

Moving into the Future: Promoting safe patient handling for worker and patient safety in Massachusetts hospitals

Report of the Massachusetts Hospital Ergonomics Task Force

Occupational Health Surveillance Program
Massachusetts Department of Public Health



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FOREWORD

Dear Reader,

Today, Massachusetts is at the forefront in providing affordable, high quality health care to all residents and in addressing the challenges of maintaining a highly skilled health care workforce and controlling health care costs. As Massachusetts moves forward to realize the vision of health care reform, it is critical to protect health care workers as well as the patients for whom they provide care. The findings presented in this report indicate that improvements in patient handling practices within our hospitals offer a valuable opportunity to pursue the “Triple Aims” of promoting the health and safety of both health care workers and patients, improving the experience of care, and, within a short time frame, reducing health care costs.

The risks of injury to health care workers associated with manual handling of patients are widely recognized. Findings from the survey of Massachusetts hospitals included in this report indicate that most Massachusetts hospitals have already taken steps to improve patient handling practices to protect workers and patients, but that more remains to be done. These survey findings also indicate that there is much to gain by sharing lessons learned among hospitals across the state. The recommendations in this report provide a solid blueprint for moving forward and recognize that advances in safe patient handling will take a collective effort of hospitals, hospital workers and government agencies. Other stakeholders - training programs for architects and health care workers - have important roles to play in safeguarding the health care workers and patients of the future.

We are deeply grateful to the Task Force members who dedicated their time and expertise to preparing this report. We also thank the hospital employee health staff who completed the survey of safe patient handling activities in Massachusetts hospitals. We welcome feedback on this document and expressed interest in participation in an ongoing stakeholder group. DPH looks forward to continuing to work with hospitals, hospital workers and other stakeholders to facilitate the development of comprehensive safe patient handling programs in our hospitals. These programs can reduce preventable injuries among caregivers, improve the quality of patient care and reduce health care costs.

Sincerely,

Cheryl Bartlett, RN
Commissioner
Massachusetts Department of Public Health

Hospital Ergonomics Task Force

<u>Name</u>	<u>Organization*</u>
David H. Wegman, MD, MSc, Chair	UMass Lowell Department of Work Environment - Emeritus Professor
Lori Adams, RN, CPHRM, COHN-S	Liberty Mutual Insurance
Debra Campbell, BS	UMass Memorial Health Care
Letitia Davis, ScD, EdM	DPH-OHSP staff
Jack Dennerlein, PhD, SM	Northeastern University
Nils Fallentin, PhD	Liberty Mutual Research Institute for Safety
Anuj Goel, JD, MPH	Massachusetts Hospital Association
Donna LaBombard, RN, MS	Clinical Risk Management Consultant
Angela Laramie, MPH	DPH-OHSP staff
Donna Levansavich, RN	DPH-Health Care Safety and Quality
Karen Manning, MSN, RN, CRRN, CHPN	MA Association of Registered Nurses
Christine Miner, MPH	DPH-OHSP staff
Pat Noga, PhD, RN, MBA, NEA-BC	Massachusetts Hospital Association
Peg O'Connor, RN, MMHC, COHN, HRM	Massachusetts Nurses Association
Tucker O'Day, MSPT, MSWE	Partners HealthCare
Gail Palmeri, RN	DPH-Health Care Safety and Quality
Chris Pontus, RN, MS, COHN-S	Massachusetts Nurses Association
Laura Punnett, MSc, ScD	UMass Lowell
Sheri Purdy, OTR/L	New England Rehabilitation Hospital
Steven Schrag, SEIU	Service Employees International Union
Kathy Schuler, MS, RN, NE-BC	Winchester Hospital
Paul Sciuchetti, BA	Bureau of Labor Statistics
Sandra Wettergreen, KT, BS	Veterans Administration

*Organizations are listed for identification purposes only.

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Most of all, DPH would like to acknowledge the thousands of health care workers in Massachusetts hospitals for their dedication to ensuring that patients are well cared for.

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To obtain additional copies of this report, please contact:

Massachusetts Department of Public Health
Occupational Health Surveillance Program
250 Washington Street, 6th Floor
Boston, MA 02108
617-624-5632

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Executive Summary

Workers in Massachusetts hospitals, like workers in hospitals nationwide, are exposed to a wide range of workplace hazards and are at high risk of being injured on the job. Manually lifting, transferring, repositioning and mobilizing patients are high risk tasks routinely performed in the course of providing care. Musculoskeletal disorders (MSDs) that occur while carrying out these tasks are among the most common injuries experienced by hospital workers. These patient handling MSDs are costly. In addition to preventable suffering and direct health care costs, these injuries result in thousands of lost work days and other indirect costs borne by injured workers, hospitals and ultimately the health care system at large. Today our population is living longer and is heavier than in the past, increasing the musculoskeletal risks that health care workers face. The physically demanding patient handling tasks necessary for routine care of hospital patients can also pose risks for patients.

The Occupational Health Surveillance Program in the Massachusetts Department of Public Health (OHSP-DPH) has a long history of collaborating with hospitals and hospital workers to reduce the incidence of injuries due to needles and other sharp devices. In January 2012, prompted by finding consistently high rates of MSDs among Massachusetts hospital workers and state and federal policy initiatives to promote safe patient handling (SPH), OHSP-DPH built on this successful partnership and established the Hospital Ergonomics Task Force. DPH asked the Task Force to review the available evidence and develop recommendations to reduce the high rate of MSDs and related disability among workers in Massachusetts hospitals with a focus on MSDs associated with patient handling.

To address this charge, the Task Force reviewed new findings provided by DPH on patient handling MSDs among workers in Massachusetts hospitals and their associated costs, the research on effectiveness of interventions to reduce patient handling injuries among both workers and patients, and current practice guidelines. It also examined policy initiatives to promote SPH in other states and at the federal level. Informed by this review as well as their own experiences, the Task Force members worked to define essential elements of effective and sustainable hospital SPH programs. The Task Force also collaborated with DPH to conduct a survey to learn more about the current status of SPH programs and practices in DPH licensed hospitals. Based on all of these inputs, the Task Force developed recommendations to reduce MSDs associated with patient handling among Massachusetts hospital workers. These recommendations are directed not only to DPH but to hospitals and other stakeholders with roles to play in improving worker and patient safety.

Findings

The Burden of Work-Related MSDs Associated with Patient Handling Is Significant

- According to Bureau of Labor Statistics estimates, during 2004-2011, more workers were injured in Massachusetts hospitals than any other industry. The large number of injuries may not be surprising given that the hospital industry is the largest industry in the state, employing approximately 6% of the Massachusetts workforce. However, the rate of injury

among Massachusetts hospital workers was also high – over double that for workers in all industries.

- MSDs were among the most common injuries experienced by Massachusetts hospital workers, accounting for half of all injuries resulting in days away from work. Patient handling was the leading cause of MSDs among hospital workers.
- During 2004-2011, the rates of all MSDs and of MSDs associated with patient handling were consistently higher among workers in Massachusetts hospitals than the comparable rates for workers in hospitals nationwide. While there are a number of possible explanations for this marked difference in rates (e.g., better reporting, varied options for modified duty, higher underlying risk), these findings highlight that patient handling MSDs are an important public health problem in Massachusetts that needs to be addressed.
- In 2010, an estimated 1,000 workers in Massachusetts hospitals suffered patient handling MSDs that resulted in lost work time. Close to 70% of these workers lost at least five days, with 30% losing at least a month. It is conservatively estimated that in 2010, Massachusetts hospital workers lost at least 21,500 days of work as a result of patient handling MSDs.
- According to data from the Massachusetts Department of Industrial Accidents, during 2008-2010, an average of 683 workers' compensation claims for patient handling MSDs resulting in five or more days of lost work were filed by Massachusetts hospital workers each year.
- The rate of patient handling MSDs for workers in acute care hospitals was almost double the rate for workers in non-acute care hospitals.
- Rates among workers in acute care hospitals increased with hospital size although there was large variation in rates within hospital size categories.
- Direct and indirect costs of patient handling injuries among health care workers are substantial. Data on the costs of patient handling MSDs in Massachusetts are extremely limited. However, the large number of lost work days from these injuries highlights not only their severity and impact on health care workers but also the substantial monetary costs to hospitals.

Safe Patient Handling Interventions Are Effective

- Multiple studies have found that comprehensive safe patient handling (SPH) programs involving use of equipment to minimize manual handling of patients have proven successful in reducing the frequency and severity of worker injuries and associated costs.
- Use of equipment for patient handling is central to these SPH programs. However equipment alone is not sufficient. Comprehensive programs are needed to support use of this equipment and sustained attention to SPH over time. Management commitment and worker involvement are essential to program success.

- While there are initial and ongoing costs involved in implementing a SPH program, a growing body of scientific evidence indicates that the benefits gained from comprehensive SPH programs outweigh the costs through reduction in workers' compensation and other costs, and improved patient outcomes. Both hospitals and long term care facilities have been found to recover initial investments in implementing SPH programs within 1 to 4 years through reductions in workers' compensation costs and lost and restricted workdays.
- SPH programs have been found to reduce risks of skin tears and patient falls occurring during manually assisted transfers. There is also a small but growing body of evidence that SPH programs reduce pressure ulcers and may improve patient functionality outcomes related to increased mobilization. More systematic research is needed on these topics.
- There is increasing recognition of the link between patient and worker safety in general and of the need for integrated approaches to protect workers and patients. This is underscored in the report *Improving patient and worker safety: Opportunities for synergy, collaboration and innovation*, published in 2012 by the Joint Commission. Similarly, according to a recent report from the Lucian Leape Institute, "Workplace safety is inextricably linked to patient safety."¹

States and Professional Organizations Have SPH Policy Initiatives

- Nine states have enacted legislation requiring acute and/or long term care facilities to implement SPH programs to minimize manual handling of patients. All of these laws require comprehensive programs with multiple programmatic components including establishment of "minimal (manual) lift" or "no lift" policies, use of patient handling equipment, and training in SPH. Most also require facility wide patient handling hazard assessments and use of injury data to inform prevention and continuous quality improvement.
- A number of national organizations have introduced detailed guidance for developing comprehensive SPH programs or have outlined guidelines for safe work practices involving the handling or movement of patients. These include, among others, the Facility Guidelines Institute, the American Nurses Association, the Veterans Administration and the Association of Occupational Health Professionals (AOHP). The AOHP guidance was developed in collaboration with the Occupational Safety and Health Administration (OSHA).

¹ Lucian Leape Institute (2013). Through the Eyes of the Workforce: Creating Joy, Meaning, and Safer Health Care. National Patient Safety Foundation. Available from URL: <http://www.npsf.org/about-us/lucian-leape-institute-at-npsf/li-reports-and-statements/eyes-of-the-workforce>.

Comprehensive Safe Patient Handling Programs Have Essential Elements

Based upon review of the scientific evidence, existing state and federal SPH policies and published guidance on SPH programs, and informed by their own experiences, Task Force members identified essential components of effective, sustainable SPH programs.

Essential Elements of Comprehensive Safe Patient Handling Programs	
• Management commitment	• SPH equipment
• Direct care worker involvement	• Patient functional mobility assessments
• Statement of SPH policy	• Training
• SPH committee	• Injury surveillance
• SPH needs assessment	• Assessment of program effectiveness

Some populations of patients present unique patient handling challenges that warrant special equipment and techniques. These include, among others, patients with disabilities, bariatric patients and patients with acute psychiatric conditions. Hospitals need to consider the patient populations served in developing their SPH programs to assure that there are appropriate equipment and procedures in place to meet the range of needs of patients and health care workers. All facilities should be committed to removing barriers and improving access for persons with special needs in order to provide the highest quality of care and treatment in an accessible environment.

Current SPH Policies and Programs in MA Hospitals Vary Significantly

- The survey of hospitals licensed by DPH revealed that most hospitals have taken steps to improve patient handling to protect worker and patient safety. However, much remains to be done. Massachusetts hospitals are in different stages of developing comprehensive SPH programs that minimize manual handling of patients, and there is an opportunity for hospitals to learn from each other, across service types, as they move forward.
- Overall, 44% (37) of the 88 responding hospitals reported having a written SPH policy in practice. Non-acute care hospitals were more likely to have a written SPH policy compared to acute care hospitals.
- Two thirds of the hospitals (57) had a committee or group working to prevent patient handling injuries while one fifth had neither a SPH policy nor a committee in place.
- Almost all hospitals had a protocol for the assessment of patient functional mobility and transfer needs on admission for inpatients. Only 62% (49) of hospitals had the same for outpatients.
- Almost all hospitals had systems for tracking injuries to workers associated with patient handling, yet in only 61% (54) of these hospitals were the data reviewed by the departments in which the injuries occurred.

Recommendations

The Task Force concluded that MSDs associated with patient handling among hospital workers are a significant public health problem that needs to be addressed. They adversely affect quality of life and result in substantial costs that further stretch an overburdened health care system. These MSDs are in large part preventable. Improvements in patient handling practices within our hospitals provide an important opportunity to pursue the “Triple Aim” of promoting the health and safety of both health care workers and patients, improving the experience of care, and, within a short time frame, reducing health care costs.

Based on its findings, the Task Force offers the following recommendations to promote SPH to improve both worker and patient safety in Massachusetts hospitals. These recommendations are offered with the understanding that reducing the risks associated with patient handling will take a collaborative effort of hospitals and hospital workers, government and other stakeholders. The Task Force recognizes that change takes time and resources, but strongly encourages organizations to move forward to establish priorities, objectives and timelines for meeting the recommendations outlined in this report.

Hospitals are strongly encouraged to:

1. Implement comprehensive and sustainable SPH programs to minimize manual lifting and mobilization and provide the patient handling equipment needed to protect workers and patients.
2. Design their injury surveillance systems to be able to distinguish incidents associated with patient handling and to record job title, department, and other variables that are potential indicators of risk.
3. Include in their SPH programs a timely process for employees to be able to communicate and resolve concerns about patient handling tasks that workers believe in good faith expose a patient or hospital worker to an unacceptable risk of injury. Workers should be informed about the process and protected so that they can raise concerns without fear of negative repercussions.
4. Incorporate physical infrastructure needs of the SPH program into the design and planning phase of both new construction and renovation of patient care facilities.

DPH is strongly encouraged to:

5. Collaborate with other state agencies as appropriate to produce an annual report on MSDs associated with patient handling among Massachusetts hospital workers, using available state data sources, to target statewide prevention efforts and monitor progress in reducing these injuries.

6. Continue to maintain a website that serves as a clearing house for useful resources on SPH and allows for sharing of lessons learned among hospitals and hospital workers.
7. Provide advice to hospitals regarding the collection and analysis of key data on patient handling incidents, including near misses, to inform ongoing injury prevention efforts.
8. Incorporate the Facility Guidelines Institute “Patient Handling and Movement Assessment” requirements in the design review and approval process for the construction or renovation for health care facilities.
9. Collaborate with other stakeholders (e.g., MNA, MHA) to hold periodic meetings bringing together staff involved in SPH programs from hospitals throughout the state to share information on SPH and discuss lessons from the field in implementing programs.
10. Issue guidance to hospitals to promote implementation of comprehensive SPH programs under its existing authority.

Additional recommendations:

11. An ongoing coalition of stakeholders should be established to promote awareness of SPH and effective injury prevention strategies, monitor progress in implementing these Recommendations, and identify evolving needs and priority research questions. DPH should initiate this effort.
12. Organizations providing risk management and accident prevention services to hospitals should provide assistance in developing and maintaining SPH programs.
13. All training programs for direct health care workers should include, as core curriculum components, education and training on SPH.
 - A. Accrediting or certifying organizations should make competency in SPH a core criterion for approved academic programs
 - B. Other training programs for direct health care workers, such as in-house hospital training programs and independent certificate programs, should incorporate SPH as a core training component.
14. Professional educators in field such as architecture, engineering, and other fields related to the design of health care facilities should examine their curricula to assure the inclusion of training on the physical infrastructure and functional requirements for SPH that need to be incorporated into building design.

The Task Force recognizes that workers and patients in other health care settings, for example, long term care and home care, face similar risks associated with patient handling and mobility. The focus of this Task Force was on hospitals, however, many of the findings and

recommendations as well as the resources identified to address the problem in this report should be highly useful in promoting SPH across health care settings.

Today, Massachusetts is leading the nation in providing affordable, high quality health care to all residents and in addressing the challenges of controlling health care costs. As Massachusetts moves forward to realize the vision of health care reform with increased focus on prevention, advances in patient handling provide the opportunity to improve the wellbeing of both health care workers and patients and reduce health care costs.

1. Introduction

Background

Increased awareness of the potential harm to patients from exposure to infectious agents, unintended medical errors, and falls has focused critical attention on the need to improve patient safety (Kohn et al., 1999). However, the risk of work-related injury and illness to hospital workers who care for patients has remained less visible (NIOSH, 2009; Lucian Leape Institute, 2013). In fact, according to official estimates from the Bureau of Labor Statistics (BLS), in Massachusetts there are more work-related injuries and illnesses among workers in hospitals than in any other single industry. The large *number* of injuries may not be surprising given that the hospital industry is the largest industry in the state, employing approximately 6% of the Massachusetts workforce (BLS, 2012a). However, similar to findings for hospitals nationwide, the *rate* of lost time injuries and illnesses among workers in Massachusetts hospitals is also high. In 2011, this rate was 2.9 injuries per 100 full time workers, almost double the rate (1.4) for all of private industry, and higher than the rates for manufacturing (1.3) and retail (1.4). Furthermore, while between 2004 and 2011 the lost time injury and illness rate for workers in all Massachusetts private industry declined by 18%, the rate for Massachusetts hospital workers remained unchanged (BLS, 2012b).

Musculoskeletal disorders (MSDs)² are among the most common injuries experienced by hospital workers, and over half involve the back. Many are related to overexertion (which includes heavy lifting), repetitive motion, and awkward postures such as bending or twisting. Between 2004 and 2010, MSDs consistently accounted for close to half of all injuries resulting in lost work time among Massachusetts hospital workers. Strikingly, the MSD rate for workers in Massachusetts hospitals was at least 70% higher than the comparable rates for workers in hospitals nationwide every year during this time period (BLS, 2012b).³

MSDs among health care workers impose substantial human and economic costs. In addition to preventable suffering and direct health care expenses, these injuries result in thousands of lost work days along with costs that are borne by health care workers, hospitals and the health care system at large. MSDs also cause professionals and para-professionals to leave the field, contributing to turnover and, in some regions, a shortage of health care personnel. In one study, 47% of nurses had considered leaving their profession because of the physical demands of the job (Peter D Hart Research Associates, Inc. 2006).

Manual handling of patients (such as lifting, transferring, repositioning and ambulating) is widely recognized as the primary cause of MSDs among direct health care providers. Back and shoulder disorders associated with patient handling are common among nurses, nursing aides, orderlies and similar occupations. One study of hospital nurses found an annual incidence of

² Musculoskeletal disorders are defined here as conditions affecting muscles, tendons, nerves, ligaments, joints, or spinal discs, which do not have an infectious, central or systemic etiology. Some have an acute onset (i.e., manifest suddenly at a particular moment), while others are more gradual and insidious.

³ All MSD statistics presented in the report exclude single traumatic events including slips, trips and falls, motor vehicle incidents, and assaults. MA estimates are not available for 2009.

34% reporting back/neck/shoulder pain related to reaching, pushing and pulling patients while repositioning (Smedley et al., 2003). In another survey of hospital based nurses, 84% of respondents reported ever having work-related low back pain that limited movement or interfered with routine activities; 36% reported such pain in the last year (Byrns et al., 2004). In a recent survey of patient care workers in two large Massachusetts hospitals, 72% reported musculoskeletal symptoms in the last three months, with 53% reporting pain in the low back. 32% reported that this pain interfered with work duties (Dennerlein et al., 2012). The physically demanding patient handling tasks necessary for routine care of hospital patients present safety risks for patients as well (Nelson et al., 2003).

The landscape of hospital care is also changing as a result of both demographic shifts and changes in health care delivery. Today the population is living longer (often with chronic disabilities) and is heavier than in the past increasing the musculoskeletal risk that health care workers face in handling and mobilizing patients. Also, because health care is increasingly provided on an ambulatory basis, hospital admissions are reserved for those who are sicker and frailer than in the past resulting in a population of patients that is less able to participate actively in their own mobilization.

The risks associated with patient handling are widely recognized. Many health care facilities throughout the country and the world have taken steps to reduce these risks. Over the last decade legislative initiatives to minimize manual handling of patients have been introduced in a number of states, and federal SPH legislation has also been proposed.

The Massachusetts Hospital Ergonomic Task Force

What should be done to promote SPH⁴ and reduce injuries to both workers and patients in Massachusetts hospitals? The answers to this question are even more critical in light of the changing landscape of hospital care in the Commonwealth and the current context of health care reform in which Massachusetts seeks to provide high quality care for all and maintain a highly skilled workforce while controlling health care costs.

The Occupational Health Surveillance Program (OHSP) in the Massachusetts Department of Public Health (DPH) has a long and successful history of collaboration with Massachusetts hospitals and hospital workers in conducting surveillance and prevention of injuries from needles and other sharps. In 2010, OHSP-DPH received funding from the Centers for Disease Control and Prevention (CDC) - National Institute for Occupational Safety and Health (NIOSH) to build on this successful partnership to explore approaches to surveillance and prevention of MSDs among workers in Massachusetts hospitals.

⁴The words “movement” or “mobility” are often added to the more common term “safe patient handling” to indicate that progressive mobility for the patient is an end goal, in addition to the safe handling of patients (ANA, 201). For convenience, the term Safe Patient Handling (SPH), is used throughout this report; it is intended to encompass this broader definition, including “safe patient handling and mobility” and “safe patient handling and movement”.

In January 2012, DPH established the Massachusetts Hospital Ergonomics Task Force to develop recommendations for reducing the high rate of musculoskeletal disorders (MSDs) and disability among Massachusetts hospital workers, with a focus on MSDs associated with patient handling. The Task Force was asked “to review available injury surveillance data, the research on SPH interventions and existing practice guidelines, information about current SPH practices in Massachusetts hospitals, and SPH policy initiatives in other states.” Specifically, the Task Force was asked to address the following questions and prepare a final report with recommendations directed not only to DPH but also to hospitals and other stakeholders.

Safe Patient Handling Programs in Hospitals

- What are the intervention priorities for safe patient handling?
- Are there best practices guidelines and tools for safe patient handling programs that should be recommended for use in Massachusetts hospitals?
- How can experiences in patient handling be effectively shared with and among hospitals?
- Does knowledge about the link between worker safety and patient safety inform safe patient handling programs?
- What considerations need to be taken into account to address needs of special patient populations such as people with disabilities and elder patients?

Surveillance of Injuries Associated with Patient Handling

- What kind of ongoing surveillance of injuries associated with patient handling is needed at the hospital level and at the state level to inform intervention efforts and monitor progress in meeting prevention goals?
- How can we use and improve existing state or facility data systems to meet these objectives?
- What metrics should be used to evaluate uptake and impact of interventions recommended by the Task Force?

Policy

- Are there statewide initiatives (e.g., development of training resources, incentives, voluntary guidelines, regulations, legislation) that should be recommended to promote safe patient handling in Massachusetts hospitals?
- What efforts are needed by government and non-government partners?

The 21 member Task Force included representatives of hospitals, hospital workers and government agencies, ergonomic experts, and academic researchers. The Task Force met quarterly over an 18 month period (January 2012 – June 2013) and operated by consensus in developing its recommendations. Three working groups – Data & Surveillance, Interventions & Program Assessment and Policy Needs & Options - communicated nearly monthly between meetings to synthesize relevant data and draft recommendations in each area for consideration by the Task force as whole.

