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INSIDE

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ROI for wellness programs is $176 per employee: This data could save your job

Savings is sometimes difficult to demonstrate

Health care costs reduced $176 for every employee — a savings of $1.65 for every dollar spent on a comprehensive wellness program. These are the eye-catching numbers that occupational health professionals at Highmark, Inc. a Pittsburgh, PA-based health insurer, can point to.[1]

Showing return on investment (ROI) for wellness programs, whether they involve smoking cessation, weight loss, or fitness, could save your job from being outsourced or your department downsized in today's cost-cutting environment, says **Karen Mastroianni**, RN, MPH, COHN - S, FAAOHN, co-owner and health and safety strategist for Raleigh, NC-based Dimensions in Occupational Health & Safety.

"If we are not showing the difference that we are making in the lives of employees and how that makes the company a better place to work, then there is the potential of budget cuts—or worse yet, position cuts," warns Mastroianni.

Even with limited time and resources, OHNs must assess the impact of programs, urges Mastroianni. "Just doing something because you believe it to be good or right is not enough," she says. "Often, an OHN provides a program and then realizes that he or she should have planned a method to evaluate it. We always need to consider the impact of services provided—not just for the company, but for our clients."

To determine the ROI of Highmark's employee wellness programs, medical claims of approximately 2000 participants were compared to claims for a group of nonparticipants with similar health risks. When

EXECUTIVE SUMMARY

Return on investment for employee wellness programs is $176 per participant, according to a recent study which showed $1.65 was saved for every dollar spent. To evaluate the impact of programs:
- Include all costs involved.
- Look at costs over multiple years.
- Set realistic expectations for programs.

program costs of $808,403 were subtracted from cost savings during the four-year period of 2001 through 2005, there was a savings of $1,335,524, partly due to reduced inpatient costs and increased use of screenings and medications.

The study's findings countered a common misconception: That research showing ROI for wellness programs only includes employees who are already healthy and motivated. That is simply not the case, according to **Brian Day**, EdD, one of the study's authors and director of advanced analytics at Highmark.

"I think the most surprising thing was the fact that the high risk folks also participated," says Day. "This goes against the perception that wellness participants are most often the healthiest in the population."

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When evaluating ROI of wellness programs, consider the following:

• Don't underestimate the amount of money actually invested.

Previous studies have shown a much higher ROI for wellness programs, but these don't always factor in all the costs involved, notes Day. The Highmark study factored in costs such as wages and benefits for the fitness center's manager, newsletters, and administrative costs, to determine an accurate per-employee cost for its wellness programs.

"The most important part of ROI calculations is the 'I.' [That] is the most challenging thing to determine," says Day. "We believe we were very conservative at $1.65 [savings per dollar spent], because everything was done to cost out what was actually invested in the program."

• Give programs enough time to show their true impact.

"Wellness programs are a challenge to evaluate, because long-term results are required," says Mastroianni. "Many health educators and companies evaluate for only six months or a year out. That's often not long enough, depending on the desired outcome."

Wellness programs do not produce healthy individuals overnight, emphasizes Day. "You have to give the programs time to work," he says. "It is necessary to examine costs over an extended time frame, in order to assess savings and latency of wellness effects."

In fact, costs typically rise during the first year, says Day, possibly due to the employee's awareness of the need to take proper medications and go to the doctor.

• Keep things simple if resources are limited.

You don't need an army of analysts to show the impact of a wellness program, says Mastroianni—often, all that's required is a simple spreadsheet and tracking information.

Ask for assistance if you need help interpreting the data. "Many communities and colleges have experts and student interns available to assist," says Mastroianni. "It truly doesn't take much, as long as it is planned in the beginning and data collection is consistent."

If evaluation is not planned initially, then it's difficult or impossible to identify the goals or targets, and to know what data needs to be collected for comparison. "If collecting data is haphazard, then the results will not be accurate," says Mastroianni. "Either they will indicate no apparent impact or too great an impact."

Mastroianni recommends using surveys and follow-up interviews to track weight loss and improvements in eating habits of participants. "Then, depending on the program objectives and expected outcomes, OHNs may need to consider other variables—absentee rates, worker's comp injuries, medical claims, or emergency department visits," she says.

• Don't overestimate outcomes.

