

**“PREPARING FOR THE PHYSICAL AND MENTAL DEMANDS OF
WORKING THE MIDNIGHT SHIFT”**

E.M.U. SCHOOL OF POLICE STAFF AND COMMAND

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ABSTRACT

As police officers, we receive training in areas ranging from criminal law and procedure, to proper use of weaponry, to high-speed vehicle pursuit, and several “tools of the trade” areas in between. The importance of training is undeniable. It teaches us to deal with situations that we may not otherwise be able to manage. Law enforcement, overall, does an excellent job of providing critical job performance training with the intention of enhancing skills and reducing liabilities. One area that has been overlooked, however, is: preparing a police officer for the physical and mental demands of working the midnight shift.

Studies have shown our ability to think clearly and perform sensory-motor functions are greatly diminished when we are overly tired. Since police officers who work the midnight shift are typically subjected some of the most violent, and physically demanding, calls for service, our ability to make split-second life or death decisions should be of utmost importance. If we are overly tired, or suffering from sleep deprivation, the physical and mental wherewithal needed to utilize the training we have received is compromised.

The information in this composition was compiled from published articles and studies relating to sleep deprivation and shift work. It is intended to make the reader aware of the dangers of sleep deprivation, while offering lifestyle adaptations designed to combat its effects. Furthermore, this research paper outlines the need to implement an informational training presentation for the members of the Wyandotte Police Department who are subjected to working the midnight shift. The implementation of such a program would be of very little cost, yet the potential savings in liabilities due to workplace accidents and negligence, could be enormous.

More importantly, this information may help save lives through proper preparation for working the midnight shift.

INTRODUCTION

A Michigan police officer, having worked nearly 24 hours straight, crashes his patrol vehicle during a chase and is critically injured. A California sheriff's deputy, on patrol, drifts off the road while driving and is killed when his vehicle hits a tree. A Florida police officer suffering from a lack of sleep runs a red light and crashes into a van, seriously injuring its occupant. A police officer in Ohio falls asleep at the wheel while driving home from work and kills a jogger on the nearby sidewalk. This is just a small sampling of the news stories dealing with sleep deprived police officers and their serious consequences. (NIJ Journal no.248, 2002)

The fact is, law enforcement is a 24-hour a day operation; someone must work the midnight shift. Also, with the recent trend towards 12-hour shift schedules, more police department employees are being subjected to working the midnight shift, yet many do not know how to properly prepare for the demands associated with staying awake all night. Police academies, for good reason, tend to focus on the "nuts and bolts" of police work. Although there is no doubt that knowledge of criminal law and procedures, patrol techniques, defensive tactics, and report writing skills are imperative to becoming an effective police officer, many of these skills can be dangerously diminished when one becomes sleep deprived. Sleep deprivation can also cause many health related problems, and errors in judgment, making the midnight shift police officer's job extremely difficult. Sleep deprivation can also create added stress in an occupation where stress levels are already dangerously high. Many officers may not be aware of the dangers of sleep deprivation, or if they are, they may not be aware of the best way to combat its effects.

This study, compiled from published information and personal experiences, will provide insight into the physiological effects of sleep deprivation and how the body adversely reacts to abrupt changes in the normal sleep-wake cycles. It will also explore other common sleep disorders associated with the disruption of “normal” sleep patterns and the effect of these disorders on one’s ability to perform physical functions, and make sound judgments. The research gathered will offer ways to combat the effects of sleep deprivation and its associated disorders by: learning how to recognize its onset, offering suggestions for a proper diet, and preparing one’s home for sleep during the daylight hours. The information gathered from this research should be a useful tool for preparing to work midnights.

BACKGROUND AND SIGNIFICANCE

Since the 1990’s, many police agencies have moved towards a compressed workweek, which often equates to a 12-hour shift length. This trend exposes one-half of the patrol staff to the rigors of working midnights, whereas, the 8-hour shifts only exposed one-third of the staff to midnights. Many departments have also moved away from “swing shift” schedules in favor of permanent shift assignments by seniority. By doing so, many police department employees are required to adapt to altered sleep patterns for months or years at a time.

