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IN THIS ISSUE

- **Failing the test:** As EHPs wrestle with false positives in TB tests of health care workers, experts advise retesting. . . . . cover
- **Caution on TB:** The American College of Occupational and Environmental Medicine urges health care facilities to remain vigilant on TB 39
- **Wellness Rx:** As a study finds tepid participation in wellness, the Centers for Disease Control and Prevention boosts employer efforts 40
- **Cure for burnout?**: Hospitals turn to resilience training to help employees cope with change 42
- **Roadmap for health:** The University of Pittsburgh Medical Center creates a framework for integrating occupational health and safety and health promotion 44
- **Group hug:** At Kaiser Permanente, wellness incentives are based on group progress 45
- **Flu shot update:** Strains stay the same next year, but new shots needed 47

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False positives plague TB screening of health care workers

Retest and use clinical judgment, experts advise

Most of the positive results in routine tuberculosis screening of health care workers are false positives. That statistical artifact is creating headaches for employee health professionals as they try to find the best TB testing method and struggle with unexpected results.

A recent study involving 2,122 health care workers found that more than three in four positive conversions on TB blood tests (interferon gamma release assays, or IGRAs) reverted to negative when workers were retested six months later.[1]

Discrepancies in test results led the American College of Occupational and Environmental Medicine (ACOEM) to suggest that a higher threshold for positive results might be appropriate for the IGRAs. (*See related story, p. 39*)

The bottom line advice from experts if a health care worker has a positive TB test and no known exposure or risk factors: Use clinical judgment and consider retesting.

That strategy "is consistent with current CDC guidelines," says **Thomas R. Navin**, MD, chief of the Surveillance, Epidemiology & Outbreak Investigations Branch in CDC's Division of Tuberculosis Elimination.

Yet don't simply discount unexpected positive results, cautions **Susan Dorman**, MD, associate professor of medicine at Johns Hopkins University in Baltimore and lead author of the paper, which was supported by the CDC's Tuberculosis Epidemiologic Studies Consortium.

"One should not automatically assume that they're false," she told *HEH*. "One probably wants to go back and ask the question, 'Is there something that went on in our institution that could have led to TB transmission?'"

IGRAs better for some HCWs

When the first IGRA was introduced in 2001, it held great promise as a modern method of screening for latent tuberculosis. Despite the con-

cerns about false positives, the IGRAs still have clear advantages over the century-old tuberculin skin test (TST), experts say.

The IGRAs are more specific and do not react to prior BCG vaccination, which is common in countries where TB is endemic. Many hospitals use IGRAs to screen health care workers who have previously received a BCG vaccine.

"We confirmed that the IGRA tests appeared to be more specific and did not cross react with BCG vaccine. So the tests are clearly helpful in that way," says Dorman.

Dorman and colleagues from medical centers in four states administered TSTs and IGRAs to the health care workers every six months for 18 months. About one in four (27%) of the health care workers who tested positive with a skin test at baseline were negative on both IGRAs. In fact, when TST-positive health care workers received a second skin test, more than half of them (54%) reverted to negative.

But the IGRAs — QuantiFERON-TB Gold In-Tube, produced by Cellestis, a Qiagen Company based in Valencia, CA; and T-SPOT. TB, produced by Oxford Immunotec, based in Abingdon, UK — showed high rates of reversion, as well. Some 57% of health care workers who tested positive with QuantiFERON at baseline and 64% of T-SPOT baseline positives reverted to negative.

Variable results continued throughout the study. Some 76% of those converting from negative to positive with QuantiFERON reverted to negative with further testing, as did 77% with a positive T-SPOT.

"We looked very hard to find relationships and understand why these conversions and reversions happened," says Dorman. "Despite intensive investigation, we really were not able to come up with any biological or medical or epidemiologic reason why these conversions and reversions happened."

Many of those conversions/reversions occurred when the positive result was near the cut point, she says.

"We concluded that most of these conversions were very likely to be false conversions," she says. Even retesting the same specimen or immediate retesting of an individual with a new specimen often led to a reversion to negative, Dorman says.

Is the cut point too low?

The Dorman study mirrors what many employee health professionals are finding in their daily practice and raises renewed questions about how to define a positive TB test result among low-risk health care workers.

Some of the problem stems from the potential variability in the way the tests are handled, processed or interpreted, she says. "What distinguishes these tests from other tests we do frequently in medical clinical practice is that these tests rely on a biological response," she says.