Avoid raising expectations too high for programs that are designed to increase awareness and nothing more, such as monthly lunch and learns, or annual health fairs.

"These activities are not intended to change behavior," says Mastroianni. "The OHN cannot deduce that just because someone attended a session or came to the health fair, that indicates that the participant will control their blood pressure, quit smoking or lose weight."

Behavioral and environmental programs are needed to change these health behaviors, says Mastroianni. "Spending money on a health fair when the intentions are to demonstrate costs savings may result in disappointing outcomes," she adds.

• Use results to make a case for new programs.

Highmark's findings were used to justify the implementation of new wellness programs, including lifestyle monitoring solutions so participants can accurately measure metabolic expenditure and dietary intake.

"The findings clearly affirm the business case for these programs," says **Lisa Scholar**, MS, manager of employee preventive health at Highmark. "This certainly gives added support to expand the scope of our programming, and implement employee wellness strategic initiatives that require financial support."

• Don't overlook intangible benefits of wellness programs.

"The intrinsic benefits are extremely important — perhaps more important than the health costs savings," says Mastroianni. "Employees feel better, are happier, and more positive."

The value of health promotion programs goes beyond ROI and savings in health care costs, adds Scholar. "There are a multitude of benefits for implementing wellness programs—healthier and more engaged employees, increased productivity and reduction of sick days," she says. "Obtaining the return is fantastic, but it isn't the sole justification for implementing worksite wellness."

Identify health risks

How much should you invest in wellness programs? To answer this question, it is "absolutely essential" to survey your population's needs, says Scholar.

Before a wellness program is implemented at Highmark, several sources of data are reviewed, including Health Risk Assessment aggregate data so risk factor prevalence can be taken into account. These steps are then taken, says Scholar:

— It is determined which programs will have the most impact, both clinically and financially.

— An operating and intervention plan is written.

— A budget is created to support the plan.

— The impact is evaluated, to determine what the next steps will be.

"We believe in implementing data-driven programming based on risk," says Scholar. "We also measure and monitor overall participation, as increased participation is associated with risk reduction and cost savings."

Reference

1. Naydeck BL, Pearson JA, Ozminkowski RJ, et al. The impact of the Highmark employee wellness programs on 4-year healthcare costs. *Journal of Occupational & Environmental Medicine* 2008; 50(2):146-156. ■

SOURCES

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Diabetic employees get big results from novel program

Workers aren't left to follow up on their own

How would you like to boast that one of your company's wellness programs got these results for diabetics: A 21% increase in employees achieving the American Diabetes Association goal of an A1C level under 7.0, an increase from 43.8% to 57.7% in participants meeting National Cholesterol Education Program goals for LDL cholesterol, and a 15.7% increase in the number of employees meeting recognized goals for systolic blood pressure?

These are some of the health benefits realized by 914 participants in the Diabetes Ten City Challenge, an employer-based diabetes self-management program conducted by the American Pharmacists Association Foundation.[1]

Since the program launched in 2005, 31 employers in 10 cities have joined forces with hundreds of pharmacists to help over 1000 people manage their diabetes. Currently, 22 employees in the City of Dalton, GA, are participating, comprising about 5% of the full-time workforce.

Employees were informed about the program by e-mail, flyers posted by time clocks, and announcements made at worksite meetings. Also, if employees screen positive for diabetes at the City's annual health fair, a letter is sent suggesting the employee get follow-up care and participate in the diabetes program.

"This program is one of several initiatives that we are doing to decrease the cost of disease processes involving poor health choices," reports **Pamela Dugger**, RN, the city's employee health nurse. "It's a matter of getting the word out."

Many incentives for employees

By participating, employees get to work with pharmacist coaches to find ways to better manage their diabetes—eating right, exercising regularly, and taking medications as prescribed. During the first visit, the employee sets goals such as weight loss, diet control, checking blood sugar more often, or better compliance with preventative exams, and key indicators are tracked.

Previously, newly diagnosed diabetics received information about their condition, but were otherwise left to follow up on their own. "Our employees like the individual support that this program gives them," says Dugger. "They are learning how to manage their disease more effectively by having that one-on-one communication with their pharmacist coach."

Employees also save money, since co-pays for diabetes medications and supplies are waived — a big motivation for participation in the program. "I would say that 85% of diabetic employees would not have followed up, had there not been this incentive," says Dugger.

