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Overwork and Stress: The Need for Policy on Working Hours in the Healthcare Professions

Richard Andrew Gabehart

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OVERWORK AND STRESS: THE NEED
FOR POLICY ON WORKING HOURS IN
THE HEALTHCARE PROFESSIONS

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OVERWORK AND STRESS: THE NEED
FOR POLICY ON WORKING HOURS IN
THE HEALTHCARE PROFESSIONS

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Introduction

The issues of overwork and mandatory overtime have become very crucial concerns among healthcare workers in the United States and Europe. Much research has been done with regard to the physiological and psychological factors associated with shiftwork, but far fewer studies have been conducted to examine the affects of overtime, overwork, and the stressors that lead to unsafe working conditions and unsound decision making. The intent of this paper is to summarize the current status of overwork and stress as it relates to these workers and to suggest avenues towards policies for reform in the healthcare industry. By examining the present conditions and studies related to these issues, the burden of stress-induced occupational injuries amongst healthcare workers on society will be assessed, providing a framework for the justification for a policy that addresses overtime.

Statement of the Issues

The term “overwork” strikes a very negative image amongst healthcare workers around the world today. To better understand the anguish felt amongst these workers one has to but pick up a newspaper or magazine and follow the drama that continues to unfold. The Boston Globe reports, “Throughout the world, the traditional image of the passive, self-sacrificing nurse is disappearing. In 1999, nurses staged strikes in Poland, Ireland, and three Canadian provinces. In each case, the public rallied to support their struggles for better pay and working conditions. “In the United States, too, nurses are on the march – often protesting understaffed patient units and mandatory overtime” (Gordon, 2000).
Changes in the healthcare environment have led to reduced staffing, enlargement of care units, a reduction in resources, and an expectation of greater efficiency and profitability (Kuokkanen & Katajisto, 2003). Hospital administrators and nurse managers constantly struggle to efficiently allocate resources in such a way as to curtail the cost of care delivery to make their institutions more profitable (Hoffman & Scott, 2003). One of the results of cost-cutting efforts is the 12-hour shift, which reduces number of employees required and reduces the amount of fringe and benefits that must be paid out collectively to the healthcare staff (Hoffman & Scott, 2003).

Over the past years many healthcare organizations have downsized by cutting the number of skilled providers and supplementing those who have remained with lesser-trained aides. This has produced an increased workload for registered nurses (RNs) that have seen their patient load increase dramatically resulting in an insufficient number of skilled personnel to cover patient’s needs (Shader, Broome, Broome, West & Nash, 2001), unsafe floating (Rudy & Sions, 2003) of nurses into areas outside their fields of expertise, and forced overtime causing stress and exhaustion (“What the Nurses,” 1995). Nurses are known to be more reluctant than almost any other group of workers in industry to strike (Lenehan, 2000). Knowing this has tended to embolden management where decisions are made solely for the benefit of stockholders and those others whose interest lie in profitability (Lenehan, 2000).

It is estimated that between 400-600 nursing positions go chronically unfilled each day in the greater Denver metropolitan area resulting in a healthcare
system that is severely taxed during periods when patient load is higher than
normal (Austin, 2000). A survey conducted by the American Nurses Association
(ANA) of 7,300 RNs found that 56% believe that the amount of time that they
have available for patient care has decreased (“Survey: Nurses,” 2001). Three-
quarters of the nurses feel that the quality of nursing care at their facilities has
decreased over the past couple of years. Four in 10 nurses stated that they would
not feel comfortable knowing that they had a loved one or family member receive
care in the facility where they worked (“Survey: Nurses,” 2001). The ANA plans
to use their survey results to push for a national state legislative agenda to
prioritize restrictions on mandatory overtime among other issues (“Survey:
Nurses,” 2001).

As a nursing professional’s satisfaction decreases, the likelihood that they
will leave the profession heightens, further compounding the nursing shortfalls,
resulting in increasing nurse-to-patient ratios, increasing job dissatisfaction, job
burnout, and an intensification of the turnover and vacancy rates within the
profession (Shader et al., 2001; Ma, Samuels, & Alexander, 2003).

Many hospitals nationwide are continuing to experience shortages of RNs
as a result of the downsizing in the mid 1990’s and have begun to ask and in more
severe cases require RNs to work an additional 4 to 8 hours after their normal
eight hour shift. The extended working hours place both the health of the
healthcare employee and the patient at risk because in many cases the patient
receives treatment or care from healthcare provider who may be at the end of a
16-hour shift (Lusa, Hakkanen, Luukkonen, & Viikari-Juntura, 2002). Extended
work hours not only compromise the care provided to the patient, they also increase the likelihood of injury or illness to the employee as a result of added stress and fatigue (Lusa et al., 2002). Healthcare workers shoulder burdens that are complex, and which go beyond the stressors that are typically seen in other occupations. In addition to long hours, and the emotional demands of working with the suffering and the sick, healthcare workers are also subject to extreme psychosocial factors such as being away from family and having to deal with seriously ill or dying patients, and a general lack of social support (Pisarski, Bohle, & Callan, 1998). Work schedules that allow little time for recovery increase the risk of poor physical and mental capacity, and long work weeks composed of excessive amounts of overtime, significantly increases the likelihood of sleep disturbance and the chances of occupational accidents (Lusa et al., 2002).

One of the primary issues involved in the overwork situation is the requirement for healthcare workers to perform mandatory overtime. Many hospitals and healthcare providers require their employees to be available to perform overtime work with very little notice, and in many cases they work excessive amounts of time over consecutive days. Voluntary overtime presents similar issues in that an employee may choose to work additional hours, and create a similar overwork situation as experienced with mandatory overtime. The difference between mandatory and voluntary overtime lies in control factors and may become a psychological stressor if the overtime is forced upon the individual employee. Shiftwork presents a myriad of complications in that it may involve adverse shifts, voluntary overtime, or mandatory overtime.
Healthcare workers share some commonalities with other occupations that typically work long hours under stressful conditions. Firefighters that worked more than 70 hours per week had a risk of sleep disturbance that was over three times higher than those who worked less than 50 hours per week (Lusa et al., 2002). Lack of sufficient resting periods, or sleep debt, results in decreased attention and performance, and higher accident rates due to a decrement of attention and diligence in performing tasks that require precise performance (Roenneberg, Wirz-Justice, & Merrow, 2003). Work-related musculoskeletal disorders (WRMSDs) increase with work stress or job strain (Faucett, Garry, Nadler, & Ettare, 2002). Workers in the healthcare professions typically exhibit a greater prevalence of musculoskeletal pain, specifically in the lower and mid-back. Such disorders are indirectly attributable to a combination of workload and psychosocial factors that include: (1) an intensification of exposure to physical load brought on by hurried movements, awkward postures, and lack of adequate breaks between exertion; (2) psychosocial factors that result in increased psychological stress which directly contribute to tension in the musculoskeletal system and lead to lower and mid-back pain (Gonge, Jensen, & Bonde, 2002).

