MEDICAL EDUCATION SYSTEMS, INC

Preventing Slips and Falls

Medical Education Systems, Inc.

TOLL FREE 1-877-295-4719
FAX (619) 295-0252
EMAIL: Info@mededsys.com
www.mededsys.com
P.O Box 81831 San Diego, CA 92138-3939

Preventing Slips and Falls

Learning Objectives
Upon completion of this course, you will be able to:

- Explain the scope of the problem of slips and falls in the hospital setting
- Identify and discuss the major risk areas that need attention
- List and explain the key steps that can be taken to minimize the occurrence of slips and falls

Introduction

Slips and falls in hospitals represent a great percentage of "risk management-oriented" losses. In terms of money and in terms of staff down time, the problem is enormous. Prevention of those slips and falls is something that is overlooked in the chaos that often occurs in the hospital setting. In this course, we are going to present several ways to look as the problem.

Most hospital slips and falls can be prevented if you take the time to:

• Pick up and clean up anything you spill or drop on the floor.

• Use a stepladder or step stool for out-of-reach things. Using chairs and other makeshifts can easily result in falls.

• Watch your step. Do not read while walking. Do not block your vision with high loads.

• Use handrails for extra support when going up or down stairs.

• Keep carts and other equipment out of traffic ways.

• Watch out for pant cuffs and untied shoes that can trip you up.

• Stay alert to anything that is in the traffic path and that can be a tripping hazard.

• Avoid groping in the dark. Report all missing or burned out light bulbs.

• Wear sensible shoes with non-skid soles.

• Never leave materials on a stairway or in a hallway.

By this time, maybe you are thinking, "I know all of these precautions", I challenge you to spend the 30 minutes after you have completed this material to walk around and see how many times you find one of these precautions violated. In fact, there is also a high probability you will

violate one of them during that time. From our accident statistics, we know persons are in a rush to get their work done and are not always taking the time to be safe.

Employee exposure to wet floors or spills and clutter that can lead to slips/trips/falls and other possible injuries.

Possible Solutions

- Keep floors clean and dry [1910.22(a)(2)]. In addition to being a slip hazard, continually wet surfaces promote the growth of mold, fungi, and bacteria, that can cause infections. (**NOTE:** the references in parenthesis are OSHA section references)
- Provide warning signs for wet floor areas [1910.145(c)(2)].
- Where wet processes are used, maintain drainage and provide false floors, platforms, mats, or other dry standing places where practicable, or provide appropriate waterproof footgear [1910.141(a)(3)(ii)].
- Walking/Working Surfaces Standard requires [1910.22(a)(1)]: Keep all places of employment clean and orderly and in a sanitary condition.
- Keep aisles and passageways clear and in good repair, with no obstruction across or in aisles that could create a hazard [1910.22(b)(1)]. Provide floor plugs for equipment, so power cords need not run across pathways.
- Keep exits free from obstruction. Access to exits must remain clear of obstructions at all times [1910.36(b)(4)].

Other Recommended Good Work Practices:

- Ensure spills are reported and cleaned up immediately.
- Use no-skid waxes and surfaces coated with grit to create non-slip surfaces in slippery areas such as toilet and shower areas.
- Use waterproof footgear to decrease slip/fall hazards.
- Use only properly maintained ladders to reach items. Do not use stools, chairs, or boxes as substitutes for ladders.

- Re-lay or stretch carpets that bulge or have become bunched to prevent tripping hazards.
- Aisles and passageways should be sufficiently wide for easy movement and should be kept clear at all times. Temporary electrical cords that cross aisles should be taped or anchored to the floor.
- Eliminate cluttered or obstructed work areas.
- Nurse's station countertops or medication carts should be free of sharp, square corners.
- Use prudent housekeeping procedures such as cleaning only one side of a passageway at a time, and provide good lighting for all halls and stairwells, to help reduce accidents.
- Provide adequate lighting especially during night hours. You can use flashlights or low-level lighting when entering patient rooms.
- Instruct workers to use the handrail on stairs, to avoid undue speed, and to maintain an unobstructed view of the stairs ahead of them even if that means requesting help to manage a bulky load.
- Eliminate uneven floor surfaces.
- Promote safe work in cramped working spaces. Avoid awkward positions, and use equipment that makes lifts less awkward.

To illustrate how some hospitals are working to confront the costly problem of slips and falls, we offer the following:

NIOSH project seeks to prevent slips and falls

Are you ignoring the second costliest occupational injuries in hospitals? If so, you're not alone. Hospitals are spending thousands of dollars to prevent ergonomic injuries, but devote little attention to the second most common and costly injuries: slips and falls.