The City's diabetic employees report feeling better overall, says Dugger. "Working with their pharmacist coaches, they're learning about nutrition, weight loss or weight gain depending on what's appropriate, and the importance of exercise," she says. "We also make sure they are seeing their doctors, including getting necessary immunizations, foot exams and eye exams."

In the city of Charleston, the program is offered to spouses, dependents and retirees enrolled in the insurance plan. Of an estimated 300 diabetics on the health plan, about 90 are currently enrolled.

"To make it convenient for employees and easy for them to build up that rapport, we have about three pharmacist coaches coming to the worksite now, so employees don't have to go anywhere," says **Jan Park**, RN, the City's wellness coordinator. "I am also here as an extra resource for them."

Park informs employees about wellness programs that support the program's goals, such as Weight Watchers at Work, Walking at Work and smoking cessation. "Usually I'm the first point of contact for the program," says Park. "I match them with a pharmacist coach based on whether

EXECUTIVE SUMMARY

Participants in the Diabetes Ten City Challenge report a savings of almost $8000.00 per person, with 116 fewer sick hours taken annually. Diabetics improved key indicators of blood pressure, cholesterol, and A1C levels by working with pharmacists to set goals and measure progress.

- Co-pays are waived for medications and supplies.
- Costs initially increase, but there are fewer complications over the long term.
- Participating employees are more productive.

SOURCES

For more information on the Diabetes Ten City Challenge, contact:

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• **Jan Park**, RN, Wellness Program Coordinator, City of Charleston, SC. Phone: (843) 958-6412. E-mail: parkj@ci.charleston.sc.us.

it's more convenient for them to meet with someone closer to home, closer to work, or who actually comes to their office for the consultations if that's what's easiest."

Dramatic ROI is seen

There is an initial increase in costs during the first year, notes Park, due to providing free medications, supplies and doctors visits. "But over the long term, fewer complications are seen which is a big cost savings," says Park.

Productivity is also a factor. "Before, employees were either missing work, or they were coming to work but weren't fully there, possibly because of poorly controlled blood sugar levels or side effects from medications," says Park.

Using projected costs, the City of Dalton calculated an average savings of almost $8000 per person. "Our actual cost savings were approximately $5000 per person," says Dugger. "While our pharmacy costs rose, our medical costs decreased."

In addition, the City's first year data showed an average of 116 fewer sick hours were taken by participants—14.5 days per year compared with 19 days before the program's implementation. "This is most likely related to less sickness as a result of poorly managed diabetes, which can be proven with the medical savings that was shown in our first year data," says Dugger.

Although the city of Charleston doesn't have its own ROI data yet, Park expects it to mirror the program's aggregate data. "We know that when the clinical data is positive, the economic data will follow," says Park. "The first year is the investment year. After that, the numbers just continue to increase, with cost savings going up every single year."

Reference

1. Fera T, Bluml BM, Ellis WM, et al. The Diabetes Ten City Challenge: Interim clinical and humanistic outcomes of a multisite community pharmacy diabetes care program. J Am Pharm Assoc 2008; 48:181-190. ■

Get employees to exercise and work at the same time

A surprising number of calories are burned

Even if you offer a variety of costly programs to get employees to exercise, participation is probably not what you wish for. "When you spend half a million dollars on a fitness center, you're reaching the people who are already converted. They won't change their risks, because they are already healthy," says **Andrew Wood**, "chief muvologist" at Wayzata, MN-based Muve, Inc., which specializes in increasing human movement in the work environment.

"Then there is the intimidation factor—you get the spandex crowd in there, and it intimidates the people who are at risk," says Wood.

A new technology could turn this approach on its head, by getting employees to exercise *while* working. The Walkstation, a height-adjustable office workstation combined with a treadmill (manufactured by Caledonia, MI-based Details) is being pilot tested at several companies. The cost is approximately $4000.