The Data & Surveillance Working Group reviewed new DPH findings on patient handling injuries in Massachusetts, developed a draft data collection tool for use by hospitals to track patient handling injuries, assisted with the development of and interpretation of results from a survey of patient handling activities in Massachusetts hospitals, and made suggestions for amending the *DPH Adverse Incident Report*.

The Interventions & Program Assessment Working Group reviewed a summary of published scientific literature on technologic and work practice interventions to prevent MSDs among health care workers, as well as recommended SPH guidelines and tools developed by government organizations and private agencies to identify those which should be considered for use by Massachusetts hospitals. Based on this review and their own experience, this group also worked to identify and describe the essential components of a comprehensive SPH program.

The Policy Needs & Options Working Group examined existing and proposed state and federal SPH policy options and explored alternative policy options for the Task Force to consider.

Focus on Hospitals

Given the Occupational Health Surveillance Program's history of working closely with hospitals, and the available resources, the Task Force was asked to focus its sights on hospitals specifically, although the SPH issue is likewise salient in long-term care and other health care settings. A brief overview of Massachusetts hospitals and the hospital workforce is provided below.

Massachusetts Hospitals

There are 119 hospitals in Massachusetts.⁵ The majority (78) are private sector acute care hospitals that range in size from 19 to over 907 beds. Private sector hospitals are licensed by the Massachusetts Department of Public Health except for psychiatric hospitals that are licensed by the Massachusetts Department of Mental Health. Close to half of the acute and non-acute hospitals have psychiatric units; these are licensed by both agencies. In addition, the state runs seven public sector hospitals serving medical and mental health needs.

Table 1-1. Massachusetts hospitals by service type and sector		
	Private Sector	Public Sector
Acute care	78	1
Non-acute care	20	3
Psychiatric	14	3

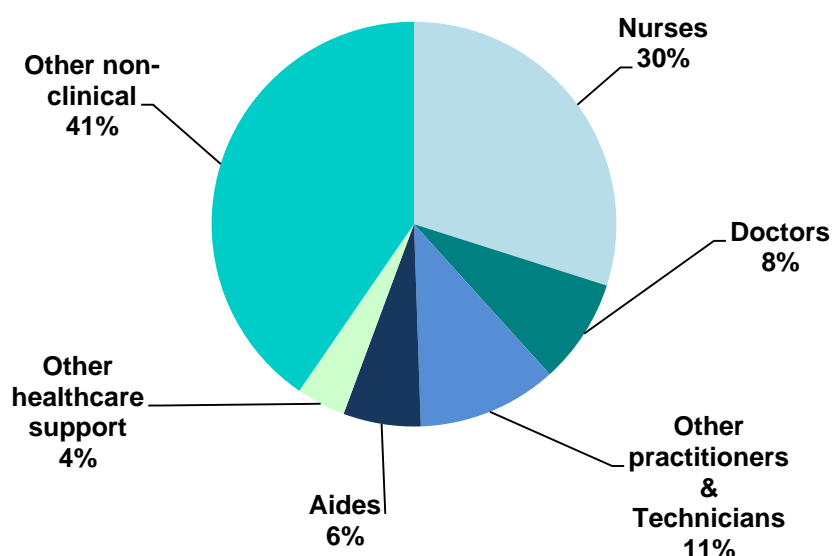
Massachusetts Hospital Workers

Approximately 163,000 workers are employed in Massachusetts both public and private sector hospitals (BLS, 2012a). About 50% are health care professionals or technicians, and 10% are in health care support occupations. The remaining 40% are in a wide range of non-direct care occupations including, for example, administration, food services, transport and janitorial staff

⁵ The number of hospitals in the Commonwealth reported by different entities can vary slightly depending on how facilities with multiple campuses are counted. Numbers reported here are based on information provided by the Massachusetts Department of Public Health Division of Health Care Quality.

(Figure 1-2). Nursing is the single most common occupation. Nurses make up about 30% of the hospital workforce and most are likely to be engaged in patient handling tasks. Nursing aides, also likely to be engaged in patient handling tasks, comprise 6% of the hospital workforce. Smaller numbers of workers are employed in a variety of other occupations likely to involve patient handling including, physical therapists, occupational therapists, patient transporters, and radiologic and other diagnostic related technicians.

Figure 1-1. **Distribution of Hospital Workforce in Massachusetts by Occupation**



Source: CPS, July 2012-June 2013

Nationwide employment in health care is growing faster than in any other sector with the fastest growth in home health services (BLS, 2008). In Massachusetts, employment in hospitals is expected to increase by 23% between 2010 and 2020. The numbers of nurses in hospitals are expected to increase by 30% during this time period. The numbers of nursing aides, physical and occupational therapists are all projected to increase by close to 20% (MEOLWD, 2013).

Key Definitions

Patient Handling

An initial step of the Task Force was to reach a common understanding of what is meant by “patient handling.” The Task Force agreed upon the following definition and list of tasks, adapted from the definition used by the Facility Guidelines Institute (FGI, 2010).

Patient handling and movement is defined as lifting, moving, sliding, transferring, positioning, or otherwise mobilizing a patient. This can be done manually, or with assistive devices or

equipment designed to facilitate handling and movement. Examples of tasks which require patient handling are provided on the following page.

Caregiver Tasks that Cause Concern around Safe Patient Handling

Transfer: The movement of a patient from one place to another. Two general categories of transfers: movement of a patient (1) from one flat surface to another flat surface (e.g., transferring patients onto and off a surgical table) and (2) from perch to perch (e.g., from one seated position to another seated position or to/from a seated position from/to a supine position).

Positioning: Done to (1) accomplish patient care tasks, (2) prevent bedsores and other position-related adverse outcomes, (3) reposition patients for their comfort and safety, (4) address a clinical condition, and (5) enhance communication.

Mobilization and Ambulation: Moving limbs of dependent, non-weight-bearing patients to preserve joint flexibility and ambulating patients as early and as often as possible to maintain mobility and bone density.

Lifting Off the Floor: Manually lifting patients who have fallen includes ensuring patient is stable and not injured (requiring care given in an awkward position) as well as lifting a patient who cannot help.

Transportation: Transporting patients long distances and/or up and down inclines (includes stretchers, gurneys, beds, transport chairs, wheelchairs).

Wound Care: May require caregivers to lift patients' heavy limbs and hold in place through sometimes lengthy procedures or to access a wound located on a part of the body that is difficult to access.

Toileting: Assisting a patient in toileting includes trying to suspend a patient over a toilet while performing personal hygiene in settings that include compromised balance, poor lighting, unfamiliarity with environmental obstacles and inadequate door clearance.

Showering/Bathing: Can occur in bed or requires transferring a patient into or out of a shower or bath. Includes patient feeling vulnerable emotionally, all areas of body need to be reached so requires lifting and turning, reaching and sometimes stooping, wet/slippery conditions, associated increased risk of falls.

Vehicle Extraction: Assisting patient from vehicle frequently requires caregiver contortions complicated by emergent conditions as well as patient size, weight, physical or emotional fragility, and state of consciousness.

(Adapted from the FGI *Patient Handling and Movement Assessments: A White Paper* (2010))

Patient Handling Equipment

Patient handling-equipment, sometimes referred to as patient handling technology, is defined as technology used for repositioning, transferring, lifting or ambulating patients in order to provide care or assist with activities of daily living. Many types of patient handling equipment are available ranging from ceiling lifts to slide boards. Examples of the types of equipment are provided below.

Mechanical Lifts	Assistive Devices
<ul style="list-style-type: none">- Total sling lifts (either floor standing or ceiling lifts)- Stand assist devices/Sit-stand devices- Mechanical or air assisted lateral transfer devices- Air assisted lifting devices	<ul style="list-style-type: none">- Slide boards- Friction reducing lateral transfer aides (e.g., draw sheets)- Gait/transfer belts with handles- Stand aides- Pivot discs- Walkers- Transport assistive devices

2. Musculoskeletal Disorders Associated with Patient Handling among Massachusetts Hospital Workers: A Look at the Data

Data Sources and Methods

Information about the nature, causes, and extent of musculoskeletal disorders (MSDs) among hospital workers in Massachusetts is essential to guide prevention efforts. To inform the work of the Task Force, the DPH Occupational Health Surveillance program analyzed data on MSDs among Massachusetts hospital workers, focusing on those associated with patient handling, from three statewide data sources:

- The Survey of Occupational Injuries and Illnesses (SOII), conducted by the Bureau of Labor Statistics (BLS) together with the Massachusetts Department of Labor Standards;
- Workers' Compensation claims data for injuries resulting in five or more lost workdays maintained by the Massachusetts Department of Industrial Accidents (DIA); and
- Notices of Injury and Workers' Compensation claims data for all injuries reported by workers employed in state agencies/facilities, maintained by the Human Resource Division (HRD).

These three data sources differ with respect to the groups of hospitals covered and the severity of injuries captured (Table 2-1). Each source provides important insights about the patterns of MSDs associated with patient handling among hospital workers in the state. The SOII allows for examination of trends in patient handling MSDs in private sector hospitals over time and comparison with national estimates. The DIA data provide information about the more serious patient handling MSDs and how rates vary by hospital size and type. The HRD data provide information about the experience in public sector hospitals. As will be shown, the patterns of patient handling MSDs are highly similar across the three data sources. Taken together, these data sources provide a more complete picture of the problem. The data provided in this chapter can also serve as an important baseline for monitoring statewide progress in preventing patient handling MSDs among Massachusetts hospital workers over time.

Table 2-1. Statewide data sources on musculoskeletal disorders (MSDs) among Massachusetts hospital workers

Data Source	Hospitals covered	Severity of MSDs captured	Type of data (all cases or sample)	Agency that maintains data
MA Survey of Occupational Injuries and Illnesses (SOII)	Private sector hospitals ^a	MSDs resulting in one or more lost workdays ^b	Estimated cases from a sample of Massachusetts establishments	U.S. Bureau of Labor Statistics and the MA Department of Labor Standards ^c
Workers' compensation claim database	All public and private sector hospitals, excluding Federal hospitals	MSDs resulting in five or more lost work days (i.e., lost time cases)	All cases	MA Department of Industrial Accidents
Notices of Injury Workers' Compensation eServices system	Public sector hospitals	All notices of work-related MSDs reported by employees	All cases	MA Human Resources Division

^a Since 2008 SOII has included data on public sector establishments but the data are currently insufficient to estimate rates for public sector hospitals specifically.

^b SOII collects data from sampled establishments on all injuries requiring more than first aid but detailed information on specific types of injuries is available only for those resulting in one or more lost workdays.

^c SOII is a joint effort of BLS and state agencies. In Massachusetts, SOII data are collected by the MA Department of Labor Standards.

Definitions

Musculoskeletal Disorders

Work-related musculoskeletal disorders (MSDs) are injuries or disorders of the muscles, tendons, nerves, ligaments, joints or spinal discs that are caused or aggravated by work activities. They include conditions such as sprains, strains, back pain, carpal tunnel syndrome and hernias. Workplace risk factors for MSDs include manual handling of heavy or awkward loads, repetitive forceful motions, awkward postures, and use of vibrating tools or equipment. These disorders can also be caused by single, traumatic events such as falls or motor vehicle incidents. Both single events and wear and tear over time can play a role in these disorders (CSTE, 2001).

The analyses presented here are based on the definition of MSDs used by BLS in the SOII. This definition includes MSDs caused by overexertion, repetitive motion, bending, twisting or climbing. MSDs due to select single traumatic events including slips, trips and falls, motor vehicle incidents and assaults are excluded.⁶

⁶ The BLS surveillance definition of MSDs is based on the following cross tabulation of Nature of Injury and Event codes in the Occupational Injury and Illness Classification System (OIICS) used to code SOII data: OIICS Nature of Injury codes: 021 (sprains, strains, tears) or 0972 (back pain, hurt back) or 0973 (soreness, pain, hurt, except the back) or 1241 (carpal tunnel syndrome) or 153 (hernia) or 17* (musculoskeletal system and connective tissue

The Task Force recognizes that workers may also sustain MSDs as a result of restraining patients or as a result of assaults (intentional or non-intentional) by patients that occur during the course of patient handling tasks. However, work-related MSDs associated with assaults and restraints were difficult to identify in the data and therefore are not included in this report.⁷

Patient Handling

The SOII does not have a data element specifically indicating patient handling. The analysis of the SOII data, therefore, focused on MSDs for which the primary or secondary *source of injury* was coded as “health care patient or resident of a health care facility.” In the analyses of both DIA and HRD data, narrative descriptions of the incident were reviewed to identify cases associated with patient handling tasks as defined in the previous chapter (page 6).

diseases and disorders) and OIICS Event codes: 211 (bending, climbing, crawling, reaching, twisting) or 22 (overexertion) or 23 (repetitive motion). A detailed definition of MSDs can be found on the BLS Occupational Safety and Health Definitions page (<http://stats.bls.gov/iif/oshdef.htm>).

⁷ For the most part, in data sources used for the analyses presented in this chapter, it was not possible to determine whether MSDs associated with assaults occurred during the course of patient handling tasks. Likewise, in the SOII and DIA data, it was usually not possible to distinguish unintentional injuries associated with restraining patients from injuries within the broader group of injuries associated with assaults.

Survey of Occupational Injuries and Illnesses (SOII) - MSDs Associated with Patient Handling Among Massachusetts Hospital Workers, Private Sector, 2004-2011

The SOII is the official source of occupational health and safety statistics in the U.S. Each year in Massachusetts, data are collected from a sample of over 5,000 workplaces, including hospitals. Employers provide information from their on-site injury and illness logs maintained as required under the Occupational Safety and Health Act (BLS, 2012b). More extensive details on nature of injury, body part, source and event as well as worker demographics are collected for all injuries or illnesses resulting in one or more lost workdays. Sample data are weighted to provide statewide *estimates* of the numbers and rates of injuries and illnesses. Data collected at the state level are combined to generate national estimates. It is well recognized that SOII does not provide good information about chronic occupational diseases. There is also evidence that injuries are underreported (Azaroff et al., 2002, Boden and Ozonoff, 2008). Nevertheless, the SOII is an important source of information on injuries and illnesses in private sector hospitals that allows for examination of trends over time and comparison of state findings with national estimates.

The Context – Massachusetts Hospitals Compared to Other Industries and to Hospitals Nationwide

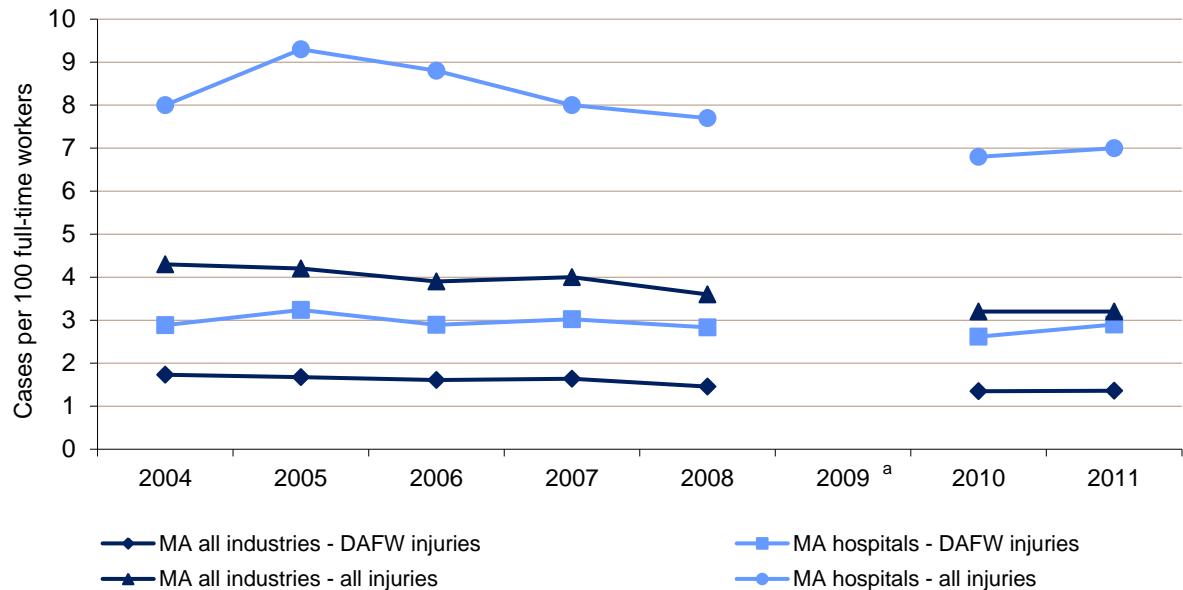
According to the SOII, during 2004-2011, more Massachusetts workers were injured⁸ in hospitals than any other single industry. In 2011, it is estimated that over 9,800 workers in Massachusetts private hospitals were injured on the job; close to half of these workers were injured seriously enough to lose time from work (42%) or require modified duties (10%). The large number of injuries may not be surprising given that the hospital industry is the largest industry in the state, employing approximately 6% of the Massachusetts workforce (BLS, 2012a). However, similar to findings for hospitals nationwide, the rate of injuries among workers in Massachusetts hospitals has been consistently high over time, exceeding the rate for all industries combined. In 2011, 7 out of every 100 full time workers in Massachusetts hospitals were injured on the job, compared to a rate of 3.2 per 100 full time workers for all Massachusetts private sector industries.

The rate of injuries resulting in days away from work (DAFW) has likewise been consistently high for Massachusetts hospitals compared to all industries. In 2011, this rate was 2.9 injuries per 100 full time workers, exceeding the rate of 1.4 for all of private industry, and higher than the rates for either manufacturing (1.3) or retail trade (1.4). While from 2004 to 2011, the rate of DAFW injuries for workers in all Massachusetts industries combined declined by 18%, during this same time period the rate for Massachusetts hospitals workers remained unchanged (Figure 2-1).

⁸ The BLS data on which figure 2-1 is based include both work-related injuries and illnesses. Ninety-five percent of the cases are injuries and the term “injured” as used in this section encompasses both.

Musculoskeletal Disorders Associated with Patient Handling Over Time

Figure 2-1. Rates of nonfatal occupational injuries and illnesses for Massachusetts hospitals compared to rates for all Massachusetts industries combined, all cases and cases with days away from work (DAFW), private industry, 2004-2011



Source: BLS Survey of Occupational Injuries and Illnesses

^aMA data not available for 2009

Musculoskeletal Disorders (MSDs) caused by overexertion, which includes heavy lifting, repetitive motion, and bending or twisting are among the most common injuries experienced by hospital workers. Between 2004 and 2010⁹, MSDs consistently accounted for close to 50% of all injuries that resulted in DAFW among Massachusetts hospital workers.

Strikingly, the MSD rate overall and the patient handling MSD rate for workers in Massachusetts hospitals was at least 70% higher than the comparable rates for workers in hospitals nationwide every year since 2004 for which data are available¹⁰ (Figure 2-2). In 2010, the patient handling MSD rate for Massachusetts hospital workers was 7.3 per 1,000 full time workers compared to a rate of 4.1 per 1,000 full time workers in hospitals throughout the country. Massachusetts hospitals have higher rates of DAFW cases than U.S. hospitals for other MSDs and other types of injuries as well. The extent to which the marked difference in the rates of patient handling

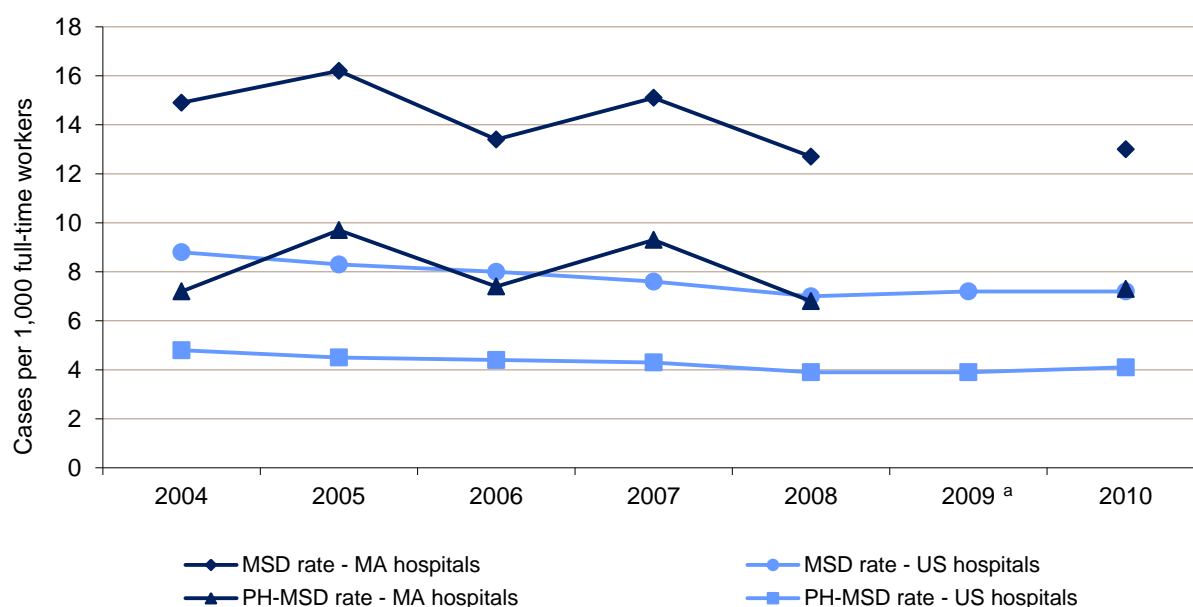
⁹ BLS changed the Occupational Injury and Illness Classification System used to classify injuries and events in 2011; data on MSDs in hospital workers in 2011 are not comparable to data collected in prior years.

¹⁰ BLS estimates on work-related injuries and illnesses are not available for Massachusetts for 2009; that year Massachusetts did not participate in the BLS Survey of Occupational Injuries and Illnesses. The federal government did collect some Massachusetts data that year for inclusion in nationally aggregated data, but the sample size was too small to produce Massachusetts specific estimates

MSDs may be due to better injury reporting practices, higher underlying risks or different options for modified duty in Massachusetts hospitals compared to hospitals nationwide is not known. Regardless of the explanation for the difference, these findings highlight that patient handling MSDs are an important public health problem in Massachusetts that needs to be addressed.

The number of days of work lost as a result of MSDs associated with patient handling - an indicator of injury severity and cost - underscores the importance of addressing the problem. The median number of days away from work experienced by Massachusetts hospitals workers with patient handling MSDs ranged from a low of 6 in 2004 to a high of 13 in 2010.

Figure 2-2. Rates of musculoskeletal disorders (MSDs) and patient handling MSDs (PH-MSD) for Massachusetts hospitals compared to rates for US hospitals, cases with days away from work (DAFW), private industry, 2004-2010



Source: BLS Survey of Occupational Injuries and Illnesses

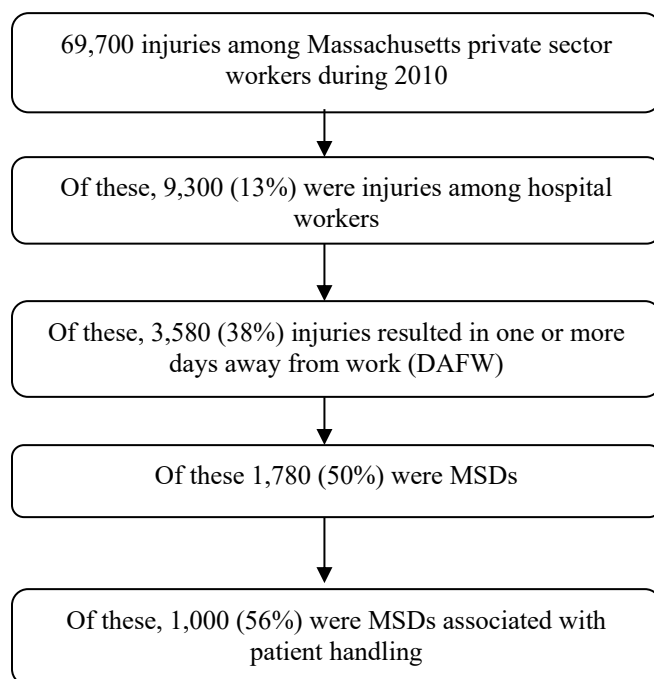
^a MA data not available for 2009

Musculoskeletal Disorders Associated with Patient Handling, 2010

Given the nature of the SOII estimates, it is not possible to aggregate SOII data over years. The data for 2010 are presented here to provide a more detailed picture of patient handling MSDs among workers in Massachusetts hospitals. Similar patterns were observed in all years examined (2004-2008, 2010).

