

Occupational Health Management™

*A monthly advisory
for occupational
health programs*

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Longer hours and overtime are taking a toll on nurses and patients alike

Study examined hours, errors, and near misses

Hospital staff nurses who cover shifts during a shortage often find themselves working overtime, too. This combination, a new study concludes, has adverse effects not only on the nurses, but also on their patients.

Occupational health nurses working in hospital employee health departments may not themselves be subject to the extreme work hours their staff colleagues face, but they can see the effects in the toll it takes on shift nurses, says **Jean Randolph**, RN, COHN-S, of the American Association of Occupational Health Nurses in Atlanta.

The study, released by Grand Valley State University in Allendale, MI, and the University of Pennsylvania in Philadelphia, mirrors findings included in a report released last year by the Institute of Medicine (IOM). The IOM report ("Keeping Patients Safe: Transforming the Work Environment of Nurses," www.nap.edu) stated that long work hours pose one of the most serious threats to patient safety, because fatigue slows reaction time, decreases energy, diminishes attention to detail, and otherwise contributes to errors.

While most nurses typically work eight- to 12-hour shifts, some work even longer hours. At the same time, patients admitted to hospitals typically are more acutely ill and require technologically more complicated care than in the past.

University of Pennsylvania nursing professor **Ann Rogers**, PhD, RN, FAAN, co-authored the more recent study, published in July, that studied the work habits of 393 hospital staff nurses.

Nurses were asked to keep logs for 28 days, and recording their work hours, overtime hours, sleep habits, caffeine intake, mood, errors, near-errors, and days off. Nurses were randomly selected from across the country, and no data were collected about where they worked — just about how they worked and factors that influenced their work.

"We were looking to see if there's a relationship between the hours the staff nurses were working and errors," says Rogers. "In other [occupational fields], some things show up and others they don't. For example, in industrial jobs and truck driving, more accidents occur after nine hours on the job. We thought it would be likely that nurses would have increased problems,

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but there were no data prior to this study.”

Rogers says her team’s study found that nurses working more than 12.5 consecutive hours were three times more likely to be at an elevated risk of making an error than nurses working shorter hours. Working overtime at the end of a shift also increased the risk of error.

12+ hours typical

Rogers says the study results are important because of the number of nurses represented.

“The majority of nurses working today are not scheduled for eight-hour shifts,” she reports. “At least 60% of the nurses in this sample were scheduled to work 12-hour shifts, and 80% worked overtime. That means they get out on time only one shift out of four.”

Of nurses in the survey who work eight-hour shifts, 85% stayed on for overtime after their shifts ended; of those on 12-hour shifts, 78% stayed on for overtime.

Rogers’ team found that most hospital nurses no longer work eight-hour day, evening, or night shifts. Instead, they may be scheduled for 12-, 16-, or even 20- shifts. Even when working extended shifts (more than 12.5 hours), they rarely were able to leave the hospital at the end of their scheduled shift. All participants reported working overtime at least once during the data-gathering period, and one-third of the nurses reported working overtime every day they worked.

Randolph says the longer shifts are the result of an evolution in nursing, from shorter shifts worked more days per week, to longer shifts and shorter workweeks. “Our nursing force has an average age of over 40, and some of those people are finding that those 12-hour shifts are rigorous and, of course, it’s never just 12 hours,” she says. “But there are many nurses who work three 12-hour days and have four days off, and that suits their needs.”

Randolph says that while fatigue is a problem if overtime is abused, she finds that for most nurses, working extended schedules satisfies’ nurses’ needs without cost to the nurse or the patients in terms of injury. “You have older nurses who have worked the longer shifts for 10 years, saying they’re ready to not work those long shifts anymore, but then you have younger nurses who maybe are having their first children, and for them, the schedule fits their needs.”

Overtime can be unavoidable on occasion, she says, such as during a temporary staffing shortage or during busy periods, such as last winter’s flu season. “In our system, we had lots of people working very long shifts and overtime during the flu season, but I didn’t see any [negative effects], and that’s probably for a couple of reasons,” Randolph recalls. “We got a boost from outside staff, who gave our staff the support they needed, and because the bell curve for the flu is about seven weeks, we knew there was an endpoint and that they weren’t going to be working those hours for long.”

While the schedule of three days on, four off might accommodate family schedules, Rogers’ team found that the longer working hours can put both nurses’ well-being and patient safety at higher risk.

Participants reported 199 errors and 213 near errors during the data-gathering period. More than half of the errors (58%) involved medication administration; other errors included procedural

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Overtime: The cost of doing business?