The treadmill runs quietly with a low-impact slow stroll, so users won't distract others or be

EXECUTIVE SUMMARY

A combination office workstation and treadmill allows employees to exercise while working. The technology costs approximately $4000 and is currently being pilot tested at several large companies.
• The treadmill runs quietly with a low-impact slow stroll.
• 100 additional calories are burned per hour.
• Employees could lose 44 to 66 pounds a year with two or three hours a day of use.

seen breaking a sweat. However, even walking at a slow pace can burn a surprising number of calories, according to a study on the Walkstation. When seated at an office chair, employees burned 72 calories per hour, but this increased to 191 if they walked at only 1.1 miles per hour while working. The researchers concluded that if sitting computer time was replaced by walking-and-working for two or three hours a day, employees could lose 44 to 66 pounds a year.[1]

"There is actual weight loss involved without changing your diet," says Wood, former health and safety officer at a food manufacturer that is piloting the Walkstation. "The idea is to get people up and moving, rather than sitting at a computer all day."

Wood acknowledges that the Walkstation "is not for everybody"— some employees can't use it because of musculoskeletal issues, and others just don't like to multitask in this way. Ergonomic training is also needed, since if the monitor position or height of the station is adjusted incorrectly, the employee could be injured.

"The employee is going from sitting in an office for eight hours a day to being active," says Wood. "So we gradually increase the employee's time on the station to the point where they're comfortable being on it for several hours a day."

Wood says that it may take time for some employees to become comfortable with the idea of exercising while working, but suggests that in the near future, use of treadmills will become commonplace in offices, and employees will walk on designated paths during meetings instead of sitting.

"When I discuss the concept of the Walkstation with desk workers, they are intrigued and interested in trying it," says **Heather Tick**, MA, MD, clinical assistant professor in the department of family and community medicine at the University of Arizona in Tucson. "The return on investment will be in improved overall health, which in turn should improve productivity and work absences."

SOURCES/RESOURCE

For more information on getting employees to exercise while working, contact:

- **Heather Tick**, MA, MD, Clinical Assistant Professor, Department of Family and Community Medicine, University of Arizona, Tucson. E-mail: rsi@treatpain.ca.
- **Andrew Wood**, PT, MS, CBES, Muve, Inc. Wayzata, MN. Phone: (507) 884-6594. E-mail: andy.wood@muveinc.com.

- The Walkstation, which costs approximately $4000, is part of the FitWork category of products, designed to bring healthy habits to sedentary workers. To order a Walkstation, contact Details, Caledonia, MI. Phone: (800) 433-0411. E-mail: info@details-worktools.com. Web: www.details-worktools.com.

Reference

1. Levine JA, Miller JM. The energy expenditure of using a "walk-and-work" desk for office workers with obesity. *Br J Sports Med* 2007; 41(9):558-561. ■

OSHA proposes a formula for pandemic stockpiles

480 N95s or one elastomeric needed per HCW

For the first time, newly proposed guidance puts a number and a cost to the respirators needed to protect health care workers during an influenza pandemic: 480 respirators at a cost of about $240 to protect a single employee, or a single reusable elastomeric respirator with three filters at a cost of $40 per employee.

The U.S. Occupational Safety and Health Administration issued the proposed guidance to help employers determine how many respirators and facemasks to stockpile for pandemic preparedness (www.osha.gov/dsg/guidance/stockpiling-facemasks-respirators.html). It requested comments on the guidance through July 8. **(See editor's note for more information.)**

OSHA is encouraging employers to stockpile respirators because "manufacturing capacity at the time of an outbreak would not meet the expected demand for respiratory protection devices during the pandemic," the agency said. "It is also important to note that respirators and facemasks are just one element of a multi-layered approach to pandemic preparedness. There are many other protective measures that can and should be elements of a comprehensive pandemic preparedness plan."

As this issue went to press, another key guide-

line on stockpiling anti-viral medication was slated for publication by the Centers for Disease Control and Prevention. The CDC also is expected to publish its final guidance on the prioritization of pandemic influenza vaccine shortly.

"When you put all this together, we believe there will be substantial ability to protect critical workforces and the population in general," says **Ben Schwartz**, MD, senior science adviser with the National Vaccine Program Office at the U.S. Department of Health and Human Services, who helped OSHA draft the respirator guidance.

Until now, hospitals and health systems have had to make their own assumptions and estimates to determine how many respirators to stockpile, says **Lewis J. Radonovich**, MD, director of Biosecurity Programs for the Office of Program Development at the North Florida/South Georgia Veterans Health System in Gainesville, FL.

"I think it's very valuable for the individual health care center or system to have this type of guidance available to them," says Radonovich, who has been involved in research on respiratory protection and pandemic preparedness. "Without this, we're all left to our own devices to make these decisions."

