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Hospitals heed warning signs of avian influenza pandemic

Time to stockpile antivirals and set vaccine priorities

As avian influenza cases continue to emerge in Vietnam, the call for pandemic preparedness is gaining urgency. Between mid-December and mid-March, there have been 24 human infections of influenza A (H5N1) in Vietnam — 13 of them fatal. Public health experts caution the virus could mutate and become transmissible among people — the key to a pandemic.

A pandemic is like a 100-year storm: No one knows when one will occur, but it is certain to come eventually, public health authorities say. Hospitals need specific contingencies for dealing with pandemic influenza, along with their general emergency preparedness plans, says **Ben Schwartz**, MD, senior science adviser in the National Vaccine Program Office.

Based on the pandemics of 1957 and 1968, researchers estimate that the next pandemic could attack up to 35% of the population, causing about 750,000 hospitalizations and more than 200,000 deaths. A pandemic similar to the one in 1918, which caused more than 500,000 deaths, would be catastrophic.[1]

As a potential for a pandemic, H5N1 avian influenza is of particular concern. Cases have been concentrated in otherwise healthy children and young adults. It has a high mortality rate; of 69 confirmed cases, there were 46 deaths. Outbreaks among poultry have occurred in five Asian countries, and the virus has been found in wild waterfowl and domestic ducks as well as other mammals.

"No one knows whether the present window of opportunity to intensify preparedness will remain open or close abruptly," stated a World Health Organization report.[2] "Experts readily agree, however, that H5N1 has demonstrated considerable pandemic potential. With the virus now endemic, the probability that this potential will be realized has increased."

As hospitals consider their priorities, protection of health care workers will be at the forefront, Schwartz notes.

"There are three things that will protect a health care worker in a

pandemic: vaccination, antivirals, and infection control," he says.

Each state is required to submit a preparedness plan by the end of the year, and the Health Resources and Services Administration (HRSA) has given money to state health departments for pandemic preparedness.

Here are some issues to keep in mind as you prepare for pandemic influenza:

- **Decide whom to vaccinate.**

"We view vaccination as likely the most important activity to decrease morbidity and mortality; but the vaccine will not be available immediately, and supply will be limited." Schwartz says.

Hospital plans should outline who would be the first to receive a vaccine. But keep in mind, vaccine development may be difficult. After all, there is only one manufacturer with domestic production, he notes. And it takes time to produce the first vaccines.

"The first doses may become available about four months after a reference strain becomes available," Schwartz says. "Two doses will be needed for protection."

There are about 11 million health care workers, including 5 million in hospitals and 6 million in outpatient facilities, he explains. "Just to vaccinate the nation's health care workers would take the entire first month of the supply of the vaccine."

The bottom line: Set priorities for your most essential workers who would be the first to receive the vaccine.

- **Consider stockpiling antivirals.**

With vaccine supply limited or delayed, the first line of defense against pandemic influenza may be antiviral medications. But again, there won't be enough. Who should get them?

Prophylaxis for 11 million health care workers would require 61.6 million doses. Even treating influenza illness among that population would require 3.9 million doses, Schwartz says.

The U.S. government stockpile contains 2.3 million doses of oseltamivir (Tamiflu), a neuraminidase inhibitor that is considered more effective and less susceptible to resistance than older versions of antivirals.[3]

Prophylactic use of antivirals can be quite effective in preventing spread of the disease, explains **Frederick Hayden**, MD, professor of internal medicine at the University of Virginia Health Sciences Center in Charlottesville.

"We know that from the study of drugs in past pandemics, we can protect against influenza," he adds.

"That means daily drug during the period of risk, which in a pandemic may be an eight-week period. That means you're going to be giving prophylaxis to a lot of people for a sustained period of time," Hayden says.

If sufficient antivirals are not available, hospitals may want to give antivirals to health care workers soon after diagnosis to limit their disease, he adds.

"If you can treat within the first day and a half or so of illness, you can get up to three days benefit in terms of rapid functional recovery," Hayden explains. "I think that's important for health care workers to get them back on the job."

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Oseltamivir has a shelf life of five years, Hayden notes. He suggests that hospitals build a stockpile of five times their annual use of oseltamivir. The University of Virginia recently built a stockpile of 1,000 treatment courses, he says.

"It's not just for a pandemic," Hayden explains. "It might be a year where there's a bad vaccine match or a shortage, where you have an increased rate of illness in target populations."

- **Establish good communication and collaboration.**

"Communication is usually the weakest link," says **David Henderson**, MD, deputy director for clinical care at the Warren Grant Magnuson Clinical Center at the National Institutes of Health (NIH) in Bethesda, MD.

NIH has been collaborating with nearby institutions — National Naval Medical Center, Suburban Hospital Healthcare System, and the Uniformed Services University for the Health Sciences. A preparedness group initially began meeting weekly about two years ago.

Now they meet once or twice a month. The partnership was prompted by the commander of the National Naval Medical Center, who recognized the importance of the hospitals working together in a post-9/11 world.

"We basically just sat around the table and brainstormed what the various organizations bring to the table," Henderson recalls.

"For us, that was enlightening. It became clear very quickly that by working together we really had way more than we could possibly have by working independently," he adds.

NIH conducted emergency preparedness drills with its partners and learned, among other things, that the best way to communicate would be with radios.