Injuries from falls are about 40% more common in hospitals than in general industry, according to 2000 data from the Bureau of Labor Statistics. They cause more than 14,000 reported injuries per year, leading to back sprains, fractures, and lost workdays. And they are difficult to prevent.

Bringing the problem into focus

For all of those reasons, injuries from slips and falls in hospitals have become the focus of a comprehensive new study by the National Institute for Occupational Safety and Health (NIOSH) in the Morgantown, WV, research office.

"From the standpoint of nonfatal traumatic injuries, once you roll out your back injury program, this rises to the top [as a priority]," says **James Collins**, PhD, MSME, NIOSH epidemiologist/engineer and project officer for the Slips and Falls Prevention in Health Care Workers project. "That's your No. 1 injury problem right behind the ergonomics issue."

"[But] it's a little bit of a different situation because it's not really clear how it's to be controlled," he adds.

Collins is working with BJC Health Care in St. Louis, a 13-hospital system that hopes to save $1 million or more through prevention activities.

"Every year, we analyze our injuries and look at which entity has the worst injury rates and what type of injuries they are," says **Laurie Wolf**, MS, CPE, ergonomist and manager of WellAware program at BJC Health Care.

"The reason we're so interested in slips and falls is that our workers' comp claims are about equal to our back injuries," she says.

In 1999, an icy winter contributed to an awful year for slips and falls for BJC's 22,000 employees. (The system includes five long-term care facilities and eight home health care units.)

That year, 55 outdoor injuries and 165 indoor injuries led to a peak of about $2 million in fall-related workers' compensation claims, a substantial portion of the system's $5 million total claims costs. Falls led to broken hips, shattered kneecaps, and broken legs, in addition to the usual bruises and sprains.

Wolf also realizes that her staff may become more vulnerable to serious injury as the work force ages. "If a fall happens when you're 20, you might get up and walk away. If that same fall happens when you're 45 or 50, you're going to break something," she says.

Modest goal of 20% improvement

Often, falls seem like isolated incidents. One day, someone slips on a bit of soapy water that sloshed from a bucket. Another day, someone steps on an icy patch on the steps and falls. Could the events have been prevented?

By the time Collins finishes his three-year project, he hopes the answer will be yes — at least, sometimes, he says.

Collins is working with researchers from the Liberty Mutual Research Center for Safety and Health in Hopkinton, MA, and the Finnish Institute for Occupational Safety and Health in Helsinki, Finland.

They will review six years of injury data and compare interventions at five hospitals — including two Veterans Affairs facilities — with seven control hospitals. They will conduct laboratory tests of flooring, slip-resistant shoes, and floor waxes.

Yet Collins has modest goals. He doesn't anticipate the dramatic gains that occur with patient-handling equipment or safer needle devices.

"When you put every conceivable effort going in, we're looking at achieving a 20% reduction [in falls]," he says. "We're trying to be realistic about it."

Still, a 20% reduction would amount to $400,000 in savings for BJC, based on the 1999 data. Wolf hopes the efforts might yield even more.

When Collins reviewed the results of 29 interviews on cases of falls, only one reported no injuries. There were four extremity sprains, three fractures, and 21 contusions and lacerations.

Let's step outside

While falls may seem to involve unique circumstances, they can be grouped in some broad categories. For example, about a quarter of BJC's falls occur outside.

Icy weather creates problems, but sometimes there's an unnoticeable hole in the grass. Home health workers may trip as they approach someone's house.

In one case, a shuttle bus let off employees at a spot where a downspout drained and left a puddle of ice. The hospital moved the shuttle stop. But most interventions are not so clear-cut.

"I can't say [the falls are] all at the front entry way because it's wet," Wolf says. "It's not that simple. We're trying to do a little bit of intervention everywhere."

In the winter, BJC now sends out e-mail alerts to staff when bad weather is expected, urging them to take precautions. Administrators ask employees to report slippery patches to safety contacts so the areas can be plowed or salted.

Researchers to test shoes, flooring

A shoe with no traction, a newly waxed floor, a little moisture: That's a disaster scenario that Collins will try to unravel in the laboratory.

He'll test unglazed ceramic tiles (with and without anti-skid particles), rubber, linoleum, vinyl tile, and sheet vinyl as well as new flooring materials for their friction measurements.

Collins says he will try to determine which types of shoes most commonly are worn, and will compare their slip resistance with that of special slip-resistant soles. NIOSH researchers will visit test hospitals and conduct friction measurements on site. Researchers also will compare the impact of various floor waxes.

Meanwhile, Collins is seeking interventions that reduce the hazards. For example, housekeeping managers will receive beepers so they can be notified immediately when there is a spill and act quickly to clean it up and mark the area as a fall hazard.