Adapt guidance to hospital needs

Hospitals are expected to adapt the guidance to their own particular circumstances. For example, in its proposed guidance, OSHA assumes that a third of hospital employees will be at high risk due to direct patient contact. The actual number, however, will vary based on the nature of the pandemic and personnel decisions.

If a disproportionate number of the pandemic influenza patients are children, then pediatric hospitals may be especially hard-hit and a higher proportion of their employees may be at risk. Conversely, hospitals may reduce the number of employees at risk by cohorting patients and limiting the number of non-clinical personnel who come onto the floor, says Schwartz.

The proposed guidance also estimates that each health care worker will use four disposable N95 respirators per shift. Employees would wear the respirators continuously and dispose of them after each of two breaks, at lunch and at the end of the day, Schwartz says.

It isn't prudent to expect health care workers to reuse the respirator during the day, he says. "After several hours (of continuous use), it may become saturated with secretions and make the workers breathing a little more difficulty," he says, adding, "There is some risk of contamination by doffing and donning the contaminated respirator."

Hospitals also shouldn't count on extending the use of N95 respirators by asking employees to wear a surgical mask over the respirator to protect it from contamination, he says.

"We have to be equally concerned about a shortage of face masks. Given the [OSHA] recommendations for use of face masks not only in health care but in other sectors as well, the estimated requirements [for face masks during a pandemic] are in the tens of billions," Schwartz says.

OSHA recommends face masks for employees who have "high frequency close contact (within six feet) of the general population." That would include store clerks, bank tellers, waiters and numerous other service workers.

A pandemic can range from mild to severe, but in its proposed guidance, OSHA assumes that "community mitigation," such as closing schools and cancelling public gatherings, would reduce illness to about 15% of the population. The guidance is based on a pattern of two waves striking a community, each lasting 12 weeks. With a five-day work week, that would equal 120 days of protection needed for employees.

Consider reusable respirators

Before deciding how many respirators to stockpile, hospitals should consider the types of respirators that would best suit their needs. Based on the cost comparison, elastomeric respirators would be the cheapest alternative.

VISN 8, the Veterans Health Administration health care network that encompasses Florida, southern Georgia, Puerto Rico and the U.S. Virgin Islands, has purchased some elastomeric respirators in addition to N95s, says Radonovich.

Reusable respirators offer a clear advantage during a pandemic, he says. "We anticipate, based on warnings, that the manufacturers won't be able to produce enough disposable N95s during a pandemic to meet the demand. We needed another option," he says.

Yet elastomeric respirators pose issues, as well. They must be fit-tested, just as N95s are. The facepiece may make it harder to communicate with patients. And they aren't comfortable to wear for long periods of time, says **William Buchta**, MD, MPH, medical director of the Employee Occupational Health Service at the Mayo Clinic in Rochester, MN.

Mayo has purchased 200,000 N95 respirators and 300,000 face masks for a pandemic stockpile. "We want to be able to last for a two and a half month period," he says. Mayo also has powered air-purifying respirators (PAPRs), which do not require fit-testing and in some cases are recommended for high-risk procedures such as bronchoscopy.

The Marshfield (WI) Clinic has a warehouse full of N95 respirators, gloves and gowns for a potential pandemic. Elastomerics sound like a good idea but have some drawbacks, says **Bruce Cunha**, RN, MS, COHN-S, manager of employee health and safety. "People just do not understand how uncomfortable it is to wear a [half-face] respirator for any length of time," he says. "You have a rubbery substance against your skin and you're breathing 98.6 degree air. The inside of those things get very warm, very quickly."

The reusables also need properly handling and cleaning. "You're going to have to train employees how to clean them properly, or you're going to have to have someone who cleans them on a daily basis," he says.

Schwartz urges health care employers at least to consider the elastomeric respirators — perhaps by trialing them at the hospital. The key is to have respirators that will be available in an emergency situation — and reusable respirators have an obvious advantage.

"While elastomerics may not be a solution for routine health care, I think it's important for planners to realize the primacy for maintaining services during an emergency," he says.

In fact, in pandemic planning, flexibility is the key, says **Michael Bell**, MD, CDC's associate director for infection control. What protection is most appropriate and who will be at greatest risk, may depend partly on the nature of the pandemic, he says. For example, a pandemic strain may cause gastrointestinal symptoms, which would require different infection control considerations.