NIOSH study examines long hours

Working overtime is accepted by most industries as part of doing business. But a study by NIOSH (www.cdc.gov/niosh/docs/2004-143/) looks at the cost of long hours and overtime.

Overtime in the United States has increased steadily from 1970 through the 1990s and, according to figures released in 2002 by the International Labour Office in Geneva, the annual number of hours worked per person in the United States is more than that in Japan and most of Western Europe, and is surpassed only by Thailand, Hong Kong, and South Korea.

The CDC report, "Overtime and Extended Work Shifts: Recent Findings on Illnesses, Injuries, and Health Behavior," examines 52 published studies that analyzed the relationship between long working hours and injuries, illnesses, health behaviors (alcohol use, smoking, physical activity, and body weight), and performance (muscular fatigue, cardiovascular fatigue, subjective alertness, car crashes, and cognitive functioning) in several fields of work,

including health care, construction, manufacturing mining, public administration, transportation, and white-collar professions.

The studies revealed a pattern of deteriorating performance on psychophysiological tests as well as injuries in workers who put in long hours, especially those working very long shifts and those who combined 12-hour shifts with more than 40 hours total work per week.

Four studies found that during extended shifts, the ninth through 12th hours of work brought on feelings of decreased alertness, lower cognitive function, declined vigilance, and increased number of injuries. Overtime was associated with poorer perceived general health, increased injury rates, more illnesses, or increased mortality in 16 of 22 studies.

One meta-analysis of long work hours suggested a possible weak relationship with pre-term birth. Overtime was associated with unhealthy weight gain in two studies, increased alcohol use in two of three studies, increased smoking in one of two studies, and poorer neuropsychological test performance in one study.

Results were not all in agreement, NIOSH found. Some studies found no correlation between overtime or extended working hours and health or performance. Most found some link between working hours and at least one of the categories of health or performance. ■

errors (18%), charting errors (12%), and transcription errors (7%).

Rogers said the study did not examine patient outcomes, and acknowledges that many of the errors were fairly trivial. Most medication errors involved patients receiving their medications late, rather than receiving wrong medications or incorrect dosages.

"Both the use of extended shifts and overtime documented in this study pose significant threats to patient safety," Rogers said. "In fact, the routine use of 12-hour shifts should be curtailed, and overtime — especially overtime associated with 12-hour shifts — should be eliminated."

The IOM report calls for changes in how nurse staffing levels are established and mandatory limits on nurses' work hours as part of a comprehensive plan to reduce problems that threaten patient safety by strengthening the work environment in four areas: management, work-force deployment, work design, and organizational culture.

Additionally, legislation has been introduced to address the problem. HR 745, the Safe Nursing and Patient Care Act, legislation sponsored by U.S. Reps. Pete Stark (D-CA) and Steven C. LaTourette (R-OH), was introduced last year and seeks to limit mandatory overtime and increase patient safety while curbing the nation's nursing shortage crisis. The bill would strictly prohibit nurses from working more than 12 hours in a 24-hour period or 80 hours in a consecutive 14-day period unless there is a declared state of emergency. If enacted, this legislation would allow nurses to volunteer for overtime if and when they feel they can continue to provide safe, quality care.

Hospitals have widely discontinued mandatory overtime for their nurses, seeing it as a deterrent to patient safety and nurse recruitment.

"No one or two actions by themselves can keep patients safe," says **Donald M. Steinwachs**, PhD, chair of the committee that wrote the report, and chairman of the department of health policy and

management, Bloomberg School of Public Health, Johns Hopkins University in Baltimore. "Rather, creating work environments that reduce errors and increase patient safety will require fundamental changes in how nurses work, how they are deployed, and how the very culture of the organization understands and acts on safety. We present a comprehensive plan to address all these areas."

The IOM report pointed out a potential for losing the safety net nurses provide against medical error — the report cites studies by two hospitals that found nurses intercept 86% of medication errors before they reach patients — and questions whether nurses stressed by overtime and long shifts can retain the mental acuity necessary to catch errors at that rate.

Rogers is hoping the IOM report coupled with her team's findings might prompt change in the way some hospitals schedule their nursing shifts. "We're hoping hospital administrators will look at why their nurses are always having to stay later," she says.

Working conditions affect how well hospitals can attract new nurses, and in the climate of a nursing shortage, work schedules can be an important factor, Rogers notes. "Hopefully, people will pay attention. Nurses are the largest group of health care providers in the United States, and the more nurses you have caring for patients, the better the outcome," she points out.

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OSHA takes ergonomics to the supermarket

Voluntary guidelines released

From the baker who spends all day squeezing frosting onto cakes, to the produce manager who moves hundreds of pounds of ice onto the

displays in his department, to the clerk who pulls and scans countless items as they move through checkout, a retail grocery store has dozens of opportunities for on-the-job injuries caused by heavy lifting or repetitive motion.