NIH does not have an emergency department, but it could take patients from Suburban Hospital, leaving that hospital with greater capability to handle a surge of patients, Henderson says.

While severe acute respiratory syndrome (SARS) presented a model for the hospitals to cope with an airborne infectious disease, pandemic influenza poses unique challenges, he explains. "Pandemic flu will present a real stress on any one of the systems because of the way the disease is transmitted and because of the ease with which it gets transmitted in the community," Henderson adds.

The collaborative focuses on all types of emergency preparedness, but those plans directly address the potential for pandemic flu.

"Of the significant events that could happen —

Infection Control and Avian Influenza Recommendations

The Centers for Disease Control and Prevention has issued recommendations for infection control in health care facilities to prevent possible spread of avian influenza:

Patients who present to a health care setting with fever and respiratory symptoms should be managed according to recommendations for respiratory hygiene and cough etiquette and questioned regarding recent travel history. Those with a history of travel within 10 days to a country with avian influenza activity and hospitalized with a severe febrile respiratory illness — or are under evaluation for avian influenza — should be managed using isolation precautions identical to those recommended for known severe acute respiratory syndrome (SARS). These include:

Standard Precautions

- Pay careful attention to hand hygiene before and after patient contact or contact with items potentially contaminated with respiratory secretions.

Contact Precautions

- Use gloves and gown for all patient contact.
- Use dedicated equipment such as stethoscopes, disposable blood pressure cuffs, disposable thermometers, etc.

Eye Protection (i.e., goggles or faceshields)

- Wear protection when within 3 feet of patients.

Airborne Precautions

- Place patient in an airborne isolation room (AIR). These should have monitored negative air pressure in relation to corridor, with 6 to 12 air changes per hour (ACH), and exhaust air directly outside or recirculated air filtered by a high-efficiency particulate air (HEPA) filter. If an AIR is unavailable, contact facility engineer to assist or use portable HEPA filters to augment the number of ACH.
- Use a fit-tested respirator, at least as protective as a National Institute of Occupational Safety and Health-approved N-95 filtering facepiece (i.e., disposable) respirator, when entering the room.

These precautions should be continued for 14 days after onset of symptoms or until either an alternative diagnosis is established or diagnostic test results indicate the patient is not infected with influenza A virus. Patients managed as outpatients or hospitalized patients discharged before 14 days with suspected avian influenza should be isolated in the home setting on the basis of principles outlined for the home isolation of SARS patients (see www.cdc.gov/ncidod/sars/guidance/i/pdf/i.pdf). For additional information regarding these and other health care isolation precautions, see *Guidelines for Isolation Precautions in Hospitals* (www.cdc.gov/ncidod/hip/ISOLAT/Isolat.htm). ■

natural or man-made disaster events — this is one we know is coming," he says. "We just have to get ready for it."

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The Avian Influenza Threat

A report by the World Health Organization in Geneva presented these dire findings about avian influenza and the potential for a pandemic:

- No virus of the H5 subtype probably has ever circulated among humans, and certainly not within the lifetime of today's world population. Population vulnerability to an H5N1-like pandemic virus would be universal.
- Many of the public health interventions that successfully contained severe acute respiratory syndrome will not be effective against a disease that is far more contagious, has a very short incubation period, and can be transmitted prior to the onset of symptoms.
- Evidence strongly indicates that H5N1 now is endemic in parts of Asia, having established a permanent ecological niche in poultry. The risk of further human cases will continue, as will opportunities for a pandemic virus to emerge.
- Studies comparing virus samples over time show H5N1 has become progressively more pathogenic in poultry and in the mammalian mouse model, and now is hardier than in the past, surviving several days longer in the environment. Evidence further suggests H5N1 is expanding its mammalian host range.
- Recent publications have suggested . . . similarities between H5N1 and the 1918 virus in the severity of disease, its concentration in the young and healthy, and the occurrence of primary viral pneumonia in the absence of secondary bacterial infection.
- All prerequisites for the start of a pandemic have been met save one, namely the onset of efficient human-to-human transmission. Should the virus improve its transmissibility, everyone in the world would be vulnerable to infection by a pathogen — passed along by a cough or a sneeze — entirely foreign to the human immune system. ■

IOM: CDC never made a case for smallpox vaccine

We still need info on preparedness, panel says

In 2003, an urgent concern about bioterrorism drove the health care community to mobilize and deliver smallpox vaccine to health care workers across the country. The Department of Health and Human Services called for vaccination of 500,000 health care workers nationwide. Yet vaccination efforts waned as reports arose about adverse cardiac events. Within six months, the program was all but over. About 40,000 health care workers had been vaccinated.

How much was accomplished? That's not clear — because the Centers for Disease Control and Prevention (CDC) still needs to define smallpox preparedness and set goals "that reflect the best available scientific and public health reasoning," an Institute of Medicine (IOM) panel said in a recent report on the smallpox vaccination program.[1]

The IOM panel also criticized the CDC for failing to present a compelling case for smallpox vaccination, saying, "The public health reasoning behind the smallpox vaccination policy and program was never fully explained. Skepticism among key constituencies was followed by a lack of buy-in."