"All this planning activity is important and useful, but at the end of the day, the actual epidemiology of an outbreak will help inform the activities," he says. "You shouldn't be too fixed on one particular solution when you're in preparedness phase. Flexibility and an ability to accommodate change are always going to be very important."

[Editor's note: To comment on the OSHA draft guidance, you may mail comments (in triplicate) to OSHA at OSHA Docket Office, Docket No. OSHA-2008-0005, U.S. Department of Labor, Room N-2625, 200 Constitution Avenue, NW., Washington, DC 20210, fax them to (202) 693-1648 or send them electronically through the federal government's "rulemaking portal," www.regulations.gov. The OSHA docket office can be reached at (202) 693-1648.] ■

The cost of stockpiling

These cost estimates were developed by OSHA for a single employee at high risk of exposure:

Option 1: Using disposable N95 respirators: 480 N95:s @ $0.50/respirator = $240 per employee protected
Option 2: Using reusable elastomeric respirators: 1 respirator @ $25 + 3 sets of filters @ $5 set = $40 per employee protected
Option 3: Using 1 PAPRs shared by 4 employees on shift work: 1 PAPR @ $800 + 1 spare battery @$160 + 3 extra hoods @ $90 each + 3 sets of filters @ $30 set = $1,320 / 4 employees = $330 per employee protected

(Note: hooded PAPRs do not need to be fit tested, which can result in other programmatic cost savings)

Rubber meets the road: The push for latex safety

Risk remains for allergic HCWs

It has been 10 years since Johns Hopkins Hospital in Baltimore created a latex task force to address the growing numbers of latex-sensitive employees. Now, the first hospital to use rubber surgical gloves — they were developed at Johns Hopkins in 1894 — has become one of the first to eliminate them completely.

Johns Hopkins isn't alone in taking a closer look at latex. Other hospitals are also seeking alternatives to latex products as a way to protect latex-allergic patients and employees.

Latex may have receded from the spotlight as an occupational risk to health care workers; powder-free, low-protein gloves produce far fewer new sensitizations. But "latex-safe" is the risk to latex-allergic patients and employees remains a concern that has led some hospitals to remove as much

latex as possible and become "latex-safe."

Improvements in alternatives to latex have enabled Johns Hopkins to replace its sterile latex gloves, which were still in use in the hospital's operating rooms, says **Robert Brown**, MD, MPH, professor in the departments of environmental health sciences and anesthesiology at the Johns Hopkins School of Medicine and chair of the hospital's latex task force.

"We felt the only way to do this was in a cultural change," he says. "We're going to be latex-safe throughout the institution."

Norton Healthcare in Louisville, which includes a children's hospital, still uses powder-free latex surgical gloves, but otherwise seeks non-latex products wherever possible.

"I think we owe it to our employees to stay diligent on this," says **Claire Rupert**, RN, division director for value analysis and technology assessment at Norton Healthcare. "The question we ask our vendors when they come in with a new product is, 'Does it contain latex?'"

HCWs have a higher risk of allergy

Because of their greater exposure to latex, health care workers are significantly more likely to be sensitized or allergic. A recent meta-analysis of studies found that 4% of health care workers were latex-allergic compared to 1.37% of the general population, and latex exposure was linked to an increase in hand dermatitis, asthma and rhinoconjunctivitis in health care workers.[1]

In January 2008, the U.S. Occupational Safety and Health Administration issued an updated Safety and Health Information Bulletin on latex sensitization and latex allergy (www.osha.gov/dts/shib/shib012808.html). In it, OSHA suggests the following measures to reduce health care worker exposure to latex:

- "If selecting natural rubber latex gloves for employee use, designating natural rubber latex as a choice only in those situations requiring protection from infectious agents.
- "If selecting natural rubber latex gloves, choosing those that have lower allergenic protein content. Selecting powder-free gloves affords the additional benefit of reducing response to environmental exposure.
- "Providing alternative suitable non-natural rubber latex gloves as choices for employee use (and as required by OSHA's bloodborne pathogens standard [29 CFR 1910.1030, paragraph (d)(3)(iii)] for employees who are allergic to natural rubber latex gloves)."

