



## KEY POINT SUMMARY

### OBJECTIVES

The objectives of this study were to: 1) describe occupational slip, trip, and fall injury events in hospitals; 2) evaluate the effectiveness of a comprehensive programme for reducing STF incidents among hospital employees.

## Evaluation of a Comprehensive Slip, Trip and Fall Prevention Programme for Hospital Employees

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### Key Concepts/Context

Recent Bureau of Labor Statistics data indicate that total slips, trips, and fall-related injuries account for the second greatest proportion (30 percent) of all work-related emergency department visits requiring hospitalization. Since slips, trips, and falls result from a wide variety of circumstances, there are a number of countermeasures with the potential to reduce slips, trips, and fall injury incidents. These include slip-resistant shoes floor surfaces, mats, and waxes, prompt cleaning of spillage and debris, keeping stairs and walkways clear, improving lighting, adding handrails, and clearing ice and snow.

### Methods

Injury and employment data were examined for all employees in three nonprofit hospitals from 1 January 1996 to 31 December 2005 to describe the rates and patterns of work-related slip, trip, and fall incidents in hospital workers.

### Findings

Floors contaminated with liquids (including water, oil, and other soiling agents) were the leading cause of slips, trips, and falls. Almost all types of slips, trips, and falls declined from the pre- to post-intervention time period and the top three causes (water, non-classifiable, and objects) declined significantly.



## Limitations

Injury narratives did not always identify specific locations. There was no control group for this study.

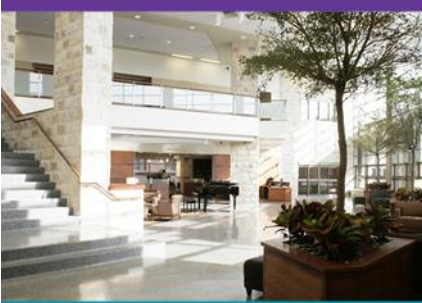
## Design Implications

Given the diverse circumstances contributing to slips, trips, and falls, a comprehensive approach must:

1. Keep floors clean and dry
  - Encourage workers to clean up, cover, and/or report floor contaminants promptly.
  - Install wall-mounted spill pads or paper towel holders conveniently throughout the hospital to provide easy access to cleaning materials.
  - Advertise the phone/pager numbers to call for housekeeping through e-mails, posters, and general awareness campaigns.
  - Install wall-mounted “wet floor” signs throughout the hospital to provide easy access to products to cover/identify a spill.
  - Provide walk-off mats, paper towel holders, trashcans, and umbrella bags near entrances to minimise wet floors.
  - Provide cups, paper towel holders, and trashcans (waste bins) near water fountains.
  - Place water-absorbent walk-off mats with beveled edges at hospital entrances. The mats should be large enough for multiple steps to fall on the mat and wide enough to cover the entire doorway. Ideally, the soles of shoes should not be depositing ice or water on the floor when they step off the mat. Consider use of these mats in areas where employees may be continually exposed to wet conditions.
  - Use appropriate methods for cleaning and degreasing kitchen floors; choose appropriate cleaning product for the conditions; mix cleaning products according to manufacturer’s directions.
  - Redirect drains away from walkways with high pedestrian traffic.
  - Check that pipes are correctly aligned with the drain they are emptying into.
  - Unclog drains regularly, particularly in kitchens.
  - Prevent entry into areas that are contaminated.
  - Use barrier signs that block off areas (tension rod with hanging sign across doorways, tall cones with chains, hallway barriers).
  - Install pop-up tent-style warning signs in wall-mounted tubes in easily accessible locations.
  - Use taller, more noticeable STF signage (48’ tall “wet floor” signs, flashing lights on top of signs, pop-up tent-style signs).



- Promptly remove “wet floor” signs after the floor is dry to avoid habituation.
  - Completely block off area during floor waxing or stripping; place door-stopper barrier to prevent wax from overflowing into adjacent areas during waxing.
2. Use slip-resistant shoes
    - A voluntary slip-resistant shoe programme was implemented, primarily for food service workers and housekeeping staff, and included ice cleats for home health nurses.
  3. Keep walkways clear of objects and reduce clutter
  4. Provide adequate lighting in all work areas including outdoor stairwells and parking garages
  5. Secure loose cords, wires, and tubing
    - Use cord bundlers and cord containers to secure cords under desks and computers and around medical and kitchen equipment.
    - Cover cords on floor with a beveled protective cover.
    - Organise operating rooms so that equipment cords are not stretched across walkways.
    - Consider retractable cord holders on phones in patient rooms and nursing stations.
  6. Eliminate outdoor surface irregularities
    - Consider eliminating wheel-stops in parking areas.
    - Patch, fill or slope cracks, holes or changes in level in walkways and parking areas that are greater than 0.5’.
    - Create visual cues; highlight changes in curb or walkway elevation with yellow warning paint.
  7. Eliminate door surface irregularities
    - Replace or re-stretch loose or buckled carpeting.
    - Replace mats that are curled or ripped; secure edges with carpet tape.
    - Remove, patch underneath, and replace indented or blistered tile.
    - Consider replacing smooth flooring materials with rougher surfaces with a higher coefficient of friction.
    - Patch or fill cracks in walkways that are greater than 0.25’.
    - Highlight changes in curb or walkway elevation with yellow warning paint.
    - Check stairs
    - Ensure stairs and handrails are in compliance with safety codes and recommendations.
    - Highlight the nosing of each step with contrasting paint or strips.



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#### 8. Prepare for ice and snow

- Provide ice cleats (or similar product) for home health and maintenance workers to put over regular shoes.
- Distribute winter weather e-mail warnings to all workers with e-mail access.
- Provide bins that anyone can use to spread ice melting chemicals on icy patches outside.

#### 9. General awareness campaign

- Phone and pager numbers for maintenance and housekeeping departments should be prominently displayed and e-mailed intermittently to staff, to be used for reporting spills, slippery conditions, ice, and other STF hazards.
- Promote STF hazard awareness campaigns through health fairs, posters, paycheck inserts, and e-mails.