Technique also matters. For example, how vigorously the QuantiFERON tube is shaken can affect the results, she says. (The T-SPOT is currently processed in a central laboratory by Oxford,

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the manufacturer.)

Furthermore, the greatest number of false positives occur near the cut point — which calls into question the definition of a positive result, says **Wendy Thanassi**, MA, MD, National Project Lead for Tuberculosis with the Office of Public Health, Occupational Health at the U.S. Department of Veterans Affairs and chief of occupational health with the Palo Alto (CA) VA Health Care System.

The U.S. Food and Drug Administration set the QuantiFERON cut point at .35 IU/mL to achieve specificity of 99%, says Thanassi.

"What we see is a few percent of the total population testing right near the cutoff point," she says. "When we retest them, they're negative. Because they were always negative. There's just always

Vigilance: TB prevention remains a priority

ACOEM urges steps to reduce risk

With historically low rates of tuberculosis in the United States and ongoing challenges with TB tests, employee health professionals are understandably frustrated. But the American College of Occupational and Environmental Medicine (ACOEM) has a message: Remain vigilant to prevent occupational risk.

In recently released guidance, ACOEM notes that the high worldwide rate of latent TB infection and rising rates of multi-drug resistant and extensively drug-resistant TB pose a risk to health care workers.

In fact, in the 1980s and early 1990s a resurgence of TB combined with less stringent infection control measures led to some hospital-based transmission of TB, ACOEM notes.

"If we don't keep up the scrutiny and assign resources to TB screening of health care workers, we could easily slip back," says **Amy J. Behrman**, MD, FACP, FACOEM, medical director for Occupational Medicine at the University of Pennsylvania Health System and lead author of the ACOEM guidance. "We should build on our successes and not be complacent about the ongoing risk."

ACOEM emphasizes important "action steps" to reduce the risk of TB exposure, including having a high level of suspicion of TB in patients with cough and fever who have risk factors, such as the homeless, incarcerated, or those from countries in which TB is endemic. Patients suspected of having active TB should wear a mask when not in an isolation room, and health care workers who have contact with them should wear respiratory protection, ACOEM says.

In the guidance, ACOEM notes that powered air-purifying respirators (PAPRs) may provide more protection than an N95, and that the quality of the N95 affects its fit.

As for the complex issues involved with TB screening of health care workers, ACOEM suggests retesting those with interferon gamma release assay (IGRA) results near the cut point (or between .35 and 1.1 IU/mL for the QuantiFERON test). (*See related article, cover.*)

"For positive IGRA results, there is accumulating evidence that the current Food and Drug Administration approved threshold for a positive test may not be accurate," ACOEM said.

The Centers for Disease Control and Prevention states that in some cases using both a tuberculin skin test and IGRA might be appropriate,[1] and the ACOEM guidance acknowledges this reality: "Neither IGRAs nor TSTs alone can be considered definitive proof of infection. Many physicians currently use both TST and IGRA in combination to manage LTBI surveillance and treatment."

For example, some institutions use IGRAs to confirm a positive TST, particularly in people who received BCG vaccination as children, Behrman notes.

ACOEM will continue to update guidance as new information emerges, especially related to the screening tests, she says. "Continued attention to this is the way to continue to achieve historic lows in [TB] case rates and transmission," she says.

[*Editor's note: The ACOEM guidance statement, Protecting Health Care Workers From Tuberculosis, 2013, is available at* www.acoem.org/Guidance_Statements.aspx.]

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maximum variability right around the cutoff."

Thanassi suggests setting a cut point of 1.1 IU/mL for low-risk health care worker screening. The results between .35 and 1.1 would be a "retest zone" in which employee health professionals should use professional judgment, she advises. "Retesting causes no harm. But chest x-rays, medications, consultations and fear cause a lot of harm," she says.

Limit screening programs

One other important way to reduce the likelihood of false positives, says Thanassi, is to follow CDC recommendations on risk assessment – and conduct only baseline testing in low-risk settings. Inpatient settings with more than 200 beds are low risk if they have treated five or fewer TB patients in the past year. Those with less than 200 beds are low risk if they treated two or fewer TB patients.[2]

"The classification of low risk should be applied to settings in which persons with TB disease are not expected to be encountered, and, therefore, exposure to *M. tuberculosis* is unlikely," the guidelines state. "This classification should also be applied to HCWs who will never be exposed to persons with TB disease or to clinical specimens that might contain *M. tuberculosis*."