OSHA also recommends that hospitals identify all products that contain natural rubber latex and monitor the natural rubber latex content of incoming products. They also need a system for reporting, evaluating and managing latex-allergy cases among employees, the bulletin says.

The Food and Drug Administration requires labeling of medical devices that contain natural rubber latex. But keeping track of products that contain latex can still be difficult — especially if the label is on the box rather than on individual items.

Those concerns prompted Premier Inc., a health care alliance and group purchasing organization based in Charlotte, NC, to publish a catalog for its members listing products that are latex-free. "Hospitals are still struggling with [the latex issue]," says **Gina Pugliese**, RN, MS, vice president of the Premier Safety Institute. "We're still getting requests from hospitals about the latex content of products."

There's great variability in the way hospitals have addressed the latex issue, Pugliese says. Many have eliminated powdered gloves, which are associated with greater risk of sensitization. But about 10% to 15% of latex glove purchases are still the powdered variety, usually due to surgeon preference, she says.

Identifying new products

Norton Healthcare sought a specific list of latex-free products from Premier because of the identifying safe items. If a product doesn't mention latex, can you be sure that it doesn't contain any? "You're always a little on edge when you don't see that label that specifically addresses latex content," says Rupert.

In some cases, the health system decides to keep a product that contains latex because of its superior qualities — but maintains latex-free versions for allergic patients and continues to seek better alternatives, says Rupert.

"A lot of manufacturers have been very proactive about eliminating the use of latex or natural rubber protein in their items. But we still are challenged by products that have to have a little bit of flex [such as pediatric nasogastric tubes]. In some cases, we don't have good latex free options," she says.

Improvements in the quality of alternatives enabled Johns Hopkins to eliminate most latex.

Brown estimates that 98% or 99% of the hospitals products are latex-free. "There are not many products left here that have latex in them," he says.

For example, polyisoprene surgical gloves have a feel that is similar to natural rubber latex— and that surgeons are more willing to accept. "Clearly, it's a leap forward in terms of quality of glove," he says.

The switch to the new gloves occurred without complaint, Brown says. The hospital brought in both neoprene and polyisoprene gloves and ask operating room personnel to try them out — including surgeons, nurses, anesthesiologists, techs and invasive radiologists. The chairman of surgery was a champion of the process; she had a colleague who had been forced to quit surgery because of a latex allergy.

The new gloves are more expensive, and the change required some getting used to. But no one complained about the new product, Brown says. "It's easier than you think to be latex-safe," he says.

Reference

1. Bousquet J, Flahault A, Vandenplas O, et al. Natural rubber latex allergy among health care workers: a systematic review of the evidence. *J Allergy Clin Immunol* 2006; 118:447-54. Online publication July 3, 2006. ■

Key to safety: Creating the right work culture

Hospital works to change behavior

Are your employees too busy to be safe? Too stuck in their old way of doing things to use new safety equipment?

There's much more to implementing a new safety program, such as safe patient handling, than buying equipment. That's why some hospitals have focused on behavioral management and building a "culture of safety" as the key to improving overall safety.

At Memorial Hospital and Health System of South Bend, IN, CEO **Phil Newbold**, FACHE, has put safety "at the top of the agenda" at meetings of the hospital's board and senior management and hired Behavioral Science Technology (BST) of Ojai, CA, to help the staff build behaviors that are important to safety.

"If our employees don't feel the management supports the culture of safety for them, then that's a signal that we want it for patients but we don't want the same level of safety for our staff members," Newbold says. "It's pretty hard to separate those two. If they see how interested leadership is in their personal well-being, that will carry over to everything they do for patients and families and visitors."

It takes about five to seven years to change the culture of an institution, says Newbold. But it's the ongoing commitment that will convince employees, he says. "You do it one person at a time by building trust...by doing what you say you're going to do," he says.

That may mean including safety practices and principles in employee competencies and new employee orientation, as well as demonstration from leadership that safety is important, he says.

Taking a broader look at safety led Memorial to its Safe Moves Initiative, which integrates patient fall prevention and safe patient handling. In the first year of the program, musculoskeletal injuries declined by 37%. Patient falls also have fallen below the benchmark of 4 per 1,000 patient days.

Separating patient safety and employee safety, as many hospitals do, simply doesn't make any sense, says **John Hidley**, MD, a psychiatrist who co-founded Behavioral Science Technology. "We find it curious that the health care industry makes a distinction between employee safety and patient safety," he says. "The interventions that work for one work for another."