“I think our greatest hope is going to lie in aggressive housekeeping, keeping the floors clean and dry, and keeping wet floor signs down with chains on them so people can’t just run through the area,” he says.

Then there are problems specific to different parts of the hospital. In the cafeteria, spilled oil or sloshing dishwater can leave dangerous slip zones.

In the operating room, infection control booties that become wet from water, blood, or other fluids can be as slick as an ice skate. The marble in the hospital lobby becomes a fall hazard when people track in rainwater.

For every problem that’s identified, Collins and his colleagues will look for a solution. In fact, he notes, there has never been such a comprehensive approach taken to occupational slips and falls in the hospital setting.

“Let’s hope we can cut down some injuries,” he says.

Regarding floor materials (which represent one of the major factors in the slips and falls problem), we offer the following information for your review:

Preventing Slips and Falls Through Effective Floor Care

Introduction

The procedures and products used to clean and maintain floor surfaces are sometimes a direct cause of many "slip and fall" accidents. Maintenance staff may not have proper instruction and training in floor care, may fail to follow manufacturer’s directions when cleaning and applying finish, or may not understand that specific types of floors require specific types of care. Many of the best cleaning and finishing materials can be hazardous when applied improperly, and using the wrong product for a specific surface can create problems. It is critical that the right product be used on the right surface, for the right reasons, and under the right conditions.

Primary errors in floor care procedure include:

- Floors not completely and properly stripped of previously applied finish
- Floors improperly cleaned or scrubbed
- Floor-treating product applied too often
- Surface not properly buffed when buffing is necessary
- Finish applied with improper equipment
- Too much finishing material applied
- Improper finish for type of floor

Inadequate drying time
Inadequate cleaning, leaving soap residue on the floor
Inadequate or untimely removal of spills

Use Floor Products To Increase Coefficient Of Friction

Many floor treatments are available that can be used to increase the coefficient of friction of floor
surfaces. These products are made for specific types of floors and work best on the floors for which they
are designed. However, the application of any of these products is not effective unless the floor is properly cleaned and maintained. Maintenance staff must follow specific procedures for proper application of these products in order for the treatments to be effective.

Follow Maintenance Procedures For Specific Floor Surfaces

The following is an overview of various floor types and general recommended maintenance procedures.
Regardless of the floor type or the specific product used, however, the two most important factors in the
proper maintenance of floors are 1) the use of the specific chemicals and procedures designed for the
particular type floor involved, and 2) proper application of the treatment products according to manufacturer's specifications.

Terrazzo

Terrazzo tile is composed of granite and marble chips bonded with cement. It is a brittle material and is
easily damaged by cleaners. The common varieties of terrazzo have very low coefficients of friction and
are therefore very slippery.

Terrazzo is especially slippery under wet conditions. In addition, many sealants, when applied to terrazzo,
create a slippery surface. Therefore, it is extremely important to use chemicals specifically designed for
terrazzo.

Terrazzo floors may be treated with a semi-permanent seal and cleaned with a neutral liquid detergent,
with a slip-resistant dressing applied after cleaning. Floors must be flushed clear of all soap residue after
cleaning and, before applying any new dressing, floors must be completely stripped using a stripper
designed for Terrazo. Terrazzo floors in high traffic or public places should never be waxed.
Some terrazzo tiles contain non-slip additives. One common non-slip additive for terrazzo flooring is
alundum grit. These terrazzo tiles cannot be distinguished visually from the more dangerous

slippery
terrazzo material. However, the cleaning process is the same for both. When proper floor maintenance
procedures are followed, non-slip terrazzo floors are generally safe under both dry and wet conditions.

Marble
The surface properties and safety of marble vary depending on its origin, how it was cut, and the wear
patterns that have developed on individual surfaces. Polished marble is a relatively slippery surface with a
low coefficient of friction value.

Normal wear can increase or decrease slipperiness, depending on conditions. For example, marble
flooring close to a street entrance, where grit and dirt is deposited, can be ground to a rough surface with a
higher coefficient of friction, while marble flooring away from street entrances usually becomes highly
polished.