While hospitals and health care workers struggled to decide how to balance the known risks of the vaccine with the unknown risk of a smallpox attack, the CDC was constrained from speaking freely, the IOM panel asserted.

"The two key points here are that CDC must be allowed to speak from science," said **Brian Strom**, MD, MPH, chair of the panel and associate vice dean of the School of Medicine at the University of Pennsylvania in Philadelphia. "If it isn't, then it loses trust and the health care and public health communities will respond accordingly. The second key point is we still don't know if we're prepared, and we need to [know]."

Julie L. Gerberding, CDC director, said, "CDC disagrees with the assertion that in any way its valued scientific voice was constrained in the smallpox program. The administration policy for the smallpox program was based on the best scientific advice of the CDC and other recognized scientific experts."

Strom said he doesn't dispute the scientific

basis of the program or CDC's voice within the administration. "We questioned whether the CDC spoke to the public, the hospital community, and the public health community from science," he added.

Gerberding also said the smallpox efforts helped the nation's overall bioterrorism preparedness. "The policy was successful in preparing the nation to respond not only to a potential smallpox event, but also preparing the nation in response to other public health emergencies," she said in a statement. "Let me reinforce that terrorism preparedness is more than a vaccination program."

But without specific goals and an evaluation based on them, it's impossible to measure our level of preparedness, Strom noted.

"Knowing that we are prepared is critical because, if there were an attack, one of the key issues would be one of public panic," he said. "The public has to have confidence that we are prepared in order to prevent that. We as a committee don't know if we are prepared. How can the public be assured we are prepared?"

Disaster scenarios guide planning

A CDC working group already is considering some of the issues raised by Strom, says **Charles Schable**, MS, director of CDC's Coordinating Office of Terrorism Preparedness and Emergency Response.

The Department of Homeland Security developed National Planning Scenarios, with examples of catastrophic incidents that could occur.

According to a report in *The New York Times*, that included the spread of pneumonic plague in the bathrooms of an airport, sports arena, and train station, killing 2,500 and sickening 8,000 worldwide; an anthrax attack aerosolized and dispersed by terrorists driving a truck through five cities over two weeks, killing 13,200 and exposing 350,000; and pandemic influenza. (Smallpox was not included as one of the scenarios.)

"We're going to put some of this [information from] scenario planning into our cooperative agreement [with state health departments]," Schable notes.

For example, state health departments will need to have an emergency preparedness phone line that is monitored 24/7, he says. They will need to conduct live drills, not just tabletop exercises, to ensure preparedness.

Schable notes that the Bush administration has given "close to a billion dollars" to state health departments for preparedness activities.

The working group discussed the status of smallpox vaccination and decided that a push to increase the numbers of health care workers vaccinated isn't necessary at this time. "With smallpox, most people believe that even though we only vaccinated 40,000 people, that's probably enough to respond to an event," he says.

"Most people believe in the ring vaccination theory. You do have several days to respond to an attack," Schable says.

However, hospitals should review their vaccination records, he says, as some employees may have left or retired, and the hospital may need to vaccinate additional employees.

"I think we need to get it back on the radar screen. It's something they need to think about for overall preparedness," he adds.

Meanwhile, further research on a safer smallpox vaccine could lead to the ultimate preparedness. "If we had a very safe vaccine, you could say, 'Vaccinate everybody,' and take that threat completely off the table," Schable explains.

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After chemical spill, WA hospital revamps policies

Plan for internal emergencies, experts say

It was 9 p.m. when housekeepers at Providence St. Peter Hospital in Olympia, WA, received a call about a spill of formalin, a fixative that is 10% formaldehyde. They wondered if there was some special precaution they should take, but when they called their manager, he told them just to clean it up.

Four of the employees soon became nauseous and began vomiting, requiring emergency department treatment. One of them was admitted with more severe symptoms and has had lingering effects.

The failure to follow proper procedures for handling hazardous materials led to a $45,000 fine from the Washington Department of Labor and Industries (L&I). As a result of the incident,

the hospital revamped its policies and procedures and educated employees.

Yet Providence St. Peter isn't alone in its failings. This mistake highlights the need for hospitals to train employees about how to handle hazardous spills — whether they are in environmental services or clinical care, says **Paul Penn**, MS, CHEM, CHSP, president of EnMagine, a Diamond Springs, CA-based consulting firm that specializes in planning and training in emergency management for health care.

Anyone who works with hazardous materials needs to know how to respond, including employees in nursing, radiology, and materials management, he says . "If they're not trained to clean up a spill, they should be at least trained to the first-responder awareness level," Penn adds.

The U.S. Occupational Safety and Health Administration (OSHA) requires employers to have a written hazard communication program that includes worker training, warning labels, and access to Material Safety Data Sheets (MSDS) on the chemicals.

According to OSHA, "Employers should provide employees with effective information and training on hazardous chemicals in their work area at the time of their initial assignment and whenever a new physical or health hazard that employees have not been previously trained about is introduced into their work area."

OSHA issued a draft Model Training Program for Hazard Communication to assist employers in designing their training. (More information is available at www.osha.gov/dsg/hazcom/MTP 101703.html.)

Beyond the MSDS information

Hospitals have MSDS safety information on their hazardous chemicals. But that is just the beginning of what employees need to properly handle or clean these substances. Hazardous chemicals can lead to an internal emergency — one that needs a response plan, just as hospitals have plans to deal with external emergencies.