Over-testing of health care workers has led to the problem of false positives, says Thanassi. "This is an absolute creation of the fact that we have such a low prevalence for the disease that the false positive rate will be higher than the true positive rate. It's a mathematical law," she says.

At the same time, employee health professionals should be aware that health care workers may travel to countries where TB is endemic, says **Amy J. Behrman**, MD, FACP, FACOEM, medical director for Occupational Medicine at the University of Pennsylvania Health System. "At my institution, we have an increased number of global health programs, with doctors and nurses choosing to volunteer or take paid rotations in areas where TB is endemic," she says. "We're seeing more and more people who are choosing to spend months at a time in Haiti or sub-Saharan Africa."

Fewer tests, fewer dilemmas?

Hospitals that are able to restrict or even eliminate annual TB screening because of their low-risk status should still be prepared for the possibility that could change. Marshfield (WI) Clinic has typically been low-risk, rarely seeing even one TB patient in the entire system. But last year, three clinic facilities saw three TB patients, suddenly putting them in the medium risk category.

As Marshfield began testing 2,500 employees with an IGRA, an unexpected number of positives occurred. **Bruce Cunha**, RN, MS, COHN-S, manager of Employee Health and Safety, has been carefully evaluating the cases to determine if the employees could have had any potential exposure at work or elsewhere.

"If they don't have any risk factors … when do we send somebody to infectious disease to have them evaluated for latent TB?" says Cunha. "I think the doctors are as frustrated as we are as to what to do with these patients."

Children's Hospital of The King's Daughters in Norfolk, VA, is a low-risk facility that once screened all employees with TB skin tests. The hospital switched to baseline testing only, initially using QuantiFERON. When a number of tests came out as indeterminate, the hospital switched again, to T-SPOT, says Occupational Health Director **Patricia Higazi**, RN, COHN.

Overall, Higazi has been happy with the change. By limiting the testing program, the hospital saves time and money, she says. And with the IGRAs, no one has to track down employees who forgot to come back to have their skin tests read, she says.

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Wellness programs need their own Rx

Too often, employee participation lags

Employers are unreliable stewards of their workers' health. Most hospitals and other large employers offer wellness programs, but they struggle to engage the employees who need it most.

This dilemma is frustrating for employers. But increasingly, it is also becoming a public health

issue, as the workplace is viewed as the primary site for addressing rising rates of diabetes, obesity and heart disease. Hospitals have an opportunity to be on the forefront of efforts to promote workplace health, wellness experts say.

"Employers are becoming more familiar with the connections between health and productivity," says **Jason Lang**, MPH, MS, team lead for workplace health programs at the National Center for Chronic Disease Prevention and Health Promotion at the Centers for Disease Control and Prevention. "They're getting much more involved in understanding that they need to do something. The question becomes, what are they going to do and how are they going to do it?"

CDC now has three distinct initiatives to help employers address wellness, two of them funded by the Affordable Care Act.

"Our overarching goals are to see an increase in the number of employers who are actively committed to employee health through health promotion and wellness programs, as well as for those who are building or enhancing the wellness options to do it with the highest quality possible," says Lang.

A recent study by the RAND Corp. in Santa Monica, CA, reveals the challenges. Employers reported low participation rates for disease management programs among at-risk employees. For example, on average, only 7% of smokers participated in smoking cessation programs and only 11% of people eligible for weight management programs participated.[1]

A comprehensive program that engages employees, offers substantial incentives and integrates all facets of employee health can produce much better results, says **Michael Parkinson**, MD, MPH, senior medical director of the UPMC Health Plan and Work Partners, a health and productivity service geared toward corporate clients. The University of Pittsburgh Medical Center has 90% participation in its wellness program.

"One reason a lot of wellness programs fail is because they believe one size fits all," he says. "Our health coaches walk the hallways and talk to people about the challenges they have."

Making wellness work

Wellness programs work. When employees participate, they achieve "statistically significant and clinically meaningful improvements" in their exercise frequency, smoking behavior and weight control, the RAND study found.

For example, continuous participation in a weight loss program for five years led to a 13% decrease in obesity and a 14% increase in the proportion of normal weight employees, RAND found.