With this in mind, OSHA has issued industry-specific guidelines for prevention of musculoskeletal disorders (MSDs) in retail grocery stores, combined supermarkets and discount stores, and warehouse retailers (www.osha.gov/ergonomics/guidelines/retailgrocery/index.html). The recommendations do not address nonretail grocery warehouse operations or convenience stores.

"The grocery industry has its share of physical demands, and basically, we think the recommendations are very thorough and very good recommendations," says **Deborah E. Lechner**, PT, MS, president of the Occupational Health Special Interest Group, American Physical Therapy Association (Orthopaedic Section), and president of ErgoScience Inc. of Birmingham, AL, a consulting firm that works with employers on injury prevention in the workplace.

Heavy lifting, repetitive motions are culprits

Chief among the ergonomic risk factors for MSDs among grocery workers are force, repetition, awkward posture, and static postures, according to the OSHA report. These factors result in disorders that include muscle strains, back injuries, carpal tunnel syndrome, tendinitis, rotator cuff injuries, epicondylitis, and trigger finger.

The guidelines present suggestions for employee education to help prevent muscle and back strains and other lifting-related injuries, and discuss new technologies and equipment in use in some stores — such as shelves and cases that are designed to eliminate the need for employees to maneuver heavy items from the front to the back of display cases, and equipment that cuts the work and repetitive motion necessary to pack produce cases with ice.

Less strenuous work can lead to MSDs if the work is repetitive — scanning groceries, squeezing frosting dispensers, or slicing deli meats, for example. Carpal tunnel syndrome and trigger finger are among the complaints that arise from repetitive motion. (See table, p. 101.)

The guidelines issued for the grocery industry, like the ergonomics guidelines released for other industries, are voluntary. OSHA says the guidelines are intended to build upon the progress the industries are making on their own in addressing

Checklist for Identifying Potential Ergonomics Risk Factors by Activity

If the answer to any of the following questions is "Yes," the activity should be further reviewed.

Force in Lifting

- Does the lift involve pinching to hold the object?
- Is heavy lifting done with one hand?
- Are very heavy items lifted without the assistance of a mechanical device?
- Are heavy items lifted while bending over, reaching above shoulder height, or twisting?
- Are most items lifted rather than slid over the scanner?

Force in Pushing, Pulling, Carrying

- Are dollies, pallet jacks, or other carts difficult to get started?
- Is there debris (e.g., broken pallets), uneven surfaces (e.g., cracks in the floor), or dock plates that could catch the wheels while pushing?
- Is pulling rather than pushing routinely used to move an object?
- Are heavy objects carried manually for a long distance?

Force to Use Tools

- Do tools require the use of a pinch grip or single finger to operate?
- Are tools too large or too small for the employee's hands?

Repetitive Tasks

- Are multiple scans needed?
- Is a quick wrist motion used while scanning?
- Do repetitive motions last for several hours without a break (e.g., slicing deli meats, scanning groceries)?
- Does the job require repeated finger force (e.g., kneading bread, squeezing frosting, using pricing gun)?

Awkward and Static Postures

- Is the back bent or twisted while lifting or holding heavy items?
- Are objects lifted out of or put into cramped spaces?
- Do routine tasks involve leaning, bending forward, kneeling, or squatting?
- Do routine tasks involve working with the wrists in a bent or twisted position?
- Are routine tasks done with the hands below the waist or above the shoulders?
- Are routine tasks done behind (e.g., pushing items to bagging) or to the sides of the body?
- Does the job require standing for most of the shift without anti-fatigue mats?
- Do employees work with their arms or hands in the same position for long periods of time without changing positions or resting?

Contact Stress

- Are there sharp or hard edges with which the worker may come into contact?
- Do employees use their hands as hammers (e.g., closing containers)?
- Does the end of the tool/utensil (knife) handle press into the worker's palm?

Source: National Grocers Association, Arlington, VA.

on-the-job injuries.

National Grocers Association senior vice president and general counsel **Thomas F. Wenning** says reducing workplace injury rates is a primary goal for the grocery industry, and stresses that the industry has made great strides on its own in that effort.

"The grocery industry has reduced occupational injuries by a third over the last 10 years, from 12.5 per 100 full-time workers in 1992, to 8.1 in 2001," he points out.

While the grocers' association agrees with the guidelines, Wenning says, it wants assurance from

OSHA that the voluntary guidelines don't lead to enforced standards. "Even the perception that OSHA might issue general duty clause citations based on the voluntary guidelines would undermine our ongoing and very successful ergonomics efforts," he warns.