In my 18 years of police experience, I have worked days, afternoons, and midnights, in various schedules ranging from: weekly swing shifts, monthly swing shifts, permanent shifts by seniority, and presently, 12 hour permanent shifts by seniority. Having been assigned to midnights for the past two years, I have experienced many of the problems associated with sleep deprivation and altered sleep patterns, yet my attempts to combat the problems have been through trial and error. During conversations with colleagues who also work midnights, I found

that many have experienced some of the same sleep related problems I've experienced. However, I have never received any training or information on how to recognize the warning signs of sleep deprivation, or how to adapt to the changes in sleep wake cycles, nor have my colleagues.

The following issues underscore the importance of combating sleep deprivation:

- Research has shown that police officers are over twice as likely as people in other occupations to develop cardiovascular disease.
- Being employed in law enforcement places one at a greater risk of developing cardiovascular disease than having high blood pressure, diabetes, being overweight or smoking.
- Police have also been found to die at a higher rate from cancer than the general population.
- At the psychological level, the stress of police work may result in chronic negative emotions such as anger, anxiety or depression, which can lead to burnout or emotional exhaustion.
- California Police Chiefs report that their greatest concerns include the liabilities attached to automobile accidents, rapid decision-making, citizen complaints, inappropriate use of force, workers compensation, and the high post-retirement mortality rates.

Shift schedules that disrupt normal sleep patterns and social life, authoritarian management styles, poor interpersonal relationships with supervisors, interdepartmental politics, lack of adequate planning and resources, lack of promotion and transfer opportunities, excessive

paperwork, lack of autonomy in performing duties and lack of recognition for work accomplishments are among the organizational stressors faced by members of the police force. (Heartmath.com 2003)

This research will provide an informative insight into the warning signs of sleep deprivation, while providing helpful information on how to sleep better, eat better, and perform tasks better, in an effort to minimize the effects related to the disruption of one's chronobiological system.

LITERATURE REVIEW

A recent article posted on CNN.com (1997) sheds light on the growing problems associated with sleep deprivation. The article reveals that many workers brag about getting their work done on little sleep. Others boast about not needing sleep, giving the impression that they perform their jobs adequately, therefore, they do not need quality sleep. However, they fail to realize the fact that sleep deprivation is dangerous. "A growing collection of research indicates that America's sleep problems have reached epidemic proportions, and may be the country's number-one health problem."

This article relates directly to the field of law enforcement where the "macho" attitudes are prevalent. I have heard many officers brag about their abilities to get by on as little sleep as possible in order to maintain their social life. I personally recall several occasions throughout my career when I compromised sleep in order to attend social functions, thereby depriving myself of the rest necessary to be efficient and safe at work.

Many sources used for this research paper shed light on the short and long term

physiological effects of sleep deprivation. Every human being needs a certain number of hours of sleep each day to revive brain cells and other body systems so they'll continue functioning effectively. If someone is suffering chronic loss of sleep these important functions soon become impaired, overall health is usually affected as is a person's memory and mood. They become a hazard to themselves and others, especially if operating machinery or driving. Yet despite this alarming news, the number of people suffering from sleep deprivation is rising.

According to a National Sleep Foundation poll: "65% of people report that they do not get enough sleep (most adults need eight hours of sleep). When sleep deprived, people think and move more slowly, make more mistakes, and have difficulty remembering things. These negative effects lead to lower job productivity and can cause accidents. The financial loss to U.S. businesses is estimated to be at least \$18 billion each year! Lack of sleep is associated with irritability, impatience, anxiety, and depression. These problems can upset job and family relationships, spoil social activities, and cause unnecessary suffering. Shift workers experience more stomach problems (especially heartburn and indigestion), menstrual irregularities, colds, flu, and weight gain than day workers. Heart problems are more likely too, along with higher blood pressure. The risk of workplace and automobile accidents rises for tired shift workers, especially on the drive to and from work." (www.sleepfoundation.org)

After reading these and several other articles relating to this topic, it is quite obvious that sleep deprivation and its related disorders is a very serious problem facing all shift workers. The majority of the literature available on this subject emphasizes the dangers associated with performing tasks while overly tired, as well as the negative health effects which stem from prolonged periods of sleep deprivation. These negative health effects seem to be magnified

when coupled with the stress incurred by police officers.

PROCEDURES

Research for this project was comprised of information gathered from various sources via the internet. Due to the subject matter, information was readily available, and easy to locate. The use of internet search engines such as “google”, “yahoo search”, and “ask jeeves”, produced more than enough information to compile an in-depth research paper. I also read an excerpt from the book “Tired Cops” which was located via the internet. Another source used was my own personal experiences over the past 19 years in police work, which exposed me to working swing shifts, and many midnight shifts on several types of shift rotations. Having battled sleep issues for many years, I was able to offer insight and validity to much of the information.