But to get benefits from the program — healthier and happier employees — it is important to tailor wellness interventions to your workforce, says **Soeren Mattke**, MD, DSc, MPH, senior scientist at the RAND Corp. in Boston, managing director of the RAND Health Advisory Services and lead

Five ways to improve your wellness program

Employers often struggle to raise participation in a wellness program, especially among those who are most at risk of chronic health conditions. The RAND Corp., based in Santa Monica, CA, researched wellness programs among a wide range of employers and identified these five strategies:

1. Communicate effectively. Employees need to know what wellness programs are available to them and how to access them. Different methods should be used to share messages about healthy behaviors and wellness activities, including email, bulletin boards, newsletters, flyers, web portals and announcements at staff meetings.

2. Make programs convenient and accessible. Long wait times for health screenings or limited hours for health and fitness programs will hinder employee participation. Conversely, providing a range of programs offered at different times can improve engagement.

3. Gain support from leadership. Senior leaders need to view wellness programs as a priority as part of a corporate culture of safety. Direct supervisors may need to provide some flexibility in schedules to enable employees to attend wellness or fitness programs.

4. Leverage existing resources and relationships. Health plans may provide some consulting services and may have marketing and communications materials that can be adapted for your program.

5. Seek continuous improvement. Evaluate your program based on participation, health outcomes, or other measures. Feedback from employees can help guide wellness programs. ■

author of the report.

"The temptation is that managers impose a solution that fits their particular world view as opposed to the world view of employees," he says. "We saw in many cases management imposed an exercise-focused program in a manufacturing context where people are actually physically active just based on their job all day. The last thing they needed was an exercise program. Managers ignored that they had a terrible diet."

Disease management provides the greatest possible impact in improving health and reducing health costs, but the RAND study found only 16% of employees eligible for those programs participated.

Incentives can boost participation rates, RAND found. But Mattke cautions that designing an accessible and appealing program is more important than the value of incentives. (*For tips on creating a wellness program, see box on p. 41.*)

ACA creates new resources

Although RAND found the wellness programs had only a modest impact on short-term health costs, the workplace has become part of the national public health strategy to reduce rates of obesity and smoking, improve control of diabetes and asthma, and promote healthier lifestyles.

CDC offers free resources and consulting to boost employer efforts. In addition, the National Institute of Occupational Safety and Health (NIOSH) created four WorkLife Centers of Excellence to promote an integrated approach to employee health.

CDC's National Healthy Worksite Project provided intensive assistance to 104 mostly small and mid-sized employers in eight communities. To share resources, the agency provides online links to toolkits to promote healthy eating, physical fitness, and other health promotion programs at www.cdc.gov/nationalhealthyworksite.

More employers wanted the hands-on help starting a program, says Lang. "It was a demand we simply could not meet," he says.

So CDC also used $8 million in Affordable Care Act funds to develop Work@Health, a training program for 600 employers of all sizes to support comprehensive wellness initiatives. The program also provides up to $5,000 in seed money to employers. (www.cdc.gov/workathealth.)

Training could help employers make existing programs more effective, Lang says. "Virtually all employers are doing something with employee health and wellness. It could be a biometric screening, it could be a Weight Watchers program," he says. "But they tend to be a one-off intervention and they're very rarely integrated with one another or implemented in a way that we would deem comprehensive."

For example, in a pilot program, it became apparent that few employers have data on employee health needs or interests to shape their wellness programs, he says. "How can you make well-informed decisions about what to do and how to do it if you don't understand what's going on in the organization with your people and your work environment?" he says.

As hospitals develop wellness programs for their own employees, they have an opportunity to assist other employers as well, says Lang.

Hospitals can use existing resources, such as diabetes education, which can be tailored for a work environment, he says. "They're in a position to be a model for others in their communities around these issues," he says.

The workplace is the obvious place to reach American adults with messages and tools to have healthier habits, he says. That's why wellness was included in the Affordable Care Act, he says.

"Through the ACA, we've been able to get resources we previously did not have," Lang says. "That has allowed us to take more proactive and formal steps toward our program goals."

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Resilience training puts chill on burn-out

Improved coping skills can reduce injury

The best thing you can do for patients may be to take care of your hardest working employees. Burnout not only affects the health and well being of health care workers, but it also leads to medical errors, higher infection rates, and injuries, says **J. Bryan Sexton**, PhD, associate professor of psychiatry at Duke University in Durham, NC,

and director of the Patient Safety Center for the Duke University Health System.

Burnout is a common ailment in a time of constrained resources, sicker patients and constant change. One in every three nurses and physicians meets the diagnostic criteria for severe emotional exhaustion, Sexton says. One study found that almost half (43%) of nurses who reported high burnout said they planned to leave their jobs in the next year.[1]

Sexton is now leading a movement to bring resilience to health care. In workshops and webinars, he teaches health care workers how to use simple tools to improve their ability to cope in a stressful environment.