Generally, marble steps have a very low coefficient of friction, and unless they are very carefully maintained, the can become extremely dangerous floor surfaces.
It is essential to follow manufacturer's directions when using chemicals designed for use on marble floor
surfaces. Mop all marble floors, including borders, to remove all dust, grit, and debris before applying any
chemical or water. Follow these general procedures to maintain marble floors properly:

- *Clean and condition.* Prepare a marble floor is by removing all built-up soap and wax; use a stone
cleaner/stripper compound according to manufacturer's instructions. Apply an "acid free" marble stone cleaner and conditioner, according to manufacturer's instructions.
- *Protect.* Apply a permeable stone impregnator (for long term protection) according to manufacturer's
instructions.
- *Polish.* Apply a silicone-based "no-wax" marble polish preserver, according to manufacturer's instructions.
- *Buff.* Buff the floor once or twice weekly, using the type of pad and the buffer speed called for by the
manufacturer of the preserver. (Obtain information about the pad type and rpm values (buffer speed)
from the manufacturer of the preserver.)
- *Keep It Clean.* Keep the marble surface clean. If the floor has been properly maintained, this intermediate cleaning can be easily accomplished with only a dust mop and damp mop, saving much

effort and time.

Ceramic And Quarry Tile

Ceramic tile comes in so many different surface variations that they are difficult to distinguish, and it is almost impossible to generalize maintenance procedures for all types. Ceramic tile is available in virgin fired condition or glazed; some have non-slip additives.

Virgin tile, such as quarry tile, has a generally high coefficient of friction; when properly maintained, it offers a relatively safe surface. Virgin tile is often sealed after installation. Many sealants give the virgin tile a ceramic appearance and also a low coefficient of friction. Some tile manufacturers even warn in their literature that their tile product can be dangerous when wet.

Glazed tiles are not appropriate for high use walkway areas because they have low anti-slip coefficient of friction values. Some glazed tiles are manufactured with non-slip implants; however, glazing eliminates the benefits of the friction implants.

Ceramic and quarry tile floors are designed and intended to offer a natural look. If they are very shiny, they have been improperly treated. Proper maintenance usually involves the use of stone cleaners and the use of "no wax" stone preservers. Use only chemicals designed specifically for natural and stone tile floors.

Vinyl Tile

Vinyl and vinyl asbestos tile are plastic or plastic-containing floor surfaces (such as asphalt, rubber, plastic, or linoleum). These plastic sheet tile surfaces have very low coefficients of friction. Floor products that combine cleaner and wax are not acceptable for commercial pedestrian traffic areas because of the build-up of residue that naturally occurs with their use.

The usual treatment for these resilient floor surfaces is to strip and clean the floor periodically, then to apply a non-slip wax or synthetic resin finish, and buff or polish the floor *as little as possible*, ensuring that the finish does not create a slippery surface. The application of "non-slip" wax dressing *without buffing* is highly recommended for these floors. This will allow a safe shine on the floor and will

be much
easier to clean. A non-slip wax dressing also protects the floor surface from wear and brings out the color
pattern.

Wood
Fewer slip and fall accidents occur on wood floors than on other types of floors. Many stained woods
provide safe floor surfaces. The customary finishing treatment for wood floors involves sanding, sealing
with a penetrating sealer, and then dressing with a solvent-resistant combination cleaner and dressing.
Wood floors generally become dangerous when unsafe sealants are applied or when they are oiled. The
use of oil on wood flooring is *not* recommended because a slight film of oil may remain on the floor. If
oil is used, the floor must be *thoroughly* wiped and dried. Appropriate commercial products other than oil
are recommended; be sure to apply them according to the manufacturer's instructions.

Brick
Brick floors are simply that: brick. Brick floors are not usually harmed by the strongest of cleaners. They
are not intended to be sealed, and should never be waxed. Brick has a naturally high coefficient of friction
material and makes an excellent floor surface when left in its natural state, as long as the integrity of the
brick persists and the surface remains even and relatively free of protrusions. When any type of sealant or
wax is used, the natural coefficient of friction is seriously reduced. The safest method of maintaining
brick surfaces is to use a strong cleaner, apply it vigorously, and thoroughly remove all soap residue.

Floor And Deck Paints
Walkway surfaces which have been painted with floor and deck paints can present serious slip and fall
hazards. Most paints produce surfaces which are below a .50 coefficient of friction and are therefore
dangerous. Few paint manufacturers and distributors provide labels or warnings advising that their
products may be slippery when applied to walkway surfaces, especially under wet conditions. A very few
manufacturers warn that it may be necessary to include a non-slip additive (such as sand) in the paint.
Some companies market non-slip additives under different labels.

Clean Floors Effectively and Safely

Several processes involved in cleaning floors have been discussed. Three of the more important concerns that need to be continuously addressed for all floor types are:

- Use soap sparingly. A little soap goes a long way. Too much soap produces dangerous, slippery residue.
- Remove all traces of soaps and cleaners. If a floor has been cleaned with liquid or powder soap, flush the surface clean with clean water to remove all soap from the floor surface. Thoroughly clean and rinse all mops, sponges, buckets, etc., to remove all traces of soap.
- Maintain floors properly to limit build-up of residues. A build-up of soap and wax can defeat even the best non-slip flooring. A non-slip floor has usually been treated or impregnated with a material to increase friction. When a build-up of residue from soap, wax, or other floor preparations is allowed to accumulate, it may increase to the point that the friction-increasing material is actually buried under the accumulated residue, resulting in a slippery surface.