By researching this topic, I intend to provide myself, and others, with insight and understanding into the sleep problems associated with staying awake all night. Armed with this knowledge, I hope to be able to: adjust my sleep wake cycles to minimize the chances of sleep deprivation, learn what foods and drinks may be advantageous combat fatigue, and provide reference material for others who find themselves having difficulty adjusting to staying up all night.

Furthermore, by reading a small portion of the vast amount of published articles on this subject, one will by no means have all the answers necessary to combat sleep related problems, but it may provoke one to seek further answers or perhaps, professional help. Many of the sleep related problems vary in degree from person to person, and others may experience no sleep related problems at all. Regardless of the effects on a single individual, the potential liabilities to a police department could be enormous if the problems of sleep deprivation are overlooked.

RESULTS

Of all the training and education afforded me by Ferris State University (my initial police certification) and by the Wyandotte Police Department (for continuing professional skills), I still found myself totally unprepared for the challenge of working midnights. Throughout my career, I simply struggled with the effects of sleep deprivation not realizing that there are ways to adapt to working midnights, and lessen the negative effects associated with it. It is quite obvious that many police departments have no informative source of reference or training courses available to teach a midnight officer how to eat better, sleep better, and recognize the warning signs of sleep related disorders.

Our natural sleep patterns are controlled by an internal body clock called a “circadian clock.” It regulates body temperature, hormone levels, heart rate and other vital body functions. As our body moves through each 24-hour cycle, it experiences fluctuations in temperature, wakefulness, gastric activity, heart rate, blood pressure and hormone levels. This flow of body activity is known as the circadian rhythm. These rhythms are important for optimal functioning of the many processes vital to health. When the normal circadian rhythms are disrupted by lack of sleep or by crossing time zones, it may take days or weeks for the body to readjust.

Among the most common health problems are gastrointestinal complaints, including constipation, diarrhea, excessive flatulence, abdominal pain and heartburn. These ailments are two to three times more frequent among shift workers. The causes are poor eating or diets high in saturated fats. Too much fast food is consumed because of constant tiredness and lack of time to prepare healthy foods. People also have difficulty digesting food during the overnight hours.

Other factors include disturbed sleep, poor eating habits, overeating, excessive coffee drinking, smoking and psychological stress.

The midnight shift worker also faces special problems in trying to maintain family relationships and social and community ties. It becomes difficult to balance work, sleep and personal time. The need to sleep during the day (or, for the evening worker, to be on the job during the dinner hour and the family-oriented part of the day) means that the midnight shift worker often misses out on family activities, entertainment, and other social interaction. Sleep loss and feeling at odds with the rest of the world can make you irritable, stressed and depressed. These issues can add to the stresses already encountered in the day-to-day life of a police officer

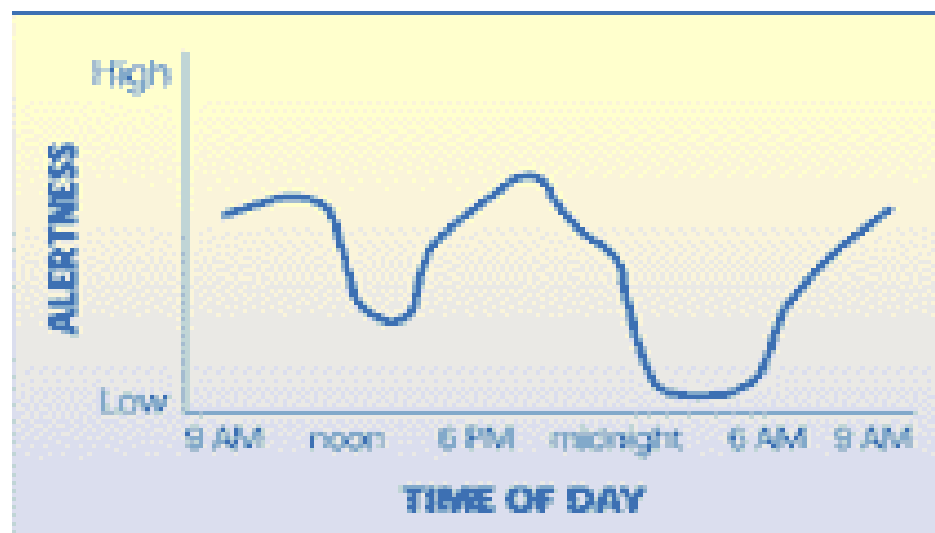
One helpful tip discovered in this research is that of “anchor sleep”. Anchor sleep relates to a common segment of sleep (in hours) that one tries to keep each day. For example: if you sleep on your workdays from 0700 to 1500, you should try to sleep from 0300 to 1100 on your leave days. The hours of 0700 to 1100 thereby become your “anchor sleep” hours. This is suggested to help maintain a sense of “normalcy” on off days, without adversely the sleep patterns established by staying awake all night during work days.

