment can be overwhelming and, as the need for access may not be necessary in the moment, the education may be lost. The OHN may be more accessible than the HR department and is an easy resource for employees who may struggle with childcare, care for an ailing parent, or have a spouse with a substance abuse problem. In these situations, the OHN can assess the employee's immediate need, provide crucial in-the-moment education, and connect the employee with benefits they may not even be aware are available.

Educator

Education is a fundamental pillar of general nursing practice as well as occupational and environmental health nursing. In the context of TWH®, the OHN has a role as an educator for

individual or groups of employees, management teams and leadership, and to the community at large.

*Employee Educator***.** Using specialty training in topics including industrial hygiene, safety, toxicology, epidemiology, human behavior, statistics, and occupational health, OHNs have a wealth of knowledge to share with workers within the organization. OHNs may be seen as peers or members of the team working to maintain a safe and healthy workplace. OHNs can work with employee groups to provide overall safety trainings or may work one-on-one with individuals who have personal health issues that are impacted by the work they do. OHNs help employees navigate the worksite policies, programs, and practices to ensure they not only understand the benefits and options afforded to them by the employer, but also utilized these options when necessary.

*Management Educator***.** NIOSH has outlined elements of TWH® necessary to ensure its success. Many of these elements—securing leadership support, developing a culture of health and safety, and empowering workers—require skills already possessed by OHNs. It is important for OHNs to be a member of any team or task force initiated by an employer to provide the TWH® perspective. With strong critical thinking and problem-solving skills, OHNs are prepared to influence employers and integrate health protection with health promotion. With the passage of the ACA, employers who provide medical insurance to their employees are incentivized to develop worksite health promotion programs with the intention to reduce the cost of group health coverage (Campbell & Burns, 2015). Management and leadership should utilize the expertise OHNs bring to planning and implementing an integrated health and wellbeing program for the benefit of the workforce.

*Community Educator***.** It is clear that a worker's health cannot be managed or controlled in one environment: the worksite, the home, or the community. In fact, every environment a worker is in and every choice he makes can positively or negatively affect health and wellbeing. To this end, health education should not be confined solely in the workplace or primary care doctor's office. Many academic programs of occupational and environmental health are found under the larger umbrella of public health. This organizational structure makes sense as OHNs use the concepts and theories of public health to implement programs around health that target at risk populations. Depending on the size of the employer, most do not employ a team of OHNs—if they employ even a single OHN. For this reason, having a network outside of the workplace is a beneficial tool OHNs can use to brainstorm current issues, gather feedback on certain initiatives, and ensure they are on the right track for the priorities of policies, programs, and practices at the worksite.

Manager

*Making the Business Case for Integration***.** The OHN Manager is in the unique position to make the financial business case for TWH®. Occupational injuries and illnesses cost an employer a significant amount of money each year. According to OSHA (2018), the direct and indirect costs of these incidents cost US employers $1 billion per week. Additionally, as employers are the main suppliers of health insurance for Americans, another significant amount of money is spent on non-occupational injuries and illnesses. In 2011, the Organization for Economic Cooperation and Development (OECD) reported the US spends $7,539 per capita, nearly double the average for the top 15 spenders (Kaiser Family Foundation, 2011). This spend accounts for 18% of the GDP and has increased faster than the general economy for three-quarters of the last four decades (Fox, 2018).

With all of this money being spent on the direct and indirect costs of healthcare, both occupational and non-occupational, employers have an incentive to take action. Organizations that invest in developing a culture of health, supported by TWH®, have been able to slow the rate increase on healthcare spending (Fabius et al., 2018). OHNs possess a specialized skill set to address this healthcare spending and relate to the Medicare Triple Aim: reduce costs, improve population health, and improve the healthcare experience. Therefore, OHNs can use the specialty to speak the business language to make a positive impact.