"When the resilience goes up, your needlesticks go down, your workplace injuries go down, turnover rates improve," he says.

Resilience also brings joy back into the caregiving professions, he says. That echoes a recent report on "Creating joy, meaning and safer health care" that was released by the Lucian Leape Institute at the National Patient Safety Foundation in Boston. *(See* HEH*, June 2013, p.68.)*

"The people who are your hardest workers are the most vulnerable to burnout," says Sexton. "If you make people more resilient, it's like adding staff. They're enjoying work more and getting a sense of meaning. Why wouldn't you do this?"

Training eases stress of change

In fact, that was the conclusion of the Minnesota Hospital Association — why not help hospitals and health care workers cope with change?

The MHA Hospital Engagement Network received a $4.5 million grant from the Centers for Medicaid & Medicare Services to improve patient safety. Some of the projects cover the usual issues, such as hospital-acquired infections and readmissions. But one goal is "creating a hospital culture of safety that fully integrates patient and worker safety."

New initiatives are often stressful, with checklists and data tracking and new protocols. "We were getting a strong sense from hospitals that they couldn't handle any more. We couldn't put one more thing in front of them," says **Tania Daniels**, MBA, PT, vice president for patient safety.

So the MHA sought a way to relieve some of the stress — and improve the capability to adapt to change. "We believe it starts with the culture," she says. "There's some evidence that shows that patient satisfaction is strongly correlated with units and hospitals that have strong employee safety and employee engagement and satisfaction."

The MHA launched a resiliency pilot project with 10 hospitals, but then opened the training up for all member hospitals. Sexton shared techniques in two and a half days of training, which was followed up with webinars.

"Some hospitals are targeting one or two units. Some critical access hospitals are going to train as many people as they can," says **Nora Vernon**, RN, MS, a patient safety/quality specialist at MHA.

The pilot hospitals will look at the impact of the program on injury rates, such as bloodborne pathogen exposures. The hypothesis is that resilience will improve attentiveness and teamwork — and reduce injuries.

Simple techniques lead to resilience

Sexton's work on resilience stems from his prior research into patient safety. He began to wonder why certain patient safety interventions were very effective in some, but not all, hospital units. High burnout inhibited teamwork and led to resistance to change, he says.

Just getting away to an offsite "retreat" to learn some simple skills can be very effective, Sexton says. His techniques are based on findings from the field of positive psychology. For example, in the "Three Good Things" exercise, participants receive a reminder email each evening to write down three positive things that happened that day. It could be a beautiful sunset, or a quiet moment reading to your child, or a successful outcome at work.

"If you do that every day for two weeks, we can actually measure marked improvements in your depression, happiness and work-life balance," Sexton says.

In "Strength Finders," participants use a tool to identify their greatest personal strengths, and then figure out how to use them in different ways.

Resilience can be enhanced through greater support in the workplace, he says. For example, the chief nursing officer at Duke established "meeting-free Wednesdays," so that everyone would have one protected day to focus on their work without interruption. Units also can add 15-minute resilience activities to staff meetings. Even doing it every other month — six times a year — makes a difference, he says.

"It shows employees that my leader cares about more than just the targets and volume. My leader cares about my well-being," Sexton says.

Resilience training is not a cure-all. Burnout often stems from budget cutbacks, high patient acuity, and other realities. But resilience training can help people cope, he says. "It will help people reconnect with purpose and meaning," he says.

[*Editor's note: More information about the resiliency training at the Duke Patient Safety Center is available at* www.dukepatientsafetycenter.com/.]

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Creating a road map to better worker health

Leadership, incentives guide UPMC

Creating a safety culture is the holy grail of employee health — an environment in which employees have a heightened awareness of safety and a focus on wellness. But how do you get there?

The University of Pittsburgh Medical Center (UPMC) designed the Employer Health and Productivity Roadmap as a framework for integrating occupational health and safety and health promotion.

About 90% of UPMC's 55,000 employees participate in health risk assessments and healthy lifestyle programs. UPMC leaders are committed to creating a work environment that supports safety and health. Reducing absenteeism and improving productivity is a priority throughout the organization.