Use Floor Finishes And Waxes Properly

Keep the maintenance of a high coefficient of friction in mind during application of any floor finish.

Suspended polymers (plastics) are used in some contemporary floor finishes. As the floor dries, these polymers become interlocked, creating, in essence, a surface comparable to a sheet of plastic. Some of these plastic floor finishes are safe walkway surfaces before they are buffed. However, many of them have very low anti-slip coefficients of friction and are very dangerous.

When a wax must be used, care should be taken to use a non-slip wax. Floor products that combine cleaner and wax are not acceptable for commercial pedestrian traffic areas because of the build-up of residue that naturally occurs with their use. When any type of wax is used, be sure that the floor is periodically stripped, cleaned, and sealed (if appropriate for the type of floor), and dressing applied as indicated by the manufacturer.

If a floor is not properly cleaned and rinsed, any residue left on the floor will mix with the newly applied floor finish, destroying much of its water resistance.

Use Buffing Only As Specified
Many floor finish products on the market are not designed to be buffed. High speed buffing can drastically reduce the coefficient of friction. A floor which has been covered with what should be a very safe floor finish may often be buffed into a very slippery floor. Sometimes maintenance personnel use highly abrasive or nylon pads to buff floors to create a high shine. Often, this buffing is done by a buffing machine set at high speeds. This vigorous buffing will seriously lower the coefficient of friction of the floor surface. In fact, many slip and fall accidents occur when retail and commercial establishments first open in the morning, after the night maintenance crews have cleaned and buffed the floors.

Many floor maintenance personnel do not understand the need to match floor finishing materials with specific buffing speeds and specific types of abrasive pads. If the buffing speed is too high, and/or the abrasives of the pad too great, the buffing will create very slippery floor conditions. It is also very important to wipe the buffing pad clean after every use.

Take Care of Standing Water And Spills Immediately
Standing water or spills on a floor create serious slip and fall hazards; a plan for their immediate removal should be in place.

Floors, especially those that have been waxed, should never be left wet. Use a "dry mop" procedure to clean up water and/or spills. A dry mop procedure is one where a slightly damp or dry mop (depending on the substance spilled) is used to clean up water or other spills, the point being to remove the spill without leaving the floor wet. A wet mop simply spreads water and most spilled substances, but does not remove them.

If water has been spilled on the floor and not immediately removed, it will start to dissolve the finish. A person may slip in a puddle of water and partially dissolved plastic.

Standard practice in floor care procedures to handle spills should include the following:
- Have clean water and more than one clean mop available.
- Be sure that mops are dried continuously and not left standing in a bucket of water.

- Do not use soapy water during business hours unless absolutely necessary, and then only in a weak solution.

Inclement Weather, Rain, Ice, and Snow

Protect against slips and falls caused by inclement weather. Start on the outside with the timely and effective application of ice melting material on parking lots, sidewalks, and steps, to increase traction.
Shovel and clear snow from walkways, paths, steps, and overhangs.

To guard against slips and falls, and to protect floors, follow this three-step procedure during inclement weather:

1. Place a tough “scrape” mat just outside the entrance, where pedestrians can scrape ice, snow, and mud off their shoes before they enter. Be sure this mat has high mat bristles with enough space between the bristles to allow water and ice to fall below the bristles and not collect on top. Sweep or clear this mat on a regular basis, depending on snow or ice accumulation.

2. Place a non-slip absorption mat just inside the front entrance to collect water and excess ice, snow, or mud that is tracked in on pedestrians’ shoes. Change this mat regularly to assure its ability to keep absorbing water. Place signs warning of wet floor conditions where needed.

3. Be sure that two or three dry mops and squeeze buckets are available to mop up excess water as it accumulates. Keep more than one mop available so that one can dry as the other is being used. Use the dry mop" technique described above.

Use Mats With Caution

Mats, if not placed and maintained properly, can create a "trip and fall" hazard. Take care to ensure that mats:

- are in good condition
- are laid flat with no upturned corners
- do not raise the height of a step
- are easily distinguished by color from the walking surface or floor

An additional hazard is created staff must lift or manipulate heavy or water-logged mats. Contracting with cleaning companies, or companies which provide and maintain mats, is an excellent method of transferring risk away from your company, as it effectively eliminates the need for your employees to do this work. These contract companies are also better equipped to maintain mats in adequate condition through replacement or trade-outs as needed.