In addition to the problems impaired motor functions and poor judgment, sleep deprivation also causes restless legs syndrome. Restless legs syndrome is a sensory-motor (movement) disorder characterized by uncomfortable sensations in the legs, which are worse during periods of inactivity or rest or while sitting or lying down. Individuals affected with the disorder describe the sensations as pulling, drawing, crawling, wormy, boring, tingling, pins and needles, prickly, and sometimes painful sensations that are usually accompanied by an overwhelming urge to move the legs. Sudden muscle jerks may also occur. Movement provides temporary relief from the discomfort. In rare cases, the arms may also be affected. Symptoms

may interfere with sleep onset. Research suggests that restless legs syndrome is related to periodic limb movement disorder (PLMD), another more common motor disorder, which causes interrupted sleep.

All animals need sleep; even plants appear to have rest periods. “The human body naturally follows a 24-hour period of wakefulness and sleepiness that is regulated by an internal circadian clock. In fact, the circadian clock is linked to nature's cycle of light and darkness. The clock regulates cycles in body temperature, hormones, heart rate, and other body functions. For humans, the desire to sleep is strongest between midnight and six a.m.. Many people are alert in the morning, with a natural dip in alertness in the mid-afternoon. It is difficult to reset the internal circadian clock. It is not surprising that 10- 20% of night shift workers report falling asleep on the job, usually during the second half of the shift. That's why shift workers who work all night may find it difficult to sleep during the day, even though they are tired.”

(www.sleepfoundation.org)



Though we may not fully understand the complexity of sleep, we know we need sleep to survive. Sleep restores us. Those who sleep fewer than six hours a night don't live as long as those who sleep seven hours or more. Furthermore, lack of sleep can be expensive: The National Commission on Sleep Disorders estimates that sleep deprivation costs \$150 billion a year in higher stress and reduced workplace productivity. One can only imagine the costs related to police related tragedies such as police brutality, patrol vehicle crashes, and other on-the-job accidents. It may also lead to personal and public tragedy. There are indications that the Challenger disaster, the Chernobyl nuclear reactor meltdown and the Exxon Valdez oil spill can all be partly linked to people suffering from a severe lack of sleep.

In many police departments, critical incidents are scrutinized in relation to their deviance from the policies and procedures. When an incident goes awry, the internal affairs investigators are quick to point out poor judgment, or rules infractions, without lending any credence to the fact that sleep deprivation may have played a large part in the causative factors. Although lack of sleep may not be an excuse for negligent or careless behavior, understanding that it often is a causative factor may help reduce future catastrophic events through education and awareness.

Nutritional Awareness

Although nothing can take the place of an 8-hour period of sound uninterrupted sleep, consuming certain types of food and drink can help stay awake and alert when needed, or sleep more soundly when needed. The use of caffeine has long been recognized as a stimulant, which can help one to stay awake and alert. Caffeine speeds up the action the nervous system and other major body systems. Shortly after drinking a cup of coffee, the level of adrenaline in your blood

rises, thereby triggering an increase in heart rate, breathing rate, urinary output, and production of stomach acids. These factors are what help create the feeling of wakefulness.

Caffeine also causes adrenal hormones to release sugar stored in the liver, which stimulates sugar cravings to replenish the stores. Caffeine causes a sudden burst of energy or wakefulness, followed by a downturn, or fatigue feeling in the afternoon hours. If used properly, caffeine will assist in staying awake and alert when the body would normally want to sleep. Caffeine should not be ingested 6 hours before bedtime as it could lead to restless sleep.