In the Providence St. Peter case, the Washington L&I issued six willful violations and 18 serious violations, and noted, "The employer did not ensure that appropriate procedures were implemented in the event of an emergency."

Employees beyond the cleanup crew were exposed to the formaldehyde spill, the agency said. "An administrative decision was made to have the night shift environmental services supervisor clean up the spill and for employees in the area to continue their work," the citation stated. "Proper spill cleanup procedures were not followed, and decontamination took days while employees continued working in the area."

Meanwhile, proper personal protective equipment (PPE) wasn't available to the housekeepers. According to **Carter Wright**, communications director of Service Employees International Union Local 1199NW, the housekeepers wore surgical masks, which are completely ineffective against chemical agents.

"There wasn't a ventilation system. There were no appropriate cleaning materials available," he says.

The spill occurred in the sterile processing area of an outpatient surgery center. Formalin had leaked from a five-gallon container onto the floor. According to hospital policy, the housekeepers should have called an outside contractor to clean the spill, which is why the PPE wasn't available, says **Deborah Shawver**, public relations director.

Now, the hospital's employees have a clear protocol to follow. Employees in nursing, pharmacy, and the laboratory, and operating engineers, have been trained to clean minor spills using proper materials and PPE — for example, a few drips of a substance that would not pose a threat of injury.

If larger spills occur, they must call the Orange Team — a new hazardous material spill response team that has been specially trained to handle hazardous substances. The team is available 24 hours a day, seven days a week. If the spill is beyond its capabilities, the team calls an outside contractor.

Meanwhile, all employees who work in departments with hazardous materials received additional training. Large containers of Formalin were replaced by smaller ones, limiting the potential for large spills.

A better policy on spills

L&I lowered its initial, proposed fine of $107,000 and lauded the hospital for its response to the incident. "The employer agreed to go above and beyond fixing this problem and making sure it doesn't happen again," says L&I spokesman **Robert Nelson**.

The hospital also set up "Right-to-Know" stations in every department so employees would be able to readily access information on hazardous materials.

"Every department has always had this list in

the department," Shawver explains. "But creating a special Right-to-Know station makes it more prominent. It raises consciousness and awareness.

"We made a lot of improvements," she says. "I think people are well aware of what they need to do in case of an emergency. We take employee safety very seriously here. When we discovered that this had occurred, we responded very quickly and very comprehensively."

Those new policies are consistent with OSHA standards, Penn adds. "OSHA says that if you are in a role where you may encounter a hazardous material spill, you should be trained to take the appropriate actions to protect yourself or others," he says.

Penn also notes that hospitals focus on preparing their emergency department to decontaminate patients contaminated by hazardous materials — but don't put as much emphasis on the potential for serious incidents within the hospital itself. Yet a major spill in a hospital could force the transfer of patients or other disruptions to service, he says.

"Hospitals, unlike other industries, don't generally have the luxury of just telling everyone to get out," he says. "I believe that hospitals have a greater responsibility to have a robust preparedness to prevent small incidents from becoming emergencies." ■

Injury management brings cost savings

Using tight controls means a safer workplace

Gaps in the system are costing you money: the injury that isn't reported right away; the employee who doesn't keep a doctor's appointment; and the supervisor who doesn't make an effort to find a position for an employee with temporary restrictions.

By fixing the gaps and adding accountability through an injury management system, Winona (MN) Health reduced workers' compensation costs from $231,000 to $56,000 in one year alone. And that is just one example of how hospitals can improve their care of injured workers — and their bottom line.

"There's kind of a knowledge gap," explains **Cheryl Brennan**, RN, MA, loss control supervisor with Berkley Risk Administrators in Minneapolis, who consulted with Winona Health, which has a hospital, long-term care facility, physician clinic, assisted living, home care, and hospice. "If everybody knows and understands what their role is and what they're accountable for, everything starts working smoothly. You can have very immediate results with this [injury management] program."

At Winona Health, injury management is entwined with an effort to improve the safety culture. For example, the health system recently added lift equipment and trained employees on the use of the equipment. The health system also added personnel to the employee health department by increasing the employee health nurse to a full-time position and adding an occupational therapist with expertise in ergonomics.

The occupational therapist observes employees as they're using the lift equipment and provides on-site training, says **William Gould**, SPHR, chief people resources officer. "I think it plays a key role in how we're managing the injuries and how we're getting people back to work," he says.

But the changes at Winona Health went far beyond a boost in the employee health department. The health system rewrote policies and emphasized accountability at every level.

"If you're going to do this, you really need to dedicate the necessary resources to do it well," says Gould. "It takes a tremendous amount of work to get these processes and policies set up, and then you have to dedicate resources to keep it going.

"It can't be a matter of your employee health or safety department taking over the process. It has to be owned by the managers and supervisors," he says.

The payoff is well worth it, says Gould. The health system had fewer reportable injuries (a 30% reduction in the Occupational Safety and Health Administration incident rate) and fewer serious injuries (a 75% reduction in the lost workday rate). Employees also feel more valued when their employee makes their safety a priority, he says.

"As an employer, you have to say, 'We care about you,'" says Brennan, who developed the injury management program with senior claim examiner Michelle Dressler. "All the way along the pathway, there are opportunities to intervene, to make this go better for the employee."