In 2010, there were an estimated 69,700 injuries reported among Massachusetts private sector workers of which 9,300 injuries (13%) were among workers employed in hospitals. Close to 40% of these injuries resulted in one or more days away from work (DAFW); another 11% resulted in job transfer or modified duty. Of the DAFW injuries, about half - 1,780 – were MSDs. Of these MSDs, at least 56% - 1,000 injuries – were associated with patient handling.

These patient handling MSDs accounted for 28% of all injuries to hospital workers resulting in one or more DAFW.



85% of the workers with patient handling MSDs were females, and 37% were less than 35 years of age. Nurses and health aides accounted for 75% of the cases - 46% and 29% respectively. All cases were reported as involving overexertion and 66% involved the back (Table 2-2). These patterns were similar in hospitals nationwide with the exception that nurses and nursing aides accounted for 37% and 38% of the cases respectively, i.e., proportionately more of the cases in Massachusetts hospitals were nurses. The extent to which this difference reflects differences in employment patterns and/or risk of injury is not known.

Table 2-2. Survey of Occupational Injuries and Illnesses

Musculoskeletal disorders (MSDs) associated with patient handling resulting in one or more days away from work, Massachusetts private hospitals, 2010 (n=1,000)

	N	%		N	%
Gender			Age		
Female	850	85	20-24	130	13
Male	150	15	25-34	240	24
			35-44	240	24
			45-54	230	23
			55+	160	16
Occupation^a			Body Part^b		
Nurses	460	46	Back	660	66
Nursing aides, orderlies and attendants	290	29	Shoulder	110	11
Medical technicians	130	13	Neck, cervical vertebrae	50	5
Others	120	12	Other	180	18
Nature of Injury^b			Event^b		
Back pain, hurt back	80	8	Overexertion	1000	100
Sprains, strains	890	89			
Other	30	3			

^a Coded according to the Standard Occupational Classification Manual.

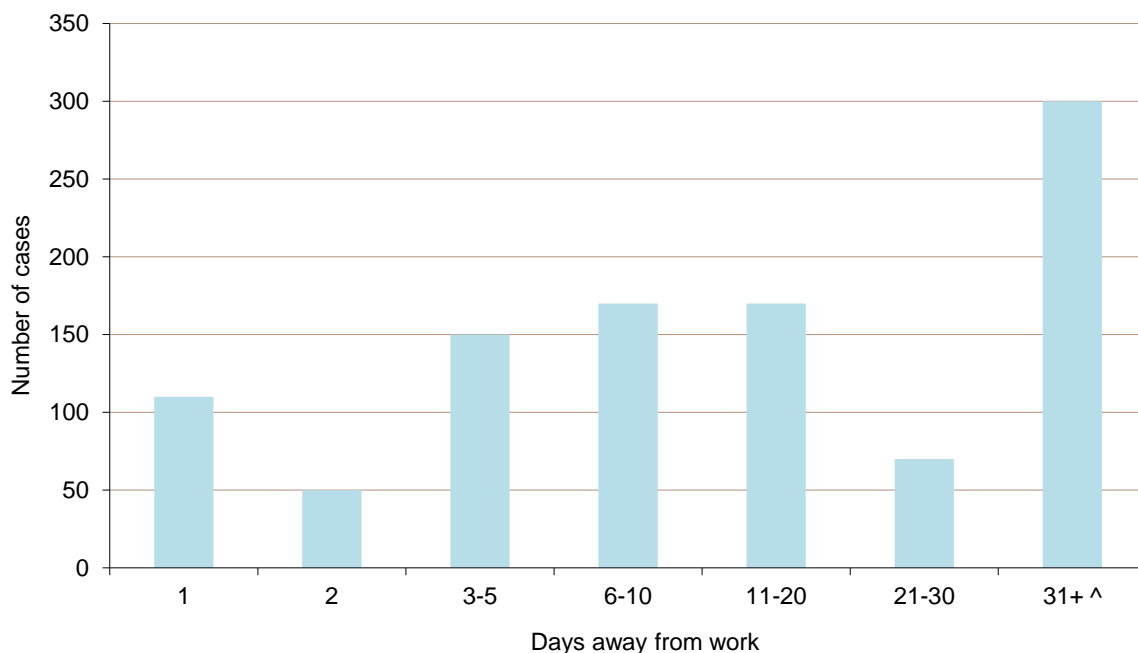
^b Coded according to the BLS Occupational Injury and Illness Classification System (OIICS).

Costs

The SOII does not collect information about medical or other costs associated with work-related injuries. It does, however, provide some information about the number of lost work days. As noted, the median number of lost workdays for the estimated 1,000 hospital workers with patient handling MSDs in 2010 was 13. Close to 70% of these injured workers (690) lost five or more days of work, with 30% losing at least 31 days (Figure 2-3). The median number of lost work days was highest – more than 20 days – for workers 45 years and older.

When workers lose more than 180 days as a result of their injuries, the additional days are not required to be recorded by employers. Thus for most cases in the SOII, the number of lost workdays is capped at 180, i.e., days lost beyond 180 are not counted. BLS therefore does not officially report the total number of workdays lost. A highly conservative estimate using the available information is that in 2010, Massachusetts hospital workers lost over 21,485 days of work as a result of patient handling MSDs.¹¹

Figure 2-3. Distribution of musculoskeletal disorders associated with patient handling among Massachusetts private sector hospital workers by days away from work category, 2010 (n=1,000)



Source: BLS Survey of Occupational Injuries and Illnesses
^Median number of lost work days is 75 in this group

¹¹ See technical note (Appendix A) for information about how this estimate was generated.

Department of Industrial Accidents Workers' Compensation Claims Database- MSDs Associated with Patient Handling among Hospital Workers in Massachusetts, 2008-2010

The Massachusetts Department of Industrial Accidents (DIA) maintains a database of all Workers' Compensation (WC) claims for injuries or illnesses resulting in **five or more lost work days**. These data provide information about the more serious injuries and illnesses among workers in both public and private sector hospitals. They also provide information about injury rates by hospital characteristics – e.g., size and hospital type (acute vs. non-acute care). Similar to findings reported in the SOII, MSDs reported here are limited to those caused by overexertion, repetitive motion, bending, twisting, or climbing.

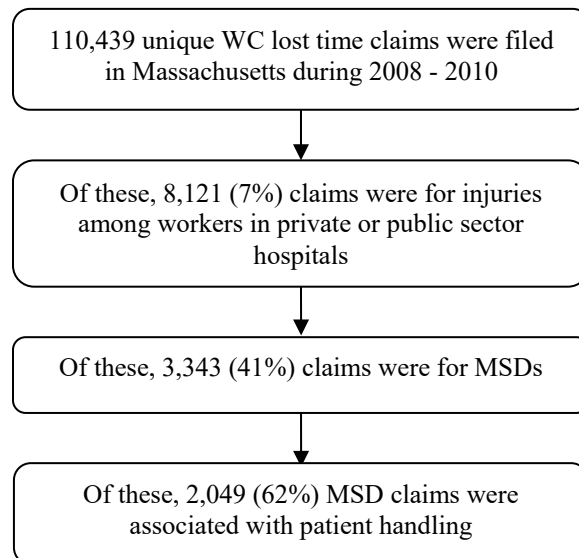


Table 2-3. Department of Industrial Accidents Workers' Compensation Database
Musculoskeletal disorders (MSDs) associated with patient handling resulting in five or more lost work days, all Massachusetts hospitals, 2008-2010 (N=2,049)

	N	%		N	%
Gender			Age		
Female	1,747	85.3	16-24	132	6.4
Male	262	12.8	25-34	397	19.4
Not Answered/Missing	40	1.5	35-44	564	27.5
			45-54	498	24.3
			55+	233	11.4
			Missing	225	11
Occupation^a			Body Part^{b, c}		
Nurses	1,009	49.2	Back	1,235	60.3
Nursing aides, orderlies and attendants	561	27.3	Shoulder	398	19.4
Medical technicians	114	5.6	Neck, cervical vertebrae	216	10.5
Others	278	13.6	Other	419	20.4
Unknown	87	4.2			
Nature of Injury^d			Event^d		
Back pain, hurt back	1,092	53.3	Overexertion	1,997	97.5
Sprains, strains	874	42.7	Bending, climbing, twisting	42	2.1
Other	41	2.0	Repetitive motion	10	0.5
Unknown	42	2.1			

^a Coded according to the Standard Occupational Classification Manual

^b Some claims involve more than one Body Part Affected. Thus, the total numbers of Body Part Affected exceed the total numbers of incidents.

^c Coded according to the American National Standards Institute coding system.

^d Coded according to the BLS Occupational Injury and Illness Classification System (OIICS).

During 2008 - 2010, there were 110,439 unique workers' compensation lost time claims filed in Massachusetts. Of these, 8,121 (7%) were for injuries or illnesses among workers employed in Massachusetts hospitals. Musculoskeletal disorders (MSDs) accounted for 3,343 (41%) of the claims filed among hospital workers. Of these, at least 2,049 (62%) involved patient handling.¹² **These patient handling MSDs accounted for 25% of all workers' compensation lost time claims filed by hospital workers.** Most patient handling MSDs occurred in acute care hospitals (88%). Similar to findings based on the SOII, over 80% of the injured workers were female, with nurses and nursing aides accounting for more than 75% of the claims. Almost all of the patient handling MSDs were reported as due to overexertion and 60% involved the back (Table 2-3). These patterns were similar in acute and non-acute care hospitals with the exception that in acute care hospitals, nurses and nurses' aides accounted for 53% and 24% of the claims respectively, whereas this pattern was reversed in non-acute care hospitals (nurses: 22% and nursing aides: 48%).

Rates of MSDs Associated with Patient Handling by Hospital Characteristics

The average annual rates of MSDs associated with patient handling presented here were computed using the number of licensed beds as the rate denominator, as the number of full time employees was not available for all hospitals. This analysis was limited to the 98 private sector hospitals licensed by the Massachusetts Department of Public Health (DPH).¹³

The injury rates for individual hospitals ranged from a low of 0 to a high of more than 10 claims per 100 beds with an average annual rate of patient handling MSDs of 3.6 claims per 100 hospital beds for all hospitals combined (Table 2-4).

- The rate increased with hospital size, with workers in large hospitals (>300 beds) experiencing injuries at a rate more than double that for workers at hospitals with less than 100 beds.
- The rate for workers in acute care hospitals was more than double the rate for workers in non-acute care hospitals.

¹² Information was obtained from reviewing narrative information about the injury event in the records. Information about source of injury was missing for 8.6% of the MSD claims. Percentages associated with patient handling were computed with missing information in the denominator and thus percentages are a minimum percent.

¹³ Excludes 15 private sector hospitals licensed by the MA Department of Mental Health only, in which there were 14 patient handling MSDs, and public sector hospitals which are covered in a separate section.

Table 2-4. Number and average annual rate of musculoskeletal disorders (MSDs) associated with patient handling by hospital characteristics, DPH licensed hospitals, Massachusetts, 2008-2010 (N=1,965)

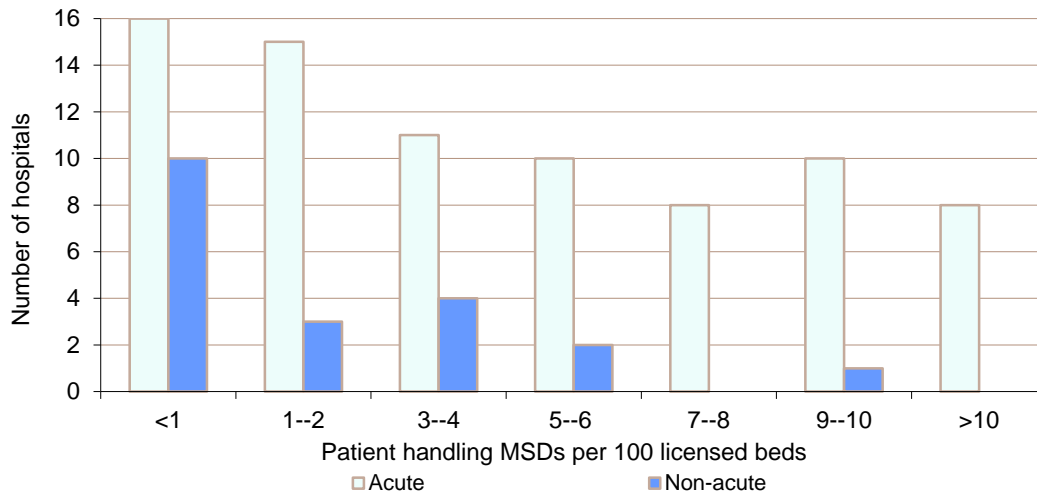
	Number of Hospitals	N	%	Average Annual Rate per 100 licensed beds (CI)
Hospital Size				
Small (<100 beds)	31	105	5.3	2.0 (1.7-2.5)
Medium (101-300 beds)	52	751	38.3	2.7 (2.5-2.9)
Large (>300 beds)	15	1,109	56.5	5.1 (4.8-5.3)
Hospital Type				
Acute care	78	1,808	92	4.0 (3.9-4.2)
Non-acute care	20	157	8	1.5 (1.3-1.8)
All Hospitals	98	1,965	100	3.6 (3.4-3.7)

CI: 95% Confidence interval

Source: MA Department of Industrial Accidents

Figure 2-4 presents the distribution of hospitals by service type and patient handling MSD rate category. Half of the 20 non-acute care hospitals had rates of less than one injury per 100 licensed beds. While 16 of the 78 acute care hospitals - about 20% - also had rates of less than one injury per 100 licensed beds, 46% (36) of the acute care hospitals had 5 or more injuries per 100 licensed beds.

Figure 2-4. Distribution of acute and non-acute care hospitals by patient handling musculoskeletal disorders (MSDs) rates, Massachusetts, 2008-2010^a

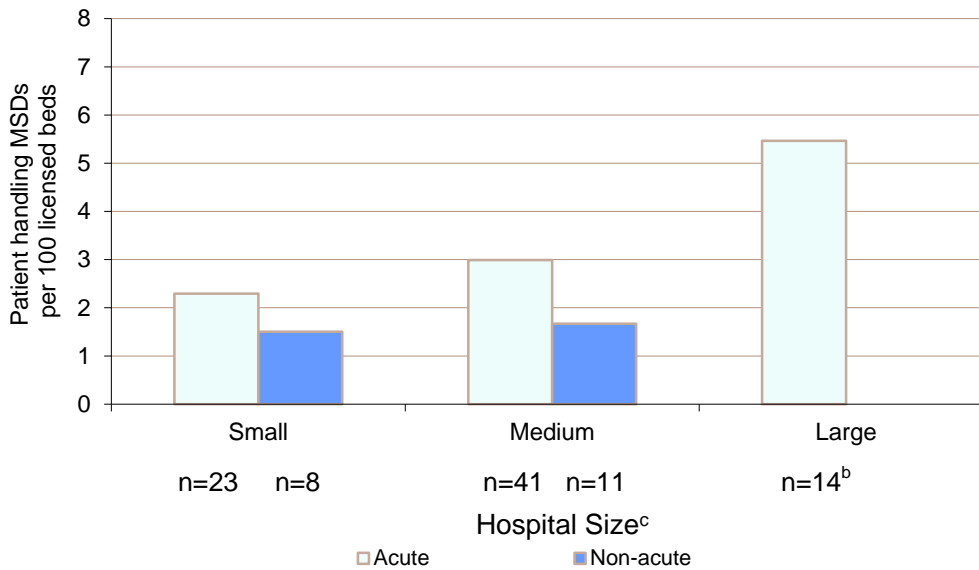


Source: MA Department of Industrial Accidents

^a Limited to hospitals licensed by DPH.

Hospital type is correlated with hospital size; acute care hospitals tend to be larger. Patient handling MSD rates by size and type were therefore examined separately by hospital type and size (Figure 2-5).

Figure 2-5. Patient handling musculoskeletal disorder (MSDs) rates by hospital type and size, Massachusetts, 2008-2010^a



Source: MA Department of Industrial Accidents

^a Limited to hospitals licensed by DPH.

^b Information about large non-acute care hospitals not shown due to small number of hospitals in this category.

^c Hospital size categories: Small (<100 beds), medium (101-300 beds) and large (>300 beds).

- Patient handling MSD rates for workers in acute care hospitals increased by hospital size. There was no clear trend for non-acute care hospitals.
- Rates for workers at acute care hospitals were higher than those for workers at non-acute care hospitals within the same size categories suggesting that hospital type has an effect independent of hospital size.
- While on average, workers in large acute hospitals were at greater risk of experiencing patient handling MSDs than workers in smaller acute care hospitals, it should be noted that there was a great deal of variation in hospital specific rates within the hospital size categories. For example, rates in large acute care hospitals ranged from 0 to over 10 patient handling MSDs per 100 beds.

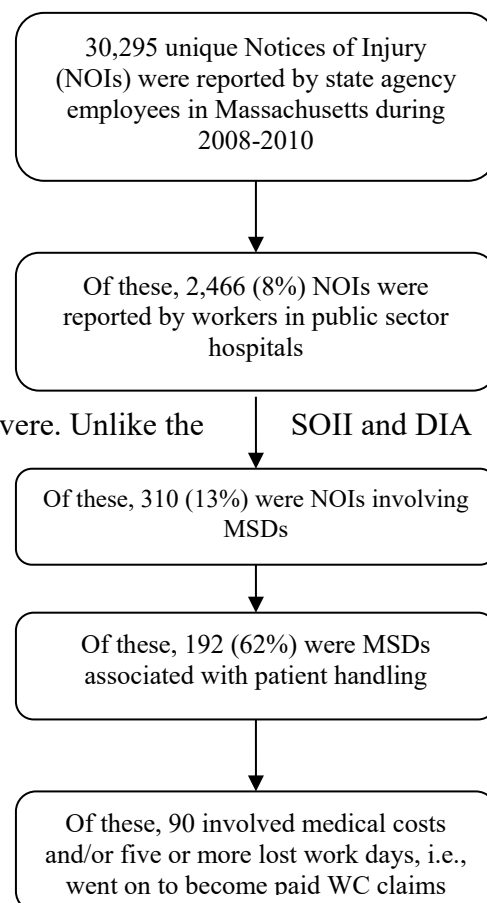
Costs

Information about neither workers' compensation costs (medical care and wage replacement) nor the total number of lost work days is available in the DIA WC database.

Human Resources Division Workers' Compensation eServices Database - MSDs among Public Sector Hospital Workers in Massachusetts, 2008-2010

The Human Resources Division (HRD) Workers' Compensation eServices system is an electronic system used by Massachusetts state agencies, including public sector hospitals, to manage Notices of Injury (NOIs) and Workers' Compensation (WC) claims filed by agency employees. It includes information on all NOIs reported by employees, including those that go on to become paid workers' compensation claims. These include injuries or illnesses that involve medical costs and/or five or more lost work days. This database provides information about the full range of MSDs associated with patient handling from the less to more severe. Unlike the SOII and DIA databases, it also includes information about the amount of money paid for workers' compensation claims. Similar to findings based SOII and DIA data, MSDs reported here are limited to those caused by overexertion, repetitive motion, bending, twisting, or climbing.

During 2008 - 2010, 30,295 unique NOIs were filed by employees of state agencies and entered into the WC eServices database. Of these, 2,466 (8%) were reported by workers employed in public sector hospitals. MSDs accounted for 310 (13%) of the NOIs reported by hospital workers. This is a lower percentage than seen in the SOII for private sector hospitals and in workers' compensation data. Of these MSDs, at least 192 (62%) were associated with patient handling.¹⁴ **These patient handling injuries accounted for 8% of all injuries reported by workers in public sector hospitals.** Almost all patient handling MSDs (93%) were reported as due to overexertion and about 60% involved the back. These patterns were similar for both the less serious (NOI only) and more serious patient handling MSDs that went on to become paid workers' compensation claims. About 70% of the workers with patient handling MSDs were nursing aides and 17% were nurses. This distribution of MSDs by occupation was different for the private sector hospitals. (See Table 2-3).



Costs

Unlike the other data sources, the HRD data set does include information on dollars paid for workers' compensation claims for MSDs associated with patient handling. These dollars reflect

¹⁴ Information was obtained from reviewing narrative fields for the injury event in the records. Information about source of injury was missing for 9.9% of the MSD claims. Percentages associated with patient handling were computed with missing information in the denominator and thus percentages are a minimum percent.

the amount paid out from the time the NOI was filed until July 2013 (when data analysis was conducted) and not necessarily the full cost of claims over time.

About half (90) of the hospital workers filing NOIs for patient handling MSDs received workers' compensation benefits, either coverage of medical costs and/or coverage of lost wages. (Workers become eligible for lost wage benefits only after losing a minimum of five days of work as a result of their injuries.) The average cost per patient handling MSD claim paid as of July 2013 was \$14,710. This was higher than the average cost of \$11,006 per paid claim for other MSDs and more than double the average cost of non-MSD claims paid (\$5,536).

Putting It All Together

Taken together, the findings in this chapter present a compelling and largely consistent picture of the problem of MSDs associated with patient handling among Massachusetts hospital workers. Findings based on the SOII indicate that hospital workers in Massachusetts, like hospital workers throughout the country, are at high risk of being injured on the job. They also reveal that MSDs associated with patient handling contribute substantially to the burden of injuries among Massachusetts hospitals workers – accounting for about a quarter of all injuries resulting in lost work days.

The finding of consistently high rates of lost time injuries in general and patient handling MSDs in particular in Massachusetts hospitals compared to hospitals nationwide is striking. Unfortunately, it is not possible to explain these differences with available data. Possible explanations include differences in injury reporting practices, in underlying risks, in modified duty practices and workers' compensation case management. Regardless of the explanation for the differences, the findings highlight a critical public health problem that needs to be addressed.

Not surprisingly, according to the SOII, the majority of workers with patient handling MSDs are employed as either nurses or nurses aides and were female. Over 35% are younger than age 35 which raises concern about the long term impact of these injuries not only on worker health and quality of life but workers' long term career options. Previous studies have found that 12% of nurses have left their profession, and up to 20% of nurses have transferred units due to lower back pain (Stubbs et al., 1986; Owen, 1989). The large number of lost work days due to MSDs associated with patient handling, conservatively estimated at 21,485 days in 2010, highlights not only the severity of these injuries and their impact on health care workers, but also the substantial monetary costs to hospitals. Hospitals need to assign additional hours to current employees or hire temporary replacement staff while workers are out on leave due to work-related injuries. Unanticipated changes in staff can also influence the quality of patient care (Castle and Engberg, 2005, Aiken et al., 2002).