The issues of stress and overwork in the healthcare professions have contributed to a scarcity of nurses creating critical shortages in many of the major metropolitan areas (Mattera, 1998). What was once viewed as a glowing profession of dedicated individuals has become a profession that is slowly spiraling downward with respect to the number of new nurses coming out of nursing school (Mattera, 1998). Many nurses are leaving the profession because
of what they view as degradation in the quality of care, and a feeling of being charged with enormous responsibility and not enough manpower to perform their nursing tasks (Larrabee, Janney, Ostrow, Withrow, Hobbs, & Burant, 2003). Nurses contend that they are exhausted, underpaid and overworked (Mattera, 1998). More than 40% of hospital nurses report being dissatisfied with their jobs (Haddad, 2002).

A study conducted by the Kaiser Family Foundation concludes that there are other additional factors that are contributing to the nursing shortages that are being experienced in the healthcare industry. The study found that 69% of nurses polled believe that staffing levels are inadequate and that patient care is being compromised. Kaiser concludes that the trend in nursing shortages is due to cost cutting efforts by hospitals that result in nurses having to shoulder greater responsibilities. Nurses are assigned a greater workload and given lower-skilled technicians to assist in patient care. Their study reported that there has been an increase in the number of nurses, but increases in the rates of admission have exceeded the rate at which additional nurses are coming into the profession. Kaiser blamed a strong economy for influencing nurses to change jobs in recent years, or to oppose mandatory overtime. Their opinion on nurses’ claims that they do not have sufficient time to spend with patients is due in part to the shorter hospital stays on the part of patients (“Cost-cutting changes,” 1999).

The issue of mandatory overtime has been taken up by organized labor across the country as unions struggle to gain support for better pay and working conditions that limit forced overtime. In some locales labor unions have
succeeded in getting some concessions that increase pay and limit the amount of overtime (Moore, 1999). Despite local efforts to limit nurses’ working hours, nurses are generally subjected to long hours and periods of time where excessive amounts of mandatory overtime may compromise their physical and mental well-being and can compromise the safety of their patients. Mandatory overtime typically results in workers having to work shifts that they are not capable of working, or are not mentally and physically prepared to undertake.

**Shiftwork**

Shiftwork brings a myriad of problems into an already complicated situation involving tired workers. Shiftwork may be characterized as work that encompasses those hours outside of the normal daytime shift and includes night work and periods outside the normal routine such as overtime. In addition to the disruption brought to the worker’s social life, shiftwork in the form of alternating shifts has been shown to negatively impact both the physical and psychological body systems (Kostreva, McNelis, & Clemens, 2002). To further complicate matters, the traditional 3-shift system appears to be gradually being replaced by flexible work schedules that require more irregular shifts or with working hours that are beyond the traditional workday (Boggild & Knutsson, 1999). An individual who is accustomed to the light and dark cycles of the typical workday becomes desynchronized when exposed to a nontraditional shift due to the disturbance of their circadian rhythm. Workers who perform rotational shiftwork are at the highest risk of sleep deprivation and work-related stress due to shifts in the sleep-wake cycle (Kostreva et al., 2002). Workers who work rotating shifts,
or who perform frequent overtime require a greater amount of recovery time than those who work a traditional fixed shift (Jansen, Kant, Van Amelsvoort, Nuhuis, & Van Den Brandt, 2003). Rotating shifts that consist of forward rotation are easier for workers to adapt to and require less recovery time than backwards rotations (Jansen et al, 2003). Kostreva et al (2002) compared fast forward rotations (5 work days, followed by 2 days off, followed by an advance to second or third shift) and found that they were harder to adjust to than the slower 2-week rotation. Workers who worked the 2-week forward rotation had more time for the their circadian rhythms to adapt to the new schedule (Kostreva et al., 2002).

Shift work, especially that which involves night work, is a risk factor that disrupts circadian rhythm and interferes with biological functions causing a negative influence on work performance, and can be a contributing factor to errors and accidents (Costa, 1998). Work schedules that do not allow adequate time for recovery increase the risk of poor physical capacity while long weekly working time increases sleep disturbance by almost 2.5-fold and elevates the risk of occupational accidents (Lusa et al., 2002).

In the United States, healthcare workers, especially medical residents, are working, and are expected to work, far beyond the limits that are established for other critical professions, which is incompatible with a desired, safe, high-quality healthcare system (Gaba & Howard, 2002). At St. Vincent’s Hospital in Massachusetts nurses could be required to work a second eight-hour shift with as little as an hour’s notice. Given a typical 5-day workweek, this conceivably could result in a nurse having to work five 16-hour shifts in a one-week period.
(Lenehan, 2000). Not only is patient care being jeopardized, but also is the health and well-being of the healthcare worker (Visser, Smets, Oort & De Haes, 2003). Aside from the dangers presented by being sued for a mistake, having to drive home after a 16-hour shift, and the toll that it takes on their families, healthcare workers face numerous potential injuries and illnesses because of the added stress of excessive overtime (Owens, 2001; Harrington, 2001). Shiftwork is viewed as an occupational stressor that may exhibit itself in the form of physiological problems such as cardiovascular disease (CVD), gastrointestinal disease, psychological illnesses and higher absenteeism (Taylor, Briner & Folkard, 1997; Kogi, 1996). “Shiftwork disrupts biological and social rhythms and, depending on the individual, is associated with health deficits” (Taylor et al., 1997). Public opinion is against extended shifts, believing that they amplify fatigue and compromise alertness and performance leading to degradation in efficiency and safety (Wallack & Chao, 2001).

