Managing Ergonomics in the Workplace

Reducing the Risks Associated with Resident Lifting and Moving

July 27, 2006
The nursing home industry is one of America’s fastest growing industries.

In 2000, approximately 1.9 million direct care workers provided care to 15 million Americans in approximately 21,000 long-term care settings.
Challenges

- Total number of Americans in need of long-term care is expected to rise from 15 million in 2000 to 27 million in 2050.

- The Bureau of Labor Statistics estimates by 2010, industry employment will rise to an estimated 2.7 million workers. This is an increase of roughly 45%.
Challenges

- Long-term care workers face strenuous physical demands and one of the highest rates of injury and illnesses among industries.

- In Minnesota the nursing home TCIR is 10.5 injuries per 100 full-time workers, for private sector sites, and 17.7 for public sector sites.

Overall industry average TCIR is 5.5 - MN rate
As a result, there is an on-going need to convince nursing home employees of the importance of safety management, in recognizing and controlling risk factors associated with resident handling tasks.
Key Management Elements

- Management Acknowledgement / Commitment
- Employee Involvement
- Hazard Identification
- Hazard Control
- Injury Reporting / Case Management
- Training & education
- Review Effectiveness of Management System
- On-going Evaluation and Planning
Management Acknowledges the Problem

- HIGH RATES OF INJURY AMONG NURSING STAFF - PARTICULARLY NA/R’s
# 2003 Minnesota Rates (BLS)
## All Injuries and Illnesses per 100 FTE

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<tr>
<td>nursing (private)</td>
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<td>nursing (public)</td>
<td>17.7</td>
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<tr>
<td>all private industry</td>
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percent of all indemnity cases in the nursing home industry classified as WMSD:

58 percent
No wonder nurses are injured!

- In an 8-hour shift, the cumulative weight that nurses lift is equal to an average of 1.8 tons per day

Safe Patient Handling Conference presentation – Audrey Nelson, Ph.D., RN, FAAN, Patient Safety Center of Inquiry, VAMC, Tampa, FL
Nursing is ranked 2\textsuperscript{nd} after industrial work for physical workload intensity.

Nurses have approximately 30\% more days off due to back pain as a percentage of all causes compared with 8\% for the general population.

Safe Patient Handling Conference presentation – Audrey Nelson, Ph.D., RN, FAAN, Patient Safety Center of Inquiry, VAMC, Tampa, FL
Force exerted on low back
- Spinal compression -

- 2-person hook – 858-1477 lbs.
- 1-person hook – 2026 lbs.
- 2-person gait belt – 1034+ lbs.
- 1-person gait belt ~ 1030 lbs.
- 1-person hug lift – 1424 lbs.

safe limit – 764 lbs.

Safe Patient Handling Conference presentations – Audrey Nelson, Ph.D., RN, FAAN, Patient Safety Center of Inquiry, VAMC, Tampa, FL
William Marras, Ph.D., CPE, Institute of Ergonomics, OSU
Force exerted on low back
- Spinal compression -

- 2-person commode to chair ~ 1120 lbs.
- 1-person commode to chair ~ 1500 lbs.
- 2-person wheel chair to bed ~ 1050 lbs.
- 1-person wheel chair to bed ~ 1440 lbs.

- safe limit – 764 lbs.

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High-risk work environment contributes to:

- high rate of injuries
- higher turnover / rates of absenteeism
- reduced employee morale
- negative affect on the level of care provided
  - familiarity between resident and nurse
  - greater chance of injury to resident during a difficult lift/transfer
  - resident dignity
Management understands the $$$ benefits...

Cost of lift / transfer / reposition aides

vs.

Cost of worker’s comp. / medical / lost time / re-training / administrative...
Minnesota Cases (Workers’ Compensation)

Estimated total cost (wages and medical) for WMSD indemnity cases closed in 2004 in the nursing home industry:

$20,000 per case
Wyandot Nursing Home

- reduced work comp. claims by 97%
- zero transfer injuries
- $55,000 payroll savings due to less turnover, OT, & absenteeism (2001)
- $116,000 investment vs. $400,000 annual return
Management Commitment

There needs to be a belief that the S&H efforts can be accomplished, staff are capable of implementing the necessary measures, and the efforts will be effective.
Safe resident handling becomes a high priority...

- Safe Resident Handling initiative:
  - value employees as much as residents
  - use of lift, transfer & repositioning aides becomes the norm
  - 2-person transfers and proper body mechanics will not prevent injuries
Action Plan

- What tasks need to be accomplished to reach the desired goal
  - assign task responsibilities
  - establish time-lines for completion
  - track progress
Change the Work Culture

- Change the “old” way of thinking and doing
  - value employees as much as residents

- Establish accountability
  - mid-managers & supervisors responsible for injuries, lost-time, & worker compensation losses
  - promote work practices that prevent injuries
Change the Work Culture

- Accountability most effective when a work environment is provided that encourages and allows for adherence to “best” practices
  - facility, equipment, and training resources provided

- Supervisory staff insist on compliance with established “safe-resident-handling” practices

- Employees accept the new way of performing the work
How do we accomplish this?
Establish a Working Team

- Assign a team leader
- Other members assigned individual roles
  - unit-specific tasks
  - include employees who are affected by the work and potential changes

defn. of Team - a group organized to work together...
Identify the High-Risk Units & Tasks

- Worker compensation data
  - type & number of cases
  - severity

- 300 Log injury/illness data

- accident investigation reports / 1st reports of injury

- Site evaluation
Prioritize high-risk tasks

- Injury incidence rates / injury severity
- Surveys
  - “Prioritizing High Risk Patient Handling Tasks”
  - facility-developed staff survey
- Direct feedback

-- focus on the current resident & staff needs --
Site Evaluation

Evaluate the work-site and gain employee feedback:

- What tasks are the most difficult to perform and pose the greatest risk of injury
- What factors contribute to the high-risk
Employee Feedback

- What situations / conditions increase a caregiver's risk of back strain and injury?