Findings for all hospitals based on analysis of workers' compensation lost wage claims shed light on the more serious patient handling MSDs among Massachusetts hospital workers and confirm the need to reduce these injuries. As we saw in the SOII, these MSDs account for about a quarter of all injuries resulting in lost wage claims among hospital workers. Notably, the distribution of these serious cases by worker and injury characteristics is remarkably similar to that observed for the wider range of patient handling MSDs resulting in one or more lost workdays reported in the SOII.

The workers' compensation results add important information about differences among hospitals and the influence of hospital characteristics. Hospital type (acute vs. non-acute) and size, both appear to make a difference. The wide range of rates among individual hospitals, even within hospital size categories for acute care hospitals, is striking and suggests that hospital policies and practices regarding patient handling likewise differ substantially and that improvement is possible. (See Chapter 6 for more information on patient handling policies and practices in Massachusetts hospitals.) As described above, differences in underlying risks, injury reporting practices, return-to-work practices and workers' compensation case management practices may

also explain some variation across hospitals. These workers' compensation claim data provide important hospital level information that can be used to develop targeted interventions to reduce patient handling MSDs.

The HRD data provide insight about the experience in the smaller set of public sector hospitals. In contrast to findings for private sector hospitals, MSDs make up a smaller proportion of all injuries reported in these hospitals and nursing aides, sustain proportionately more of the patient handling MSDs than nurses. This is likely explained by the nature of these hospitals (only one acute care) and patient populations served. The HRD data are our only source of specific information about dollars spent on patient handling MSDs in Massachusetts, and even these workers' compensation costs do not include the full range of workers' compensation or other costs associated with these MSDs. The findings are consistent with previous reports in the literature that MSDs are comparatively costly injuries.

The data clearly indicate that patient handling MSDs are a significant public health problem that needs be addressed. Each year, hundreds of workers and their familiars are impacted by these injuries and thousands of workdays are lost. While specific information on the economic burden of these injuries in Massachusetts is extremely limited, we know that direct and indirect costs of patient handling injuries among health care workers are substantial. The estimated number of Massachusetts hospital workers with patient handling injuries and resultant days lost indicate that these costs in the Commonwealth are substantial, further burdening an overstretched health care system, an issue ever more critical as Massachusetts seeks to assure access to quality health care for all Massachusetts residents.

3. Effectiveness of Safe Patient Handling Programs

Worker Safety

The hazards of patient handling are not new or unknown. High rates of MSDs among health care workers engaged in manual patient handling tasks have been recognized for decades (Smedley et al., 2003). Over the years, a wide range of interventions have been implemented to reduce risk associated with patient handling, and hundreds of studies reporting on interventions have been published. Since 2003, there have also been several systematic reviews of the patient handling intervention research that meets rigorous scientific criteria and focuses on health outcomes (Bos et al., 2006; Hignett 2003; Tullar et al., 2010).

Historically, the approach to minimize injury when moving patients in health care facilities and taught in nursing schools was training on body mechanics/lifting techniques, such as the hook-and-toss method (Nelson et al., 2004; Joint Commission, 2012). It is well established that interventions for patient handling based on lifting technique training have no effect on injury rates or work practices (Hignett, 2003; Tullar et al., 2010; NIOSH, 2009). Another measure, the use of back belts to support the back during lifting, also lacks evidence of effectiveness in the scientific literature and may in fact give workers a false sense of security (NIOSH, 1994, Wassell et al., 2000).

Alternative methods to lift, transfer and mobilize patients safely exist and are increasingly used, and, in some jurisdictions, required. Patient handling devices aim to engineer-out the hazard by reducing the biomechanical load on the worker's body and the extreme postures that can occur when manually handling patients. Generally, patient handling equipment is introduced within the context of a safe patient handling (SPH) program that includes other components such as worker training on equipment use. The specific elements of multi-component SPH programs vary; however, there are a number of core components that are common to most: an organizational policy (e.g., "minimal lift" or "zero lift" policy); the purchase and use of lift/transfer equipment; and staff training on SPH and/or equipment use (Hignett, 2003; Bos et al., 2006; Tullar et al., 2010; VA, 2005).

Numerous studies have evaluated the effectiveness of SPH programs. While these studies have focused on a variety of outcomes (e.g., injuries, work practices, self-reported pain, and costs), have had different follow up times, and have been conducted in different health care settings, they collectively provide consistent evidence: multi-component SPH programs involving patient handling equipment have been found to be effective in reducing the frequency and severity of patient handling injuries to health care workers, with lower injury rates, reduced lost time, reduced turnover, and, as will be discussed, reduced costs (Hignett, 2003; Bos et al., 2006; Tullar et al., 2010).

While the earliest studies of SPH program effectiveness were conducted in long term care facilities, there is a growing body of research on program effectiveness in hospitals. Li et al. (2004) found statistically significant improvement in musculoskeletal comfort in all body parts following implementation of and training on mechanical lifting equipment in a small community hospital. Additionally, OSHA recordable injury rates decreased from 10.3 injuries per 100 FTE

before the intervention to 3.8 injuries per FTE after the intervention and workers' compensation costs decreased by \$333 per FTE for nursing personnel in the units where the intervention was implemented. A number of hospitals have reported reducing the frequency of injuries related to patient handling by as much as 70% (Hinton, 2010; Charney, 1997; Haglund et al., 2010) and injury rates decreased by as much as 71% (Kutash et al., 2009; Charney, 1997; Charney et al., 2006) after establishing a SPH program.

In a randomized controlled trial comparing a multicomponent SPH program involving training and use of mechanical lift devices to training in safe manual handling, Yassi et al. (2001) found that the SPH program resulted in larger improvements in staff comfort and larger decreases in staff fatigue and physical demands. Similarly, Lynch and Freund (2000) found that the number of back injuries decreased by 30% (compared to the average of the previous three years) following implementation of a multi-component SPH program in an acute care hospital. This study also found a statistically significant decrease in the frequency of manual lifting following SPH program implementation and an increased knowledge of risk factors associated with back injuries. In a non-randomized study with a pre/post-evaluation of a multi-component program, Black et al. (2011) found a similar reduction in all injuries of 30.7% (RR = 0.693; 95% CI = 0.60–0.80), and a 18.6% reduction in time-loss injuries (RR = 0.814; 95% CI = 0.677–0.955). A statistically significant reduction in repeated back injury was also observed in this dataset and described in a second manuscript (Lim et al., 2011). Another pre/post comparison study by Anyan et al. (2013) examined the effect of a SPH program on back injuries in one unit in a university hospital and found that this type of injury was nearly eliminated after the program's implementation.

A number of studies have also examined environmental and individual factors affecting implementation of SPH programs. As reviewed by Koppelaar (2009), key factors identified to date include the convenience and easy accessibility of equipment, health care worker motivation and ability, and a supportive management climate. Organizational factors associated with better program outcomes in one study included less time pressure; lower aide turnover and agency staffing; and better teamwork, staff communication, and supervisory support (Kurowski et al., 2012). Koppelaar also highlighted patient-related factors, including the physical and cognitive capabilities of the patients as well as their attitude towards the equipment and other program components.

Large-scale SPH programs are still relatively new, and as such, much of the scientific research on the program impact is based on short term follow-up periods (Bos et al., 2006; Hignett, 2003). The long-term effects of SPH programs, while anecdotally positive, are currently being examined in a number of different settings. Notably, there is increasing anecdotal evidence from the field that sustainability of SPH programs is an issue and that programs need to be developed with long-term sustainability in mind (Washington State DOL, 2011).

Based on the available evidence, implementation of SPH programs is considered 'best practice' by a number of national agencies and organizations including the Veterans Administration (VA, 2005), the American Nurses Association (ANA, 2013), and the Association of Occupational Health Professionals (AOHP, 2011; OSHA, 2009).

Economic Benefits of SPH Programs

The costs of work-related injuries among hospital workers are substantial (Waehrer et al., 2005; USDOL, 2013). Injuries associated with patient handling have been found to account for about a quarter of these injuries. While it is difficult to assign an exact dollar amount to the burden of injuries due to patient handling, in terms of workers' compensation claims for wage replacement, patient handling injuries are among the most expensive types of hospital worker injuries (USDOL, 2013). In addition to direct workers' compensation costs, there are numerous additional costs to hospitals, including for example, employee overtime, training and replacement costs (Siddharthan et al., 2005a; Hunter et al., 2010). These indirect costs can far exceed direct costs. Workers and their families also incur costs associated with patient handling injuries.

Case studies of SPH program effectiveness have demonstrated cost savings in both acute care facilities (Charney et al., 2006; Hunter et al., 2010; Siddharthan et al., 2005a; Stenger et al., 2007; Yordy, 2011; Lancman et al., 2011; Cadmus et al., 2011; Celona et al., 2010; Hinton, 2010; Garg, 1999; Kutash et al., 2009; Anyan et al., 2013; Black et al., 2011) and long term care facilities (Chhoker et al., 2005; Collins et al., 2004; Garg, 1999; Nelson et al., 2006; Lahiri et al., 2013). For example, Charney et al. (2006) conducted a review of 31 hospitals in rural Washington that implemented SPH programs. Between 1999 and 2004, patient handling injury claims decreased by 43% (from 3.88 injuries per 100 FTEs in 1999 to 2.23 per 100 FTEs in 2004) and the total incurred loss per claim decreased by 24% (from \$6,510 in 1999 to \$4,991 in 2004). Other measures, such as frequency of time lost and health care only claims also decreased by more than 40% between 1999 and 2004.

Hunter et al. (2010) described the economic impact of a SPH program implemented at an acute care facility in Texas over a period of approximately three years. The facility was able to recoup all program implementation costs (\$582,081) in the one year that followed through a reduction in frequency and severity of workers' compensation claims. The average direct cost per injury before program implementation in 2002 to 2004 was \$27,402. By 2009, this cost had dropped to \$1,320. Implementation of a SPH program at several Veterans Administration facilities that included both long term-care and acute care hospitals in Florida lowered the incidence and severity of injuries following program implementation resulting in a savings of \$200,000 per year through reduction in medical treatment costs, workers' compensation claims and lost and restricted work days. The initial investment in patient handling equipment was paid back in 4.3 years and the authors estimated a net benefit of \$2 million over 10 years (Siddharthan et al., 2005b). The University of Iowa Hospitals experienced a decrease of 85% in workers' compensation costs three years after putting a SPH program in place thus recouping the costs of the program (Stenger, 2007). In addition to the findings cited above a new report from the US Department of Labor cites additional examples of hospitals that were able to recover the costs of their initial investments in SPH programs within a three year period (USDOL, 2013).

There are additional examples in the literature of cost effective programs in long-term care facilities. Collins et al. (2004) found a cost savings of \$55,000 annually in workers' compensation costs following implementation of a zero-lift policy across six nursing homes over a six-year period. The cost of the program was recovered in less than three years (Collins et al.,

2004). Lahiri et al. (2013) reported that in 110 nursing homes with at least six years of data per center, annualized savings in workers' compensation and turnover costs totaled over \$4.6 million, or an average of \$143 per bed, in each year after program implementation. Restrepo et al. (2013) also found that the increased presence of comprehensive safe lift programs at long-term care facilities had a positive impact on workers' compensation costs and claims. Using data from the Centers for Medicare and Medicaid Services (CMS)-certified facilities throughout the US, they found that an increase in lift usage of one lift per 100 residents was associated with a 5% decrease in frequency of claims and an 11% decrease in total costs.

In sum, while there are initial and ongoing costs involved in implementing a SPH program, a growing body of evidence in the scientific literature indicates that the benefits gained from multi-component SPH programs outweigh the initial costs: reduced injury rates (lost time and restricted work), reduced workers' compensation costs, improved patient outcomes (as discussed below), and improved job satisfaction. Notably, as discussed in the recent Joint Commission report *Improving Worker and Patient Safety*, the business case for any investment in safety is not limited to return on investment but must also consider the contribution to the organization's mission and patient and staff satisfaction as well as the bottom line (Joint Commission, 2012).

The Link between Patient and Worker Safety

There is a small but growing body of evidence that the benefits of SPH programs extend beyond hospital staff to include better outcomes for patients both by reducing risk of injury associated with manual handling and by facilitating mobilization (Joint Commission, 2012). Patients at facilities with SPH programs have been found to experience lower rates of skin tears associated with manual handling (Nelson and Baptiste, 2004). There is also evidence of reductions in pressure ulcers associated with increased mobilization. Nelson et al. (2008) examined a range of quality indicators among residents in six nursing homes and found lower levels of depression, improved urinary continence, higher engagement in activities and higher levels of alertness in the day following introduction of comprehensive patient care ergonomics programs. Higher levels of mobilization have been elsewhere linked to prevention of pneumonia, deep vein thrombosis, and other ailments (Clark et al., 2013). In a recent article using CMS data to examine several mobility-related outcomes among patients in a large national sample of nursing homes in relation to the availability of powered mechanical lifts and lifting policies, Gucer et al. (2013) found decreases in pressure ulcers and less confinement to bed or chair. Additionally, a number of studies have noted improvements in nursing home resident satisfaction and overall patient comfort following implementation of a safe patient handling program (Yassi and Hancock, 2005; Pellino et al., 2006; Zhuang et al., 2000).

It is widely held that SPH programs may also reduce risk of patient falls compared to manual handling, and there is anecdotal evidence that patients are less likely to be dropped during an equipment assisted lift compared to a manual lift. Nelson et al. (2008) report decreased incidence of patient falls following implementation of SPH programs and reductions in falls have been reported in several case studies (Joint Commission, 2012). Gucer et al. (2013) found an increase in falls with increased availability of lifts but this association disappeared after accounting for long term care facilities with safe lifting policies. It is important to recognize that the availability and use of equipment can lead to more mobilization of patients, which inherently increases the

risks of falls while at the same time can improve balance and strength, as well as other aspects of quality of life which are preventative. More systematic research on the complex relationship between SPH and falls is needed.

Nelson et al. (2008) suggested that the available evidence of patient safety benefits from a SPH program likely underestimates the actual positive impact. They note that while certain rare patient outcomes decreased following implementation of a SPH program, the sample sizes were too small to detect a statistically significant difference. Furthermore, the benefits caregivers experience as a result of SPH can in turn lead to improvements to the quality of care for patients and reduction in medical errors, which can be reflected in lower patient infection rates and accelerated recovery times (Collins et al., 2006; Charney and Schirmer, 2007; Lucian Leape Institute, 2013; Thorp et al., 2012; Yassi and Hancock, 2005).

Most of the research on direct patient outcomes in relation to SPH programs has been completed in long term care facilities (Nelson et al., 2008; Gucer et al., 2013). The lack of scientific evidence in acute care facilities does not indicate that there is not a benefit (or harm) to direct-patient outcomes; only that studies of hospital patients are more challenging to conduct but are needed.

In sum, while the extent of the evidence for the impact of SPH programs on patient outcomes is limited, it is positive. The link between SPH and patient safety has been acknowledged by lawmakers, advocacy organizations, researchers, and practitioners as an important reason to implement SPH programs.

More generally, there is also growing recognition of the link between patient and worker safety and the need to create a safe environment of care for workers and patients alike. According to a recent report from the Lucien Leape Institute, “workplace safety is inextricably linked to patient safety.” As the Joint Commission (2012) report states, “few activities in health care link patient and worker safety more directly than lifting, transferring, repositioning, and ambulating patients.”

“In health care, the primary ethical imperative is ‘First, do no harm.’ Although we have traditionally applied this obligation to our patients, this monograph helps to establish it also as our obligation to those with whom we work – and to all within the care setting.”

*Paul Schyve, MD. Senior Advisor, Healthcare Improvement
The Joint Commission (2012)*

4. Safe Patient Handling Legislation across the Country

Over the last decade, a number of states have enacted legislation requiring health care facilities to implement SPH programs. Federal SPH legislation has been proposed as well. Additionally, several national organizations have developed recommended guidance for implementing SPH programs in health care facilities. This chapter summarizes the Task Force's comprehensive review of patient handling legislative policy initiatives throughout the United States as well as the SPH program components recommended in select guidance documents.

The first step of the policy analysis involved a review of the key components of all enacted and proposed state and federal legislation related to SPH, as well as bills at both levels that were not passed. This information was obtained through internet searches on each state legislature's website. The Task Force also reviewed information on all state health and/or labor department issued guidelines, also obtained through internet searches on the various departments' websites as well as any related information on SPH policy initiatives in the available scientific literature. Major components of enacted SPH legislation are described below and summarized in Table 4-1.

The Task Force reviewed guidance for developing SPH programs in health care facilities from the following organizations, with a focus on the recommended program components: the Facility Guidelines Institute (FGI), the Veterans Administration (VA), the American Nurses Association (ANA), and the Association of Occupational Health Professionals (AOHP). The AOHP guidance was developed in collaboration with the Occupational Safety and Health Administration (OSHA). Findings from this review are included in Table 4-1.

As part of the legislative and state agency review, several individuals identified by the Task Force as experts on SPH policy development and/or implementation were contacted and interviewed via phone. In total, twelve interviews were conducted with individuals from seven states. Four of the individuals had been or were currently involved in state legislative activities regarding SPH, seven were involved in implementing the patient handling program in a hospital or hospital system and one was involved in the SPH effort at the federal level. Select comments from these interviews are included throughout this chapter.

Mandated State Safe Patient Handling Legislation

States with Enacted Legislation

As of August 2014, eleven states have enacted legislation related to SPH in acute care and/or long-term care facilities (See Figure 4-1). Nine of these states (California, Illinois, Maryland, Minnesota, New Jersey, New York, Rhode Island, Texas, and Washington) passed laws that mandate SPH programs and policies in hospitals. Regulations implementing SPH legislation have been developed and issued in four states (California, New Jersey, Rhode Island, and Washington). Regulations in the other five states are currently under development.

There are two additional states that passed legislation related to SPH. Ohio passed a long-term care loan program that provides financial support for facilities that wish to implement SPH policies but do not have adequate internal funding. Hawaii passed a resolution that encourages

hospitals to adopt the SPH policy included in the American Nurses Association's Handle with Care campaign (Hawaii, HCR16, 2006).

The scope of the enacted legislation varies quite substantially from state to state. For example, the legislation in California, Illinois, New York and Washington applies only to hospitals, whereas in Minnesota, New Jersey, Rhode Island, and Texas, the legislation applies to both hospitals and nursing homes. (Maryland first passed a law pertaining only to hospitals; one year later it passed another law for SPH in nursing homes). Some states (Washington and Minnesota) include provisions for financial assistance in their laws, whereas others do not. In some states (Illinois, Maryland, New Jersey, New York, Rhode Island, Texas, and Washington), the state health department is the government agency responsible for promulgating and enforcing a standard, whereas in other states, it is the state labor department/OSHA (California and Minnesota).

Despite these differences, there is also considerable overlap. Legislation from each of the nine states with mandatory SPH programs includes the need for a SPH policy statement in the hospital program. While the language from state to state varies somewhat; each law requires that the policy explicitly specify that facilities adopt a variant of a "no lift policy" or a "minimal lift policy."

The legislative language in all but one of the states emphasizes the benefit of SPH to both patients and workers. For example, New Jersey states that, "Each covered health care facility shall establish a SPH program to reduce the risk of injury to both patients and health care workers at the facility." Maryland alone puts the emphasis only on the worker, stating, "The goal of the policy shall be to reduce employee injuries associated with patient lifting." This is not to say that the authors of the Maryland legislation did not have patient benefits in mind; however, the wording strongly emphasizes worker safety.

Each of the state laws also includes the requirement that health care facilities establish a SPH program. The laws then go on to list the programmatic elements (e.g., committees, assessments) that the program must contain. These elements vary from state to state. Program elements are outlined in Table 4-1 and described in more detail below.

Requirement of a Written Program

Three states (Minnesota, New Jersey, and Rhode Island) specifically mention that certain aspects of the program shall be written out in detail. Minnesota, for example, requires that by a certain date each facility adopt a written policy that details the plan to achieve minimal lifting of patients through the use of SPH equipment.

Hazard Assessment

It is well acknowledged in the SPH implementation guidance documents that an early and important step in creating such a program is a facility-wide hazard assessment (AOHP, 2011; FGI, 2010). With the exception of California, all of the state laws explicitly require hospitals to conduct patient handling hazard assessment. These assessments must consider issues such as the

types of nursing units, the patient populations, the physical environment of the hospital, and the potential risk of injury to both nurses and patients.

Annual Program Review

With the exception of California, all of the states require some form of annual review of the SPH program. The goal of the review is to help facilities evaluate the effect of their program, determine what areas still need improvement, and focus future prevention efforts. Some states provide details in the legislation regarding the preparation of the report and presentation of findings, whereas others include only a simple statement requiring that such annual reviews be conducted. As described by NIOSH in the “Essential Elements of Effective Workplace Programs and Policies for Improving Worker Health and Wellbeing” (2008), regular program evaluations are crucial to promoting workplace initiatives such as SPH programs and can help to sustain the effects of such programs in the long term.

Several of the key informant interviews highlighted the importance of safe patient handling annual reviews. Not only does the review process help them identify areas of improvement, it enables them to recognize the areas of success. They are able to share this information with both frontline employees and hospital administration and build more support of the program.

It is well acknowledged that annual evaluations help strengthen the patient handling program most when the review includes a wide range of metrics (FGI, 2010; AOHP, 2011; VA, 2001). These metrics include patient satisfaction, staff musculoskeletal pain and injury, patient injury, use of SPH equipment, staff satisfaction, cost comparisons, and other staff surveys (FGI, 2010).

Enforcement Agency

Each of the laws directs a state agency to promulgate regulations and enforce activities under the law. In California and Minnesota, the state Occupational Safety and Health Administrations (OSHA) enforce the law through the existing workplace compliance programs and may issue civil penalties as needed. In each of the other seven states, enforcement is the responsibility of the state health department, where compliance is often tied to hospital licensing and/or patient safety requirements.

Construction Considerations

There are seven states (Illinois, Maryland, Minnesota, New York, Rhode Island, Texas, and Washington) that require all future facility renovations and construction activities to incorporate adequate physical space and support mechanisms for SPH equipment into the architectural plans. Similar to Prevention through Design (PtD) initiatives (NIOSH, 2010), these laws require hospitals to “design out” (or at least minimize) injury risk by changing the physical environment in such a way that patient handling activities can be carried out safely (FGI, 2010).

In the 2010 Washington State Legislation Efficacy Report, room size, lack of enough lifting equipment, storage space, and equipment size/capabilities were all cited as some of the top barriers faced by direct care staff when handling patients (Washington State DOL, 2011). This

was also echoed in many of the key informant interviews. While the construction consideration component of these laws does not require the retroactive fitting of all rooms, it does ensure that all future renovations and additions reflect SPH needs, thus helping to overcome some of these implementation barriers (FGI, 2010).

Safe Patient Handling Committee

Several states (Maryland, Minnesota, New Jersey, New York, Rhode Island, and Washington) require a hospital SPH committee to oversee all SPH related decisions. Each of these laws also specifies that at least half of the committee be non-managerial (frontline) employees.

The mixture of employees on the committee helps to bring different perspectives to the decision-making process, and increases worker acceptance when changes are made to the patient handling procedures (VA, 2001; OSHA, 2009). Safe patient handling committees provide workers with leadership roles, resources to make a change in their workplace, and professional development opportunities, all of which have been attributed to improving the safety culture of an organization (NIOSH, 2008; Yassi, 2008).