The following table indicates the varying amounts of caffeine found in certain drinks:

• FOOD	CAFFEINE (mg.)
coffee, brewed, 6 ounces	105
coffee, instant, 6 ounces	55
Mountain Dew, 12 ounces	55
Colas, 12 ounces	35-45
Tea, 6 ounces	35

Other foods may assist us in the process of obtaining quality sleep. What you eat affects how you sleep. One of the keys to restful sleep is to get your brain calmed down. Foods that aid in restful sleep contain tryptophan. Tryptophan is the amino acid that the body uses to make serotonin, which is the neurotransmitter that slows down nerve traffic so your brain isn't so busy.

Dr Sears notes in his website that “Tryptophan is a precursor of the sleep-inducing substances serotonin and melatonin. This means tryptophan is the raw material that the brain uses to build these relaxing neurotransmitters. Making more tryptophan available,

either by eating foods that contain this substance or by seeing to it that more tryptophan gets to the brain, will help to make you sleepy. On the other hand, nutrients that make tryptophan less available can disturb sleep” (www.askdrsears.com)

The following is a list of foods that may help induce sleep:

- Dairy products: cottage cheese, cheese, milk
- Soy products: soy milk, tofu, soybean nuts
- Seafood / Meats / Poultry
- Whole grains
- Beans
- Rice
- Hummus
- Lentils
- Hazelnuts, Peanuts
- Eggs
- Sesame seeds, sunflower seeds

Preparing a Room for Daytime Sleep

Aside from nutritional awareness, proper bedroom preparation is essential to getting restful sleep. Minimize noise, light, and excessive room temperatures when preparing for sleep. Make the room as dark as possible by using room darkening blinds or curtains. Create some “white noise” such as the noise from a fan to help stimulate relaxation. Also, the use of earplugs may be helpful especially in households where children or animals have a tendency to make

noise. It is also a good idea to lower the room temperature to help compensate for the fluctuations in body temperature caused by the interruption of the chronobiological system. Use the bedroom only for sleep and sex. Activities such as watching TV, reading, eating, or working in the bedroom will stimulate wakefulness. It's wiser to do those activities elsewhere in the home. If you are unable to fall asleep in 15 or 20 minutes, get out of bed and do a relaxing activity in another room until you become sleepy.

Sleep Schedules and Napping

It is also important to keep a regular sleep schedule, even on days off and weekends. However, this is not always possible. If an interrupted sleep schedule causes fatigue, naps as short as 20 minutes can be helpful. Naps can maintain or improve alertness, performance, and mood. Some people feel groggy or sleepier after a nap. These feelings usually go away within 1-15 minutes, while the benefits of the nap may last for many hours. The evening or night worker can take a nap to be refreshed before work. Also, napping at the workplace can be effective for workers who need to maintain a high degree of alertness, attention to detail, and who must make quick decisions. With that in mind, a police supervisor may want to think twice before disciplining the subordinate who is caught "napping on the job."

Other problems associated with sleep loss are that it affects our personalities and our sense of humor. One may become irritable and less tolerant, and as parents, they often get irritated at the antics of children that otherwise might amuse them if they were properly rested. Lack of sleep clearly affects our thinking, or cognitive, processes. A sleep-deprived brain is truly running on four rather than eight cylinders. If we're trying to be creative, the motor doesn't work as well. We can perform calculations, but not as quickly. We're much more likely to

make errors. If someone is suffering chronic loss of sleep these important functions soon become impaired, overall health is usually affected as is a person's memory and mood. One may become a hazard to themselves and others, especially if operating machinery or driving. As police officers working midnights, we must attempt prioritize our basic need to sleep.

When sleep deprivation affects us physically, our coordination suffers, and we lose our ability to do things with agility. Sleep improves muscle tone and skin appearance. With adequate sleep one is stronger, faster, and has more stamina. Adequate sleep also helps maintain immune responses necessary to fight off infections and diseases. The amount of sleep a person needs will vary from individual to individual. But most people require around eight hours. That is the challenge that faces all us who work the midnight shift.

DISCUSSION

The education and training afforded each police officer is intended to provide us with the competitive edge needed to out wit criminals and maintain professionalism. These skills are extremely critical, not only to the performance of our job, but to the safety of ourselves, and the citizens we protect. This research paper has emphasized the fact that a lack of sleep impairs our judgment, and our ability to perform sensory-motor functions. As previously noted in this research, the National Commission on Sleep Disorders estimates that sleep deprivation costs \$150 billion a year in higher stress and reduced workplace productivity. If one were to examine in depth, the causes of many of the vehicle accidents, cases of police brutality, and illnesses incurred by police officers, a common underlying factor just might be sleep deprivation.