Here are some other basic steps in injury management, according to Gould and Brennan:

- **Revamp your policies and procedures.**

Gould set up a work injury management team made up of a physical therapist, occupational

therapist with ergonomics training, employee health nurse, and managers of high-risk areas experiencing a lot of workers' compensation claims. The team met every other week and reviewed cases as it developed new policies, procedures and training. For example, each job now has a detailed physical requirements assessment.

Job descriptions also need to be revamped to include accountability for safety practices and injury management, Brennan notes. For example, employees have the responsibility to report injuries immediately, keep appointments for doctors and therapists, and comply with restrictions if they're injured.

Supervisors need to report injuries promptly, follow up with employees who are out of work, and notify managers if the injured employee doesn't show up to an alternate duty shift.

- **Designate personnel to handle injury management.**

Good injury management requires time and focus. It means calling an employee to find out how a doctor's appointment went. It means checking up on whether a transitional duty job is working out. It means finding out if pain is being managed properly and whether the employee is having any new medical problems.

"It really does take a dedication of resources," Brennan continues. "The very front end of it is labor-intensive — looking at new policies and procedures, and looking at new training. I think a lot of times, it's going to take more resources than people are currently dedicating to managing this."

- **Hold people accountable at every level.**

Brennan recalls one case in which an employee reported an injury to a nurse manager. The nurse manager let the report sit on her desk for two weeks without notifying anyone. The insurance company and state department of labor received late reports.

That type of behavior could have serious repercussions and should be treated accordingly with disciplinary action, she says. "The employees might not be getting the appropriate medical care they need. If they're off work and no one knows about it, they might not be getting their benefits."

Brennan developed forms that incorporate accountability. For example, injured workers sign a form indicating they understand their responsibilities (such as keeping scheduled appointments and obtaining a Report of Work Ability from the physician at least once every two weeks) and will comply with them. The Work Ability/Return to Work form asks if work restrictions apply to the home environment. If not, the physician is asked to explain why. **(See copies of forms inserted in this issue.)**

"This is a point of leverage," adds Brennan, who notes that the employer can then hold an employee accountable for activities outside of work that aggravate the work-related injury.

The ultimate accountability comes from tracking data. Are your injury rates going down? What about lost time days? Or the cost and number of indemnity claims?

Top leadership in the hospital also needs to support the program. "Everybody in the organization needs to know and understand the role that they play," she says.

- **Respond to injuries immediately.**

Timing is everything. Prompt medical care may help employees recover more quickly. Getting back to work right away, even if it's restricted duty, will help them transition back to their original position.

To support that system, make sure each department has transitional duty jobs available, Gould advises. Winona Health moved the cost of the transitional duty out of the individual department budgets and tracks it separately to make it more palatable for supervisors.

"Previously, we sent communications out to managers and asked them if they needed any additional work in their areas," he says. "But managers really didn't have an understanding of why we were doing this or how it would impact their budget."

Meanwhile, cases are reviewed at least weekly, and the work injury management team meets every other week.

"We're actively managing the cases we do have and really working with employees to make sure they're in proper treatment, with the goal of getting them back into their pre-injury position," Gould points out.

- **Deal with the few abusers of the system.**

Some people will try to take advantage of the workers' compensation system. They may be repeat filers of claims. They may skip appointments and fail to show up for alternate duty.

"Certain employees with high-risk behavior are going to act out and test you and your injury management program. What they count on is the injury management lead or manager/supervisor backing away from the conflict," Brennan notes. "The result is the employee is left alone to drive

the case, so to speak, and costs skyrocket."

Simply follow through with your policies, following up with phone calls and using disciplinary procedures, if necessary, she advises. Eventually, they will either straighten up or find another job. "They will take themselves out of your work environment because they won't want to go through this," she says. ■

Safety by the numbers: Ergo hazards and results

Health system defines maximum force

Patient handling isn't like carrying boxes, which can be defined by weight and size. But you can still take a methodical, or even numerical, approach to the hazards.

And with ergonomic interventions, the outcome can be measured in dollars saved, both in workers' compensation costs and lost workdays.

At Winona (MN) Health, the efforts begin with a functional assessment that is part of the preplacement exam for newly hired nursing assistants. They must be able to lift 30 pounds and perform patient transfer activities.

That is the force nursing assistants may exert when helping a patient move from a lying to a sitting position in a "moderate assist," says **Sally Mergendahl**, OTR-L, an occupational therapist and employee health specialist, who will present her program at the annual conference of the American Association of Occupational Health Nurses (AAOHN), to be held in Minneapolis.

Nursing assistants who work either in the acute care hospital or the adjacent long-term care center receive annual ergonomics training. They learn how to limit the use of force in repositioning patients, a frequent cause of musculoskeletal injuries.

"In our training, we have them practice what it is to pull up 30 pounds. We attach a force gauge to a person and have them pull and have them guess how much weight they're handling at that period of time," Mergendahl adds. "Most people work harder than they need to be working.

"Most people pull and handle around the 75 pound range. They really only need to pull at the 35 pound range," she points out.

If the patient or long-term care resident is unable to assist in the repositioning or transfer, and the force would be greater than 30 pounds, then the nursing assistant is expected to use a mechanical lift, Mergendahl says.