“The mixture of employees from different areas in the hospital enabled us to engage nursing leadership. This was the key driver of our program’s success.” - *Committee leader at a Missouri hospital*

Employee Right to Refuse to Lift Patients Manually

There are six states (California, Illinois, New Jersey, New York, Texas, and Washington) that include a specific provision in the legislation that gives employees the right to refuse to handle or move patients in situations that they believe may cause harm to either the patient or themselves. As the Washington law states, “A hospital shall develop procedures for hospital employees to refuse to perform or be involved in patient handling or movement that the hospital employee believes in good faith will expose a patient or a hospital employee to an unacceptable risk of injury. A hospital employee who in good faith follows the procedure developed by the hospital in accordance with this subsection shall not be the subject of disciplinary action by the hospital for the refusal to perform or be involved in the patient handling or movement.” This language is very similar (and in some cases verbatim) to the language in the other five pieces of legislation and is reminiscent of Part 1977.12(b)(2) of the Occupational Safety and Health Act that provides an employee’s right to refuse dangerous work.

Lift Teams

Several of the states (California, Illinois, Maryland, Rhode Island, and Washington) also include lift teams as part of their SPH program. The term “lift team” in the Illinois legislation is defined as “at least 2 individuals who are trained in the use of both safe lifting techniques and safe lifting equipment and accessories, including the responsibility for knowing the location and condition of such equipment and resources.” California, Rhode Island, and Washington describe lift teams as a group of hospital employees who have been specifically trained to perform patient lifts and repositioning as appropriate. California also goes on to specify that lift team members are able to perform other duties, as assigned, during shifts, and that hospitals are not required to hire new staff to comprise the lift team, as long as other direct patient care assignments are kept up.

Not only does the definition of a lift team vary from state to state, but the term has evolved considerably over time. Historically the term lift team meant that instead of one staff member manually moving a patient, two or more people would manually move a patient as a group. Due to the angles required by this type of lift, additional loading was often placed on the staff members and/or the patient, thus creating a patient transfer that endangered one or more of the people involved. This term has also been used to refer to a set of individuals specifically trained to move patients either manually or with equipment. There is growing consensus in research and practice that the term “lift team” is antiquated and should be replaced by another phrase, such as “lift protocol” or “group and equipment assisted lift.” For example, the VA’s Patient Care Ergonomics Resource Guide notes that lift teams involve a mixture of multiple people and equipment and are an important element of any SPH program, so long as the teams are truly a combination of people and equipment (VA, 2005). Many acknowledge that in current practice today, use of lift teams (the number of people and amount of equipment) should be determined based on a clinical assessment of the patient.

Clinical Assessment of Patient

Three recently passed laws, in California, Illinois and New York, include requirements for some sort of assessment before each lift. In California, this is referred to as a “clinical assessment” that must be completed by the registered nurse involved in the patient’s care. The Illinois law states that the facility must create a procedure to implement a “mobility assessment” for each patient when they are admitted into the hospital and as their health status changes. Employees must present a range of available options to the patient (or patient’s guardian) and consider their choice in the final selection of patient transfer procedures. The language in New York differs somewhat, but notes that facilities shall review the patient’s condition in order to identify appropriate use of the safe patient handling policy. It states that each facility shall “develop a process to identify the appropriate use of the safe patient handling policy based on the patient’s physical and medical condition and the availability of safe patient handling equipment.”

Most of the other older state laws do not specify clinical practice procedures. Those that do, Texas, Rhode Island, and Maryland, include ambiguous language regarding patient assessments. The Rhode Island law specifies that facilities must develop a process to identify patients that require the use of SPH equipment. Similarly, the Texas law states that nurses must be trained in identifying, assessing, and controlling the risk of injury to patients and nurses during patient handling. In Maryland, the law states that the SPH committee must consider “developing or enhancing patient handling hazard assessment processes.”

However, despite the ambiguity present in the Texas and Rhode Island laws, they, along with the California and Illinois laws, are alluding to the same principle of reviewing each patient individually before transfer. Terms such as “patient assessment,” “patient mobility assessment” and “mobilization assessment” are used in many of the SPH guidance documents, such as the FGI (2010) and the VA material (2005), to mean any or all of the following: an assessment of the patient and his or her ability to provide assistance during the transfer, to bear weight, and to cooperate and follow instructions, as well as an assessment of the physical environment where

the transfer will take place, the task at hand, the equipment available, and any special circumstances of the patient or provider.

Equipment Selection, Purchasing, and Maintenance

Three states, Minnesota, New Jersey, and Washington, include specific statements regarding the selection, purchasing, and/or maintenance of SPH equipment. Minnesota specifies that it is the role of the SPH committee to oversee the “purchase, use, and maintenance of an adequate supply of appropriate safe patient handling equipment.” In the New Jersey law, the SPH program requires the facility to purchase SPH equipment in order to “carry out the safe patient handling policy”, and maintain this equipment based on the manufacturers’ recommendations. Neither Minnesota nor New Jersey specifies what is considered “adequate” or enough to “carry out” the policy.

Washington on the other hand, provides further details on the requirements of the acquisition of equipment. The law specifies that all hospitals must obtain one of the following: “(a) One readily available lift per acute care unit on the same floor unless the safe patient handling committee determines a lift is unnecessary in the unit; (b) one lift for every ten acute care available inpatient beds; or (c) equipment for use by lift teams.”

The other five states do not mention the purchase, selection, or maintenance of equipment; rather, they provide a general statement in their SPH definition to the effect of, “safe patient handling means the use of engineering controls, lifting and transfer aids, or assistive devices.”

State-Provided Funding

Economic concerns are often noted as the major objection to legislation (Lancman et al., 2011). While the positive impact of SPH to both patients and employees is widely acknowledged, the high costs and delayed benefits of implementation are frequently cited as barriers to implementation of such programs. Two states, Minnesota and Washington, have included provisions in their laws providing for state funding to assist with SPH program implementation.¹⁵

In Washington, a Business and Occupations (B&O) tax credit was issued to hospitals to help facilitate implementation of the SPH statewide requirements. The credit was issued for 100% of the cost of SPH equipment (up to \$1,000 per acute care bed), for equipment purchased between June 7, 2006 (the date legislation took effect) and December 30, 2010. The legislation set a \$10 million cap on the tax credit, and hospitals were allowed to request credits until this limit was

“The ability for the state to provide financial assistance was a major driver of the legislation’s effectiveness.” – *Employee at Washington State Department of Labor and Industries*

¹⁵ In 2005, Ohio passed a long-term care loan program through the Bureau of Workers’ Compensation that provides financial support to facilities that want to implement a safe patient handling program but do not have sufficient internal funds. New York also passed a law in 2005 (that has been renewed every two years since) that provides funding to a few hospitals in the state to implement SPH demonstration programs and report back to the state on their efficacy.

met. The Department of Labor and Industries (L&I) went on to establish a special reduced premium risk class for hospitals who had implemented full SPH programs (about a 16% discount).

In Minnesota, the legislation includes a component that provides grants from the state to facilities for the purchasing of equipment and training of personnel. The grants may be awarded for up to \$40,000 to each facility and must be matched dollar-for-dollar by the grantee. Unlike Washington, Minnesota requires an extensive application process that gives priority to facilities that demonstrate that acquiring SPH equipment and implementing related programs would impose a financial hardship. For facilities that meet this definition, the state will consider waiving the match requirement and will consider awarding funds in excess of \$40,000 dollars. Furthermore, facilities with demonstrated hardships have an additional 18 months to implement the SPH program requirements.

“I know of several small hospitals that were able to buy new safe patient handling equipment because of the grant program. Without the support from the state, I’m not sure they would have been able to make any changes.” --
Employee at a Minnesota hospital

Unlike Minnesota and Washington, New York does not include direct funding to facilities for SPH program implementation. Instead, it includes a provision that states that the Department of Health shall promulgate rules that allow facilities that implement a SPH program to obtain a reduced workers’ compensation rate, so long as the program includes all of the legal requirements.

Injury Surveillance

Minnesota is the only state to include a statement about injury surveillance in the legislation. The law states that the SPH committee shall, “recommend a mechanism to report, track, and analyze injury trends.” While not specifically referenced in the other state laws, the importance of injury surveillance to identify areas of concern for action is widely recognized and is included as an essential component in SPH programs in other guidance documents including the Association of Occupational Health Professionals’ “Beyond Getting Started” (2011).

Washington State Legislation: Implementation and Efficacy Report

Since its passage in 2006, the Washington State Department of Labor and Industries (L&I) has collected extensive data on the efficacy of the SPH legislation. This information, first published in 2011, then updated in 2012 (Washington, 2011; Washington, 2012), describes the overall impact of the legislation on compensable claim rates, patient and staff injuries, and equipment implementation and use.

In acute care hospitals, the compensable workers compensation rate decreased in the two years following legislation implementation (2007 to 2009), and then began to increase. The report attributes this pattern to a variety of potential reasons, including higher acuity of patients,

increases in the number of morbidly obese patients, an aging nursing workforce, increased turnover of nursing staff, and the return of retired nurses to the job.

Data collected in focus groups with nursing directors and unit managers in 2007 and in 2011 indicated that the major barriers to implementing SPH programs included equipment storage, inadequacy of staffing numbers to use equipment properly, variability of the equipment type and manufacturer, patient mistrust of the equipment, difficulty in knowing when use of the equipment limited a patient's ability to move independently, and the perceived increase in time by staff to use equipment. Concerns were also brought up over sustainability of the program. The focus group attendees noted that while injury rates initially declined after the program began, rates began to increase again due to the lack of sustained momentum. This was attributed to difficulty in maintaining awareness, lack of consistent training, and aging lift equipment.

Despite these barriers, the report does note a number of positive impacts of the legislation. Compliance with the legislation was high, with Department of Health inspections indicating that the vast majority of hospitals met all requirements. Additionally, surveys with direct care staff and committee representatives indicated that equipment usage had increased over time and staff buy-in to the programs had increased. The use of the Business & Occupation Tax credit to purchase equipment was acknowledged as a success, with \$8.9 million (of the total of \$10 million available from the state) claimed by 32 acute care facilities as of January 7, 2011. The report also noted that the preliminary actuarial analysis shows evidence for a sustainable workers' compensation premium discount rate for acute care hospitals with fully implemented SPH programs.

The results of these reports indicate that the SPH legislation had a mostly positive impact on the health and safety of hospital employees and patient populations but that attention must be paid to ensure the sustainability of the program.

Other State Safe Patient Handling Initiatives

In addition to the mandatory SPH requirements enacted by the states described above, two states have enacted legislation in support of SPH, one state health department has promulgated a SPH regulation under existing public health authority, and another has issued a non-binding resolution urging adoption of SPH policies.

In 2005, Ohio passed a loan program through their Bureau of Workers' Compensation that provides financial support and consultation services to facilities that wish to implement SPH programs but do not have adequate internal resources. Park et al. (2009) evaluated the effect of this loan program on back injury rates using administrative data from nursing homes within the state. The purchase of additional SPH equipment by nursing homes was found to be associated with decreases in back injuries. Additionally, the reduction in workers' compensation claims costs were similar in magnitude to the equipment expenditures.

Missouri's Department of Health and Senior Services published a rule in the Missouri Code of State Regulations (19 CSR 30-20.097) in 2011 that requires hospitals to have a comprehensive SPH program. Specifically, there must be a multidisciplinary committee, a SPH policy, a patient

handling hazard assessment, a patient needs assessment process, educational materials for patients and families, an annual program evaluation process (including injury surveillance), and employee training.

In 2006, Hawaii passed a resolution in support of the American Nurses Association's Handle with Care campaign. The legislature acknowledged the high risk of musculoskeletal disorder development experienced by nursing personnel as a result of patient handling. The resolution sought to increase awareness of patient handling related injuries (to both workers and patients) and urges hospitals to adopt SPH policies included in the Handle with Care campaign. It is not known what kind of impact this resolution had on facilities in Hawaii.

Legislative Efforts Currently under Review

State Level

The following states have legislation currently under review: Connecticut, Iowa, Maine, Michigan, Missouri, Nevada, and Vermont. Comprehensive SPH bills have been proposed but failed to pass the legislature in Florida, Hawaii, Kansas, Massachusetts, and Mississippi.

Federal Level

In 2007 the Nurse and Patient Safety and Protection Act (H.R.378) was introduced into Congress by Representative John Conyers. The bill was sent to two committees, the House Education and the Workforce Committee and the House Energy and Commerce Committee, but was not reported out. The bill was then re-introduced in 2009 as the Nurse and Health Care Worker Protection Act (H.R.2381). This version of the bill also failed to make it out of committee. The bill was re-introduced once again on June 25, 2013 as the Nurse and Health Care Worker Protection Act of 2013 (H.R. 2480) where it was been referred to the Committees on Education and the Workforce, Energy and Commerce, and Ways and Means. As of July 26, 2013, the status is pending.

The proposed federal legislation includes many of the same components as the state legislation described above. These components include: training, hazard assessment, annual evaluation of the program, and the right of employees to refuse unsafe patient transfer tasks.

Safe Patient Handling and OSHA

Since the 2000 passing (and the subsequent 2001 repeal) of the ergonomics standard, OSHA has not issued any regulations that address patient handling. This regulation would have provided hospital workers with protection from ergonomic hazards, including patient handling. OSHA does occasionally issue citations to health care facilities under the general duty clause (Section 5(a)(1)) for failure to address hazards related to patient handling; however, this is still relatively uncommon (OSHA's General Duty Standard Search).

Additionally, OSHA has addressed concerns related to patient handling in hospitals and nursing homes in the absence of an ergonomics standard through Ergonomic Hazard Alert Letters

(EHALs) (OSHA, 2007). Between 2008 and 2013, there have been 44 EHAs in Region 1 (New England) OSHA nursing homes and two in Region 1 hospitals (J. Regan, personal communication, July 30, 2013). Ergonomic Hazard Alert Letters are issued following an ergonomics inspection and notify employers of hazards and deficiencies identified during the inspection.

OSHA has produced guidance material relating to patient handling. In 2009, OSHA issued a document entitled “Guidelines for Nursing Homes: Ergonomics for the Prevention of Musculoskeletal Disorders.” Although OSHA currently has no official guidance documents for SPH in acute care hospitals, it has collaborated with the Association of Occupational Health Professionals to produce “Beyond Getting Started: A Resource Guide for Implementing a Safe Patient Handling Program in the Acute Care Setting.” OSHA also provides a list of non-OSHA references on their website (<http://www.osha.gov/SLTC/healthcarefacilities/safepatienthandling.html>).

Conclusion

The legislative summary presented above was based on a review of publicly available information on state health and labor department websites. Legislative initiatives promoting SPH programs are on-going throughout the United States at the state and federal levels. All legislation requiring SPH programs requires that covered health care facilities adopt a variant of a “no lift policy” or a “minimal lift policy.” These legislative initiatives are directed at improving both worker and patient safety and have in common many of the same essential programmatic elements. Similar programmatic elements are included in reviewed guidance for developing SPH programs published by national organizations. There has been little formal evaluation of these legislative initiatives, with the exception of evaluations conducted in Washington State. Findings from those evaluations are largely positive and underscore the need to attend to program sustainability.

Figures and Tables

Figure 4-1. **Map of safe patient handling related legislation efforts in the United States**



Enacted legislation/adopted regulations to date (11 states): CA, IL, MD, MN, NJ, NY, OH, RI, TX and WA, including a resolution from HI.

*MO published rules requiring hospitals to implement a comprehensive program

Map adapted from ANA map available at: <http://nursingworld.org/MainMenuCategories/Policy-Advocacy/State/Legislative-Agenda-Reports/State-SafePatientHandling>

Table 4.1 Components of safe patient handling (SPH) legislation based on laws enacted in nine states (California, Illinois, Maryland, Minnesota, New Jersey, Ohio, Rhode Island, Texas, and Washington) and SPH components recommended by select national organizations.

Policy Element	Description of Element	States	FGI	VA	ANA	AOHP ^a
1. Statement of SPH policy requirement	Specifies a SPH policy must exist.	All	Yes	Yes	Yes	Yes
2. Written safe patient handling plan	Legislation specifically mentions the requirement of a <u>written</u> SPH plan.	MN, NJ, RI	Yes	Yes	Yes	No
3. No or minimal lift policy	Explicitly states No/Minimal/Zero lift policy.	All	Yes	Yes	Yes	Yes
4. Safe patient handling program/plan	Requires that a SPH program/plan be established. The bills then go on to list the programmatic elements (e.g. training, committee, assessment requirements) that the program/plan must contain.	All	Yes	Yes	Yes	Yes
5. Training programs	Requires all employees to be trained in SPH procedures.	All	Yes	Yes	Yes	Yes
6. Hazard assessment prior to SPH program implementation	Requires SPH hazard assessments to determine what lifting equipment and procedures are needed at the facility.	All (except CA)	Yes	Yes	Yes	Yes
7. Annual performance metrics/management	Includes regular (annual) review/assessment of SPH program (for continuous improvement purposes).	All (except CA)	Yes	Yes	Yes	Yes

^a AOHP Guidance for SPH in acute care hospitals was developed in collaboration with OSHA. OSHA also recommended guidance for safe patient handling in nursing homes. All items with superscript ^a in this column are similar in both the AOHP and OSHA nursing home guidance.

Table 4.1 Components of safe patient handling (SPH) legislation based on laws enacted in nine states (California, Illinois, Maryland, Minnesota, New Jersey, Ohio, Rhode Island, Texas, and Washington) and SPH components recommended by select national organizations.

Policy Element	Description of Element	States	FGI	VA	ANA	AOHP ^a
8. Responsible government agency (e.g., state health department or state OSHA)	The health or the state OSHA department can serve as the enforcement agency for SPH programs.	IL, MD, NJ, NY, RI, TX, WA.	Does not specify	VA	Does not specify	Does not specify
9. Emphasis on worker and/or patient safety	Legislation can emphasize the benefit to patient safety, worker safety, or both.	CA, IL, MN, NJ, NY, RI, TX, WA	Both	Both	Both	Both
10. SPH facility design/construction considerations	Includes specific procedures/requirements for incorporating SPH considerations into all future facility renovations.	IL, MD, MN, NY, RI, TX, WA	Yes	Yes	Yes	No
11. Safe patient lifting (or handling) committee	Requires a SPH committee to oversee all SPH related decisions. At least half of the committee must be non-managerial (frontline) employees.	MD, MN, NJ, NY, RI, WA	Yes	Yes	Yes	Yes
12. Employee's right to refuse unsafe working conditions	Includes a specific provision that allows employees to refuse to lift patients and not be subject to disciplinary action.	CA, IL, NJ, NY, TX, WA	No	Yes	No	No
13. Clinical assessment/patient mobility assessment	Requires facilities to develop procedures for transferring patients, as necessary, that utilize safe patient handling equipment.	CA, IL, MD, NY, RI, TX	Yes	Yes	Yes	Yes
14. Lift teams	Includes guidelines/requirements about the creation of teams of individuals to perform SPH activities.	CA, IL, MD, RI, WA	Yes	Yes	Yes	Does not require but describes pros and cons of lift teams

Table 4.1 Components of safe patient handling (SPH) legislation based on laws enacted in nine states (California, Illinois, Maryland, Minnesota, New Jersey, Ohio, Rhode Island, Texas, and Washington) and SPH components recommended by select national organizations.

Policy Element	Description of Element	States	FGI	VA	ANA	AOHP ^a
15. Equipment selection, purchasing, and maintenance	Includes requirements regarding the selection, purchasing, and maintenance of equipment.	MN, NJ, WA	Yes	Yes	Yes	Yes
16. State SPH financing included in law	Legislation specifically provides a funding source for SPH equipment/training/ resources.	MN, WA	N/A	N/A	N/A	N/A
17. State financing in the form of grants	Funding source is in the form of grants from the state.	MN	N/A	N/A	N/A	N/A
18. State financing in the form of tax benefit	Funding source is in the form of tax benefits from the state.	WA	N/A	N/A	N/A	N/A
19. Reduction in workers' compensation rate	Facilities that implement safe patient handling programs can obtain a reduced workers' compensation rate	NY	N/A	N/A	N/A	N/A
20. Injury surveillance	Requires the establishment and maintenance of a data system to track and analyze trends in injuries.	MN	Yes	Yes	Yes	Yes

FGI: Facility Guidelines Institute, "Patient Handling and Movement Assessments: A White Paper," April 2010.

VA: Veterans Administration "Patient Care Ergonomics Resource Guide," October 2005.

ANA: "Safe Patient Handling and Mobility Interprofessional National Standards", American Nurses Association, 2013.

AOHP: Association of Occupational Health Professionals, "Beyond Getting Started: A Resource Guide for Implementing a Safe Patient Handling Program in the Acute Care Setting, 2006

Links to Enacted and Proposed Safe Patient Handling Legislation

- Federal: Nurse and Patient Safety & Protection Act of 2007. HR2381, 111th Congress. <http://www.gpo.gov/fdsys/pkg/BILLS-111hr2381ih/pdf/BILLS-111hr2381ih.pdf>. Accessed June 19, 2012.
- Federal: Nurse and Health Care Worker Protection Act of 2013. HR2480, 113th Congress. <http://www.gpo.gov/fdsys/pkg/BILLS-113hr2480ih/pdf/BILLS-113hr2480ih.pdf>. Accessed July 26, 2013.
- California: Hospital Patient and Health Care Worker Injury Protection Act. 2011. AB1136 http://www.leginfo.ca.gov/pub/11-12/bill/asm/ab_1101-1150/ab_1136_bill_20111007_chaptered.pdf. Accessed June 14, 2012.
- Illinois: Hospital Licensing Act, Section 6.25. 2011. HB1684. <http://www.ilga.gov/legislation/97/HB/PDF/09700HB1684lv.pdf>. Accessed June 14, 2012.
- Hawaii: House Concurrent Resolution No. 16. 2006. http://www.capitol.hawaii.gov/session2006/bills/hcr16_.pdf. Accessed June 19, 2012.
- Maryland: An Act Concerning Hospitals – Safe Patient Lifting. 2007. HB1137. http://mlis.state.md.us/2007RS/chapters_noln/Ch_57_hb1137T.pdf. Accessed June 21, 2012.
- Massachusetts: An Act Relating to Safe Patient Handling in Certain Health Facilities. 2011. HB1484. <http://www.malegislature.gov/Bills/187/House/H01484>. Accessed on October 1, 2012.
- Minnesota: Safe Patient Handling Act. 2007. Public Law 135. <https://www.revisor.mn.gov/statutes/?id=182&view=chapter#stat.182.6551>. Accessed June 19, 2012.
- Missouri: Safe Patient Handling and Movement in Hospitals. 2011. 19 CSR 30-20.097. <http://www.sos.mo.gov/adrules/csr/current/19csr/19c30-20.pdf>. Accessed July 10, 2012.
- New York: Safe Patient Handling Act. 2014. S6914. <http://open.nysenate.gov/legislation/api/1.0/pdf/bill/S6914-2013>. Accessed August 13, 2014.

5. Essential Components of a Comprehensive Hospital Safe Patient Handling Program

Program Components

The review of safe patient handling (SPH) programs' effectiveness underscores that SPH programs are most successful when a multifaceted approach is taken to minimize manual lifting and reduce the risk of injury to both workers and patients. Based upon review of the scientific evidence, existing state and federal SPH policies and published guidance on SPH programs, and informed by their own experiences, Task Force members identified essential components of a SPH program. Clearly, providing staff with ready access to sufficient amounts and appropriate types of SPH equipment is central to program success. However, no single component stands alone. All components taken together are necessary for a comprehensive, effective and sustainable program.

1. Management Commitment:

Management commitment is an essential and required element of any effective safety and health program (OSHA, 2008). Leaders' attitudes and behaviors regarding safety and health promotion and protection are arguably of equal importance as structures, processes and systems.