"The health care sector has some unique stressors and some unique strengths," says **Michael Parkinson**, MD, MPH, senior medical director of the UPMC Health Plan and WorkPartners, a health and productivity service geared toward corporate clients. The roadmap creates "a culture of health where we truly care about each other," he says.

At UPMC, the goal of healthier employees is shared by a team that includes disability managers, risk managers, occupational health and LifeSolutions, the employee assistance program. "We view integration as a critical component to our organization," says **Stephen Doyle**, MS, MBA, director of health promotion operations and account management for the UPMC Health Plan. "We all work together on an ongoing basis."

Focus on work environment

The first step in the roadmap is to optimize the work environment. The organization must be committed to making changes, Parkinson says. "It begins with leadership awareness and leadership buy-in," he says.

UPMC conducts a gap assessment, taking inventory of the attitudes, infrastructure, resources, policies and practices and the health status of employees. "The inventory itself can change as the evidence reveals that some other factor might be contributory," he says.

For example, if you want to encourage employees to maintain a healthy weight, are healthy options highlighted in the cafeteria and vending machines? If you want to improve employees' physical activity, are the stairways well-lit and attractive? Are you reducing ergonomic hazards?

It's important to conduct the assessment periodically and to use different methods of gathering information, Parkinson says. A hospital walk-through can reveal opportunities to boost health and safety. Employee satisfaction surveys, absenteeism, medical claims and injury rates point to problem areas.

UPMC also focuses on health and safety messages. The marketing team targets employees at work and at home, online and in print.

Incentives boost participation

The MyHealth program is the cornerstone of the UPMC efforts to promote a healthy lifestyle. Deep incentives have helped ensure widespread participation.

UPMC began with a modest incentive nine years ago — a $200 credit off of the insurance deductible for employees and $400 for family coverage for those completing a health risk assessment.

"We've gradually increased the value of that deductible credit as the requirements have increased as well," says Doyle. "We converted to a point-based system."

Employees can earn 250 points, or a $250 deductible credit, by participating in a 12-week weight management program. They can earn 15 points, or a $15 credit, by completing an online educational module on high blood pressure. With almost 400 activities that provide points, the maxi-

mum credit is $1,000 for an individual employee and $2,000 for families. (Family members participate in the MyHealth program, as well.)

MyHealth uses other motivation strategies. More than 10,000 employees participate in a team-based weight loss competition. The winners receive prizes such as an iPad, in addition to the deductible credits that all participants receive.

The health risk assessment identifies whether employees have low, medium or high health risks. MyHealth's goal is to improve the health status of employees — and maintain the good habits of healthy employees.

Health coaches sometimes walk through units to engage employees and answer questions. They tailor interventions to help employees who have health risks, and they work with employees to manage chronic conditions such as diabetes.

The results speak for themselves. In the past five years, physical activity increased to more than 52%, cholesterol levels improved and 3.7% more employees recorded normal blood pressure. Employees lost more than 30 tons in weight last year.

The UPMC road map also seeks to improve return-to-work after injuries, reduce unnecessary surgeries and minimize avoidable acute care.

"Each year, as an organization we're going to raise the bar on how we can try to improve our health and how we can get more engaged in the right health care decisions," Parkinson says.

[*Editor's note: More information about the Employer Health and Productivity Roadmap and other programs to promote Total Worker Health (a program of the National Institute for Occupational Health and Safety) is available in a special December 2013 supplement of the Journal of Occupational and Environmental Medicine. Free access is available at* http://journals.lww.com/joem/toc/2013/12001.] ■

For this incentive, only teamwork wins

Kaiser takes a group approach to health

Imagine health as a team activity. What matters most isn't whether one person achieves personal health goals, but how well everyone does as a group.

With a population-based approach, Kaiser Permanente has bucked the trends in wellness. Employees achieve financial incentives if their entire region meets goals for participation in health risk assessment and biometric screening and health improvements.

Kathy Gerwig, vice president for Employee Safety, Health and Wellness at Kaiser Permanente Oakland (CA) calls it "people in their day-to-day jobs working together to create an environment where they can thrive."

The program was developed in a labor-management partnership with the unions that represent 100,000 Kaiser employees. It builds a collaborative spirit and a culture of health and safety throughout the organization, Gerwig says.

"There aren't any penalties associated with not achieving the goals or not participating," she says. "When you talk about creating a culture, it might be undermined by having very individualized incentives and disincentives. We want to get away from that and create an environment in which teams will work together toward improving everybody's health."