Lechner says while there is debate over voluntary guidelines vs. enforceable standards, she contends that employers' desire to avoid injuries and their associated costs will drive the ergonomics movement. "Companies are interested in ergonomics because it saves them money, so you don't

have to mandate it," she says.

While there are costs associated with implementing ergonomic measures in the workplace, Lechner says there are ways to balance the costs of putting the measures into practice against the cost of paying for injuries associated with not taking the preventative steps.

The grocery industry is the latest to receive industry-specific ergonomic guidelines from OSHA. The nursing home industry and poultry processors have both been the focus of previously released guidelines, and the shipyard industry currently is under study. Guidelines for meat-packers were released in 1993.

"OSHA is looking at Bureau of Labor Statistics figures for injuries, and choosing the industries with the greatest number of reported injuries, and I think they're choosing the right ones," Lechner says.

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• **Thomas J. Wenning**, JD, senior vice president and general counsel, National Grocers Association, (703) 516-0700.] ■

Inclusion of minority workers increases morale

It's all about having a say

Ask any occupational health nurse, and he or she will likely agree that involving employees in workplace problem solving fosters an atmosphere of inclusion, and when employees feel that they are members of a team and that their presence matters, they're likely to be happier and healthier employees.

A study by the University of Georgia's Workplace Health Group, based in Athens, has backed up this widely held belief with empirical data, and in the process found that the employees who benefit most from team participation are minority workers.

The study, which surveyed 1,400 employees of a national retailer, was based on a "very simple model," says **Mark Wilson**, HSD, one of the

co-directors of the Workplace Health Group, a program within the university's College of Education that conducts research on workplace health and organizational effectiveness.

"Healthy, happy workers are productive workers; and healthy, happy, productive workers make a successful organization," Wilson says. "Happy, healthy workers feel good, like their work, like the people they work with, show up for work, and there's less turnover and less absenteeism. It's a very basic idea, but no one had shown it empirically before."

The Workplace Health Group's study provided support for the link between employee satisfaction and organization success, Wilson says, but it also provided some surprising results about which employees specifically benefit from policies and practices that involve them in decision making and problem solving.

The research group evaluated a problem-solving approach in the workplace, in which representative teams of employees, called ACTion Teams, met to identify workplace concerns and then developed action plans to address the problems. The model and teams were designed to increase employee participation and decision making.

The employees for whom this approach seemed to bear the most benefit, Wilson says, are minorities — in the case of this study, predominantly African-American and Hispanic workers.

Having minority workers participate on problem-solving teams helps to create a more inclusive work environment based on shared goals rather than demographics, Wilson says the study showed.

The study included questionnaire responses from workers at stores that did and did not have ACTion Teams. The analysis focused on responses from black and Hispanic employees, each of which represented about 7% of workers.

In follow-up surveys, stores with ACTion Teams had significant improvements in organizational climate and worker health and well-being. These reflected benefits for all workers at the stores, not just those directly participating in the teams. The improvements seemed at least partly related to reducing the impact of stressful times, including an economic recession and changes in company leadership.

"The whole idea is that if you make people feel valued, that they have input and that their input matters, then they feel good, they show up, work harder, and aren't absent as much," says Wilson.

For black and Hispanic employees, the benefits

appeared even greater than for white employees. Minority workers were especially likely to perceive improvements in organizational and co-worker support and in access to supervisors, Wilson says. Representation on the ACTION Teams made the views of minority workers heard, thus helping to make the workplace more inclusionary. But the improvements in work climate did not affect employees' ratings of work stress levels or general health. However, longer follow-up may show benefits in employee stress, productivity, and other health and well-being indicators, Wilson says.

The full results of the study appear in the July issue of the American College of Occupational and Environmental Medicine's *Journal of Occupational and Environmental Medicine*.

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• Visit the OSHA web site at www.osha.gov/ergonomics/guidelines/retailgrocery/index.html.] ■

Coping with co-worker's death takes time, support

Effects on staff and business vary

The death of an employee can have a profound effect on the co-workers he or she leaves behind, and not only can cause emotional fallout, but may also influence productivity and operations in the workplace.

According to the Help Center at Stanford University, because strong personal bonds often are formed within work groups, the experience of grieving a co-worker's death can be profound. The intensity of reactions will vary among individuals, but the following experiences are common:

- numbness, shock, and disbelief;
- decreased concentration and memory;
- increased anxiety;
- sleep disturbances, fatigue;
- change in eating habits;
- sadness, tearfulness;
- headaches, muscle tension, stomachache;
- irritability, frustration;
- depression, emptiness.