Few studies have examined the effects of working 12-hour shifts as compared to 8 or 10-hour shifts, but higher levels of dissatisfaction were reported amongst nurses who worked 12-hour shifts (Hoffman & Scott, 2003). Nurses who worked 12-hour shifts for 6 months were dissatisfied with pay, professional status, and working hours, and 82.7% of those interviewed indicated that they were unwilling to continue working a 12-hour work shift pattern (Hoffman & Scott, 2003).
Overtime in Other Industries

The problems of excessive overtime are not unique by any means to workers in the healthcare industry. Many studies have examined the effects of long working hours, excessive overtime, and sleep deficit in general industry (Kirwan, Scanelli & Robinson, 1996; Duchon, Smith, Keran & Koehler, 1997; Bobko, Karpenko, Gerasimov & Chernyuk, 1998; Ognianova, Dalbokova & Stanchev, 1998; Paley, Price & Tepas, 1998; Prunier-Poulmaire, Gadbois & Volkoff, 1998; Schroeder, Rosa & Witt; Smith, Hammond, Macdonald & Folkard, 1998; Macdonald & Bendak, 2000; Mitchell & Williamson, 2000). The adverse and cumulative effects of these factors contribute to increases in accident and injury rates, occupational disease and illness, worker dissatisfaction, and are a detriment to production or operating capacity (Duchon et al., 1997). To simply state that Americans are overwhelmed by their lifestyles and work style betrays the true issue at hand.

Individual Risk Factors

Studies have focused on the increased morbidity among night shift workers and those that work outside the traditional 40-hour-week day job compared to the typical full-time day worker. Among the findings of these studies are indications that a higher risk of CVD, gastrointestinal disease, cancer, and mental illness exists within this group of workers. A pattern of overwork, stressful work environment, and an inadequate balance of sleep and leisure time can contribute to sleep disorders, exhaustion, and fatigue (“Feeling tired,” 1997). Fatigue coupled with adverse conditions such as complex practice areas, caring
for patients who are dying, or dealing with a patient’s death, are a likely explanation for the compounding effect of stressors that are faced by workers who work beyond 8 hours when compared to a strict 8-hour-per-shift worker (Hoffman & Scott, 2003). Although fatigue can be caused by conditions such as overwork and stress, it can also be an indicator of serious underlying medical conditions such as: cardiovascular disease, cancer, chronic fatigue syndrome (CFS), hypothyroidism, sleep apnea, narcolepsy, and major depressive disorders (Kogi, 1996). Fatigue, in addition to being indicator of other conditions, may exacerbate these conditions causing a synergism between stress, the underlying condition, and the body’s production of physiological chemicals that may tend to heighten or amplify the stresses that are brought about as a result of long working hours, insufficient rest, and sleep deficit (Owens, 2001).

Many studies have been done to determine the health impacts of the disruption of biological rhythms. As humans, our circadian rhythm gears us for activity during the day and rest during the night hours (Taylor et al., 1997). Changes tend to disrupt this pattern causing rifts in our social and biological norms and causing changes in various physiological functions (Taylor et al., 1997). The factors of stress and circadian disturbance can result in outcomes such as a lowered sense of well-being, altered eating habits, inadequate sleep, and disruptions to the family and social circles (Taylor et al., 1997).

**Physiological Factors**

Studies based on the Swedish twin registry have suggested that overtime work may contribute to increases in the levels of stress hormones resulting in
increased mortality. Subtle differences are noted between men and women with respect to the physiological changes observed with overtime work. It has been observed that men and women develop a protective effect (reduced mortality) from overtime work up to a maximum of 5-hours per week (Nylen, Voss, & Floderous, 2001). A protective effect (RR (95% CI) 0.58 (0.43 to 0.80)) was observed in men performing moderate overtime of 5 or less hours per week (Nylen et al., 2001). For overtime work in excess of the 5-hours per week an increase in mortality rate (RR (95% CI) 1.92 (1.13 to 3.25)) has been observed in women (Nylen et al., 2001). A similar mortality was found for men but it was found for only the first five years during the follow-up (Nylen et al., 2001). The higher morbidity amongst women for work beyond 5-hours was attributed to the fact that women are responsible for much more of the unpaid labor at home during non-working hours and if combined with more than full-time work would translate to a workload that is beyond a threshold after which adverse health effects would be observed (Nylen et al., 2001). Men on the other hand were likely to be benefiting from the moderate amount of overtime consisting of 5-hours per week or less in terms of job satisfaction (Nylen et al., 2001).

**Cardiovascular Disease**

Cardiovascular disease is the number one cause of death and disability in industrialized society. The severity of CVD has been dramatically reduced through progress in modern medicine and the development of advanced medications and therapeutics. Despite the reductions in the mortality from CVD, there remains the opportunity to do more primary prevention that could result in a
reduced incidence. Though many factors are linked to the causes of CVD, it has been only over that past decade that researchers have recognized that stressors in the work environment may contribute to the etiology of CVD. Shiftwork has been identified as a stressor that may contribute to if not cause CVD.

Boggild and Knutsson (1999) examined seventeen studies dealing with the risk of CVD in people who worked outside the normal daily work hours. Four of the larger studies that they examined did not support a relationship between shiftwork and CVD. Knutsson et al. (1986) demonstrated that there is a dose response relationship amongst shiftworkers indicating a 40% increase in the risk of developing CVD amongst both men and women due to shiftwork. Irregular shifts and extended working hours may place an additional strain on shiftworkers and further studies and evaluations of these groups of people would provide valuable research towards the relationship between occupational stress and CVD (Boggild, & Knutsson, 1999).

Many physiological indicators have been studied in an attempt to understand the effects of work-related stressors. Heart rate variability (HRV) has been suggested as a possible way to study the effects of occupationally induced stress on cardiovascular autonomic regulation. HRV is a method of measuring variation in circulation, and can be used as an indicator of stress. Van Amelsvoort et al (2000) examined a group of workers using Holter monitors to record and analyze HRV using the normal-to-normal (NN) intervals that were recorded for shiftworkers. [NN intervals are the time-distance between adjacent QRS complexes resulting from sinus node depolarization. The components of the QRS
complex consist of instantaneous electrical forces (waves) that are recorded on an electrocardiogram. Letters of the alphabet identify the various waves; the letter "Q" is used to designate the downward deflection that is seen during the initial portion of the QRS complex, the letter "R" is used to designate the first upward deflection, and the letter "S" is used to designate the first downward deflection that projects below the baseline following the "R" wave (Hurst, 1998)]. They hypothesized that comparing the mean of the standard deviations of all NN intervals (SDNNi) for all 5-minute segments of the entire recording, in milliseconds x HF high frequency x LF low frequency among shiftworkers might provide a diagnostic indicator for occupational stress. Their findings indicated that a decreased SDNNi level was present during sleep for shiftworkers (64.2 ms) as compared to day workers (75.5 ms). This was interpreted as a less than favorable cardiovascular autonomic regulation that could influence the prevalence of cardiovascular disease amongst shiftworkers (Van Amelsvoort, Schouten, Maan, Swenne, & Kok, 2000).