Region's employees must improve

To win an incentive, at least 75% of eligible employees in a region must complete an online health risk assessment, measured over a three-year period. The first payment is $150 per employee. About 133,000 employees are eligible.

In the next tier, employees can earn another $150 if, over a two-year period, 85% of the region participates in biometric screening. If those two levels are achieved, then employees can earn another $200 by collectively improving in four measures: non-smoking status, body mass index, blood pressure and total cholesterol.

With the Total Health Incentive Plan, employees promote health and wellness and encourage participation because everyone wins together. "Union representatives are wellness champions. Their job is to recruit and train other champions," says Gerwig.

"Your co-workers will encourage you to take a walk at the lunch break, or hold a build-your-own salad potluck," she says. Healthy options take the place of pizza parties, fruit bowls replace candy bowls.

'Instant recess' adds moves

Meanwhile, Kaiser has added health-oriented improvements to their campuses, with walking

paths and healthy items in vending machines. Some Kaiser cafeterias have eliminated deep fryers and limited or removed sugary beverages.

Kaiser also promotes "instant recess," a five-minute respite in which employees move to music. A website features some simple movement routines and music.

"It gives people a chance not just to move around, but to do that in their team," Gerwig says. "We found it actually can bring some joy to the day, as well. When people are moving to the music, they're smiling and it enhances their mood."

The physical activity program is based on teamwork. "We want to encourage people to build more movement into their day every day," she says. "If we're doing instant recess three days a week, maybe on alternate days there's a walking club."

It's too soon to know the outcomes from the program. The measurement period began January 1, and the first incentive bonuses will be paid in 2015.

"Behavior change is a combination of how hard something is to do and the level of motivation," says Gerwig. She hopes teamwork will be the right inspiration for healthy habits. ■

Biometric screening is just a first step

Put numbers in context, experts say

Biometric screening is a common entry point for wellness programs. If the screening detects high blood pressure, blood sugar or cholesterol, employees can take steps to avoid serious medical issues.

But biometric screening alone is not a strategy. It is a tool that should be part of a supportive health promotion program, says **Rebecca Kelly**, PhD, RD, CDE, director of health promotion and wellness at the University of Alabama in Tuscaloosa.

"Just for an individual to know their numbers is nice, but that one-time episode or single visit to a health care provider may not yield the change in behavior," says Kelly, who was co-author of recent joint guidance by three leading health care organizations on the use of biometric screening.

"A biometric screening can provide awareness and education, but without a comprehensive approach, it will not truly support a change in behavior. You have to look at the community, the culture, the leadership, the incentives and the environment," she says.

In the joint statement, the Health Enhancement Research Organization (HERO), American College of Occupational and Environmental Medicine, and Care Continuum Alliance provide a framework for employers to implement biometric screening.

The bottom line: Your screening should be shaped by the goals of the program. You will need to think through how you will deliver the results of the screenings and how you will communicate and engage employees in managing their health.

Building trust is key. "This is personal health information that has to be protected at every level," Kelly says.

Employers also need to have realistic expectations. "As important as what screenings are, is what screenings are not," the joint guidance says. "Biometric screenings are not a replacement for regular medical examinations or wellness visits with a health care provider. They are also not a mechanism for diagnosing disease."

Engage employees in health

Many companies create a health promotion program in order to lower medical costs. But they are most likely to see those savings if the program is attuned to the employees' needs and interests.

Companies with a supportive culture and clear leadership support had greater improvements in health metrics, according to a survey of more than 600 employers by HERO, which is based in Edina, MN, and Mercer, a global consulting firm based in New York City.

The University of Alabama partnered with its School of Nursing to provide health coaches for employees. Having someone who could explain the biometrics made the information relevant – and motivating, Kelly says.

Based on feedback from focus groups, the university also added incentives. For the first year, the incentive was modest — a $25 gift card for participating in the health screening. Then the incentives rose to a three-tiered system based on health risk: $50 for silver, $100 for gold and $200 for crimson (the healthiest employees with the lowest risk). Employees gained more money by boosting their health status.

"We've had over 35% [of employees] improve their health in a one-year time frame," Kelly says.

The core elements of biometric screening are typically blood pressure, cholesterol, body mass index, and tobacco status. Some employers also include blood glucose to detect pre-diabetes. With health

coaching and lifestyle changes, employees may be able to modify that risk, Kelly says.

The University of Alabama also asks employees how often they exercise. "We've found that individuals who do no form of exercise cost upwards of three times as much as people who are exercising one or more days," says Kelly. "We've got to get people moving. Physical activity alone helps make changes in your cholesterol, blood sugar and body mass index."