To build a "culture of safety," Memorial began by defining a safe hospital environment. "We've worked with senior leadership to help them define what they envision that safety ought to be – including employee safety and patient safety," says **Sharon Dunn**, RN, BSN, MAS, practice leader for health care at BST.

BST surveyed employees, including physicians, and began identifying gaps between the safety goals and the realities. For example, BST wants to know how employees perceive leadership's credibility.

"You're trying to create an environment in which the employee feels the leader has his interests at heart and therefore the employee is willing to have the interests of the facility at heart," says Hidley.

Newbold set his goal high. "We hope to be the safest hospital in the United States," he says. ■

NEWS BRIEF

Study: GERD has big impact on productivity

Forty-one percent more sick days, 59% more short-term disability days, 39% more long-term disability days, 48% more workers' compensation days, and 6% lower annual productivity.

You'd probably guess that these dismal statistics involve diabetic or obese workers—but they actually refer to gastroesophegal reflux disease (GERD).

Researchers looked at 11,653 employees with GERD and compared them with 255,616 without GERD from a database of U.S. employee health care and payroll data, and found that employees with GERD were much less productive.[1]

Despite this, GERD usually doesn't get the attention it deserves from OHNs. "GERD is often overlooked because it gets a bad rap as a 'lifestyle' disease—if only patients would alter their lifestyles, they wouldn't have the problem," says **Nathan L. Kleinman**, PhD, one of the study's authors and senior research analyst at Human Capital Management Services in Cheyenne, WY. "This takes no account of the physiology of transient relaxations of the lower esophageal sphincter and the need to reduce the presence of acid in the esophagus."

Better management and treatment would likely result in fewer absences and decreased costs, says Kleinman. He recommends screening for GERD in your annual Health Risk Assessment surveys.

"GERD is a significant disease that should be recognized by occupational health nurses and professionals," says Kleinman. "Focus on those with the most troublesome GERD symptoms. For those who report symptoms severe enough to impact their daily activities, offer an opportunity for treatment."

Reference

1. Wahlqvist P, Brook RA, Campbell SM, et al. Objective measurement of work absence and on-the-job productivity: A case-control study of US employees with and without gastroesophageal reflux disease. *Journal of Occupational & Environmental Medicine* 2008; 50(1):25-31. ■

SOURCE

For more information about management of employees with gastroesophegal reflux disease, contact:

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CE Objectives / Instructions

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 productivity.
- Identify employee health trends and issues.
- Comply with OSHA and other federal regulations regarding employee health and safety.

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 June issue and return it in the reply envelope provided in order to receive a letter of credit. When your evaluation is received, a letter of credit will be mailed to you. ■

COMING IN FUTURE MONTHS

■ Find out whether diet counseling really impacts heart attack risk

■ How to reduce rising costs of back and neck problems

■ Interventions to decrease prostate cancer risk for employees

■ Calculate lost productivity due to sleep-deprived workers

CE *questions*

1. Which is recommended to improve accuracy of evaluating return on investment for wellness programs?
   A. Exclude employees with chronic conditions.
   B. Examine costs over an extended time frame.
   C. Discontinue any program that hasn't shown a good return within the first twelve months.
   D. Minimize the costs of investment.

2. Which of the below data should be reviewed before implementing a wellness program?
   A. Health Risk Assessment aggregate data
   B. Risk factor prevalence.
   C. Participation rates.
   D. All of the above.

3. Which of the following resulted from participation in the Diabetes Ten City Challenge?
   A. Employees had difficulty achieving nationally recognized goals for systolic blood pressure.
   B. There was an increase in the number of employees who achieved the American Diabetes Association goal of an A1C level under 7.0.
   C. Pharmacy costs decreased immediately after the program was implemented.
   D. Overall productivity decreased.

4. Which was found in research involving workstations combined with treadmills?
   A. By using the treadmill for two or three hours a day, employees burned enough calories for significant weight loss.
   B. Employees didn't lose weight because they weren't walking fast enough.
   C. Most employees didn't burn any additional calories with use of the treadmills.
   D. Employees only lost weight if they used the treadmill for over five hours per day.

Answers: 1. B; 2. D; 3. B; 4. A.