Winona Health also uses checklists and report cards to assess workplace hazards and injury rates.

Checklists developed by the Washington state Department of Labor and Industries (L&I) help quantify the hazards. For example, the checklist indicates how much time per shift should be spent in a squatting position or reaching above the arms. (The checklist is available at www.lni.wa.gov/Safety/Topics/Ergonomics/Services Resources/Tools/default.asp.)

Mergendahl picks an hour during an employee's busiest or most stressful time to observe and actually tally the hazardous activity.

"Most employees know what is the hardest part of their job," she notes. "You want to have a general checklist and identify the key areas and then more specifically take some observations, then you can generate some solutions to the problem. By doing a good analysis where you can get some numerical value — how much ergonomic risk there is in performing the job — it can help you set up programs so you can tackle the ones that are the most risky."

Sometimes, employees just need an awareness of their body posture and suggestions on how to change the activity to reduce the need to reach, bend, or squat, Mergendahl explains.

"Most of the time, in my experience, employees don't really know how they're using their body," she says. "They do it in the easiest way they've figured out how to do it. Having someone come in and observe with a different perspective sometimes helps them realize they can do it in an easier way."

In some cases, the analysis may indicate the need to purchase equipment to minimize the hazard, Mergendahl says.

Mergendahl also monitors departments by creating a report card on ergonomic risk.

She uses Bureau of Labor Statistics data as a benchmark and calculates an incident rate for musculoskeletal disorder injuries over a three- to five-year period. (Number of injuries and illnesses X 200,000/employee hours worked = incidence rate. More information on calculating incidence rates is available at www.bls.gov/iif/osheval.htm.)

When a problem is identified, Mergendahl seeks job activity changes and new equipment that can reduce the hazard. For example, in radiology, the transfer to the X-ray table can be made

safer by transferring the patient from a gurney rather than a wheelchair, she notes.

Involving employees in a team approach can create a greater chance of success, Mergendahl says. "People spend time thinking about their jobs a lot more than somebody from employee health. They've already had years and years to think about it and already have some ideas about what would be the key area to focus on."

In a pilot project in the long-term care center, Winona Health purchased additional mechanical lift and repositioning equipment. Three years later, the health system was able to demonstrate a $250,000 savings in workers' compensation costs and a one-third reduction in lost work time from injuries.

"It does make a big difference," Mergendahl notes.

The Minnesota L&I is trying to quantify the success of ergonomic interventions on a larger scale.

In 2004, the department launched a three-year study involving 77 nursing homes. Half will work in consultation with the department to lower resident handling injuries, while the control group will continue with their own individual efforts.

The study will look at improvements and their effectiveness, such as ceiling lifts, electric beds, and other mechanical lifts.

"If everybody [in both groups] gets better, we'll consider that a success," says **Philip Jacobs**, MS, CSP, CPE, ARM, ergonomics program coordinator for the Minnesota L&I Workplace Safety Consultation program in St. Paul. "We want to see if we can make an extra difference by working on this." ■

For HCW flu vaccine, make it free and easy

Strategies show increase in vaccine rates

If you want to raise the influenza vaccination rates of health care workers, make the vaccines free and convenient. Education helps, but a promotional campaign won't be enough.

That is the conclusion from a comparison of vaccination strategies at California nursing homes, according to a report in the *Mortality and Morbidity Weekly Report (MMWR)* of the Centers for Disease Control and Prevention.[1]

The California Department of Health Services conducted a controlled study with 77 Southern California nursing homes in the 2002-2003 flu season. A previous study found problems with vaccine access and misconceptions about influenza vaccination. Public health authorities wanted to know the best way to improve vaccination rates.

Twenty-five nursing homes were in a control group, with no interventions. Fifteen offered an educational campaign only, 15 provided Vaccine Days with free influenza vaccination, and 15 provided both interventions.

The Vaccine Days combined with an educational campaign led to vaccination rates that were twice as high as the control group (53% vs. 27%). The Vaccine Days alone were also effective, with a vaccination rate of 45%. But the nursing homes with an educational campaign alone had a vaccination rate of 34%, which was not significantly higher than the control group.

Vaccines need to be convenient and free of charge, the *MMWR* authors concluded. "The study of Southern California nursing homes, the only controlled evaluation of efforts to influenza vaccination coverage among health care workers, suggests that publicity and educational messages about the importance of vaccination are only effective when combined with other approaches to increase coverage," they stated.

Other successful strategies outlined in *MMWR*:

- **A mobile vaccination cart.**

For two weeks in mid-October, an employee health nurse and two infection control nurses at the Minneapolis Veterans Affairs (VA) Medical Center visit all wards and departments with a mobile vaccination cart.

Employees also are vaccinated at walk-in clinics. With education and improved access, the VA Medical Center gradually increased vaccination rates. In 2003-2004, 65% of the center's health care workers received the influenza vaccine.

- **A Peer Vaccination Program.**

In 2000-2001, the Mayo Clinic in Rochester, MN, added a Peer Vaccination Program (PVP) to its usual vaccination clinics. Nurses were able to vaccinate co-workers on all inpatient units. "The PVP eliminated the expense and logistical difficulty of establishing and staffing additional vaccination clinics and made vaccination more convenient for health care workers," according to the *MMWR* report.