In my personal experiences as a police officer, I have never received any education or training relative to shift work, in particular, the midnight shift. I feel that it may be one of the more serious oversights in the law enforcement education process. We are taught to be tough, smart, professional, stern, and friendly, but we are never told that all of these qualities are much more difficult to execute when we are sleep deprived. We tend to generalize our police related problems into the category of “stress” without ever looking further into what may be causing the stress, or at the least, amplifying it. Instead, we just assume it is something we have to “deal with”.

Since researching this topic, I have been able to adjust my sleep schedules to utilize the “anchor sleep” concept previously discussed in this paper. This has helped me feel more awake, and less irritable, on my days off. Also, I’ve learned to properly use caffeine as a stimulant to help stay awake and alert while at work, and eat cereals and dairy products before going to bed to help attain quality sleep. By becoming aware of the health related concerns associated with sleep deprivation, I have made an effort to prioritize sleep instead of trying to go without it. These small adjustments have made it much easier to adapt to the midnight shift demands.

The Wyandotte Police Department recently adopted the 12-hour work schedules for the patrol platoons, which resulted one half of the patrol force being required to work the midnight shift. Many of the rookies and low seniority officers are forced to work the midnight shift due to the bid-by-seniority process. As a rookie, the task of learning the basic skills of the job can be demanding enough without the added stresses of sleep deprivation. From a liability standpoint, the failure to train and educate employees about the warning signs and consequences of sleep

deprivation could be costly when an officer crashes a patrol car, or inexplicably “snaps” and beats up a prisoner.

Although education and awareness will not eliminate vehicle accidents or police brutality cases, we may be able to reduce their numbers. In addition, education and awareness may help produce officers who are more alert and awake, thereby allowing them to make better decisions under stressful conditions. Lastly, by learning how to adapt to the midnight shift demands, one can also improve their personal life away from police work.

RECOMMENDATIONS

Given the fact that most law enforcement officers must work midnights at some point in their careers, the adoption of an educational training program that teaches one to adapt to the rigors of working nights would be greatly beneficial. Upon review of the curriculum currently used in the various Michigan Police Academies, it is obvious that the topic of sleep deprivation and its effects on police officers are not addressed. The research has addressed issues of health, safety, and job performance and how they are affected by sleep deprivation. It stands to reason that a person who is better prepared for all aspects of his or her job will be more capable of properly performing their duties.

While researching various websites for this research project, I found a website originated by the Vanderbilt University Medical School. The website contained a complete Power Point presentation designed to educate their medical staff on how to perform shift work. The program addressed many of the issues cited in this research i.e. circadian rhythm, caffeine use, and

bedroom preparation for daytime sleep. The program also addressed the fact that critical decision making skills, and sensory motor skills are significantly diminished in the sleep-deprived worker. The importance here is that the medical profession has recognized the dangers associated with a sleep-deprived worker, and has taken steps to try and combat the problem. Why hasn't law enforcement done the same?

I believe that future critiques of critical incidents should examine the possibility that the persons involved may have been performing their duties while suffering from sleep deprivation, or at the very least, a lack of sleep. The State of Michigan traffic accident form (UD10) now tracks causative factors for accidents, including driver fatigue. Driver fatigue is suspected of being as dangerous as drunk driving when it comes to motor vehicle accidents. Since driving involves sensory-motor skills, it is safe to assume that other activities that rely on proper use of sensory-motor skills would also be compromised by sleep deprivation and fatigue.

The data gathered from critical incident critiques could be used to support my recommendation for a training and education program, which should be implemented by all police agencies. The program would consist of a Power Point presentation with handout material. The presentation would mirror the Vanderbilt University medical staff training program, which elaborates on many of the important issues researched within this paper. The handout material would serve as a source of reference for any department member suffering from sleep related disorders.

In conclusion, the training and education standards for police officers have improved dramatically since the 1980's. Training is now a priority for many departments who are looking to maintain professionalism and reduce civil liability. I feel that an educational training program

designed to promote awareness and insight into sleep related disorders would be one more valuable resource available to assist us in performing our duties to the best of our abilities. The program would cost very little, but the benefits could be enormous if we are able to prevent an accident, or critical decision making error, through knowledge and training. Ultimately, however, the overall health and safety of the midnight shift worker would be the main objective of this program.

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