Have A Program For Fall Prevention

Your organization's top management should ensure that floor care and fall prevention methods and practices are uniformly followed by all employees and contractors. Management should assign accountability for this task to a respected position or individual, and all management should be held accountable for following proper fall prevention methods in their work. The fall prevention program, at a minimum, should include:

Investigate Every Fall Incident to Determine Conditions

Every fall incident, like every other accident, must be investigated immediately and thoroughly to obtain all pertinent data (such as location, time, prevailing physical conditions of floor, operations at time of accident, etc.) Record names of witnesses and names of employees who can testify as to the condition of the floor, whether or not they witnessed the accident, etc. Take photographs of the area where the fall occurred to show the physical condition of the area at the time of the incident. Promptly report all accidents to the insurance company or management designees.

Investigate Every Incident To Determine Cause

Investigate each accident to identify cause(s). Summarize and analyze all accident data to discover the cause(s) of falls on floors and the areas or locations producing such accidents, so that operating methods or conditions can be improved to prevent similar incidents. Develop monitoring techniques so that management to assess the success, or lack of success, of the various departments or facilities in maintaining a low fall incident ratio.

Hold Employees Accountable
Assign responsibility to employees who are held accountable for performing maintenance work in a proper manner. Ensure that floor maintenance is completed on a scheduled basis, and that employees who clean the floors follow manufacturer's directions completely. If the manufacturers' directions are not in the native language of the employee(s) doing the work, find some means of translating the information so that the worker(s) know exactly what to do. In all cases, training employees in proper floor maintenance is of primary concern in all loss prevention programs. Be sure that orientation programs for new employees include basic safety training. Emphasize fall prevention as well as the relationship between improper work procedures and slip and fall hazards.

Hold Contractors Accountable
If a contract company does the cleaning, ensure that the company is are aware of, and uses, proper cleaning and finish compounds and proper maintenance procedures. Require contractors to provide Certificates of Insurance evidencing adequate levels of Completed Operations Liability coverage.

Conduct Periodic Inspections
Periodic housekeeping surveys and inspections, conducted by the safety committee, are important to the program of prevention of falls. Inspections can identify unsafe conditions and improper work methods so that corrective steps can be taken. An inspection program can also stimulate satisfactory housekeeping standards. The success of a fall prevention program depends upon the timely identification, investigation, and correction of unsafe conditions and practices discovered through housekeeping surveys, employees reports, or other methods.

Summary
Floor care and maintenance is an integral part of an effective slip and fall prevention program. Select floor care procedures carefully, and use materials, cleaners, and other floor care products according to manufacturers' specifications.

Accident investigation and accident trend monitoring are important components of a slip and fall prevention program. (A method for recording and monitoring slip and fall incidents is illustrated in Appendix 2.) To be effective, a slip and fall prevention program must be tailored to the operations and organizational structure of a company, and accountability and responsibility must be assigned to appropriate staff and monitored for results.

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For more information, contact your local Hartford agent or your Hartford Loss Control Consultant.
Visit The Hartford's Loss Control web site at http://www.thehartford.com/corporate/losscontrol/

Another important aspect of preventing "slips and falls" has to do with patients, and while possibly not relevant to all of you, it important to at least review that aspect of the problem:

Patient falls: A liability exposure that can be controlled

When risk managers reel off their big-ticket items, back injuries and surgical incidents usually top the charts, and somewhere down the Top 10 list comes patient falls. Yet the cumulative impact of patient falls—in terms of injuries, deaths, and costs—is formidable, not to mention each fall's effect on the victim's short- and long-term outlook.

"In terms of frequency, patient falls are the first or second most significant liability issue risk managers face," says **Jerry Rakes**, assistant vice president of loss control for Columbia/HCA Healthcare in Nashville. "But a lot of progress has been made to prevent falls, such as predictive risk factors, education, and even technology and equipment. However, the concern is that issues, such as staffing reductions, might counterbalance those improvements, resulting in frequency rates that stay the same."

Beyond the aggregate risk and cost that patient falls present to health care facilities, there is the real trauma that each individual fall has on a patient and his or her family.

"At best, a fall can lead to changes that truly compromise a patient's lifestyle," says **Ann Hendrich, MSN, RN**, senior nurse executive at 1,120-bed Methodist Hospital of Indiana in Indianapolis. "At worst, a single fall can be the beginning of the deterioration of a patient's life, even if an acute injury doesn't occur. Yet, these events are difficult to control because of all the complex variables and factors involved. And these variables and factors are becoming even more complex with changes in patient diagnoses, delivery settings, medications, and technology."