Mayo added incentives, which vaccinated employees could receive from a drawing, and

began offering the vaccine in departmental grand rounds. Vaccination has been promoted through newsletters, flyers, e-mails, and a telephone hotline. In the 2003-2004 season, 76.5% of the Mayo Clinic's 26,261 employees received the vaccine.

Reference

1. Kimura AC, Higa JI, Nguyen C, et al. Interventions to increase influenza vaccination of health care workers — California and Minnesota. *MMWR* 2005; 54:196-199. ■

NEWS BRIEF

OSHA sends letters to 68 high-injury hospitals

Sixty-eight hospitals recently received letters from the U.S. Occupational Safety and Health Administration (OSHA) alerting them that their injury rates are above the national average.

Among general industry, employers on average had a rate of 2.6 injuries or illnesses that resulted in days away from work, restricted activity, or job transfer (DART) for every 100 full-time workers. In hospitals, the average DART rate was 3.6, and for nursing homes, it was 6.3. Hospitals received letters if their DART rate was 6.5 or greater. The information was based on employer-reported 2003 data from a survey of 80,000 work sites.

"Our goal is to identify workplaces where injury and illness rates are high, and to offer assistance to employers so they can address the hazards and reduce occupational injuries and illnesses," acting OSHA Administrator **Jonathan L. Snare** said in a statement.

The data do not include the 21 states that have OSHA-approved state plans that cover private sector employers. ■

CE *questions*

17. Frederick Hayden, MD, professor of internal medicine at the University of Virginia Health Sciences Center, suggests hospitals build a stockpile of the antiviral medication oseltamivir that is five times your annual usage because:
    A. The threat of pandemic from avian flu will diminish in five years.
    B. A vaccine will be developed within five years.
    C. There will be new antiviral medications in five years.
    D. It has a five-year shelf life, and the hospital can rotate the medications.

18. An IOM panel criticized the CDC over the smallpox vaccination program because:
    A. Not enough people were vaccinated.
    B. The public health reasoning behind the smallpox vaccination program was never fully explained.
    C. The smallpox vaccine caused adverse events.
    D. The smallpox vaccine program was unnecessary.

19. OSHA requires employers to have a written hazard communication program that includes:
    A. worker training, warning labels, and access to Material Safety Data Sheets on chemicals used in the hospital
    B. a method of communicating with the public health department
    C. an audible alarm system when a spill occurs
    D. response to contaminated patients entering the emergency department

20. At Winona (MN) Health, injury management emphasizes:
    A. better medical treatment of injuries
    B. a response plan for needlestick injuries and post-exposure prophylaxis
    C. close follow-up of employees after an injury and accountability for workers and managers
    D. disciplinary action for malingering employees

Answer Key: 17. D; 18. B; 19. A; 20. C

COMING IN FUTURE MONTHS

- What you can learn from accident investigation
- Ergonomic solutions in the emergency department
- Pathway to a new safety culture
- Health risks of long working hours
- Improve your training to prevent needlesticks

Go on-line for this month's *Bioterrorism Watch*

The May/June 2005 issue of *Bioterrorism Watch* is available on-line at www.hospitalemployeehealth.com, exclusively for subscribers of *Hospital Employee Health*.

Copies of the issue will be available in HTML and PDF formats for easy reading. Just log on to print out your copy. To take the CE test on-line, go to http://subscribers.cmeweb.com/. Each issue will test separately.

If you have questions, please call customer service at (800) 688-2421. ■

CE instructions

Nurses 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 with the **June** issue, you must complete the evaluation form provided in that issue and return it in the reply envelope provided to receive a certificate of completion. ■

CE objectives

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

- Identify particular clinical, administrative, or regulatory issues related to the care of hospital employees;
- Describe how those issues affect health care workers, hospitals, or the health care industry in general;
- Cite practical solutions to problems associated with the issue, based on overall expert guidelines from the Centers for Disease Control and Prevention, the National Institute for Occupational Safety and Health, the U.S. Occupational Safety and Health Administration, or other authorities, or based on independent recommendations from clinicians at individual institutions. ■

Injury Management Program

Injured Workers' Responsibilities

As your employer, we are concerned about your full recovery. Reasonable and necessary medical care will be paid for any compensable work injury. Medically authorized time away from work will be reimbursed in accordance with the state of Minnesota workers' compensation laws. Wherever possible light-duty restrictions imposed as a result of your injury will be accommodated.

RESPONSIBILITIES OF THE INJURED WORKER:

Minnesota Rule Number 5221.0430 Subpart 1 requires that you choose one primary health care provider. Subpart 2 places limitations on your right to change primary health care providers. Discuss with your employer any change in health care provider.

Attend all scheduled appointments. While on physical limitations, visits should be a minimum of once every two weeks. Failure to have current medical support for disability may result in termination of benefits. Schedule your next appointment immediately after your doctor visit, before you leave the clinic if possible.

Obtain a Report of Work Ability from your physician at every appointment, a minimum of once every two weeks. M.R. 5221.0420 requires that your physician cooperate with return-to-work planning and that you be released to return to work at the earliest appropriate time.

Immediately following your appointment, provide a copy of the report to the designated employer representative. You should deliver this in person so changes in work restrictions may be addressed and any questions answered.