Subsequent studies examined HRV with respect to the 24-hour profile of the differential effects between forward and backward rotating shifts on circadian cardiac autonomic control. The focus of the studies involved the comparison of morning shift and night shift differences and provided data that supports the hypothesis that working nights causes a shift of the autonomic balance towards sympathetic dominance. This shift is viewed as unfavorable and is suspected to lead to an increased cardiovascular burden (Van Amelsvoort, Schouten, Maan, Swenne, & Kok, 2001).
Articles and studies coming out of Japan cite what is referred to as “Karoshi” (death by overwork). This phenomenon has been attributed to acute onsets of fatal cardiovascular disease. Findings indicate that overtime work and long hours of work elevate both blood pressure and heart rate, suggesting that these factors affect the cardiovascular system and may pose an increased risk of cardiovascular disease (Hayashi, Kobayashi, Yamaoka, & Yano, 1996). Overtime work influences blood pressure by stimulating sympathetic nerve activity typical of that associated with psychological stress and physical activity (Hayashi et al., 1996; Kawakami & Haratani, 1999).

Several studies indicate that psychosocial factors may exacerbate work-related stress resulting in a further elevated risk of coronary heart disease (CHD) and may lead to increases in morbidity and mortality amongst shiftworkers. One such study examined the association between multiple factors in shiftwork and the cardiovascular risk factors, hypertension, and elevated blood lipids (Peter, Alfredsson, Knutsson, Siegrist, & Westerholm, 1999). This study used the demand-control model (this model postulates that a relationship exists between the psychological demands of a particular job, and the varying amount of autonomy that a worker may have in carrying out tasks; an individual with a psychologically demanding job will respond in an inflexible way to work situations that allow little control), and effort-reward (this model postulates that jobs characterized by a perceived imbalance between high effort and low rewards are stressful and will lead to negative health outcomes, particularly in persons with limited coping abilities) imbalance to determine cardiovascular risk (Peter et
In theory, the effort-reward imbalance postulates two primary exposures; an intrinsic component (need for control and approval) and an extrinsic component (effort vs. reward ratio). The study found that the intrinsic component was an important factor for women in elevated cardiovascular outcomes, whereas the extrinsic was more important for men (Peter et al., 1999). Psychosocial stressors noted in the workplace were found to act as a mediator of adverse health effects of shiftwork on hypertension and artherogenic lipids (Peter et al., 1999). The odds ratios (OR) ranged from 2.18 to 2.27 for hypertension, and from 1.34 to 1.45 for artherogenic lipids (Peter et al., 1999). Overtime is seen as a mediating factor that multiplies the stress brought on by shift work and uncertain work schedules (Peter et al., 1999).

Peter and Siegrist (2000) compared the theoretical approaches of the job strain model and the effort-reward imbalance model. They cite the job strain model, introduced by Robert Karasek in 1979, as being an impressive method of evaluating work stress although findings are typically more consistent among men than in women, among blue-collar rather than white-collar and in populations under 55 years of age (Peter & Siegrist, 2000). Peter and Siegrist (2000) point out a Swedish study comparing day and late shiftworkers and the effect of effort-reward imbalance with respect to psychosocial factors. The study looked at the association between hypertension and shiftwork and concluded that the effort-reward imbalance factors affected the late shiftworkers to a greater extent, and the late-shift workers also exhibited a greater risk with regard to higher levels of atherogenic lipids (those lipids that contribute to or cause a condition known as
atheroma, an abnormal mass or deposit of fat in an artery wall). These findings indicate a correlation between a greater effort reward imbalance (odds ratio (OR) for those exposed to effort-reward imbalance ranged from 2.15 to 4.53) and the production of atherogenic lipids is relative to the imbalance, which increases as more effort is invested, and little reward is received. The imbalance poses a mediating effect on psychosocial factors resulting in an indirect compounding of the stressors that result in physiological chemical changes that pose a further detriment to the health and well-being of the worker (Peter & Siegrist, 2000).

A study was conducted to investigate the etiology of cardiovascular disease and what appears to be an elevated risk of accidents among night shift workers. The hypothesis was that discordance between circadian rhythms and stress-related biological variables such as cortisol and body temperature and the work-sleep schedule might explain both the higher incidence of CVD and accidents amongst night shiftworkers (Furlan, Barbic, Piazza, Tinelli, Seghizzi, & Malliani, 2000). These biological variables typically follow a circadian like pattern of maximum values during the day when the body is typically active and a low value at night during typical sleep hours. A decrease in the cardiac sympathetic modulation when work was performed at night was noted (Furlan et al., 2000). The study theorized that a reduction in sympathetic tone during night work might be accompanied by decreased alertness and a general deterioration of performance capabilities, which could result in the occurrence of accidents or mistakes on the part of the workers (Furlan et al., 2000).
Carcinogenicity of Work-Related Stress

While many studies have examined the effects of occupational stress relative to the increased risk of developing CVD, few reports have investigated the carcinogenicity of work-related stress. One such study examined the effects of work-related stressors such as overwork and psychological stress on the formation of oxidative DNA damage, which is known to be a determinant in the initiation of cancer (Irie, Asami, Nagat, Miyata, & Kasai, 2001). The study used workload and working hours to appraise the degree of overwork, and the biomarker 8-hydroxydeoxyguanosine (8-OH-dG) was used to ascertain the extent of DNA damage (8-OH-dG is produced as a result of exposure to various carcinogens, and is therefore a useful tool in determining exposure to occupational carcinogenic risks). It was observed that the female subjects exhibited a significant relationship between the levels of 8-OH-dG and perceived workload (Irie et al., 2001). Females also tended to experience a perception of overwork to a greater extent than the men do (Irie et al., 2001). The study concluded that among female workers, the perception of overwork, perceived psychological stressors, and inability to mitigate stress (high demand low control) are all potential etiological risk factors that should be further evaluated (Irie et al., 2001).