Management commitment is exemplified by endorsement of program components, visible involvement and providing the motivation and resources to effectively implement and sustain a SPH program. This commitment should include, but not be limited to:

- Demonstrating organizational concern for worker safety and health;
- Exhibiting equal commitment to the safety and health of workers and patients;
- Committing necessary resources to implement the SPH program;
- Ensuring that all managers, supervisors and direct care workers/providers clearly understand their respective roles and responsibilities in carrying out the various program components;
- Making certain that workers at all levels are actively engaged in program development and implementation;
- Allocating appropriate authority and resources for program oversight to all responsible parties including designation of a SPH program coordinator and unit SPH peer leaders;
- Maintaining a system of accountability for all involved, including managers/supervisors and employees;
- Establishing a proactive, non-punitive system for reporting and investigation of incidents associated with patient handling; and
- Formulating a plan for program sustainability.

2. Direct Care Worker Involvement

Direct care workers should be involved in all aspects of the SPH program and should be an integral part of the development, implementation and operations of the program. Direct care workers have the knowledge and experience to contribute to their own safety and that of others by their involvement in the SPH program. When direct care workers develop a sense of responsibility and pride in the success of the overall program, meaningful and sustainable changes can occur.

Workers should be involved in activities including, but not limited to:

- Providing input on the selection of lift equipment and other devices;
- Participating in the SPH committee;
- Participating in training to learn and apply skills necessary to analyze and control hazards;
- Prompt and accurate reporting of perceived physical hazards, near misses and injuries; and
- Participating in ongoing evaluation of the program.

3. Statement of SPH Policy

A SPH policy should be a clear written statement of the purpose and objectives of the SPH program. The policy should establish that manual movement of patients should be minimal, occurring only during medical emergencies. It should further:

- Describe the use of patient handling devices in the delivery of care to:
 - Ensure patient and staff safety while encouraging patient mobility and independence;
 - Reduce unnecessary lifting and handling of patients requiring assistance;
 - Reposition patients in bed; and
 - Transfer patients from one support surface to another.
- Incorporate the methods to be used to document patient functional mobility status and how patient status is to be communicated to other direct care providers who may interact with the patient(s);
- Reflect and link to existing policies that have the potential for overlap (e.g., fall prevention, pressure ulcer prevention, patient accommodation/disability, hand off communication, etc.);
- Include a statement regarding the rights and responsibilities of workers to exercise reasonable care for their own safety and for the safety of their patients and co-workers when handling patients; and
- Include a commitment to educating patients and family members about the SPH program and equipment that will be used for direct patient care.

4. SPH Committee

An interdisciplinary SPH committee plays a key role in the establishment and maintenance of a SPH program. The committee is the organizational embodiment of employers' and employees' common responsibility in ensuring a safe and healthy workplace and creates a structure and framework for management commitment and worker participation and involvement. It also serves to facilitate collaboration with various services and entities within the facility that impact the SPH program.

Each hospital should establish a SPH committee by either creating a new committee or assigning the responsibilities for SPH to an existing committee. The committee should oversee all aspects of the development, implementation and evaluation of the SPH program, including review of injury data and the evaluation and selection of patient handling equipment and other appropriate controls.

Composition of the SPH committee should reflect both management commitment and direct care worker participation. In order to ensure a participatory process and to design a program that accurately reflects the needs of the direct care providers and patients, at least half of the members should be non-managerial nurses and other direct patient care workers. In hospitals where health care workers are represented by one or more collective bargaining units, the management of the hospital should consult with the collective bargaining units regarding the selection of those members who are direct care providers. The remaining committee membership should be made up of individuals with experience, and/or responsibility relevant to the operations of a SPH program and who represent various hospital functions that could impact program outcomes (e.g., rehabilitation staff, hospital leadership/management, safety office, human resources, transport, laundry, marketing, finance, and engineering).

The committee should meet as needed, but not less than quarterly. Since it may be difficult to gather the entire committee membership, it may be appropriate to have a core group and invite other representatives to meetings based on specific topics in the agenda or to form sub-committees, or smaller task forces, to focus on particular subject areas. A chairperson should be responsible for convening the committee and reporting to other committees as appropriate.

5. SPH Needs Assessment

Undertaking a comprehensive initial needs assessment is necessary to assure that program design matches the needs of the organization and patient populations served. Prior to the implementation of a SPH program, the hospital should take the following steps:

- Collect and review injury data reported to be associated with patient handling or mobilization:
 - Identify high-risk units and high-risk tasks within those units;

- Determine the high-risk patient handling demands and needs that may be unique to each clinical setting (e.g., imaging, ICU's, OB, OR, ER, transport, rehabilitation, morgue, behavioral health, out-patient); and
- Identify the characteristics of the patient profiles in that service area (e.g., level of dependence, ability to co-operate).
- Conduct an inventory of existing patient handling equipment, along with associated storage locations, and review any internal processes for requesting equipment that may be housed centrally;
- Assess the physical environment to make certain that it is conducive to SPH and consider factors such as workplace layout and design, storage areas, patient room size, access to patients around beds, types of flooring, placement of electrical outlets, presence and grade of ramps that may be used, placement of beds in relation to patient bathrooms, toilet and shower placement within bathrooms, and doorway thresholds; and
- Evaluate the system needs for programming and determine where support may be needed from other departments such as linen services, supply support, maintenance, and clinical engineering.

This needs assessment should be repeated formally to re-evaluate program status and needs on a regular basis on a frequency to be determined by the organization. Re-evaluation should occur when there is a change in classification of a unit, new construction or identification of particular problem areas. (See Program Component #10 for additional information.)

6. SPH Equipment

The availability of accessible, appropriate and well maintained SPH equipment is central to a SPH program. There are many types and brands of mechanical assistive devices available including but not limited to ceiling lifts, powered floor lifts, or mobile lifts; powered sit-to-stand devices and air inflatable lateral transfer devices. Available devices should be evaluated and selected with the goal being to eliminate or minimize manual patient handling while focusing on the safety of the caregiver, the patient and rehabilitation goals.

Some populations of patients present unique challenges that warrant special equipment and techniques. (See page 51.) Understanding of the patient population served and any associated patient handling tasks performed are critical to ensuring that equipment is properly selected and matched to meet the needs of the patients and caregivers.

Whenever devices are purchased, it is critical that direct care workers are involved early on with evaluation, selection and piloting of any new devices under consideration. This helps to facilitate staff buy-in as the program rolls out and ensures that the devices are a good match for the tasks and patient population(s) for which they are to be used.

To ensure that equipment is readily accessible to staff when needed, special attention should be given to how and where all equipment will be stored and availability of electrical outlets for equipment that may require charging. All storage locations should be easily accessible and clearly identified and communicated to staff to facilitate equipment use. A plan should

be established for all equipment to be properly cleaned according to the facilities' infection control guidelines and maintained according to manufacturers' specifications, with an established process for staff to report any equipment malfunctions. (See *Resource* section for sample equipment selection tools.)

7. Patient Functional Mobility Assessment

Assessment of patient functional mobility prior to handling or mobilization activities is considered a crucial component of a SPH program. This involves the assessment of patient mobility and transfer needs and informs the selection of appropriate SPH equipment and/or SPH transfer techniques and protocols.

Comprehensive functional mobility assessments include assessment of additional factors such as the patient's cognition; ability to communicate; medical status; behavioral/emotional factors; ability to provide assistance; predictability; height and weight; and special circumstances such as wounds, tubes, joint replacements, and casts.

The assessment should provide guidance to identify the most appropriate patient handling transfer technique, the required assistive device, sling type/size and the appropriate number of staff necessary for each transfer. Patient functional mobility status can change throughout a patient's hospital stay for a variety of reasons. It is important that, at a minimum, the patient's assessment is completed upon admission, on each shift and in situations that may lead to a change in the patient's condition.

Responsibilities for and expectations regarding frequency and communication of patient functional mobility assessment should be clearly defined. There should also be a method to communicate patient functional mobility status within patient documentation and to other direct care providers who may interact with the patient. The assessment format used should be consistent and integrated with the current plan of care (e.g., paper vs. EMR).

While not replacing professional clinical judgment, assessment tools and protocols consistent with ergonomic guidelines and evidence-based practice are available. Formats vary and include clinical algorithms, scoring systems or classification systems. (See *Resource* section for a list of patient mobility assessment tools.)

8. SPH Training

As in any effective workplace health and safety program, training is essential (OSHA, 2008). A SPH program should incorporate training at various levels of the organization so that senior leadership/management, supervisors and direct care providers all understand the SPH program components, expectations and goals. Planning for training should address training objectives suitable for each unit's needs, content and materials, methods and format, duration and frequency and processes for evaluating training effectiveness and

achievement of training goals and objectives. Training should be provided in a language that all attendees will understand, and methods should meet the needs of adult learners.

Training curriculum for direct care providers should include conducting patient functional mobility assessment, documentation and communication of patient mobility status and the proper use, care and storage of SPH equipment. It should be provided by staff with training and expertise in SPH and incorporate hands on patient functional mobility assessments, use of equipment and repeat demonstration. Introductory training content should be incorporated into the orientation curriculum for new hires working in patient care areas. Annual competencies for direct care providers should include review of patient functional mobility assessment and equipment use. Mandatory annual training updates also should be completed by all staff, both clinical and nonclinical, who move and handle patients.

Successful SPH programs have found that unit peer leaders play a key role in program implementation (Powell-Cope et al., 2013). They serve as experts and role models in safe handling and moving of patients by advising co-workers, demonstrating use of equipment and championing SHP in their units. An advanced curriculum should be planned for those direct care providers who will function as unit champions or peer leaders. This training should include an outline of the roles and responsibilities of the unit champions/peer leaders, demonstration of competency in performing functional mobility assessments and use of equipment and a review of specific patient scenarios likely to be encountered. Unit champion, or peer leaders training, might also include instruction in auditing SPH practices in units or departments.

Those without direct patient care responsibilities should be educated in the benefits of the program for staff and patients.

To facilitate participation, training should be provided during paid work time, preferably during regularly scheduled work-hours.

The SPH program should also include educational resources for patients and family members on the benefits of SPH and the equipment that will be used for direct patient care. Examples include short videos on the patient TV channel, brochures etc.

9. Injury Surveillance

Surveillance of work-related injuries associated with patient handling is essential to establish prevention priorities within the hospital overall and within hospital units. It likewise provides information necessary to monitor program effectiveness.

Central to effective surveillance is a widely disseminated, non-punitive protocol (process) for workers to report injuries and near misses, such as equipment failures. Reporting by employees should be actively encouraged, understanding that this may result in an initial appearance of increased rates.

A hallmark of a High Reliability Organization is that they value identifying potential and actual problems and treat adverse occurrences as opportunities for learning and improvement (JCAHO, 2012). Ongoing injury reporting should be used to target follow-up investigations to learn more about the factors leading to the incidents, identify root causes and develop recommended actions to address systems issues and prevent future injuries. Investigation tools or fact-finding tools should be designed to determine root causes of the injury/near miss. Investigation tools should include sections analyzing contributing factors related to equipment, environment, employee, patient, and process/systems and should have a section designating responsibility for addressing contributing factors in the interest of preventing future injuries from occurring. Corrective actions taken and follow-up review should be documented.

To obtain meaningful summary data to inform prevention, the surveillance system should be designed to collect sufficient detail about factors potentially associated with the injury, such as unit, job title, shift, whether staff have been appropriately trained and whether equipment was involved. The data should be collected in a standardized fashion that allows for efficient analysis. Findings should be periodically summarized and shared with appropriate stakeholders within the hospital (e.g., SPH / Safety & Health committees, unit heads, workers, hospital leadership/management) and incorporated into continuous quality improvement activities. A sample “Employee Health: Patient Handling Incident Recording Form” developed by the Task Force is included in Appendix B.

10. Evaluation of Program Effectiveness

Periodic assessment of the SPH program is necessary to determine strengths and areas in need of improvement. It is important that evaluation items are measurable and achievable. Variables used to measure success should be clearly defined during initial stages of program implementation and related to program goals. Measures should include both leading and lagging indicators (leading indicators = observations of staff compliance with use of best practices, documentation of patient functional mobility status, number of SPH devices available to staff, percentage of employees trained, ratio of unit champions/peer leaders to direct care staff, percentage of patients with functional mobility assessments completed upon intake, staff satisfaction with programming, patient satisfaction with programming; lagging indicators = number of injuries to workers or patients) (Washington State, 2010). Intervals for collecting data should be determined ahead of time. Surveys of staff can also be used to measure program effectiveness. Baseline data should be gathered prior to program implementation. Results of baseline data and periodic assessments should be shared with staff and management.

The Task Force recognizes that SPH programs will vary somewhat among hospitals reflecting differences in resources, patient populations served and organizational structures. However, all programs should encompass the essential components identified.

Special Patient Populations

Some populations of patients present unique patient handling challenges that warrant special equipment and techniques. Hospitals should consider the patient populations served in developing their SPH programs to assure that there are appropriate equipment and procedures in place to meet the range of needs of patients and health care workers. The following are examples of patient populations that warrant special approaches in establishing a SPH program. Within all patient populations, individual patient mobility assessment is required to assure that the procedures and equipment selected are matched to the needs of the individual patient and health care worker.

Bariatric Patients

The admission frequency of bariatric patients is increasing, representing a challenge to hospitals trying to provide care that is safe for both patients and health care workers. Weight, combined with body dimensions, and co-morbidity issues create an increased risk of injury to the health care worker and the patient during typical handling and movement tasks, and a disproportionately high number of recordable injuries to staff working with bariatric patients has been demonstrated (Muir, et al., 2007). The definition of a ‘bariatric patient’ is not uniformly accepted, but for practical use in the health care sector, a suggested threshold for instituting bariatric patient handling procedures is a weight in excess of 300 pounds, depending on the patient’s body size and shape, medical conditions, and physical dependency.

Hospital procedures should call for development of a handling plan in advance of admitting a bariatric patient that addresses patient factors, building (or vehicle design), patient handling equipment and furniture as well as communication and organizational issues. Basic bariatric patient handling algorithms to assist health care providers in selecting the safest equipment and techniques based on an assessment of patients’ characteristics are available for common handling tasks (VA, 2005). Specialized equipment is required to move, transport and care for bariatric patients and should be accessible to all caregivers. Larger rooms are required for the care of bariatric patients to accommodate equipment and secure enough space for health care workers to move about as needed and avoid awkward postures. All health care workers should be provided with adequate training in safe bariatric handling procedures to provide quality and respectful care in a safe manner before they are asked to take care of a bariatric patient.

Patients with Disabilities

All organizations/facilities should be committed to removing barriers and improving access for persons with disabilities in order to provide the highest quality of care and treatment in an accessible environment. This statement is in accordance with the Americans with Disabilities Act (ADA), 1990 and 504 Rehabilitation Act, 1973.

Treatment areas should be designed so that they are free from physical and architectural barriers. Patients using wheelchairs or other personal mobility devices should have adequate room to enter, exit and move about the space as needed. Patients should be offered a level of support when mobilized, when moving from one surface to another or when ambulating with the overall

goals being to increase, maintain or improve their functional abilities to maximize their independence and to protect staff from potential physical stressors associated with patient handling. Accessible equipment, such as power/height adjustable exam tables, ceiling lifts, and portable assistive devices should be made available for persons with disabilities in order to provide them with the highest level of independence and safe movement possible. Staff should be sufficiently trained on all devices used for their own health and safety and that of their patients. The Department of Justice document “Access To Medical Care for Individuals with Mobility Disabilities” provides details about accessibility for individuals with disabilities (USDOJ, 2010).

Patients with Acute Psychiatric Conditions

Individuals who are undergoing significant mental crisis and who have a need for hospitalization require special considerations that focus on preventing the patients from harming themselves. Room design and patient handling techniques differ for this population as compared to other patients. Room design often incorporates tamper-resistant ceilings, tamper-resistant lights, beds that are flush to the floor and have no space beneath, and wall-mounted computer workstations that are enclosed, locked and that have no space above between the computer storage and the ceiling. All patient handling equipment for this population must be kept in locked storage areas, well outside of patient reach but still made easily accessible for staff. Accessibility of the equipment and where it is stored are critical to ensuring that patient handling equipment will be used when needed.

Patient handling strategies for this patient population may involve more than one step and may be somewhat more time consuming but are crucial for staff and patient safety. For instance, transferring an acute psychiatric patient from their bed to/from a wheelchair may require (a) performing a lateral transfer from bed to stretcher using a lateral transfer device and then (b) transferring the patient from the stretcher to a wheelchair using a portable floor lift. Educating patient care providers regarding the time expectations when handling this patient population will help to facilitate compliance with proper strategies and techniques.

6. Survey of Safe Patient Handling Policies and Practices in Massachusetts Hospitals

To obtain baseline information about current SPH policies and practices in Massachusetts hospitals and to inform the deliberations of the Hospital Ergonomic Task Force, the DPH Occupational Health Surveillance Program conducted a mailed survey of Massachusetts acute and non-acute care hospitals licensed by DPH in April 2012.

Survey Methods

The survey questionnaire was adapted from a Washington State Department of Labor and Industries survey and incorporated input from the Task Force. The survey collected information about:

- SPH policies and procedures
- Presence of a committee addressing SPH
- Patient mobility assessment practices
- Assessment of SPH practices
- Injury surveillance
- Availability of patient handling equipment
- SPH training

It also included questions about perceived barriers to the use of patient handling equipment and suggestions for what DPH can do help hospitals to promote SPH. A copy of the survey questionnaire is included in Appendix C.

The survey was mailed to the CEOs and occupational health/employee health staff of the 98 DPH licensed hospitals and follow-up of non-responders was conducted by mail, email, and phone. Percentages of survey responses were calculated excluding hospitals with missing information from the denominator, as not all hospitals responded to each question. Results were stratified by several hospital characteristics including: size (small, medium, and large), type (acute, non-acute) and teaching status (teaching, non-teaching). Differences between hospital groups were assessed using standard statistical methods. Results are presented for all hospitals combined. Differences by hospital characteristics are included only when statistically significant ($p < 0.05$).

SPH Program Index

To assess the extent to which hospitals have comprehensive SPH handling programs that include the essential program components recommended by the Task Force (See Chapter 5), a simple index based on survey responses was developed. Because the survey was implemented before the Task Force characterized essential SPH program components, answers to select survey questions were used as “indicators” that hospitals were implementing program components as recommended by the Task Force. Future surveys could be tailored to better assess the comprehensive nature of SPH programs. Note the survey did not provide good, single indicators

of either leadership commitment or initial needs assessment activities and thus these recommended components were not included in the index (Table 6-1).

Table 6-1. Safe Patient Handling Program Index: Survey questions used to assess implementation of program components		
Component	Survey questions	Question #
Policy	Hospital has a written SPH policy that addresses: <ul style="list-style-type: none"> • Accessibility, maintenance, and replacement of lifting equipment, AND • Assessment of patient functional mobility and transfer needs, AND • Guidelines for selecting appropriate patient handling method, AND • Training of employees on the use of lifting equipment. 	12, 12C
SPH Committee	Hospital has a formal committee or group working to prevent patient handling injuries.	16
Injury Surveillance	Hospital has an injury surveillance system: <ul style="list-style-type: none"> • That allows for identification of the patient handling task associated with injuries AND • Summaries of patient handling injuries are reviewed by the departments where the injuries occurred. 	19, 21
Patient mobility assessment	Hospital has a protocol requiring care staff to determine appropriate equipment for patients' functional mobility status and transfer needs for inpatients.	9A
Training	Hospital provides <i>hands-on</i> training to direct patient care staff on mechanical lifts and assistive devices at least annually.	26, 26A
Equipment	Hospital has mechanical lifts in Medical/Surgical Departments. Additionally, an acute care hospital has either mechanical lifts or assistive devices in the following departments: <ul style="list-style-type: none"> • Emergency department • Operating rooms • Post-anesthesia care units • Intensive care units. 	22
Worker involvement	Hospital involves front line nursing staff AND other direct patient care staff in the evaluation of patient lifting devices.	25
Continuous quality improvement	Hospital assesses effectiveness of policies and procedures by: <ul style="list-style-type: none"> • Reviewing staff injury rates relating to patient handling, AND • Performing staff surveys, OR • Conducting interviews with staff. 	15

Results

Eighty-eight hospitals completed the survey for a response rate of 90%. Almost three-quarters of individuals completing the survey were in management positions and almost half of the respondents worked in Occupational Health/Employee Health.

Hospital Characteristics

- The distribution of respondent hospitals by teaching status, service type, and hospital size was similar to the actual distribution of all DPH licensed hospitals.
- The number of employees ranged from 140 to 20,000
 - On average, 64% of employees were directly involved in patient care.
- In total, the estimated number of employees involved in direct patient care across all respondent hospitals was 101,751.

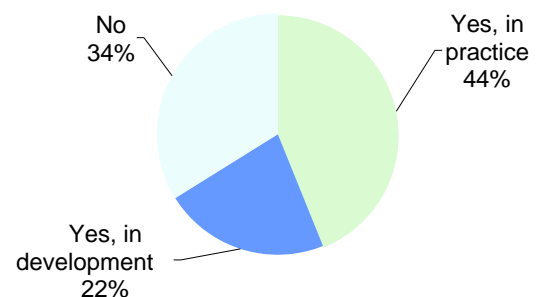
Table 6-2. Respondent hospital characteristics (n=88)

	n	(%)
Teaching Status		
Teaching	17	19
Non-teaching	71	81
Hospital Type		
Acute care	70	80
Non-acute care	18	20
Hospital Size		
Small (<100 beds)	26	30
Medium (101-300 beds)	48	55
Large (>300 beds)	14	16
Number of employees		
Mean	2,000	
Range	(140-20,000)	
Median	1,107	

Written Safe Patient Handling Policies

- Overall, 44% (37) of hospitals reported having a written SPH policy in practice and an additional 22% (19) of hospitals reported that a SPH policy was under development. 34% (29) of hospitals reported having no written SPH policy.
 - Non-acute care hospitals (72%, 13) were more likely to have written policies in practice, compared to acute care hospitals (34%, 24) ($p=0.005$).

Figure 6-1: Percentage of hospitals with written SPH policies (n=85)



Length of Written Policy Implementation

- A majority of hospitals (54%, 20), with written SPH policies in practice, implemented their SPH policies within the last 4 years.

Table 6-3. Length of written policy implementation (n=37)¹

	n	%
<1 year	2	5
1-4 years	18	49
>4 years	17	46

¹Limited to hospitals with written SPH policies

Safe Patient Handling Policy Components

- Hospitals' policies covered a wide variety of topics
 - More hospitals reported having components regarding clinical practice than those addressing equipment or injury surveillance.
 - Most policies addressed employee training in the use of lifting equipment (77%, 27) and to a lesser extent, training in the assessment of patient mobility (66%, 23).
 - Only 9% (3) of hospitals' policies addressed special provisions for employees under the age of 18, even though federal child labor laws place some restrictions on use of hoisting devices including patient lift equipment by persons in this age group.¹⁷

Table 6-4. Safe patient handling policy components (n=35)¹

	n	%
Clinical Practice		
Assessment of patient functional mobility and transfer needs	30	86
Guidelines for selecting the appropriate patient handling method	26	74
Patient skin integrity/ prevention of breakdown	12	34
Prevention of patient falls	23	66
Equipment		
Accessibility, maintenance, and replacement of lifting equipment	22	63
Injury surveillance		
Reporting of injuries that are related to patient handling	22	63
Reporting of near misses or incidents without injury that are related to patient handling	15	43
Training		
Training of employees on the use of lifting equipment	27	77
Training in assessment of patient mobility and transfer needs	23	66
Patient and family education	17	49
Other		
Compliance of employees with policy requirements	21	60
Special provisions for employees under the age of 18	3	9

¹Limited to hospitals with written SPH policies and excludes missing observation(s)

¹⁷ Leppink N. Assisting in the Operation of Power-Driven Patient/Resident Hoists/Lifts Under the Child Labor Provisions of the Fair Labor Standards Act. Washington, DC: DOL, 2011. (http://www.dol.gov/whd/FieldBulletins/fab2011_3.htm). (Accessed May 8, 2012).