Departments that have recently experienced a loss due to death are presented with a number of issues. There may be difficulties with productivity

and attendance for those most affected by the loss. If new information about the deceased emerges at the time of death, or if events surrounding the death are upsetting (if the death was due to a violent accident, homicide, or suicide, for example), some employees may be shocked, anxious, or confused.

Decisions about the deceased employee's possessions, workspace, and job responsibilities will have to be made; it is important that these decisions are made with a sensitivity for all those affected. There might be feelings of guilt, resentment, or uneasiness for staff members who assume roles previously handled by the deceased co-worker. Also, certain work situations may serve as reminders of the loss, and may trigger grief reactions unexpectedly.

It is important to understand that the emotional environment at work will be changed for a period of time, and that each person will have a unique reaction to the loss. Acknowledging and discussing the impact of the death can help with the process. In addition to offering referrals for counseling services for individuals, a company's wellness coordinator, nurse, or EAP can arrange for facilitators to lead discussions in departments that would like to meet as a group. (See box, p. 104.)

Guidelines for supervisors and managers

When employees are affected by the death of a co-worker, personal loss, or serious illness, managers and supervisors are faced with the challenge of ensuring that employees are adequately supported while work responsibilities are being met. It's important to keep in mind that not every employee will respond in the same way, and that the grieving process can last quite a while. Don't expect a quick recovery, says the Help Center's **Nancy N. Reitz**, LCSW, MPH. The process is different for everyone.

Research has shown that early intervention with the affected workgroup, within 24-72 hours after the word of a death arrives, reduces the stressful impact of the news. Co-workers have the opportunity to volunteer expressions of grief and time to share thoughts in remembrance of the person. Plans for gestures of condolence to family members can be completed and satisfy the general need to do something to commemorate the loss. Effectively managing what may be an extremely emotional situation for the affected workgroup may mean delegating certain duties associated with the death to those who are more detached from the situation.

Ways to help employees cope

- **Be aware of each other.** If it appears that someone is having a serious problem coping with the death, express concern and encourage them to seek professional assistance through their EAP or outside counseling sources.
- **Accept that work may be affected.** Management and co-workers' job performance and interactions may be affected by the stress. In time, things will return to normal. If the death is suicide, homicide, unexpected, or occurred in the workplace, the emotional trauma experienced will be more severe and the need for outside help will be greater.
- **Contact the family of the deceased.** Consider sending cards, flowers, or other gifts, such as a book of memories written by the staff, to a surviving spouse or child.
- **Attend or organize a memorial service.** Whether conducted on or off the work site, a memorial service can be another important step for acknowledging feelings and coming to terms with the death.
- **Consider establishing a memorial at work.** If a company maintains an internal (intranet) web site or newsletter, an on-line or published memorial message may be created. ■

Because an incident of this nature can result in a traumatic stress response, it is recommended that the employer — through its nurse, human resources office, or EAP — conduct a debriefing session for all affected employees within 24-48 hours after learning of the death. Research has found that early intervention with a work group reduces the possibility of delayed stress responses and enables the work group to return to their normal level of productivity sooner. Another benefit of the debriefing is that the organization and its management staff are viewed by employees as responsive and caring people.

The employer's role is to create an accepting environment — whether through outside referrals for assistance, an in-house EAP, or company wellness program — in which the process of grieving is treated as normal, yet work still gets done. If an individual seems to be slipping into depression and managers or peers are concerned about the level or severity of his or her reaction, a consultation or referral is a good idea.

If the death of an employee affects many staff members, it may take some time for business to

resume at usual levels. It may be impossible for some employees to work at their normal level of productivity, at least temporarily. Co-workers who take on extra workloads during such a transition should be appreciated and acknowledged.

[For more information, contact:

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Co-workers can play a key role in suicide prevention

Workplace can be a point of intervention

Establishing an effective suicide prevention program in your company's workplace must be grounded in educating employees to be the eyes and ears for the occupational health nurse or employee assistance coordinator, says the director of the Tennessee Suicide Prevention Network.

"The things to address first are raising awareness among co-workers, and dealing with the stigma associated with suicide," says **Scott Ridgway, MS**, executive director of TSPN. His agency coordinates suicide prevention programs across the state, in schools, community agencies, state offices, and private business and industry.

"Once the company nurse or [human resources] director has brought in a program to get them trained on prevention in the workplace, then you need to educate employees on what to look for and how to respond," Ridgway advises.

Look for signs

What do employees need to know? Ridgway says they need to be advised on what behaviors should raise concern, and then what to do when they suspect a co-worker might be in danger of harming him or herself. **(See box, p. 105.)**

Once employees have received training on what to look for, they need information that gives them the confidence to act on what they observe, should they become concerned about a co-worker, he says.