Musculoskeletal Disorders

Other studies indicate a higher incidence of musculoskeletal disorders that may be attributable to sleep deficit, fatigue, perceived workload, disturbance of circadian rhythm, and the body’s inability to obtain needed rest and recovery
from the work periods that disturb physiological balance within the body’s systems. If in fact adverse working hours have a detrimental effect on worker health, it might be possible to detect such differences by analyzing injury and accident statistics between various working groups. One such study attempted to correlate the differences in a longitudinal study that included physician-diagnosed sick leave data for 3500 workers over an 11-year period (Kleiven, Boggild, & Jeppesen, 1998). The study did not note any substantial difference in the amount of sick leave used by shiftworkers as compared with other workers. They did note however that numerous other studies have observed an increase in morbidity due to shiftwork and they conclude that there may be some bias in their study that may have influenced their findings (Kleiven et al., 1998). Diagnoses for all the shiftworkers and day workers were evenly distributed among the cases and the odds ratios ranged from 0.8 to 1.2 (Kleiven et al., 1998). There was a higher risk of sick leave with musculoskeletal diagnoses and a significant amount of sick leave used by the 2nd shift workers for musculoskeletal disorders (MSD) or injuries (Kleiven et al., 1998). The 2nd shift workers were however exposed to heavy manual work in the packaging departments, which could explain the higher incidence of MSD. It is questionable as whether sick leave is an accurate indicator or predictor of morbidity among shiftworkers and any correlation between the two are uncertain and must be further investigated (Kleiven et al., 1998).

Other studies indicate that long-term exposure to these stressors may translate to musculoskeletal disorders (MSD) that may take years of exposure
before they are detected. Chronic work environment exposures to ergonomic stressors may appear as pain over a shorter period of time. Work that causes pain from repetitive motions, awkward positions, vibration, and forceful muscular exertions can manifest itself in MSDs that occur many years after the exposure. These disorders typically develop over years of accumulated workload. These repeated soft tissue injuries are difficult to heal because of their prevascular nature. Prevascular tissues are those that do not have a vascular supply of blood to provide nutrients, carry away wastes, or supply that which is necessary to repair damaged or injured tissue. These tissues can only receive nutrients and repair materials through osmosis, resulting in a reduced rate of healing as compared to vascular tissues. Excessive overtime and overwork further compromise the healing process by adding additional trauma to the tissues and slowing down further what is typically a slow healing process. Such tissues may never fully heal, may result in restricted function or movement and are vulnerable to repeated injury for many years after the fact (Fredriksson, Alfredsson, Koster, Thorbjornsson, Toomingas, Torgen, & Kilbom, 1999).

**Psychosocial Factors**

Psychosocial factors have been shown to interact with other factors such as overtime, overwork, and shiftwork placing a psychophysiological burden on the worker. The demand-control (DC) model relates the psychological demands of a particular job with the varying amount of autonomy that a worker may have in carrying out tasks. The model suggests that an individual whose job demands are high, combined with very low autonomy (little control over their work
situation) is more prone to stress-related illnesses (Bliese & Castro, 2000). The demand-control model is bounded by a third factor: social support (Bliese & Castro, 2000). The amount of support received individually (or collectively) influences perceptions of well-being (Bliese & Castro, 2000). Levels of support within a group are important factors, however, supervisory support is particularly important with respect to strain in stressful occupational settings (Bliese & Castro, 2000). The interaction between demand and control is what is referred to as job strain (Soderfeldt, Soderfeldt, Jones, O’Campo, Muntaner, Ohlson, & Wang, 1997). Cross-sectional studies indicate that factors such as stress, strain, low autonomy, high responsibility, feelings of little or no control, and low support from superiors and co-workers, are associated with the perception of or actual degradation of health with regard to musculoskeletal disorders and related myalgias (Gonge et al., 2002). Many such psychosocial factors are significant and present a synergy with physical exertion or load in the typical work shift (Gonge et al, 2002). A serious consequence of overtime that is being seen with increasing occurrence in Japan is “karo jisatsu” (suicide from overwork). This has been attributed to mental overload induced by physical and psychological stress and occurs when the worker “loses the rational ability to evaluate suicide” (Inoue & Matsumoto, 2000).

Job strain draws some part of its impact on individual well-being from the organizational level, and social support is identified as the sole predictor of “intimacy and conflict levels” (family functioning), amongst those exposed to cases involving medical trauma and severe injuries (Shakespeare-Finch, Smith &
Obst, 2002). This holds especially true for those involved in human service work such as the health professions where these individuals are likely to experience strain induced by the emotional exertions involved in patient care (Gonge et al., 2002).

Overtime and extended working hours can disrupt family and leisure time (Owens 2001). Children of shiftworkers may be affected by the working schedule of the parents to the degree that they may experience emotional difficulties. Children of shiftworkers are susceptible to the psychological stressors experienced by the parents and may be at risk of developing forms of pathology such as anger, anxiety, dysphoria, withdrawal or even depression (Barton, Aldridge, & Smith, 1998). Such collateral effects may only serve to cause additional stress to the parent who works the adverse shift by adding to the anxiety, worry, and feelings of guilt about their absence from home while at work (Owens 2001). Work-related stress and psychological demand is mediated by social-support that involves participation by individuals and management (Mikkelson, Saksvik & Landsbergis, 2000). Participatory efforts to establish avenues of support within the healthcare environment improves workplaces that are psychologically stressful and provides social support that is necessary for those that are involved in occupations that are emotionally demanding (Mikkelson et al., 2000).

A review of research on stress among nurses identified shiftwork and lack of support from management as being major sources of stress and concern (Pisarski et al., 1998). The study concentrated on coping factors and social
support that are very important considerations in any work environment where stress can interfere with the worker’s health, safety, and well-being. The study also illustrated the importance of allowing employees some degree of autonomy and control in order to diminish some of the stressors encountered during a shift (Pisarski et al., 1998).

The perception of poor performance coupled with perceptions of overload and reward-imbalance are likely factors that could contribute to substance abuse (Trinkoff & Storr, 1998). Adverse work conditions such as rotating or night shifts, and work in excess of an 8-hour shift have been shown to contribute to the use of drugs, alcohol, and tobacco among healthcare workers (Trinkoff & Storr, 1998). Studies do show that scheduling may play a role in substance abuse as workers experience social disruptions as well as the biological factors that are brought on by adverse working hours (Trinkoff & Storr, 1998). Aside from substance abuse, healthcare workers are further impacted by sleep loss and fatigue in that they have a higher rate of automobile accidents after having worked long shifts or extended workweeks, a greater prevalence of social dysfunction in relationships outside the workplace, and suffer potential impediments to learning (Owens, 2001).