Designing/Redesigning Employee Health Plan. The ACA includes a provision allowing employers to create a health plan premium differential based on certain employee metrics (e.g., not smoking, certain BMI, certain blood pressure). Some employers have used this provision to shift the burden of healthcare on individual employees. In reality, not only are they not improving the health of their population, they may be making their health worse. By not focusing on all three goals of the Triple Aim, these employers are missing the point. Although this may be decreasing the employer cost of healthcare in the moment, the net value could actually be greater as the employee with the higher cost (and usually greater risk factors), may delay treatment for any acute condition or flare-up of chronic symptoms due to the increased personal cost to access care. This delay in treatment will only exacerbate the underlying issue and the employee's final cost of treatment and prognosis for health outcome will be much worse (Schulte et al., 2012).

Instead, employers would benefit from truly assessing their employee population's overall health. Of course, details on individual's health are protected under the Health Information Portability and Accountability Act (HIPAA) but aggregate data are available to employers. Employers should assess the analytics available to them from their insurers or third-party-administrators to determine key cost drivers. According to a study conducted by Thomsons

Online Benefit, 46% of employers fail to use the analytics available to them when designing or managing their benefit plan (Miller, 2016). OHNs can play an important role in this process as they may be the only clinical voice at the table.

*Ensuring Leadership Commitment***.** TWH® is not a project with a beginning and an end. Ensuring the safety and health of the workforce requires an ongoing commitment and a culture where health and safety are foundations of how business is done (McLellan et al., 2017). As a specialist in occupational safety and health, the OHN is a key player to ensuring the ongoing success of TWH®.

The easiest implementations occur when leadership is already on the same page as the workforce regarding safety and health. Not all organizations are so lucky. In the event leadership requires convincing, OHNs can help to educate key stakeholders of the value of TWH®. The business case can lay the foundation for this argument. Although much of the literature paints leadership in a light that appears they focus solely on the bottom-line and business strategy, leaders also understand that employees are an organization's greatest asset. Most leaders want to do the right thing for their employees and TWH® can be a tool that will allow them to do so. Although perhaps another example of questioning causality, it is sometimes difficult to determine whether companies that emphasized the health and safety of the employees are companies that are ethical and altruistic in other areas, or if the highly ethical and altruistic companies are the ones who invest in their workers' health and wellbeing in the first place (Fabius et al., 2016). Either way, OHNs can help leaders see how TWH® supports organizational goals and business objectives (McLellan et al., 2017) in helping them to focus on their greatest asset.

Multidisciplinary Team Collaborator

The true effort of implementing TWH® requires a collaborative team. In an organization that does not yet have leadership support, the team will be instrumental in securing that support. On the other hand, for an organization that does have commitment from leadership, building the team and planning the integrated implementation will be a true group effort. In many contexts, OHNs may organize of TWH® initiative, but this does not necessarily need to be the case. Collaboration is key and having the right mix of team members will be important.

Integration is the cornerstone to the success of TWH®. The historical nature of keeping injuries and illnesses in their occupational and non-occupational health buckets may mean OHNs need to create a team of individuals who already exist at the organization. The traditional silos of safety, health, and human resources include experts of different policies, programs, and practices that affect worker safety, health, and wellbeing. When assembling the team, OHNs should draw from safety personnel, representatives of human resources, Workers' Compensation personnel, the Employee Assistance Program (EAP), disability managers, and most importantly, the workforce itself. The success of the TWH® program depends on the support of leadership, the input of the workforce, and all the experts in the middle who will assess, plan, implement, and evaluate the program (Lee et al., 2016).

Recognizing Opportunities for Prevention

Protecting workers from hazards present in the workplace is the number one priority of TWH®. For onsite OHNs, hazard recognition and mitigation are daily priorities. Whether making assessments while interacting with individual employees during surveillance visits to the onsite clinic or taking in a birds-eye view of a plant floor during rounds, OHNs are equipped with the assessment skills necessary to see issues before they become hazards. Utilizing specialty

training combined with workplace experience, OHNs can then take these assessments back to leadership with a plan for hazard mitigation.

Exposure to workplace hazards has not been completely eliminated. Historic industries such as mining, railroads, textile manufacturers, etc. have made vast improvements in the way in which they do work. Science has assisted in this endeavor as a means to identify substances that may not have been known to be toxic are now regulated and controlled. However, workplaces across all industries are not hazard-free and OHNs must be diligent to recognize and control the hazards that remain.