"What a lot of people don't realize is that suicide is preventable, and most suicidal individuals desperately want to live," says Ridgway. "Often, they have reached a point where they can't see that there are alternatives to their problems."

When someone is suicidal, he or she often gives

Suicide Warning Signs

A suicidal person may:

- lose interest in his or her personal appearance;
- lose interest in work;
- talk about suicide, death, or having “no reason to live”;
- be preoccupied with death and dying;
- withdraw from friends and/or social activities;
- have a recent severe loss (especially relationship) or threat of a significant loss;
- experience drastic changes in behavior;
- prepare for death by making out a will (unexpectedly) and final arrangements;
- give away prized possessions;
- have attempted suicide before;
- take unnecessary risks; be reckless, and/or impulsive;
- increase use of alcohol or drugs;
- express a sense of hopelessness;
- be faced with a situation of humiliation or failure;
- have a history of violence or hostility;
- show unwillingness to connect with potential helpers. ■

Source: Tennessee Suicide Prevention Network, Nashville.

definite clues to their condition, but those clues often go undetected or, more commonly, are detected by others who don't know how to respond.

Fear of seeming intrusive or of offending the suicidal person must be conquered, so that the person can be directed to help, says Ridgway.

Train employees not to fear getting involved with a co-worker in crisis, he advises. “They should know that showing interest, support, and being willing to listen to expressions of feeling without lecturing or debating whether suicide is right or wrong are critical steps.”

Coping mechanisms

Co-workers also should refrain from expressing shock, be empathetic rather than sympathetic, and never promise to keep secret their concerns about the possibility that their colleague might be suicidal.

“And don't be afraid to take action and, if necessary, to remove the means for a person to harm himself,” Ridgway advises.

“Get help from individuals or agencies that specialize in crisis intervention and suicide prevention,” he adds.

[For more information, contact:

• **Scott Ridgway**, MS, executive director, Tennessee Suicide Prevention Network. Phone: (615) 297-1077; e-mail: sridgway@tspn.org.] ■

On-line tool calculates cost of depression to employers

Savings when illness treated also is revealed

An easy-to-use on-line tool can help employers get an idea of the time and money lost due to depression among employees.

The Depression Calculator (www.depressioncalculator.com) not only calculates the costs of the disease, but also computes the financial benefits of treating employees with depression.

A study published in 2003 in the *Journal of the American Medical Association*¹ (JAMA) showed that depressed workers lost 5.1 hours per week more than workers without depression. Additionally, employers lost \$3.1 billion in productivity per year. The JAMA study indicated that fewer than 30% of the employees studied were using antidepressant medications, which the authors cited as proof that there is a great deal of room for improvement when it comes to treatment rates.