**Chronic Fatigue**

The Centers for Disease Control (CDC) describes a condition known as chronic fatigue syndrome as “a debilitating and complex disorder characterized by profound fatigue that is not improved by bed rest and that may be worsened by physical or mental activity” (“What is CFS,” 2003). Though CDC has yet to
conclusively identify the root causes of CFS, it is suggested that stress, viral infections, transient traumatic conditions, and toxins, may play a role in its development. In a study designed to estimate the prevalence of chronic fatigue syndrome (CFS) among nurses questionnaires were mailed out to the members of 2 nurses unions to obtain data on fatigue and stress. The study was based on the premise that healthcare workers are perceived to be at a greater risk of injury and illness than other professions. Previous studies had reported that roughly 50% of the calls received by a CFS support hotline were from nurses and a vast majority of those, 9 out of 10 worked in hospitals. A second questionnaire was mailed out to those who indicated that they had experienced incapacitating fatigue. Several physicians and one psychiatrist, who found that the CFS rates for nurses were higher than what had been previously reported, then independently reviewed the records of a select population of these respondents. A physician review team estimated the prevalence of CFS to be 1,088 per 100,000 (Jason, Wagner, Rosenthal, Goodlatte, Lipkin, Papernik, Plioplys, & Plioplys, 1998). The study concluded that nursing is a high-risk vocation due to occupational exposure to risks such as viruses, stressful work environments, disruptions in circadian rhythms, and exposure to other stressors such as shiftwork and adverse overtime incursions that affect rest and recovery (Jason et al., 1998).

Safety Issues

Long working hours, extended work times, and overtime hours that are not anticipated can reduce a worker’s cognitive abilities and performance. Some studies indicate that there are an exponentially increasing risk of accidents once
an employee has worked beyond the 9th hour of work and that the optimum number of hours from a safety standpoint are 6 to 9 working hours. One such study based on five other published works calculated that the relative accident risk was doubled after the 12th hour and tripled after the 14th hour of work (Hanecke, Tiedemann, Nachreiner, & Grzech-Sukalo, 1998). Many employers cite advantages to extended work programs in that it allows them to be more cost effective and profitable. In some cases having extended hours and regularly scheduled overtime allows employers to operate with fewer employees, thus paying out far less in benefits overall. Employees enjoy the advantages of increased economic benefits such as overtime and longer periods of time off as a result of working longer and fewer shifts. These are positive factors that may contribute to bias when trying to determine the degree of detriment incurred by excessive periods of long working hours. Such positive factors may negate psychosocial stressors such as those explained in the demand-control and effort-reward models because employees experience a reward for additional effort (Lowden, Kecklund, Axelsson, & Akerstedt, 1998). Twelve-hour shift systems are popular because they offer a compressed workweek that allows for longer periods of consecutive time off. Beyond these considerations however lies the concern that regardless of employer benefit or employee satisfaction, that a serious risk is being posed for the health of employees, and the safety of those affected by the quality of work performed by them. The public has become aware of the risk that is posed by extended working hours, and has demanded that resident work hours be regulated to provide safer working and treatment
environments and to preclude such incidents as the Libby Zion case in 1984. Libby Zion affected the course of medical residency training when she was evaluated and treated by a tired resident, who misdiagnosed her condition resulting in her death. Ms. Zion, an 18-year-old college student, was taken to the emergency room at a prominent New York City teaching hospital with fever, shaking, chills, and dehydration. Only junior medical residents, who believed that she was simply suffering from a viral syndrome, evaluated her. Despite their knowledge of her phenelzine use and illicit drug intake, particularly cocaine, she was prescribed and treated with meperidine, a medication that is contraindicated with phenelzine. Ms. Zion was placed in restraints for her personal protection, and as a result of her misdiagnosis, died the following morning. A medical intern who was covering multiple wards in the hospital at the time, and who had been awake for more than 18 hours, gave many of the orders for her treatment over the phone without consulting with the residents who had been attending her (Wallack & Chao, 2001).

Studies have shown that work beyond 9-hours per shift tends to diminish a worker’s cognitive abilities as well as the ability to react or perform necessary iterations safely (Hanecke et al., 1998). Within the healthcare industry it has been shown that 12-hour shift nurses showed an increase in error during comparison performance testing and tended to be less alert compared with 8-hour shift nurses (Smith, Folkard, Tucker, & MacDonald, 1998). In other industries 12-hour shift system workers have exhibited a 70% increase in the probability of bad judgment, incidents, or accidents with the levels of alertness during the last few hours of
When individual weekly working hours exceed 70 hours, the risk of occupational accidents is almost 4 times as great when compared to another individual working less than a 50-hour workweek (Lusa et al., 2002).

In addition to long or extended working hours there are other factors such as time of day that may mediate the accident risk that is posed by these factors. There is evidence that suggests that night workers have a doubled risk of accidents than that of their counterparts on day shifts (Tucker, Smith, MacDonald, & Folkard, 1998). This observation alone could pose a dilemma for a healthcare worker who has just completed an 8-hour evening shift who is required to work an additional 8-hour shift, as there may exist a synergism between extended working hours and night work (Tucker et al., 1998). Workers have been found to have problems with alertness in the afternoon period during a 12-hour shift during the period between 2:00 P.M. and 6:00 P.M. after having reported on shift at 6:00 A.M (Tucker et al., 1998). These results are in keeping with previous work that indicates a serious degradation after 8 hours of work when sleepiness begins to set in and performance levels have eroded (Hanecke et al., 1998). However, another study concluded that there was no appreciable difference in sleepiness or performance in workers performing 12-hour shifts during weekends when compared to 8-hour shift weekday workers (Axelsson, Kecklund, Akerstedt, & Lowden, 1998).
There remains some disagreement in light of the varied outcomes of studies that have been performed on the effect of night shift or long working hours on worker cognitive abilities and lowered performance or risk of accidents.

Most leading scholars and researchers agree that stressors that are induced by excessive overtime, extended working hours, compressed schedules, shiftwork, and psychosocial factors need to be examined more closely. The current status of the problem with overwork and mandatory overtime places an unfair burden on many critical professions whose performance has a direct influence on public health and safety. This is especially true amongst the healthcare professions. A study conducted to examine the perceptions experienced by physicians relating to the causes of diminished clinical care found that 82 of 225 hospital doctors reported that symptoms of stress had negatively affected the care they had provided to patients (Firth-Cozens & Greenhalgh, 1997). These doctors were polled by questionnaire that contained questions regarding stress, coping, and attitudes towards work and career choice. Many responses were of a general nature and referred to instances such as “Inability to stay awake while anesthetizing patients – fairly regularly at night”, a response indicative of overwork, tiredness, pressure, and quite possibly interruption to circadian functions that result in inattentiveness or reduced performance (Firth-Cozens & Greenhalgh, 1997). One third of the doctors in the study reported instances of reduced standards of care to patients, which they attributed to stress-related factors, “10.5% of these were serious mistakes, two of which led to death” (Firth-Cozens & Greenhalgh, 1997). Recent attention has focused on resident working
hours and how extremely long hours and sleep deprivation pose a detriment to clinical performance exposing patients to physicians with potentially impaired judgment (Weinger & Ancoli-Israel, 2002).