A groundbreaking study on falls

The range of complex risk factors for falls, in combination with a rapidly aging—and thus increasingly high-risk—population, brings patient falls to the forefront of risk management. Methodist's Hendrich was the lead author in a groundbreaking study published last summer in Applied Nursing Research, entitled "Hospital Falls: Development of a Predictive Model for Clinical Practice."

The basis for Hendrich's study is found in the compelling statistics surrounding patient falls. Among them:

- the fastest growing segment of society is the over-75 population;
- fall injuries are already the sixth leading cause of death among those over the age of 75 years;
- roughly 10,000 older Americans die from falls each year; and,

 about 250,000 hip fractures occur each year, costing an estimated $8 billion.

From the chart review, Hendrich and her colleagues identified 22 statistically significant risk factors for falls.

Of those 22 risk factors, seven were considered to be significant: recent history of falls, depression, altered elimination patterns, dizziness, primary cancer diagnosis, confusion, and altered mobility.

The chart review also revealed the following about the falls:

- falls typically occurred in the patient's room while he or she was alone and ambulating;

- although fall victims ranged in age from 9 to 104 years, the median fall patient was 58 years old;

- there was no particular time (hospital shift) when falls were most prevalent;

- the use of siderails and restraints did not prevent falls;

- based on their written orders, there appeared to be a lack of recognition of fall risk by physicians; and

- drug side effects (i.e., sedation, hypotension, impaired balance, etc.) are better predictors of fall risk than the drug type.

A unit-based fall prevention model

Based on her study, Hendrich developed a 10-step patient fall prevention program that she has successfully implemented in her facility and other hospitals have begun to work with as well. The uniqueness of her program is that it is unit-specific and risk-based; it is not a one-size-fits-all panacea.

"Like most hospitals, we're going through many changes and don't have enough hours in the day," Hendrich says. "So we're not where we want to be with our fall program, but we're in good shape. But the nurse at the bedside has to understand the importance of falls and has to own it; it can't be imposed by risk management or quality."

The following are Hendrich's 10 steps:

1. Develop a measurable definition of a fall for your institution and determine where fall data will be collected and evaluated.

2. Determine the fall index and injury rate per unit and hospital-wide based upon your definition of a fall.

3. Identify all those who should be involved in planning and discussions of fall prevention (managers, clinical nurses, QA directors, risk managers, CNSs, hospital attorney, directors, various committees).

4. Form a task group from those described in step three:

- review unit-specific data on falls within the group;
- identify trends from the fall data;
- set objectives for the project;
- develop a time line or chart to complete objectives; and
- select risk factors for nursing assessments.

5. Review policies and procedures that will be influenced by the fall prevention program:

- target nursing interventions for the prevention of falls in high-risk patients; and
- present group work to other clinical nurses and committees for their approval to prepare for a pilot study.

6. Determine how risk factors will be incorporated into the nursing assessment with your task group to:

- develop a form for nursing assessment with risk factors and interventions; and/or
- incorporate risk factors into the existing nursing assessment used at the institution.

7. Select pilot areas and measures results, problems, etc.:

- use fall-prone patient populations to give the tool a "good test" (nursing units with a high fall index);
- work with specialty areas (OB, pediatrics, psychiatry) to develop unit-specific risk factors; and
- monitor the specificity and sensitivity of the tool so that low-risk patients are not "overtargeted" as high-risk.

8. Increase support through education:

- prepare program for hospital-wide implementation—consider impact on other areas at less risk;
- present to unit-based QI committees, if applicable; and
- include ancillary departments (radiology, physical therapy, etc.).

9. Refine program for hospital-wide implementation:

- develop feedback loops for clinical nurses and management on fall occurrences;
- include in-hospital orientation or performance-based assessments; and
- establish ongoing educational programs at least yearly.

10. Establish ongoing program evaluation from measurement and assessment parameters for continuous quality improvement:

- fall index;
- injury rate—patient outcome; and
- feedback loops of information to clinical nurses, ancillary departments (committees, staff meetings, QI task forces).

It works, it really works

One organization that has seen the fruits of Hendrich's model is 350-bed Lutheran Hospital in La Crosse, WI, which has seen a near 40% decrease in its patient fall index in the six years it has been addressing patient falls.

There was no single precipitating event, such as a major lawsuit or rash of incidents, that caused Lutheran to address patient falls. But a growing elderly patient mix and a few high-incidence patient units prompted Lutheran's gerontology research coordinators, **Chris Heiderscheit, RN**, and **Coreen Bissell, RN**, to take a closer look.

Both Heiderscheit and Bissell worked on units with high-risk patients—cardiac rehab and oncology, respectively. After attending an educational program on falls, they decided to start close to home. "We wanted to start small by training nurses on our units to see if this model would work in the real world," says Bissell. "But the first step we took was to agree on a single definition for a fall. This helped us identify and report falls consistently on our floors and laid the foundation for identifying risk factors."