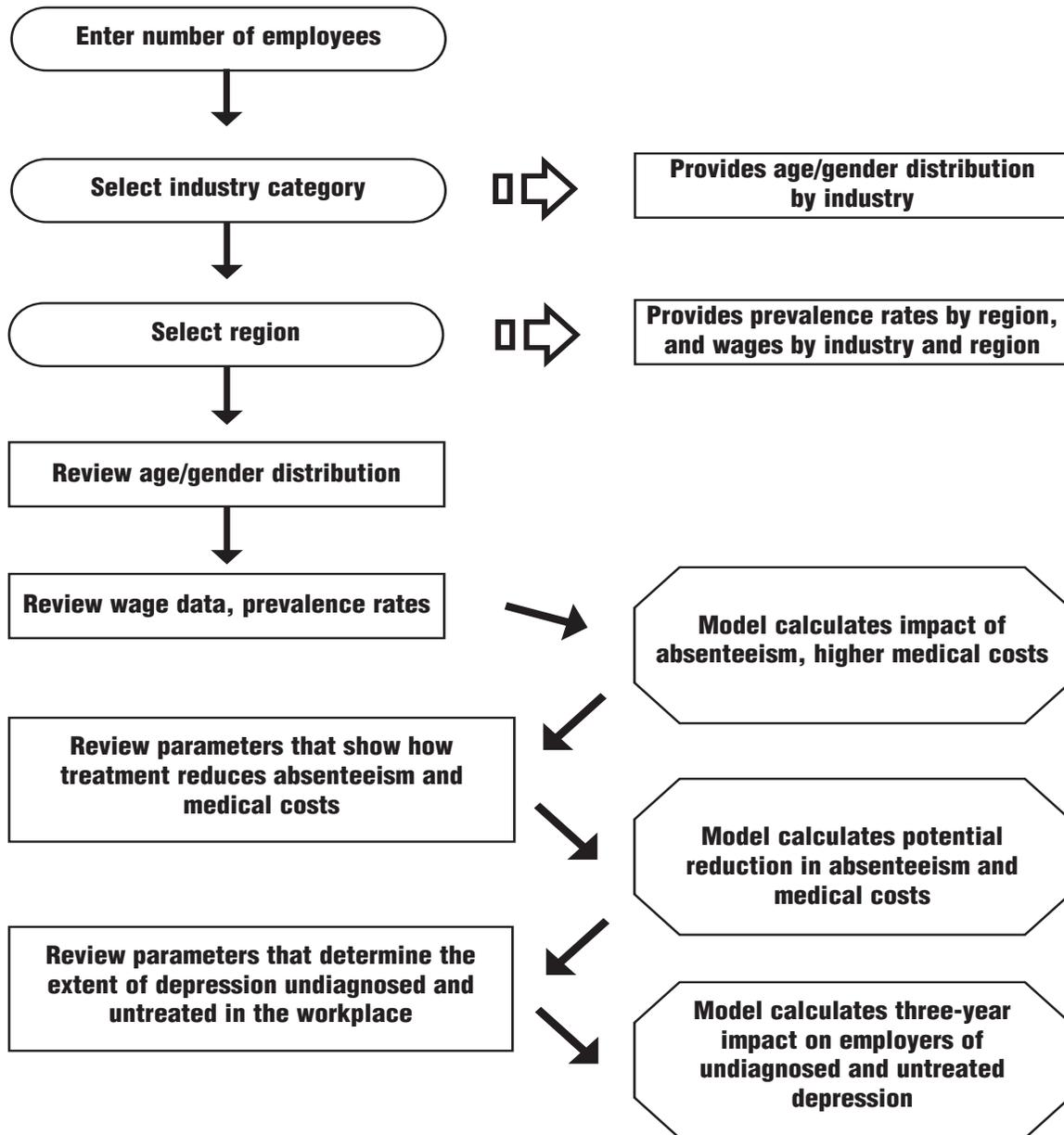
Developed by The HSM Group Ltd., a consulting firm in Scottsdale, AZ, and the Washington, DC-based Pharmaceutical Research and Manufacturers of America (PhRMA), the calculator asks users to input values unique to their own business, and provides estimated rates of lost wages and productivity, and then supplies rates of diagnosis, successful treatment, and treatment costs to reflect overall savings to the employer when treatment is successfully pursued. (See chart, p. 106.)

According to the American Psychiatric Association (APA), employees suffering from depression sustain average annual medical costs that are \$2,000-\$3,000 higher than those of nondepressed employees. The combination of missed days, lower productivity when on the job, and other associated issues costs the U.S. economy approximately \$80 billion annually, it estimates.

The calculator estimates the incidence of depression and its impact on a company's work force, based on the company's size, type of industry, location, and the age/gender breakdown of employees. It computes the expected number of days each year

Productivity Impact Model

Calculating the Impact of Depression in the Workplace
and the Benefits of Treatment



Source: Pharmaceutical Research and Manufacturers of America, Washington, DC. Used with permission.

that employees will be absent or suffer low productivity due to their depression and calculates the associated costs to a business.

Finally, it projects the net savings the company can expect, after accounting for the cost of treatment, if employees obtain treatment. An employer can change the key assumptions so that the calculation best reflects the characteristics of that particular work force.

Reference

1. Stewart WF. Cost of lost productive work time among U.S. workers with depression. *JAMA* 2003; 289:3,135-3,144.

[For more information, contact:

• **Pharmaceutical Research and Manufacturers of America**, 1100 15th St., N.W., Washington, DC 20005. Phone: (202) 835-3400.

• **The HSM Group**, 8777 E. Via de Ventura, Suite 188, Scottsdale, AZ 85258. Phone: (800) 776-8078.] ■

Court rules workers' comp not voided by drug use

Businesses fear higher insurance costs

A recent ruling by the Arizona Court of Appeals may mean that workers hurt on the job who test positive for illegal substances can't be denied workers' compensation benefits in that state. An attorney familiar with the case says other states may or may not face similar challenges.

For the past five years, Arizona businesses with drug-testing policies have been able to deny workers' compensation claims when injured workers test positive for drugs. But a case stemming from denial of a construction worker's benefits when he broke a wrist and knee on the job in 2000 and tested positive for several illegal substances might have ended that protection to employers.

In *Grammatico v. The Industrial Commission, et al.*, the appellate court ruled 2-1 in June that David Grammatico's employer was wrong to deny compensation benefits based on his positive drug screen. The court based its decision on its interpretation of the Arizona state Constitution, which states that employees injured by necessary risks inherent in their jobs are entitled to workers' compensation.