Work-related stress in the health professions can have very profound effects on those who are attempting to cope with the adversities of their job. Depression has been noted as having an effect on the performance of healthcare workers who are additionally affected by a myriad of other occupational stressors that are initiated by long working hours, night work, and excessive overtime (Burke & Greenglass, 2000). Emergency physicians (EP) are reported to have higher rates of burnout and attrition due to the extreme nature of their jobs that often require adverse shiftwork and rotation schedules. A study that was examining the effects of night work on emergency physicians noted that night shift EP’s took longer to intubate mannequins than did their day shift counterparts (Dorevitch & Forst, 2000). Studies repeatedly demonstrate that virtually any task that requires sustained vigilance “shows deficits” in the face of sleep loss (Daugherty, Baldwin, & Rowley, 1998). Sleep loss and fatigue leads to degradation in neurocognitive function resulting in medical or medication errors and poses a threat to the safe delivery of patient care (Owens, 2001). A medical error is defined as an adverse event that results from the failure of a health care delivery plan to be completed as intended, or the use of an incorrect plan to reach an appropriate patient care objective. Fatigue and lack of sleep play a significant role in the quality of healthcare given, and a healthcare provider who is tired may perform at the same skill level as an individual who is legally drunk ("Tired
Residents,” 2003). Even relatively moderate levels of fatigue have been shown to impair performance to an extent equivalent to or greater than is currently acceptable for alcohol intoxication (Dawson & Reid, 1997).

**Analysis and Evaluation**

Medical professionals are exposed to many of the same stressors and are charged with similar responsibilities as are airline pilots, transit drivers, train engineers, and nuclear plant operators. All of these jobs require high levels of attentiveness and there is little room for performance errors since the outcomes of such errors can affect the safety and well-being of the public. Commercial pilot, train engineer, transit driver, and nuclear plant operator working hours are regulated by Federal law to insure that they are not subject to excessive amounts of overtime. This acknowledges that long hours, shiftwork, and other adverse conditions involving overtime could endanger the public.

One need only look back over the last 30 years to realize that most all of the real-life disasters of the 20th century occurred during the early hours of the morning. Three Mile Island, Chernobyl, the Exxon Valdez, and the space shuttle Challenger disasters all started in the early hours of the morning under the supervision and control of people who had been on duty for many hours (Harrington, 2001). Authors such as John Perrow (“Normal Accidents”) theorize that catastrophic accidents occur due primarily to the complexity of the systems involved. However, stress and fatigue from overwork and excessive shiftwork place a high degree of psychophysiological strain on individual performance (Bobko et al., 1998), and complex systems often require vigilance 24 hours a day.
Excessive overtime, mandatory overtime, and stress are harmful to the individual body system, place public health and safety at risk, and place undue and unnecessary stress on families (Barton et al., 1998).

The issue of mandatory overtime has further compounded the issues of stress and overtime by creating an environment that is not conducive to attracting new nurses into the nursing professions. Many nurses currently feel that management has overstepped its bounds by creating shortages of nurses through what has been called “managed care” among other names. Historically, nurses have accepted overtime as a necessity to cope with disasters and emergencies. The view by most nurses nowadays is that management is using mandatory overtime as a way to deal with nursing shortages or to make themselves more profitable by keeping staffing levels low (Price, 2000). Job dissatisfaction has been identified as a key reason why the numbers of individuals in the nursing professions are dwindling. In many industries and professions, some turnover can invigorate or revitalize an organization, however, the high turnover rates amongst healthcare workers has a negative impact. Such turnover rates result in increased costs to the employer, losses of experience within the organization, and situations that result in short staffing, increased workload, and worker perceptions that management does not care or support the efforts of the remaining staff (Larrabee et al., 2003).

Conclusions and Policy Recommendations

Healthcare workers in America are facing a dilemma with respect to working hours. Measures must be taken to limit the amount of hours those
members of the healthcare professions can be forced to work. Without such mandates these professions will no longer be able to attract the numbers of new candidates that are needed to refill the aging ranks in our healthcare system. Healthcare organizations such as hospitals and long-term care facilities have downsized their staffing in order to make themselves more profitable (Burke & Greenglass, 2000). Many doctors and nurses are faced with exhaustive schedules because of these measures which place them at an elevated risk of medical, psychological, and social maladies, and which endanger the patients that they have been tasked to care for (Burke & Greenglass, 2000). For the sake of improving worker safety, more research needs to be done to fully understand the etiology of occupational stress, diseases, and work environment factors that diminish performance. However, it appears clear based on existing research that stress, overwork, mandatory overtime, and especially shiftwork under adverse conditions are harmful to worker health and public safety (Duchon et al., 1997). Efforts must be made to mandate a policy concerning healthcare workers that limits the amount of consecutive overtime hours a worker must perform in a week.

There are many things that can be done in a stressful work environment with the intent of alleviating some of the stressors that are present. However, fatigue from overwork or excessive overtime cannot be as easily addressed. In order to make workplaces safer, reasonable thought needs to be applied to working hours. Shiftwork must be designed such that scheduling makes provisions to allow workers to be on duty during times when they are most alert.
and awake. Such provisions may include implementation of circadian rhythm based guidelines that could aid in designing shiftwork schedules that are conducive to individual sleep-wake cycles (Kostreva et al., 2002).

Other countries have begun to address the issues of overtime, and in Europe a set of international regulations was recently passed that limits the amounts of overtime that workers “must” perform. This regulation is known as European Council Directive 93/104/EC. This directive addresses the organization of shiftwork and provides specific measures with regard to the scheduling of shifts and resting times (Kogi, 1998). The core provisions of this directive provides for the following measures: a minimum daily rest period of 11 consecutive hours between shifts, a minimum uninterrupted rest period of 35 hours per each 7-day period, a maximum of 48 work hours per week, and 4 weeks of paid annual leave. Council Directive 93/104/EC has been subsequently amended by Directive 2000/34/EC, which provides a timeline for transition into the more restrictive working hour regulations. Directive 2000/34/EC, Article 17(2) provides for a transitional period of five years from August 1, 2004 for compliance with working hours for doctors in training. In addition, member States (States of the European Union), may take up to two additional years “if necessary, to take account of difficulties in meeting the working time provisions with respect to their responsibilities for the organization and delivery of health services and medical care” (Community legislation, 2000). During this transition, working hours can not exceed an average of 58 hours during the first three years, an average of 56 hours for the following two years, and an average of 52 hours for
any remaining period during the transition (additional transitional time is available based on circumstance). By the end of the transition period, working hours will be reduced to a maximum of 48-hours per week (Community legislation, 2000).