For many, the traditional workplace is a thing of the past. The very nature of work is changing and with it come new exposures and new hazards. The organization of work and the location it is being done causes work and non-work to overlap. Increasingly, employees may have the flexibility to work from home or other locations over which an employer does not have jurisdiction. By incorporating the concepts of TWH®, OHNs can support employees who may work outside of the traditional work environment to ensure they have the necessary tools to safely perform their work, feel connected to the organization, and participate in the health promotion activities afforded to them as employees.

Employment patterns are also changing. Non-traditional employer-employee relationships are occurring with greater frequency. It is estimated that between 8 to 18% of the workforce make up these non-traditional relationships such as contracting, subcontracting, seasonal work, and the growing gig economy (Schill et al., 2017). By either not having a traditional workplace or by not having access to the breath of benefits available to a traditional employee, there is an opportunity for OHNs to ensure the health and safety of these workers as well.

Community Involvement

Networking and Relationship Building

Having a network outside of the workplace is a beneficial tool OHNs can use to brainstorm current issues, gather feedback on certain initiatives, and ensure they are prioritizing holistic policies, programs, and practices at the worksite. Occupational health professional organizations exist and OHNs should participate as a member of organizations that provide both specialty and broad-strokes perspectives of the industry. National organizations like the American Association of Occupational Health Nurses (AAOHN) and American College of Occupational and Environmental Medicine (ACOEM) have educational opportunities and practice resources that can benefit all OHNs regardless of the industry in which they work. Local chapters of national organizations are also important to ensure regular networking and relationship building. All these avenues present OHNs with a means to stay current on industry changes.

Community Resources and Referrals

Outside of the professional organization arena, OHNs should develop a network of other members in the community who work to protect the health and safety of populations. County or state health officials are involved in communicable disease outbreaks or disaster preparedness that can affect any workplace environment. The nature of work is not untouched by the outside world and employees may attend a community event on a day off that exposes them to a communicable disease that can then be transmitted throughout the workplace. Having a network of other experts available for referral ahead of time will save OHNs time and resources when an urgent need arises.

Resources

Centers for Disease Control and Prevention

Being that TWH® is a program developed, researched, and promoted by the CDC, it is no surprise that the majority of resources available to OHNs are available through this entity. Over and above what is published online, NIOSH sponsors six TWH® Centers for Excellence located around the country. These centers conduct research on the concepts of TWH® to build the scientific evidence supporting the effort. The Centers test promising policies and programs, distribute best practice materials and toolkits, strategize overcoming barriers, provide cost-benefit analysis and return-on-investment justifications, and continue to promote the development of TWH® (CDC, 2017).

World Health Organization

WHO has published a variety of tools and resources to ensure the safety and health of workers around the world. Although many of their resources may not be relevant to companies operating solely in the US, they are important in the context of the global economy. Many organizations may employ workers in other countries or they may outsource certain aspects of the company to third-parties. In the context of TWH®, the global employer should be aware of the conditions in their external locations. For example, a major US-based shoe manufacturer faced public outrage when it became known that an international subcontractor tolerated workplace conditions that were inferior to US standards. These conditions included hazardous work environments, unfair wages, and extended hours of operation. TWH® should extend to the partnerships and collaboration of all workers employed in any variety of contexts: direct employee, subcontracted employee, independent contractor, etc.

Publications, Workbooks, and Guidelines

The published resources available to OHNs on the topic of TWH® are growing. In addition to the resources available from DHHS and WHO, other academic and for-profit entities have compiled publications, workbooks, and guidelines available in a variety of formats and either offered free of charge, included in certain class attendance or available for purchase. A few of these resources are listed on the Appendix.

CHAPTER V

SUMMARY AND RECOMMENDATIONS

Healthcare is a large, nebulous system to control. Many moving parts exist within healthcare and the variables affecting a person's health are endless: from genetics to exercise, from the home environment to adverse childhood events, from travel to work. There is not a single predictive element that will determine if an individual is healthy for a lifetime or permanently disabled.

The cost of healthcare in this country is out of control. Although the US spends more than twice as much per capita on healthcare than any other country, the health of Americans is significantly worse (Tryon et al., 2014). Factors not related to health but rather related to systems, bureaucracy, and litigation drive the costs higher each year (Fabius et al., 2016). The historic practice of fee-for-service and the boom of the internet drove physicians to order unnecessary tests or procedures in both an effort to increase payment and assuage patient demands.