Follow all physical restrictions at home and at work.

Report to work and perform physically suitable tasks as assigned. These may or may not be in your regular department. The work may or may not be on your usual shift.

Maintain regular, weekly communication with your employer if you are unable to return to work. Contact your employer a minimum of after every visit with your primary health care provider. Keep the claims representative advised of your status.

Notify your employer immediately of any new injuries or conditions that affect your physical condition.

If it is necessary to miss scheduled work due to a work injury, you must be seen by your primary health care provider the same day to receive compensation for the time away from work. The physician must complete a Report of Work Ability.

I have read my responsibilities and agree to abide by these guidelines.

Signed: _____

Printed Name: _____

Employer Representative: _____

CC: Employee
Employer file
Claims Representative

WORK ABILITY/RETURN TO WORK (Please complete form fully)

NOTE TO EMPLOYEE: You must immediately provide a copy of this report to: _____

EMPLOYEE	SS #	SUPERVISOR	DEPARTMENT
JOB TITLE			DATE OF INJURY / ILLNESS

DIAGNOSIS	ICD-9 CODE

History and Findings:

Work related injury/illness? ☐ No ☐ Yes ☐ To be determined Permanent partial disability? ☐ No ☐ Yes If Yes, _____%

Any pre-existing conditions affecting this injury/illness? ☐ No ☐ Yes If Yes, describe:

Maximum medical improvement reached? ☐ No ☐ Yes Date reached: _____

RETURN TO WORK

☐ Return to work with **no limitations** on ___/___/___ (MO DAY YR)

☐ Return to work **with limitations** on ___/___/___ (MO DAY YR) through ___/___/___ (MO DAY YR) if manager can accommodate.

☐ **Unable** to work from ___/___/___ (MO DAY YR) through ___/___/___ (MO DAY YR)

Restrictions apply to home environment? ☐ Yes ☐ No If no, explain _____

EMPLOYEE'S CAPABILITIES From: ☐ PMD _____ Dated: _____ ☐ IME _____ Dated: _____

BODY PART AFFECTED: ☐ Left ☐ Right ☐ Both ☐ Neck ☐ Upper Back ☐ Lower Back ☐ Shoulder ☐ Elbow ☐ Wrist ☐ Hand ☐ Leg ☐ Knee ☐ Ankle ☐ Foot ☐ Other _____

	NOT AT ALL	OCCASIONAL 0-33%	FREQUENT 34-66%	CONTINUOUS 67-100%
Lift/Carry				
0-09 lbs.	☐	☐	☐	☐
10-19 lbs	☐	☐	☐	☐
20-29 lbs	☐	☐	☐	☐
30-39 lbs	☐	☐	☐	☐
40-49 lbs	☐	☐	☐	☐
No lift from floor	☐	☐	☐	☐
Push/Pull without resistance:				
0-19 lbs.	☐	☐	☐	☐
20-40 lbs	☐	☐	☐	☐
> 49 lbs	☐	☐	☐	☐
No patient transfers, lifts or boosts	☐	☐	☐	☐

	NOT AT ALL	OCCASIONAL 0-33%	FREQUENT 34-66%	CONTINUOUS 67-100%
Bend	☐	☐	☐	☐
Twist/turn	☐	☐	☐	☐
Kneel/squat	☐	☐	☐	☐
Stand/walk	☐	☐	☐	☐
Ladder/stair climb	☐	☐	☐	☐

HAND, WRIST AND SHOULDER ACTIVITIES AVOID PROLONGED, REPETITIVE AND/OR FORCEFUL:

	NOT AT ALL	OCCASIONAL 0-33%	FREQUENT 34-66%	CONTINUOUS 67-100%
Gripping/grasping	☐	☐	☐	☐
Repetition wrist motion	☐	☐	☐	☐
Reaching:	☐	☐	☐	☐
Above shoulder height	☐	☐	☐	☐
At shoulder height	☐	☐	☐	☐
Below shoulder height	☐	☐	☐	☐
Restrictions (circle)	☐	☐	☐	☐

Keyboarding (hrs./shift) 0 1-2 3-4 5-6 7

Writing (hrs./shift) 0 1-2 3-4 5-6 7

Total spread out evenly over shift at _____ intervals

Change positions every ☐ As needed ☐ Half hour ☐ One hour ☐ Two hours

☐ Latex-free/powder-free gloves (see Comment section)

Comments _____

☐ Work site stretches, i.e., per handout

☐ Exercises ☐ Other _____

Prognosis: ☐ On schedule, full recovery expected by _____ ☐ Delayed recovery ☐ Full recovery not expected

INSTRUCTIONS

☐ Keep wound clean and dry. Change dressing every _____

☐ Medication _____

☐ Ice _____ min. _____ ☐ Heat _____ min. _____

☐ Splint / Brace _____

☐ Referral _____

RETURN TO CLINIC ON: _____

THIS TREATMENT PLAN HAS BEEN DISCUSSED WITH THE EMPLOYEE ☐ Yes ☐ No

HEALTH CARE PROVIDER SIGNATURE	LICENSE/REGIS.	DATE OF EXAM	EMPLOYEE SIGNATURE
NAME & ADDRESS OF HEALTH CARE FACILITY (print)		RELEASED TO WORK SIGNATURE	DATE