In the wake of the case of Libby Zion some changes were made in the United States to establish a maximum numbers of hours per week that a resident may work. These changes were brought about by a lawsuit on behalf of her family, which sought to regulate working hours. In response to the civil malpractice action brought by Libby’s father, a grand jury in New York issued 5 specific recommendations that addressed all medical specialties. The first three recommendations dealt with items less pertinent to surgery resident training such as restraint usage, medication referencing systems, and emergency department staffing. The fourth recommendation was that junior residents would have closer supervision by senior residents and attending medical staff. The fifth recommendation, and most important with respect to the intent of this study, was that interns and junior residents be limited in their consecutive working hours (Wallack & Chao, 2001). From these recommendations the 405 Regulations or Bell Regulations were conceived by the State of New York, limiting the number of consecutive hours worked by residents and increasing the amount of supervision (Gaba & Howard, 2002). Initially residents were limited to 16 consecutive work hours with 8-hours off between shifts, resulting in an 80-hour workweek. Soon thereafter the 16-hour shift was extended to 24-hours with 8-hours between 24-hour shifts for rest and with an average of 80 hours per week.
over a 4-week period (Wallack & Chao, 2001). Wallack (2001) summarizes the Regulations for Surgery as follows:

1. No more than an 80-hour scheduled work week
2. No more than 24 consecutive hours of scheduled duty
3. On-call hours not included if documented adequate rest time available
4. Non-working periods following scheduled on-duty or on-call periods (8 hours or 16 hours, dependent on the amount of rest received)
5. One 24-hour period of scheduled non-working time per week
6. On-site, 24-hours per day, 7 day per week supervision of residents by at least a postgraduate year 4 resident
7. Direct, in-person supervision by an attending surgeon for all surgical procedures

Though it may be considered a step in the right direction towards regulating the working hours of some medical professions, there are cases where the nature of the regulation was challenged and abused. The Accreditation Council for Graduate Medical Education (ACGME) provides primary oversight for residency training, and sets standards for residency training through 27 residency-review committees (Gaba & Howard, 2002). Despite regulations, residency working hours continue to be a concern for both residents and hospital administrators (Daugherty et al., 1998). Aggressive oversight by the ACGME led to such enforcement actions as threatened loss of accreditation for the Yale-New Haven Hospital in May 2002 if residents’ working hours were not limited (Gaba & Howard, 2002). Despite attempts to alleviate the threats to public health and
healthcare worker safety, the 405 Regulations (Bell Regulations) do not provide sufficient protection against stress and overwork (Wallack & Chao, 2001). As with the changes noted in the European Union Council Directive 2000/34/EC, a softening has been observed in the 405 Regulations, which were likely due to opposition by the hospital and medical care communities.

The European Council directive poses some interesting possibilities for what could be a workable policy for shiftwork in the United States. Providing 4 weeks of paid annual leave, however, would be a hard sell to American businesses who typically, at best, provide only 2 weeks of paid annual leave to new workers and after 10 to 15 years may provide 4 weeks of annual leave. But this is not really the issue at hand when we speak of excessive overtime. American workers, particularly those who work in the healthcare professions, need protection that will ensure that they receive adequate resting periods and that they will not be required to work more hours than they are capable of working. Such a plan must also have provisions that eliminate the worker's ability to decide to work excessive hours because of economic need. Healthcare workers should be covered by regulations similar to those that regulate the flying duty hours for pilots and duty hours for nuclear reactor operators. The Federal Aviation Administration (FAA) regulates pilots' hours and the Nuclear Regulatory Commission (NRC) regulates reactor operators' working hours. Healthcare workers such as doctors and nurses could have their working hours regulated by an agency such as the Occupational Safety and Health Administration (OSHA), the Food and Drug Administration (FDA), the Labor Department, or even the
Joint Commission on Accreditation of Healthcare Organizations (JCAHO). A policy that addresses working hours for the healthcare professions should include the following items:

1. **Daily rest** – A minimum daily rest period of 11 consecutive hours per 24-hour period.

2. **Weekly working hours** – A maximum of 48 hours per week.

3. **Weekly rest period** – A minimum uninterrupted rest period of 40 hours per each 7-day period.

4. **Night and Shiftworkers** – Night and Shiftworkers must be medically screened prior to being assigned to night duty to determine fitness and tolerance to night and shiftwork (Koller, 1996). Both a medical surveillance and a counseling service are recommended before and during engagement in shift and night work (Koller, 1996). Workers under 40 years of age should be reevaluated every two years and workers over 40 should be reevaluated annually. Shiftworkers over 40-45 years of age seem to sleep worse after night shifts (Harma, 1996). Continuous night work should be voluntary after 40 years of age (Harma, 1996).

5. **Consecutive shifts** – Workers shall neither be allowed nor required to work double-shifts except in cases of extreme emergency. Any exceptions shall be reported in writing to the overseeing agency within 30 calendar days for review and may be subject to punitive actions.

6. **Staffing** – The employer shall establish adequate staffing to ensure that the necessary minimum number of essential personnel are available to cover
patient requirements at all times. This is necessary to ensure that patient care is never understaffed placing an unnecessary physical and emotional load on healthcare workers. Having adequate on-call or callback personnel identified in advance is an additional way that understaffing does not occur and that patient staffing is adequate to ensure safety.

These policy recommendations do not provide a large amount of flexibility because, as many of the studies show, there is not a resiliency among the workers to safely perform any more working hours than what the policy allows. Items 1 and 2, however, do allow for a worker to work a compressed schedule that may include four 12-hour shifts, or any other number of combinations of hours providing the 48-hour maximum is not exceeded. Item 1 also precludes the working of double shifts. Item 3 provides for an extended rest break for the worker that allows for a backward rotation on a standard 3-shift work schedule. Item 4 ensures that a worker is medically cleared prior to being placed on an adverse shift such as night work. Item 5 clearly states that workers will not be allowed to work a double shift and that any deviation from this item will require a written justification and may subject the employer to a monetary fine. Item 6 requires that the employer maintain adequate staffing such that patient care is not ever in question. This may be accomplished by having additional personnel assigned to each shift and normally operating in a slightly over-staffed mode at all times in anticipation that some workers may call out sick.

In conclusion, patient care should never be compromised, nor should the safety of a patient be placed behind corporate earnings. The medical professions
are an important asset and those personnel who treat the sick and injured must never be placed in a position where their own safety and health is jeopardized.

References