Evaluation and Oversight of Patient Handling Procedures

- All hospitals implemented methods to evaluate patient handling policies and procedures. Most (89%, 77) used multiple methods to do so:
 - The most frequently used methods were reviewing staff injury rates (89%, 77) and adverse event reports (75%, 65).
- Nursing staff were most often reported as being involved with the oversight of patient handling policies and procedures (64%, 56), followed by occupational health staff (46%, 40) and other departments (35%, 30).
 - 22% (19) of hospitals reported that physical therapy/rehabilitation staff was involved in oversight of patient handling policies and procedures.

Table 6-5. Evaluation and oversight of patient handling procedures (n=87)

	n	%
Evaluation of patient handling policies and procedures²		
Reviewing staff injury rates relating to patient handling	77	89
Reviewing individual adverse events relating to patient handling	65	75
Reviewing injury cost data	54	62
Interviews with staff	46	53
Staff surveys	42	48
Patient satisfaction surveys	35	40
Other	15	17
Staff involved in the oversight of patient handling programming, policies, and procedures		
Any nursing	56	64
Nursing only	17	20
Nursing and occupational health	8	9
Nursing, occupational health and other department	18	21
Nursing and other department, not occupational health	13	15
Occupational health only	10	12
All other	21	24

¹Excludes missing observation(s)

²Respondents were asked to select all applicable responses; therefore, percentages may not add to 100

Committees to Prevent Patient Handling Injuries

- 65% (57) of hospitals had a committee or group working to prevent patient handling injuries.
- Health and safety/injury prevention committees were most often identified as the committee working to prevent patient handling injuries (53%, 30).
 - 32% (18) hospitals had specific SPH committees, while 7% (4) hospitals had ergonomics committees
- Almost all hospitals with committees working to address patient handling injuries had nurses on the committee (97%, 55); 77% (44) of the committees included physical therapists and 70% (40) included occupational health staff.

Table 6-6. Committees to prevent patient handling injuries		
	n	%
Committee or group working to prevent patient handling injuries (N=88)		
Yes	57	65
Type of committee to prevent patient handling injuries (n=57)^{1,2}		
Health and safety/injury prevention	30	53
Safe patient handling/ergonomics	22	39
Risk management	7	12
Environment of care	6	11
Falls	4	7
Other	5	9
Persons on committee to prevent patient handling injuries (n=57)^{1,2}		
Nurses	55	97
Physical therapists	44	77
Occupational health staff	40	70
Other direct patient care staff	34	60
Occupational therapists	25	44
Physicians	18	32
Other	39	68

¹Limited to hospitals with patient handling committees

²Respondents were asked to select all applicable responses; therefore, percentages may not add to 100

Distribution of Hospitals by Presence of Written Policies and Committees to Prevent Patient Handling Injuries

Not all hospitals with committees working to reduce patient handling injuries had written SPH policies.

- 15% (13) of hospitals had a committee working to prevent patient handling injuries, but no written SPH policy.
- 9% (8) of hospitals had no committee working to prevent patient handling injuries, but had a written SPH policy.
- 19% (16) of hospitals had neither
 - These included 2 large hospitals, 10 medium hospitals and 4 small hospitals.¹⁸
 - All, but one, were acute care hospitals.

Table 6-7. Distribution of hospitals by presence of written policies and committees to prevent patient handling injuries (n=85) ¹				
Patient handling committee	Written SPH Policy			Total
	No	Yes, in development	Yes, in practice	
Yes	13	13	29	55
No	16	6	8	30
Total	29	19	37	85

¹Excluded observations due to missing responses

¹⁸ Hospital size is defined by the number of licensed beds. Small: ≤100 beds, Medium: 101-300 beds, Large: >300 beds.

Assessment of Patient Mobility and Patient Handling Events

Assessment of Patient Mobility

Table 6-8. Assessment of patient mobility		
	n	%
Protocol for assessment of patient functional mobility and transfer needs on admission		
Inpatients (n=88)	83	94
Outpatients (n=79) ¹	49	62
Protocol requires staff to determine appropriate equipment for patient's functional mobility status (n=83)¹		
Yes	59	71
Frequency of patient mobility status updates (n=87)¹		
On a daily basis (only)	39	45
On a daily basis and other	2	2
Weekly (only)	4	5
Weekly and other	4	5
Other	38	44
Staff that updates patient mobility assessment plan (n=87)¹		
Any Nurse	83	95
Nurses (only)	12	14
Nurses and physical therapists	43	49
Nurses, physical therapists, and other staff	24	28
Nurses and other staff	4	5
Physical therapists (only)	3	3
Other staff	1	1
¹ Excludes missing observation(s)		

- Almost all hospitals (94%, 83) had a protocol for the assessment of patient functional mobility and transfer needs on admission for inpatients. Only 62% (49) of hospitals did the same for outpatients.
 - Non-acute care hospitals (71%, 12) were more likely to have a protocol for outpatients, compared to acute care hospitals (54%, 37) (p=0.02).
- More than two-thirds (71%, 59) of all hospitals had a protocol that requires staff to determine the appropriate equipment for a patient's functional mobility.
 - 97% (58) of these hospitals record this information in the patient's medical record.
- Almost half of all hospitals update inpatients' mobility status on a daily basis (47%, 41).
- In 77% (67) of hospitals, both nurses and physical therapists were involved in updating the patient mobility assessment plan.

Assessment of Events Relating to Patient Handling

- Nearly all hospitals (98%, 85) reported always formally assessing patient handling incidents involving harm to patients. A somewhat lower number of hospitals (87%, 76) reported always formally assessing incidents involving harm to providers.

Table 6-9. Assessment of events relating to patient handling (n=87) ¹		
	n	%
Patient handling event assessment for patients		
Always	85	98
Sometimes	2	2
Patient handling event assessment for providers		
Always	76	87
Sometimes	10	12
Rarely	1	1
¹ Excludes missing observation(s)		

Injury Surveillance Systems

- 98% (86) of hospitals had a system for tracking patient handling injuries.
 - 82% (70) of these tracking systems allow for the identification of the patient handling task associated with the injury. However, it is unknown if the system can readily generate statistics on patient handling, or if data are contained in narrative text.

Table 6-10. Injury surveillance systems		
	n	%
System for tracking injuries among health care workers (n=88)		
Yes	86	98
Systems of Hospitals that track patient handling injuries (n=85)¹		
OSHA logs only	5	6
OSHA logs and other system	63	74
Other systems, not OSHA logs	17	20
Department that reviews summaries of patient handling injuries to health care workers (n=88)²		
Occupational/Employee Health	79	90
Workers' compensation	57	65
Department where the injury occurred	54	61
Risk management	43	49
¹ Limited to hospitals that had systems to track injuries		
² "Select all" question; percentages do not add to 100		

- 74% (63) of hospitals used both OSHA logs and other systems (for example, workers' compensation records) for tracking patient handling injuries.
- 94% (81) of hospitals summarized and analyzed data to characterize the nature and cause of the injuries.
- While Occupational/Employee Health and Workers' Compensation were the departments listed most frequently as reviewing summaries of patient handling injuries, 10% (9) of hospitals reported that Occupational/Employee Health was not involved in the review process.
- Only 61% (54) of hospitals reported that the department where the injury occurred reviewed summaries of patient handling injuries.

Patient handling Equipment in Hospital Departments

Percentage of Hospital Departments with Patient Handling Equipment

- Hospitals were asked to provide information about whether they had any mechanical lifts or assistive devices in various departments. The table below presents the percentages of departments with lifts, with assistance devices, and neither. These figures provide a sense of which departments are more or less likely to have lifting equipment. The survey did not collect detailed information about the number of mechanical lifts or assistive devices in hospitals by department.
 - In acute care hospitals, Medical/Surgical departments were more likely to have patient handling equipment than other departments. A number of departments had no patient handling equipment, for example, 19% of ICUs did not have patient handling equipment.
 - In non-acute care hospitals, Medical/Surgical and Physical Therapy/Occupational Therapy/Respiratory Therapy departments were more likely to have patient handling equipment than other departments. Again, a number of departments did not have patient handling equipment.

Table 6-11a. Percent of hospital departments in acute care hospitals with mechanical lifts or assistive devices (n=70)¹

	Mechanical lifts		Assistive devices		Neither	
	n	%	n	%	n	%
Medical/Surgical	63	90	62	89	3	10
Emergency Department	41	59	57	81	12	17
Intensive care unit	23	33	57	81	13	19
Radiology	31	44	54	77	14	20
Physical Therapy/ Occupational Therapy/Respiratory Therapy	30	43	53	76	15	21
Operating room	38	54	52	74	16	23
Post-anesthesia care unit	37	53	51	73	16	23
Clinics	12	17	16	51	51	73

¹ Analysis limited to departments that are present in all acute care hospitals

Table 6-11b. Percent of hospital departments in non-acute care hospitals with mechanical lifts or assistive devices (n=18)¹

	Mechanical lifts		Assistive devices		Neither	
	n	%	n	%	n	%
Medical/Surgical	11	61	11	61	7	39
Physical Therapy/ Occupational Therapy/Respiratory Therapy	10	56	11	61	7	39
Radiology	6	33	4	22	12	66
Clinics	4	22	5	28	13	72
Dialysis	4	22	5	28	13	72

¹ Analysis limited to departments that are present in all non-acute care hospitals

Organizational Responsibilities for Patient Handling Equipment

- Three-quarters (66) of hospitals owned their lifting equipment, as opposed to leasing all or some of their equipment.
- Only 50% (42) of hospitals had provisions within their SPH policy for preventive maintenance.
 - Battery maintenance was reported as the most common preventive maintenance included in SPH policies.
- At most hospitals, front line nursing staff was involved in the evaluation of patient lifting devices prior to purchase (84%, 74).
 - In two-thirds of all hospitals, materials management (59) and other direct patient care staff (59) were involved in the evaluation of patient lifting devices prior to purchase.

Table 6-12. Organizational responsibilities for patient handling equipment		
	n	%
Ownership of lifting equipment (n=87)¹		
Purchased	66	76
Purchased and leased	21	24
Safe handling policy has provisions for preventive maintenance (n=73)^{1,2}		
Yes	42	50
Type of preventive maintenance^{1,2,3}		
Battery re-charging and replacement	35	83
Sling laundering and replacement	33	79
Replacement of lifts or devices	25	60
Department involved in the evaluation of patient lifting devices prior to purchase (n=88)³		
Front line nursing staff	74	84
Materials Management	59	67
Other direct patient care staff	59	67
Other	48	55

¹Excludes missing observation(s)

²Excludes "Not applicable" responses

³Respondents were asked to select all applicable responses; therefore, percentages may not add to 100

Safe Patient Handling Training

- 98% of all hospitals reported training direct patient care staff on mechanical lifts (85), assistive devices (85) and manual lifting (85).
- 69% (59) of hospitals reported training their employees at least annually.
- Only 35% (30) hospitals reported having training on hire and annually
 - 18% (15) of hospitals trained on hire only
 - 28% (24) of hospitals trained annually only

Table 6-13. Safe Patient handling training		
	n	%
Provides training to direct patient care staff on safe patient handling (n=87)¹		
Mechanical lifts	85	98
Assistive Devices	85	98
Manual lifting	85	98
Frequency of training (n=85)¹		
Annually only	24	28
Annually and upon hire	18	21
Annually, upon hire and other	11	13
Annually and other	6	7
Upon hire only	15	18
Other	11	13

¹Excludes missing observation(s)

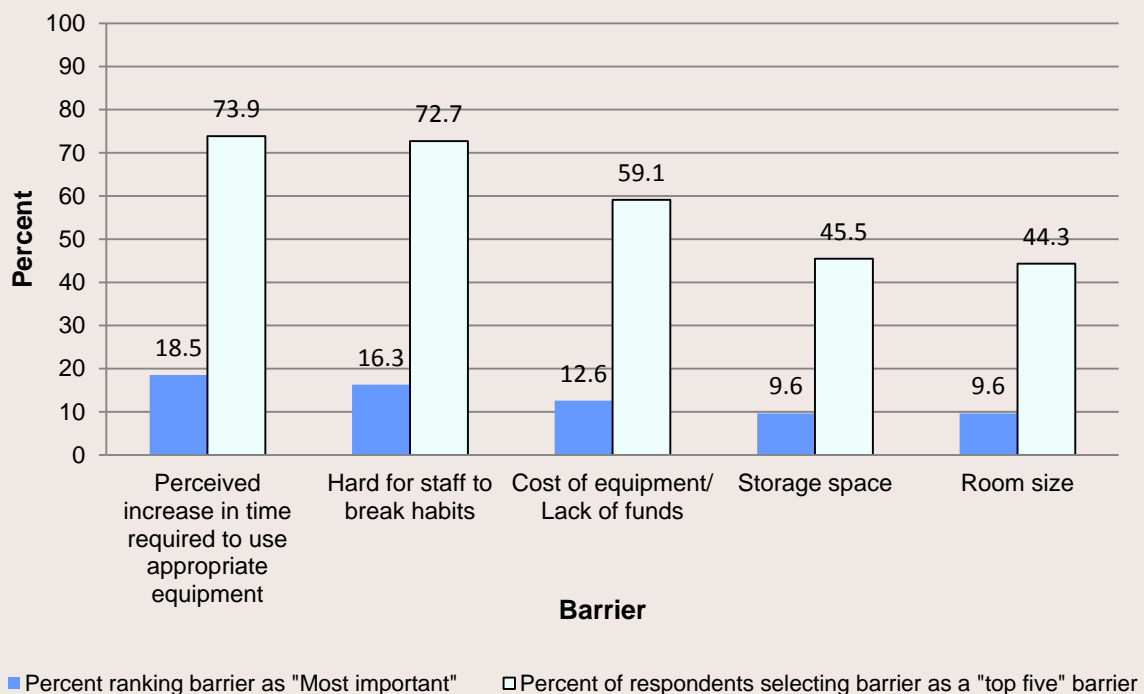
Barriers to Addressing Safe Patient Handling

Survey respondents were asked to select their top five (of 17) potential barriers to addressing SPH at their facilities (Table 6-14). The selected perceived barriers to SPH were ranked on a scale of one to five, with one being a “most important” barrier to SPH and five being a “least important” barrier.

Table 6-14. Perceived barriers to addressing SPH in hospital facilities

- | | |
|---|--|
| • Equipment size/capabilities | • Room size |
| • Lack of enough lift equipment or slings | • Not enough staff |
| • Perceived increase in time required to use appropriate equipment | • No time for training |
| • Concerns for patient safety/comfort when using handling equipment | • Available equipment is not an appropriate match for patient’s mobility needs |
| • Cost of equipment/lack of funds | • Family/patient resistance to use |
| • Problems with slings (get lost, size, difficult to use, damaged) | • Consistent training programs do not exist |
| • Difficult to update old equipment | • Storage space |
| • Unfamiliar with new equipment | • Other |
| • Hard for staff to break habits | |

Figure 6-2. Top five barriers to addressing SPH in MA hospitals as perceived by respondents (N=88)¹



¹ Several hospitals tied multiple barriers as "most important"

- Respondents identified “perceived increase in time,” “hard for staff to break habits” and “cost of equipment” as the three most important barriers to addressing SPH in their facilities. “Storage space” and “room size” were also identified as common barriers to addressing SPH.
- “Difficult to update old equipment,” “unfamiliar with new equipment” and “not enough staff” were least frequently selected as a “top 5” barrier.

Suggestions for What DPH Can Do to Help Hospitals Address Safe Patient Handling

Table 6-15. Suggestions for what DPH can do to help hospitals address safe patient handling (n=81)^{1,2}

	n	%
Provide information/training in:		
Assessment of patient functional mobility and transfer needs and matching appropriate solutions for safe patient handling	34	42
How to develop a surveillance system to assess potential risk factors for injuries related to patient handling	33	41
How to establish safe patient handling policies and procedures	30	37
Ways to improve the use of existing data to track injuries to health care workers associated with patient handling	29	36
Equipment options	26	32
Root cause analysis of injury incidents and near misses involving patient handling	21	26
Facilitate the exchange of successful practices in safe patient handling	34	42
Through conferences/workshops ^{2,3}	17	50
Through electronic materials/website ^{2,3}	16	47
Through webinars ^{2,3}	16	47
Through notices of new developments in the field ^{2,3}	13	38
Other ^{2,3}	3	9

¹Excludes missing response(s)

²Respondents were asked to select all applicable responses; therefore, percentages may not add to 100

³Limited to "Yes" answers for "Facilitate the exchange of successful practices in safe patient handling"

Respondents were asked to indicate what guidance they would like from DPH. Between 30 and 40 percent of respondents reported wanting guidance in the following topic areas:

- Assessment of patient functional mobility and transfer needs and matching the appropriate solution for safe patient handling
- Information on how to develop a surveillance system to assess potential risk factors for injuries related to patient handling
- Information on how to establish safe patient handling policies and procedures
- Ways to improve the use of existing data to track injuries to health care workers associated with patient handling
- Equipment options
- Root cause analysis of injury incidents and near misses involving patient handling

About 40 percent of hospitals would like DPH to facilitate the exchange of information regarding SPH through conferences, electronic materials/website, webinars, notice of new developments in the fields, and other methods.

Safe Patient Handling Program Component Index

The results presented here provide more detailed insight into the status of current SPH programs in DPH licensed hospitals and whether these programs are implementing multiple program components consistent with the recommendations of the Task Force. For example, in this section, a hospital is counted as having surveillance system to track worker injuries associated with patient handling in place only if it also provides injury data back to the department in which injuries occurred as recommended by the Task Force. For six of the eight essential program components assessed, over half of hospitals had indicators of recommended activity.

Table 6-16. Number and percent of hospitals indicating that they are implementing select recommended aspects/activities within eight essential SPH program components			
		Hospitals with the indicator of recommended activity	
		n	%
Policy	Hospital has a written SPH policy that addresses: <ul style="list-style-type: none"> • Accessibility, maintenance, and replacement of lifting equipment, AND • Assessment of patient functional mobility and transfer needs, AND • Guidelines for selecting appropriate patient handling method, AND • Training of employees on the use of lifting equipment. 	16	18
Committee	Hospital has a formal committee or group working to prevent patient handling injuries.	57	65
Injury Surveillance	Hospital has an injury surveillance system : <ul style="list-style-type: none"> • That allows for identification of the patient handling task associated with injuries AND • Summaries of patient handling injuries are reviewed by the departments where the injuries occurred. 	49	56
Patient mobility assessment	Hospital has a protocol requiring care staff to determine appropriate equipment for patients' functional mobility status and transfer needs for inpatients.	60	68
Training	Hospital provides <i>hands-on</i> training to direct patient care staff on mechanical lifts and assistive devices at least annually.	21	24

Table 6-16. Number and percent of hospitals indicating that they are implementing select recommended aspects/activities within eight essential SPH program components

		Hospitals with the indicator of recommended activity	
		n	%
Equipment	Hospital has mechanical lifts in Medical/Surgical Departments. Additionally, an acute care hospital has either mechanical lifts or assistive devices in the following departments: <ul style="list-style-type: none"> • Emergency department • Operating rooms • Post-anesthesia care units • Intensive care units 	54	61
Worker involvement	Hospital involves either front line nursing staff AND other direct patient care staff in the evaluation of patient lifting devices.	53	66
Continuous quality improvement	Hospital assesses effectiveness of policies and procedures by: <ul style="list-style-type: none"> • Reviewing staff injury rates relating to patient handling, AND • Performing staff surveys, OR • Conducting interviews with staff. 	54	61

All Components

Table 6-17. Distribution of hospitals by number of essential SPH program components (N=88)

Number of Components	Total	
	n	%
1-2	12	14
3-4	37	42
5-6	36	41
7-8	3	3

Program components were summed for each hospital, to evaluate the extent to which hospitals have multiple components in place. No hospitals had “indicators” of recommended activity in all eight component areas assessed. There were three hospitals that had indicators in seven of the eight areas. Two had all but the training component and one had all but the policy component

Conclusions

This survey provides previously unavailable information about the status of SPH policies and practices in Massachusetts hospitals and can serve as a baseline for monitoring progress in developing SPH programs over time. Findings indicate that while most hospitals have taken steps to improve patient handling to protect worker and patient safety, there is clearly need for improvement. The survey highlighted a number of gaps to be addressed:

- About a third of hospitals, most notably acute care hospitals, lack written SPH policies in practice or under development. Even when policies do exist, many are not comprehensive.

- Only 65% of hospitals have committees or groups working to address SPH and 19% of hospitals (14 acute care and one non-acute care) have neither a policy nor a committee in place.
- While most hospitals have systems for tracking work-related injuries, in only 61% are the data reviewed by the departments in which the injuries occur.
- While most hospitals conduct patient mobility assessments for inpatients (94%), fewer do so for outpatients (62%). Non-acute care hospitals (71%) were more likely to have a protocol for outpatients compared to acute care (54%).
- While all hospitals provide training on SPH only 34% provide training at least both on hire and annually.
- There appears to be lack of equipment in some departments.

Findings also indicate that hospitals are in different stages of implementing comprehensive SPH programs. While several hospitals have many of the essential components recommended by the Task Force in place, most hospitals have gaps. Variations in implementation of SPH programs were seen by hospital size and type, likely reflecting organizational differences as well as differences in patient populations. This variation suggests that there are also valuable opportunities for hospitals to learn from each other, across service types, as they move forward.

Finally, survey results also suggest that hospitals are poised to advance their efforts to improve patient handling. Many hospitals expressed interest in receiving additional education and training on various aspects of developing SPH programs. Also several hospitals reported an unforeseen benefit of the survey: that the survey itself prompted discussion of SPH among hospital departments and self-assessment of their facilities' SPH policies and procedures.

7. A Blueprint for Action: Conclusions and Recommendations

The Task Force concluded that work-related MSDs associated with patient handling are a significant public health problem that needs to be addressed. They adversely affect quality of life and result in substantial costs that further stretch an overburdened health care system. These MSDs are in large part preventable. Patient handling equipment, in combination with training in equipment use, can reduce injuries to staff and patients and their related costs. The survey of Massachusetts hospitals reported here reveals while many hospitals have taken steps to minimize manual handling of patients, much remains to be done, and that there are opportunities for hospitals, in different stages of developing SPH programs, to learn from one another. Improvements in patient handling practices within our hospitals provide an important opportunity to pursue the “Triple Aim” of promoting the health and safety of both health care workers and patients, improving the experience of care, and, within a short time frame, reducing health care costs.

Towards these aims, the Task Force offers the following recommendations to promote SPH to improve worker and patient safety in Massachusetts hospitals. These recommendations are offered with the understanding that reducing the risks associated with patient handling will take a collaborative effort of hospitals and hospital workers, government and other stakeholders. The Task Force recognizes that change takes time and resources, but strongly encourages organizations to move forward to establish priorities, objectives and timelines for meeting the recommendations outlined in this report.

Hospitals are strongly encouraged to implement the following recommendations:

1. Recommendation: Massachusetts hospitals should implement comprehensive and sustainable SPH programs to minimize manual lifting and mobilization and provide the patient handling equipment needed to protect workers and patients.