- What specific care tasks are most difficult?
  - which lifts, transfers are most difficult...
  - which residents are most difficult to work with...
Employee Feedback

- Are certain manual transfers difficult to perform? If so, why?
  - -- resident-specific -

- Are certain over-the-bed tasks difficult?
  - -- resident-specific -

- What can be done to reduce the risk?
  - Are mechanical lift-aides available when needed?
Safe Weight Limit

- Consider up to a 35 lb. weight restriction for lifting
  - to coincide with NIOSH RWL and existing research
Employee Feedback

- Do staff follow care plan requirements **always**?

- How are residents lifted from the floor?
Employee Feedback

- Are ambulation tasks difficult? (resident-specific)
  - resident unexpectedly stops bearing-weight
  - resident not supporting their weight well
  - uncooperative
  - history of falls
Facility evaluation

What facility characteristics contribute to the injury risk?

- facility design
- room lay-out / design
- patient conditions
Equipment Inventory

- Mechanical lifts
- Beds
- other transferring and moving devices
  - low-friction devices
  - lateral transfer aides
  - gait belts
  - shower/commode chairs
  - ...other transfer devices
Resident Population

- Level of dependency
  - total / extensive assistance required
  - limited assistance required
  - independent
Resident Assessment Guidelines

- Assessment tools
- Algorithms for safe patient lifting and moving

Assess the:
- resident
  - ability to bear weight & provide assistance
  - level of cooperativeness
  - cognitive ability
  - upper-extremity strength
  - height / weight
  - existing medical conditions
- area
  - room lay-out
  - facility design
  - existing furnishings & equipment
On-going Resident Assessments

- Care staff know what’s “normal”
- They must report changes promptly
- Assessments done as frequently as needed

- Communicate changes to all shifts
## Selecting Appropriate Resident Handling Aides

(example: limited assistance)

<table>
<thead>
<tr>
<th>Transfer Type</th>
<th>Full Sling Lift</th>
<th>Stand Assist Lift</th>
<th>Lift Walkers</th>
<th>Stand Assist Aid</th>
<th>Gait Belt w/ Handles</th>
<th>Friction Reducing Aid</th>
<th>Unassisted</th>
<th>Manual Assist</th>
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<td>1) Bed to Chair</td>
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<td>4) Lateral Bed to Stretcher</td>
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<td>5) To Standing Position for Ambulation</td>
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<td>6) Repositioning in Bed</td>
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<td>7) Repositioning in Chair</td>
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What is needed?

- Based on the needs of the resident’s and current inventory of equipment
- 1 mechanical lift for every 8-10 residents who need assistance
- A combination of ceiling, full-assist floor lifts, partial-assist lifts, ambulation equipment, beds, and other alternative handling devices
- Sufficient numbers of slings and other accessories to accommodate residents
Recommend Solutions

- ceiling-mounted lift systems
- full & partial assist lifts
- bariatric aides
- turning & repositioning devices
- ambulation aides
- ...other assist devices for moving residents
- beds
- administrative controls
Recommend Solutions

- vendor & product search
  - strong, stable, & appropriate for resident
  - efficient, maneuverable, versatile
  - easy to understand and operate

- vendor demonstrations
- observations / field-testing
Recommend Solutions

- Employee involvement in observing, testing, and providing recommendations
  - better acceptance if involved in the decision-making process
Implement Recommended Solutions

- Purchase equipment
  - technical service available
  - parts availability
  - storage requirements
  - battery life / charging
  - lift base height & width / adjustability
  - requirements for operation
  - sling types / sizes
  - versatility......

- Implement administrative controls
Implement Recommended Solutions

- **Staff education & training**
  - vendor assistance to demonstrate equipment use
  - competency-based
  - educate on factors that contribute to high-risk of injury
Educate all who are affected:

- Working Staff
- Families
- Residents
Accountability

- Safe Resident Handling work policy
- Insistence on use of lifting & moving aides
- Preceptors / care coaches / team leaders
- Discussion of best practices, issues / solutions... during staff meetings, in-services, performance reviews...
On-going Support of SRH Initiative

- Support and comply with SRH policy
- Set a good example for staff
- Respond to issues that may discourage adherence to ‘best-practices’ and increase injury risk
- Resolve issues that discourage adherence to ‘best-practices’
Evaluate the Effectiveness

- reduction in the # of work comp. cases
  - reduced severity
- reduction in the # of injuries related to resident lifting and moving
- employee acceptance of SRH practices
- equipment availability and maintenance
- absenteeism, turnover, productivity, morale, resident care
Evaluate the Effectiveness

- Cost savings
  - what was the investment vs. cost of injuries (based on past data)
    - work comp. premium
    - medical costs
  - other costs: over-time, re-training, other administrative costs...
THE HIDDEN COSTS OF INJURIES

DIRECT COST
- Compensation Payments
- Medical Cost

INDIRECT AND HIDDEN COSTS OF INJURIES
- Replacing Employees
- Investigation Time
- Supervision Time
- Training
- Staff Moral
- Possible Patient Injury
- Break-up Work Team
- Administrative Time
- Overtime Paid
- All Other Costs
References

- Patient Care Ergonomics Resource Guide: Safe Patient Handling and Movement, Patient Safety Center of Inquiry
- Guidelines for Nursing Homes, OSHA 3182
- Nursing Home e-tool
- Diamond Insurance Limited Lift Safety Program
- Guldmann Care Lift Management
- Berkley, LLC – implementing a low-lift work environment at a public nursing home
- ...field observations and other safety & ergonomic management references