The decision is under review by the Arizona Supreme Court, and business advocates are urging that the appellate decision be reversed and the state Constitution amended.

Long-range implications

"If [*Grammatico*] is upheld, the court's decision would give employees little incentive to be drug and alcohol free, knowing that if they get hurt on the job while under the influence, they can still collect benefits," says **Michelle Bolton**, Arizona state director of the National Federation of Independent Business.

Bolton contends that her chapter's member businesses are additionally concerned with the

effect the ruling might have on their insurance costs. She adds that Arizona's largest workers' compensation insurer has said that in light of the ruling, it might stop offering employers who have drug and alcohol policies the discount on premiums that it has offered in the past.

In most states, including Arizona, a worker may be barred from receiving workers' compensation benefits if his or her on-the-job injury is caused by drug or alcohol use. However, in the *Grammatico* case, the employee argued that his use of drugs two days' prior could not be proven to have caused the injury, and that state law did not require him to prove that the injury was not caused by drug use.

Tibor Nagy, a Tucson employment attorney familiar with the case, says if other states' statutes have the same element challenged in the *Grammatico* case, employers in other parts of the country might face suits that are similar. "At the moment, I think it's a case unique to our state."

[For more information, contact:

• **Michelle Bolton**, National Federation of Independent Business, Phoenix, AZ. Phone: (602) 263-7690. E-mail: Michelle.Bolton@NFIB.org.

• **Tibor Nagy**, Attorney, Snell & Wilmer, Tucson, AZ. Phone: (520) 882-1228.] ■

CE objectives

The CE objectives for *Occupational Health Management* are to help nurses and other occupational health professionals to:

- **develop** employee wellness and prevention programs to improve employee health and attendance;
- **implement** ergonomics and workplace safety programs to reduce and prevent employee injuries;
- **develop** effective return-to-work and stay-at-work programs;
- **identify** employee health trends and issues;
- **comply** with OSHA and other federal regulations regarding employee health and safety.

COMING IN FUTURE MONTHS

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CE questions

Nurses and other professionals participate in this continuing education program by reading the issue, using the provided references for further research, and studying the questions at the end of the issue.

Participants should select what they believe to be the correct answers, then refer to the list of correct answers to test their knowledge. To clarify confusion surrounding any questions answered incorrectly, please consult the source material.

After completing this semester's activity, you must complete the evaluation form provided in the **December** issue and return it in the reply envelope provided in order to receive a certificate of completion. When your evaluation is received, a certificate will be mailed to you.

9. Which of the following statements about the Grand Valley/University of Pennsylvania study of nurse fatigue and patient error is true?
 - A. Researchers tracked patient outcomes, and found multiple cases of mortality resulting from medication errors made by nurses who worked longer shifts.
 - B. Nurses working more than 12.5 hours were at an increased risk of making errors.
 - C. Working overtime at the end of a regular shift did not increase the risk of error.
 - D. Most errors reported by the nurses participating in the study were procedural errors.
10. Grocery industry workers are at risk for which of the following types of musculoskeletal disorders?
 - A. Back injury
 - B. Tendinitis
 - C. Carpal tunnel syndrome
 - D. All of the above
11. There have been many empirical studies documenting the importance of fostering a feeling of involvement and inclusion among employees, according to the University of Georgia's Workplace Health Group.
 - A. True
 - B. False
12. Employee reactions to the death of a co-worker may include:
 - A. Numbness, shock, and disbelief
 - B. Changes in eating habits and sleep
 - C. Headaches, muscle tension, and irritability
 - D. All of the above

Answers: 9-B; 10-D; 11-B; 12-D.

NEWS BRIEF

Jury rules against popcorn employees

A jury in Carthage, MO, has ruled against four popcorn factory employees in the third of a series of lawsuits by workers who claim a butter flavoring caused disabling lung injuries.

Flavoring makers International Flavors and Fragrances Inc. and its subsidiary Bush Boake Allen Inc. were not responsible for the injuries at the plant, the jury ruled.

All four plaintiffs said they contracted the lung disease bronchiolitis obliterans, a widespread obstruction of the small airways. In all, 30 people who worked at the plant have filed suit over the flavoring used there, with 27 lawsuits still pending.

In March, jurors awarded a total of \$20 million in damages to a married couple who worked at the plant. The following month, a confidential settlement was reached before the jury could rule in a second trial.

The lawsuits contend the flavoring manufacturers knew about the dangers but didn't give warning. The defendants said they were unaware of risk and suggested there is not enough evidence to prove their product caused the disease. ■