"It made a difference right away," says Heiderscheit. "The education of unit nurses was the key. We wanted them to understand the fall prevention tools and their usefulness.

"At first it was hard to convince them that a piece of paper would prevent patients from falling and, ultimately, improve patient care. But if nurses can relate a new policy or tool to their practice and their patients, they'll embrace it because it's good nursing. We have worked to make fall prevention part of our nursing standards of care."

What have been the results? As mentioned, Lutheran's fall index (which is figured using Hendrich's High-Risk Fall Model form that is reproduced on p. 5) has dropped precipitously, from 3.9 (about average for a hospital) to 2.4 in six years. "The results have been wonderful," says Heiderscheit.

Steps to take

Similar to what Hendrich suggests in her model, Heiderscheit and Bissell offer the following advice for hospitals trying to tackle patient falls:

- Develop a single definition for falls in all care settings. Doing so will provide a common denominator for everyone and will help education efforts immensely.

- Find out who is falling, where, and why. And break it down by unit so you can understand the risk factors on each unit.
- Once you've got baseline data, find a group of interested unit nurse managers and get administrative buy-in. A fall program is a big undertaking that costs money, so the more managers behind this effort, the more likely administration will be to support it.
- Integrate the fall program into the hospital's quality model, such as PDCA (Plan-Do-Check-Act). The quality manager can be immensely helpful in making sure the fall program keeps moving forward and is focused on making continuous improvements.
- Make sure there is ongoing nursing education to keep the fall program alive. If education lapses, interest will wane and the program will flounder.

While Lutheran's program has been primarily a nursing effort, as it should be, other providers have begun to get involved in the fall program, specifically physical therapy and pharmacy. The next frontier, which is a significant one, is to draw physicians into the fall program. Heiderscheit and Bissell are also pleased that the fall program has been expanded out into all of the Lutheran system's affiliates.

Examination

Select the ***best*** answer to each of the following items. Mark your responses on the Answer Form.

1. Most hospital slips and falls can be prevented if you take the time to _____.

a. Pick up and clean up anything you spill or drop on the floor
b. Use a stepladder or step stool for out-of-reach things. Using chairs and other makeshifts can easily result in falls.
c. Use handrails for extra support when going up or down stairs.
d. All of the above

2. Possible solutions to the risk of slips and falls in the hospital setting include _____.

a. Keep floors clean and dry
b. Provide warning signs for wet floor areas
c. Keep aisles and passageways clear and in good repair, with no obstruction across or in aisles that could create a hazard
d. All of the above

3. Injuries from falls are about _____% more common in hospitals than in general industry, according to 2000 data from the Bureau of Labor Statistics.

a. 15
b. 25
c. 40
d. 65

4. In the operating room, infection control booties that become wet from water, blood, or other fluids can be as slick as an ice skate. The _____ in the hospital lobby becomes a fall hazard when people track in rainwater.

a. wood
b. Vinyl Tile
c. marble
d. All of the above

5. Primary errors in floor care procedure include:

a. Floors improperly cleaned or scrubbed
b. Surface not properly buffed when buffing is necessary
c. Floors not completely and properly stripped of previously applied finish
d. All of the above

6. Fewer slip and fall accidents occur on wood floors than on other types of floors.

a. tile
b. marble
c. wood
d. brick

7. Standard practice in floor care procedures to handle spills should include the following:

a. Have clean water and more than one clean mop available.
b. Be sure that mops are dried continuously and not left standing in a bucket of water.
c. Do not use soapy water during business hours unless absolutely necessary, and then only in a weak solution.
d. All of the above

8. Mats, if not placed and maintained properly, can create a "trip and fall" hazard. Take care to ensure that
mats:

a. are in good condition
b. are laid flat with no upturned corners
c. are easily distinguished by color from the walking surface or floor
d. All of the above

9. Recommended OSHA Good Work Practices include _____.

a. Ensure spills are reported and cleaned up immediately
b. Use waterproof footgear to decrease slip/fall hazards
c. Use no-skid waxes and surfaces coated with grit to create non-slip surfaces in slippery areas such as toilet and shower areas
d. All of the above

10. Regardless of the floor type or the specific product used, however, the most important factors in the
proper maintenance of floors are _____.

a. the use of the specific chemicals and procedures designed for the particular type floor involved
b. proper application of the treatment products according to manufacturer's specifications
c. None of the above
d. All of the above

MEDEDSYS
PO BOX 81831, San Diego, CA, 92138-3939
TOLL FREE 1-877-295-4719
FAX: 619-295-0252
info@mededsys.com
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