It is important to make the biometric screening easily accessible to all employees, Kelly notes. The University of Alabama offers screenings at different times and places to accommodate employees with late shifts. Employees also can bring a form to their physician or to a freestanding laboratory.

The goal is to engage employees to take steps to improve their health, says Kelly. Wellness programs often include team efforts and competitions. "You have to have the joy that comes with improving health," she says.

[*Editor's note: A copy of the joint statement on biometric screening is available at http://bit.ly/1dn6M6i*] ■

FLU VACCINE UPDATE

Same strains still mean new shots

H1N1 still causing severe disease

Next season's trivalent influenza vaccines will contain the same strains as this year's vaccine – but it's still important to get the annual flu vaccine, according to the Centers for Disease Control and Prevention.

In a telebriefing, **Anne Schuchat**, MD, director of CDC's National Center for Immunization and Respiratory Diseases, said CDC is still studying the issue of how quickly immunity wanes after flu vaccination. To ensure protection, it is important to receive the vaccine every year, she said.

"We strongly recommend people get influenza vaccine every single year whether the flu vaccine changes or not," she said. "We know that duration of protection for any vaccine can vary by individual."

CDC reported that the prevailing strain this year

(Continued on p. 48.)

CNE INSTRUCTIONS

Nurses participate in this CNE/ CME program and earn credit for this activity by following these instructions.

1. Read and study the activity, using the provided references for further research.
2. Scan the QR code below, or log on to **www.cmecity.com** to take a post-test; tests can be taken after each issue or collectively at the end of the semester. *First-time users will have to register on the site using the 8-digit subscriber number printed on their mailing label, invoice or renewal notice.*
3. Pass the online tests with a score of 100%; you will be allowed to answer the questions as many times as needed to achieve a score of 100%.
4. After successfully completing the last test of the semester, your browser will be automatically directed to the activity evaluation form, which you will submit online.
5. Once the completed evaluation is received, a credit letter will be emailed to you instantly. ■

CNE OBJECTIVES

After reading each issue of Hospital Employee Health, the nurse will be able to do the following:

- identify particular clinical, administrative, or regulatory issues related to the care of hospital employees;
- describe how the clinical, administrative and regulatory issues particular to the care of hospital employees affect health care workers, hospitals, or the healthcare industry at large;
- cite solutions to the problems faced in the care of hospital employees based on expert guidelines from relevant regulatory bodies, or the independent recommendations of other employee health professionals. ■

COMING IN FUTURE MONTHS

■ A link between workplace violence and MSDs?

■ Top-citations: What OSHA inspectors are looking for

■ Update on hazardous drug safety

■ Renewed push for a national safe patient handling standard

■ Overcoming barriers to safe patient handling

(Continued from p. 47.)

was H1N1, the strain that emerged in the pandemic of 2009. It has continued to cause severe illness, hospitalizations and deaths, hitting adults younger than 65 particularly hard.

Almost two-thirds (61%) of flu-related hospitalizations were among adults 18 to 64 years of age, CDC reported. Antiviral treatment should be given to patients with severe illness as early as possible, CDC advised. ■

CNE QUESTIONS

1. What is a retesting zone for tuberculosis screening, as suggested by **Wendy Thanassi**, MA, MD, National Project Lead for Tuberculosis with the Office of Public Health, Occupational Health at the U.S. Department of Veterans Affairs?
   A. A timeframe after the TST when it may be read a second time.
   B. A timeframe after a positive TST in which a blood test is given.
   C. The zone just above the cut point on TB blood tests in which positive tests may be repeated.
   D. A higher-risk unit in the hospital in which everyone is retested in six months.

2. According to a study by the RAND Corp. in Santa Monica, CA, about what proportion of eligible workers participates in weight management wellness programs?
   A. 11%
   B. 16%
   C. 23%
   D. 34%

3. According to **J. Bryan Sexton**, PhD, associate professor of psychiatry at Duke University in Durham, NC, about how many nurses and physicians suffer from severe emotional exhaustion?
   A. Half
   B. One in three
   C. One in four
   D. One in five

4. Kaiser Permanente promotes "instant recess" among its employees. What is that?
   A. A safety time-out before performing certain procedures.
   B. A nap break for fatigued workers.
   C. A "mental health" break for stressed hospital executives.
   D. A five-minute wellness respite in which employees move to music.