It is time for an overhaul.

Continuing the TWH® Effort

The theory to support TWH® most certainly exists. Many studies conclude the research should be continued and more funding is needed (Anger et al., 2014; Chari et al., 2018; Feltner et al., 2016; & Loeppke et al., 2009). Metrics in a system as large as healthcare are difficult to define and the outcomes take years to achieve. However, the evidence is growing, and a few focused employers are realizing actual results. Worker wellbeing requires partnerships on the part of the employer, the community, and the individuals themselves. Chari et al., (2018)

concluded, “the goal of helping workers flourish is an occupational health and safety, and population health endeavor worth pursuing” (p. 593).

Expanding the TWH® Effort

NIOSH’s TWH® structure today emphasizes the integration of health protection from workplace hazards and health promotion activities. In parallel activities, employers may be following models for cultures of safety, high reliability, and most recently, cultures of health within the workplace. Regardless of the title for the effort, the ultimate goal of supporting a healthy population is strong.

Employers who understand the influence of social determinants of health and address their workforce in a holistic fashion stand to rise above the masses achieving direct and indirect cost savings as their workforce becomes healthier. The WHO’s definition of health is “a state of complete physical, mental, and social wellbeing and not merely the absence of disease or infirmity” (WHO, 2018a, para 1). As the location where most workers spend at least a third of their time, the workplace is an ideal avenue to address all these components of wellbeing. If TWH® were to truly take hold and make a difference, OHNs would support their employer’s partnerships with primary care physicians, ancillary healthcare providers, and public health entities to realize true health promotion in the working population.

Healthy Workforce, Healthy Population

Even as far back as 2009, before TWH® was officially a program, Loeppke et al. (2009) studied multiple employers measuring health-related lost productivity and the implications of managing the health of the workforce. The authors conclude that the costs of healthcare are not a benefit to be managed but rather, the health of the workforce is an “investment to be leveraged” (p. 427). Families and retirees benefit from the integration of health protection and health

promotion. Eventually, as the healthy workforce retires productively, the burden on Medicare can also be reduced. A healthy workforce, leveraged appropriately, creates strong businesses, healthy families, healthy communities, and a healthy population.

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APPENDIX

SELECTED RESOURCES

American Association of Occupational Health Nurses (AAOHN)

Source: AAOHN TWH® Affiliate Resources
Website: http://aaohn.org/page/make-total-worker-health-about-you-and-your employer

Fundamentals of Total Worker Health® Approaches: Essential Elements for Advancing Worker Safety, Health and Wellbeing

Source: Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute of Occupational Safety and Health
Website: https://www.cdc.gov/niosh/twh/fundamentals.html

Healthy Workplaces: A Model for Action for Employers, Workers, Policy-makers, and Practitioners

Source: World Health Organization
Website: http://www.who.int/occupational_health/healthy_workplaces/en/

Implementing an Integrated Approach: Weaving Worker Health, Safety, and Wellbeing into the Fabric of Your Organization

Source: Harvard T.H. Chan School for Public Health, Center for Work, Health, & Wellbeing
Website: http://centerforworkhealth.sph.harvard.edu/resources/guidelines-implementing-integrated-approach

Total Worker Health® Centers for Excellence

Sources: Colorado School of Public Health, University of Colorado, CU Anschutz in Denver, CO;
University of Connecticut/University of Massachusetts in Lowell, MA;
Harvard University in Boston, MA;
University of Iowa in Iowa City, IA;
Oregon Health and Science University in Portland, OR; and
University of Illinois-Chicago in Chicago, IL.
Website: https://www.cdc.gov/niosh/twh/centers.html

Total Worker Health® Essential Video Series

Source: University of Iowa, Healthier Workforce Center for Excellence
Website: https://www.public-health.uiowa.edu/hwcmw/for-the-workplace/videos/

Total Worker Health® Toolkit

Source: Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute of Occupational Safety and Health
Website: https://www.cdc.gov/niosh/twh/tools.html