Work-related musculoskeletal back, neck and arm injuries in nursing staff and others who perform manual patient handling activities commonly result from patient handling tasks. Over the past 30 years, efforts to reduce these injuries included education on body mechanics and lifting techniques, work hardening¹⁹, and employee selection and have been largely unsuccessful. On the other hand, substantial reductions of musculoskeletal injuries have resulted following introduction of programs that include use of patient handling equipment that reduce biomechanical loads of caregivers. Comprehensive SPH programs have proven successful in reducing the frequency, severity and costs of MSD injuries. Experience has demonstrated that essential components of a comprehensive program at a minimum need to include: management

¹⁹ Work hardening is a therapeutic approach to improve return-to-worker successes post injury or health event. The individualized approach utilizes simulated work tasks as conditioning exercises with the goal of improving worker’s neuromuscular and cardiovascular functioning post event.

commitment, involvement of direct care workers in problem identification and device trials, statement of SPH policy, SPH committee, SPH needs assessment, SPH equipment, patient functional mobility assessments, training, injury surveillance and assessment of program effectiveness. A further benefit from implementing a comprehensive SPH program is that it contributes to an overall culture of safety in the work environment.

2. Recommendation: Hospitals should design their injury surveillance systems to be able to distinguish incidents associated with patient handling and to record job title, department, and other variables that are potential indicators of risk of injury.

Surveillance of work-related injuries and near misses (e.g., equipment failures) associated with patient handling is essential to establish prevention priorities and provides information necessary to monitor program effectiveness. Central to surveillance is a well communicated and non-punitive protocol (process) for workers to report injuries and near misses. Hospitals are actively encouraged to record both injuries and near misses. Hospitals should also develop methods to link patient and worker injuries associated with the same incident to provide a more complete picture of injuries associated with patient handling and promote an integrated approach to worker and patient safety.

To obtain meaningful summary data to inform prevention, the surveillance system should be designed to collect sufficient detail about factors potentially associated with the injury or near miss, such as job title, unit, shift, and equipment involved. The data should be collected in a standardized fashion that allows for efficient analysis. Findings should be periodically summarized and shared with SPH/Safety & Health committees, unit heads, workers, and hospital leadership. Feedback from data users should inform subsequent analysis as part of continuous quality improvement.

3. Recommendation: Hospital SPH programs should include a timely process for employees to be able to communicate and resolve concerns about patient handling tasks that workers believe in good faith expose a patient or hospital worker to an unacceptable risk of injury. Workers should be informed about the process and protected so that they can raise concerns without fear of negative repercussions.

An effective SPH program requires a collaborative approach in which employees and hospital leaders work together to create a system of review and continuous quality improvement. In particular, there should be a documented mechanism for communicating issues through a chain of command. This process should include an on-going non-retaliatory mechanism for workers to raise concerns about patient or worker safety that allows resolution of these concerns in a sufficiently timely fashion to prevent injuries. The mechanism should be an integral component of already on-going systems, such as continuous quality improvement.

4. Recommendation: The physical infrastructure needs of the SPH program should be incorporated into the design and planning phase of both new construction and renovation of patient care facilities.

SPH programs require technology to be intimately integrated into the patient care facilities. The more integrated the functions of the end users into the design and development of the building, the more effective the facility and the lower the lifecycle costs. These functions should be incorporated early in the design and conceptual phases of any care facility during new construction and during renovation projects. This is the fundamental principle of “prevention through design” (NIOSH, 2010) which seeks to minimize occupational health and safety hazards through the design process. Safe patient handling experts should be included on the design and project management teams. Construction designs should take into account both physical equipment and workflow elements in patient care areas and the patient population being treated, including special populations such as bariatric patients, acute psychiatric patients and patients with disabilities. At a minimum, construction designs should follow the recommendations regarding patient handling from the Facility Guidelines Institute (FGI, 2010). Accommodating equipment for the SPH program in the facility design should be a design priority.

DPH is strongly encouraged to implement the following recommendations:

5. Recommendation: DPH should collaborate with other state agencies as appropriate to produce an annual report on musculoskeletal disorders (MSDs) associated with patient handling among Massachusetts hospital workers, using available state data sources, to target statewide prevention efforts and monitor progress in reducing these injuries.

An annual report can provide information to guide statewide efforts to reduce MSDs associated with patient handling and monitor progress in meeting prevention goals. It will serve to keep the issue on center stage for hospitals and hospital workers as well as policy makers and provide useful information for hospital staff and others working to address patient handling injuries. This report should draw on workers’ compensation data maintained by the Department of Industrial Accidents (lost time injuries in public and private hospitals) and the state Human Resources Division (all injuries in public hospitals) as well as data from the Survey of Occupational Injuries and Illnesses maintained by the Department of Labor (one or more lost workday injuries in public and private hospitals). To the extent feasible, this report should include information about successful approaches to intervention or “lessons from the field,” providing a means for hospitals to learn from one another.

6. Recommendation: DPH should continue to maintain a website that serves as a clearing house for useful resources on SPH and allows for sharing of lessons learned among hospitals and hospital workers.

There is a significant amount of information available regarding SPH in the clinical setting. It can be a substantial undertaking for hospital staff not only to gather the information but also to determine which information is most useful. A page on the DPH website would centralize useful,

evidence-based information regarding SPH programs and the benefits of such programs. The page should include any materials developed or identified by the Task Force and links to relevant web pages developed by Massachusetts stakeholders.

Other Massachusetts stakeholders are also encouraged to develop web pages with relevant resources on SPH and with links to the DPH site.

7. Recommendation: DPH should provide advice to hospitals regarding the collection and analysis of key data on patient handling incidents, including near misses, to inform ongoing injury prevention efforts.

DPH is already recognized as an important resource for hospitals developing and implementing surveillance systems for sharps injuries sustained by workers. The lessons learned should be useful to hospitals as they focus on collection and analysis of injuries resulting from patient handling. While hospitals have systems in place to collect information on work-related injuries, they could benefit from DPH assistance in determining additional data elements to collect as well as how to effectively use their data to guide prevention of patient handling injuries to workers. DPH should also review existing mechanisms, including the *DPH Adverse Incident Report*, to determine how best to collect adequately detailed data on injuries and near misses to patients associated with patient handling. Suggested changes in the *DPH Adverse Incident Report* for consideration by DPH are included in Appendix D. Additionally, DPH should work with hospitals to develop methods for combining data on patient and worker injuries related to patient handling to provide a more complete picture of risks and promote integrated approaches to patient and worker safety. Near misses may be identified by linking data on patients and workers involved in the same incident, because it is possible that an injury to one is a near miss to the other.

8. Recommendation: DPH should incorporate the Facility Guidelines Institute “Patient Handling and Movement Assessment” requirements in the design review and approval process for the construction or renovation for health care facilities.

DPH currently uses the Facility Guidelines Institute Guidelines for Design and Construction of Health Care Facilities (FGI, 2014) for the purposes of plan review, as mandated by licensure regulations. In 2010, these Guidelines were updated to include new requirements that hospitals complete facility wide Patient Handling and Movement Assessments (PHAMA). This is considered a necessary step in the design process. It must be completed in order to determine the space requirements and structural considerations to allow for incorporation of patient handling equipment. FGI provided additional detail on these assessments in the document “Patient Handling and Movement Assessment: A White Paper” (FGI, 2010). DPH should ensure that the Patient Handling and Movement Assessment has been completed as part of the design review and approval process. Changing the DPH review process to include the Patient Handling and Movement Assessment process will help to ensure that facilities are designed in a way that accommodates SPH.

9. Recommendation: DPH should issue guidance to hospitals to promote implementation of comprehensive SPH programs under its existing authority.

DPH has the authority to require hospitals to institute new practices regarding patient and worker safety (MGL Ch 111 §2). This can be done through regulations, or through the issuance of circular letters in the absence of regulations, providing guidance for hospitals in the implementation of programs such as SPH programs designed to minimize manual handling of patients. Feedback from hospitals indicates that requirements from DPH often make it easier to implement necessary programs within the hospital. Direction from DPH would facilitate implementation of comprehensive SPH programs within hospitals, would ensure that programs are instituted statewide, would lend weight to the importance of SPH, and would help to establish a standard of practice, thereby influencing community norms. Issuance of guidance should be a first step. Publishing guidance does not preclude regulations or legislation in the future.

Additional recommendations:

10. Recommendation: An ongoing coalition of stakeholders should be established to promote awareness of safe patient handling and effective injury prevention strategies, monitor progress in implementing these Recommendations, and identify evolving needs and priority research questions. DPH should initiate this effort.

This coalition should be a tripartite effort of government (DPH), hospital management and hospital workers. Coalition members would include thought leaders with knowledge of patient and worker safety from labor and industry organizations, hospitals, and state agencies as well as ergonomic experts and academic researchers who meet periodically (e.g., quarterly). The coalition would serve to increase awareness of the preventability of patient handling injuries and advance the recommendations in this report. Aims should include: 1) identifying and sharing best practices and evolving approaches to address patient handling hazards; and 2) developing methods for information dissemination (e.g., list serve, website) and 3) continuing assessment of hospital needs. The coalition should also monitor the progress in meeting Task Force recommendations and reducing patient handling injuries over time in Massachusetts hospitals. Additionally, the coalition may play a role in identifying research gaps and fostering collaborative research to expand knowledge about risk factors associated with patient handling and effective prevention strategies.

11. Recommendation: DPH should collaborate with key stakeholders (e.g., MHA, MNA) to hold periodic meetings bringing together staff involved in patient handling programs from hospitals throughout the state to share information on safe patient handling, and discuss lessons from the field in implementing programs.

A current model for periodic meetings is provided by the annual meetings that bring hospital staff together to address sharps surveillance and prevention. These meetings have proven valuable in sharing effective approaches to reducing sharps injuries. This approach should be

adopted to address SPH. Periodic (e.g., yearly) meetings involving those directly involved in implementing SPH programs should be held so that hospital staff can learn from one another and allow for continuing identification of needs. Topics of discussion might include availability of new equipment or assistive devices, considerations for special populations, or challenges faced and effective solutions to address them. Findings from such meetings should also be shared with the coalition referred to in Recommendation 10.

12. Recommendation: Organizations providing risk management and accident prevention services to hospitals should provide assistance in developing and maintaining safe patient handling programs.

Workers' compensation carriers and others providing accident prevention services are good resources for hospitals in addressing work-related hazards, including prevention of MSDs related to patient handling. They can provide data on patient handling related incidents that are helpful to hospitals designing intervention programs. In addition, they are often in touch with vendors of lifting and transfer equipment and can help facilitate discussions with those vendors. Insurance carriers also have access to resources on health and safety programs management and setting up SPH programs and committees, which may be useful in addressing hazards associated with patient handling. Insurance carriers are strongly encouraged to consult with their clients specifically on establishing comprehensive SPH programs and policies as part of their hazard prevention initiatives. Risk management services should include support of comprehensive SPH programs. Hospitals are also encouraged to request services from carriers and third-party administrators.

13. Recommendation: All training programs for direct health care workers should include, as core curriculum components, education and training on safe patient handling.

- A. **Accrediting or certifying organizations should make competency in SPH a core criterion for approved academic programs**
- B. **Other training programs for direct health care workers, such as in-house hospital training programs and independent certificate programs, should incorporate SPH as a core training component.**

Safe patient handling requires attention to the needs and capacities of the patient, the workforce and the care environment. Properly prepared health care professionals will have the knowledge and skills necessary to minimize health or safety risks to patients, themselves or their colleagues. Professional accrediting organizations are ideally situated to assure that health care professionals receive the necessary instruction to accomplish this. For example, in its "The Essentials of Baccalaureate Education for Professional Nursing Practice," the American Association of Colleges of Nursing (AACN) notes that baccalaureate nursing programs prepare graduates to "apply safeguards and decision making support tools embedded in patient care technologies and information systems to support a safe practice environment for both patients and health care workers." As yet, however, the Commission on Collegiate Nursing Accreditation has not proposed criteria for assessing whether academic programs attend to/provide skills and

knowledge necessary for nurses to protect themselves and their colleagues from preventable conditions.

Even in the absence of accreditation requirements, professional education curricula should be enhanced to include adequate attention to skills and knowledge about worker as well as patient health and safety. Annual competency training/recertification should include practical demonstration of competency in use of patient handling equipment and patient mobility assessment. The use of simulation technology as part of training offers an ideal opportunity to include developing competency in patient handling, including the use of equipment and assistive devices that protects both patients and caregivers.

14. Recommendation: Professionals in architecture, engineering, and in other related fields involved in the design of health care facilities should receive training on the physical infrastructure and functional requirements for safe patient handling that need to be incorporated in building design.

In order to meet the requirements of Recommendation #4 above, professionals who design health care facilities must be knowledgeable of and hence should receive training on how to design the physical space/layout in order to incorporate SPH program components and function. Training can occur in both professional and continuing education settings. Design guidelines do exist and training should be based on current guidelines, such as those published by the Facility Guidelines Institute (FGI, 2010a; FGI, 2014).

The Task Force recognizes that change takes time and resources, but urges organizations to move forward to establish priorities, objectives and timelines for meeting the recommendations outlined in this report. The Task Force also recognizes that workers and patients in other health care settings (for example, long term care and home care) face similar risks associated with patient handling and mobility. The focus of this Task Force was on hospitals, however, many of the findings and recommendations as well as the resources identified to address the problem in this report should be highly useful in promoting SPH across health care settings.

Today, Massachusetts is leading the nation in providing affordable, high quality health care to all residents and in addressing the challenges of controlling health care costs. As Massachusetts moves forward to realize the vision of health care reform with increased focus on prevention, advances in patient handling provide the opportunity to improve the well-being of both health care workers and patients and reduce health care costs.

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9. Appendices

Appendix A

Technical Note on Survey of Occupational Injuries and Illnesses Data Analysis

Use of SOII data to estimate number of lost workdays due to MSDs associated with patient handling among workers in Massachusetts hospitals, 2010

For all workplace injuries and illnesses, the OSHA reporting procedure caps the total number of days lost per case at 180 days. In other words, for workers who lose more than 180 days as a result of their injuries, employers are not required to report the specific number of days lost. Days lost beyond 180 are typically not reported and thus cannot be counted in the SOII. For this reason, SOII does not compute or publish the average number of days lost.

SOII does report the median number of days lost for all cases (in this instance, cases of MSDs associated with patient handling) combined and presents the distribution of cases by days away from work categories, providing a median value in each category. The SOII data for MSDs associated with patient handling in Massachusetts private sector hospitals in 2010 are shown below (Table 1).

Number, incident rate, median days away from work and relative standard errors by Days Away from Work Group (DAFW), MSDs associated with patient handling, Massachusetts private sector hospitals, 2010					
DAFW Group	Total Cases**	Incidence Rate	Median Days	RSE*	Estimated days away from work
Total	1,000	73.1	13	5.0	21,560
1 day	110	8.0	1	17.3	$110 * 1 = 110$
2 day	50	3.3	2	27.1	$50 * 2 = 100$
3-5 days	150	11.0	3	14.7	$150 * 3 = 450$
6-10 days	170	12.1	8	14.0	$85 * 6 + 85 * 8 = 510 + 680 = 1,190$
11-20 days	170	12.1	14	14.0	$85 * 11 + 85 * 14 = 935 + 1190 = 2,125$
21-30 days	70	5.0	25	22.0	$35 * 21 + 35 * 25 = 735 + 875 = 1,610$
31 or more days**	300	21.6	75	10.3	$150 * 31 + 150 * 75 = 4,650 + 11,250 = 15,900$
* Relative Standard Error					
** Number of cases per 10,000 full time workers.					

This information was used to generate an estimate of the total number of DAFW due to patient handling injuries among Massachusetts hospital workers (2010) (i.e., the last column in the table above) as described below.

For cases in the 1 or 2 DAFW groups, we multiplied the number of cases (n) in each group by 1 or 2 days respectively. For cases in which DAFW were reported as a range of values, we generated an estimated number of DAFW for the group as follows:

$$0.5n * \text{lowest value in the range} + 0.5n * \text{median value in the range.}$$

This estimate is highly conservative because we used the lowest number of days and the median values of the range to generate the estimates. It is even further conservative because, as noted above, lost time is truncated at 180 days.

Last, the total estimated number of DAFW was computed as simply the sum of the numbers for all groups.

Appendix B

Sample

Employee Health: Patient Handling Incident Recording Form

Employee Health: Patient Handling Incident Recording Form

HEALTHCARE WORKER'S NAME:			UNIQUE INCIDENT NUMBER:						
STATUS OF WORKER (Check one): <input type="checkbox"/> Part time employee <input type="checkbox"/> Full time employee <input type="checkbox"/> Student <input type="checkbox"/> Non-employee practitioner <input type="checkbox"/> Per diem <input type="checkbox"/> Other <input type="checkbox"/> Temp / contract <input type="checkbox"/> Volunteer			DATE OF HIRE: / /	AGE of WORKER: _____	GENDER: <input type="checkbox"/> Female <input type="checkbox"/> Male				
TIME WORK SHIFT BEGAN: : am pm	DATE OF INCIDENT: / /	TIME of INCIDENT: : am pm	DATE REPORTED: / /	TIME REPORTED: : am pm					
Impact on worker ability to perform job duties (check all that apply): Did the incident result in: <input type="checkbox"/> Transitional Duty <input type="checkbox"/> Lost One or More Days from Work <input type="checkbox"/> Other _____									
Did the incident result in an injury to a patient? ___Yes ___No ___Don't know. If yes, provide date and incident number of the adverse event report: Date: / / Adverse event report number: _____									
OCCUPATION (Check one): <table style="width: 100%; border: none;"> <tr> <td style="width: 25%; vertical-align: top;"> <input type="checkbox"/> Attending physician <input type="checkbox"/> Attendant/Orderly <input type="checkbox"/> Certified Nursing Tech <input type="checkbox"/> Dentist <input type="checkbox"/> Dental Assistant / tech <input type="checkbox"/> Dietician <input type="checkbox"/> EMT/Paramedic <input type="checkbox"/> Fellow <input type="checkbox"/> Hemodialysis technician <input type="checkbox"/> Home health aide <input type="checkbox"/> Intern </td> <td style="width: 25%; vertical-align: top;"> <input type="checkbox"/> Law enforcement officer <input type="checkbox"/> Licensed Practical Nurse <input type="checkbox"/> Medical assistant <input type="checkbox"/> Medical student <input type="checkbox"/> Medical Resident <input type="checkbox"/> Morgue technician <input type="checkbox"/> Nurse Anesthetist <input type="checkbox"/> Nurse Midwife <input type="checkbox"/> Nurse Practitioner <input type="checkbox"/> Nursing Assistant <input type="checkbox"/> Nursing student </td> <td style="width: 25%; vertical-align: top;"> <input type="checkbox"/> Nutritionist <input type="checkbox"/> Occupational Therapist <input type="checkbox"/> OR / surgical technician <input type="checkbox"/> Patient care technician <input type="checkbox"/> Patient activities coordinator <input type="checkbox"/> Phlebotomist <input type="checkbox"/> Physician <input type="checkbox"/> Physician assistant <input type="checkbox"/> Physical therapist <input type="checkbox"/> Psychiatric technician <input type="checkbox"/> Public health worker </td> <td style="width: 25%; vertical-align: top;"> <input type="checkbox"/> Radiologic technician <input type="checkbox"/> Radiologist <input type="checkbox"/> Registered Nurse <input type="checkbox"/> Respiratory Therapist / tech <input type="checkbox"/> Safety / security <input type="checkbox"/> Speech therapist <input type="checkbox"/> Surgeon <input type="checkbox"/> Transport / messenger <input type="checkbox"/> Volunteer <input type="checkbox"/> Other <div style="text-align: center;">_____</div> <div style="text-align: center;">(specify)</div> </td> </tr> </table>						<input type="checkbox"/> Attending physician <input type="checkbox"/> Attendant/Orderly <input type="checkbox"/> Certified Nursing Tech <input type="checkbox"/> Dentist <input type="checkbox"/> Dental Assistant / tech <input type="checkbox"/> Dietician <input type="checkbox"/> EMT/Paramedic <input type="checkbox"/> Fellow <input type="checkbox"/> Hemodialysis technician <input type="checkbox"/> Home health aide <input type="checkbox"/> Intern	<input type="checkbox"/> Law enforcement officer <input type="checkbox"/> Licensed Practical Nurse <input type="checkbox"/> Medical assistant <input type="checkbox"/> Medical student <input type="checkbox"/> Medical Resident <input type="checkbox"/> Morgue technician <input type="checkbox"/> Nurse Anesthetist <input type="checkbox"/> Nurse Midwife <input type="checkbox"/> Nurse Practitioner <input type="checkbox"/> Nursing Assistant <input type="checkbox"/> Nursing student	<input type="checkbox"/> Nutritionist <input type="checkbox"/> Occupational Therapist <input type="checkbox"/> OR / surgical technician <input type="checkbox"/> Patient care technician <input type="checkbox"/> Patient activities coordinator <input type="checkbox"/> Phlebotomist <input type="checkbox"/> Physician <input type="checkbox"/> Physician assistant <input type="checkbox"/> Physical therapist <input type="checkbox"/> Psychiatric technician <input type="checkbox"/> Public health worker	<input type="checkbox"/> Radiologic technician <input type="checkbox"/> Radiologist <input type="checkbox"/> Registered Nurse <input type="checkbox"/> Respiratory Therapist / tech <input type="checkbox"/> Safety / security <input type="checkbox"/> Speech therapist <input type="checkbox"/> Surgeon <input type="checkbox"/> Transport / messenger <input type="checkbox"/> Volunteer <input type="checkbox"/> Other <div style="text-align: center;">_____</div> <div style="text-align: center;">(specify)</div>
<input type="checkbox"/> Attending physician <input type="checkbox"/> Attendant/Orderly <input type="checkbox"/> Certified Nursing Tech <input type="checkbox"/> Dentist <input type="checkbox"/> Dental Assistant / tech <input type="checkbox"/> Dietician <input type="checkbox"/> EMT/Paramedic <input type="checkbox"/> Fellow <input type="checkbox"/> Hemodialysis technician <input type="checkbox"/> Home health aide <input type="checkbox"/> Intern	<input type="checkbox"/> Law enforcement officer <input type="checkbox"/> Licensed Practical Nurse <input type="checkbox"/> Medical assistant <input type="checkbox"/> Medical student <input type="checkbox"/> Medical Resident <input type="checkbox"/> Morgue technician <input type="checkbox"/> Nurse Anesthetist <input type="checkbox"/> Nurse Midwife <input type="checkbox"/> Nurse Practitioner <input type="checkbox"/> Nursing Assistant <input type="checkbox"/> Nursing student	<input type="checkbox"/> Nutritionist <input type="checkbox"/> Occupational Therapist <input type="checkbox"/> OR / surgical technician <input type="checkbox"/> Patient care technician <input type="checkbox"/> Patient activities coordinator <input type="checkbox"/> Phlebotomist <input type="checkbox"/> Physician <input type="checkbox"/> Physician assistant <input type="checkbox"/> Physical therapist <input type="checkbox"/> Psychiatric technician <input type="checkbox"/> Public health worker	<input type="checkbox"/> Radiologic technician <input type="checkbox"/> Radiologist <input type="checkbox"/> Registered Nurse <input type="checkbox"/> Respiratory Therapist / tech <input type="checkbox"/> Safety / security <input type="checkbox"/> Speech therapist <input type="checkbox"/> Surgeon <input type="checkbox"/> Transport / messenger <input type="checkbox"/> Volunteer <input type="checkbox"/> Other <div style="text-align: center;">_____</div> <div style="text-align: center;">(specify)</div>						
DEPARTMENT WHERE INCIDENT OCCURRED (Check one): <table style="width: 100%; border: none;"> <tr> <td style="width: 25%; vertical-align: top;"> <input type="checkbox"/> Ambulance <input type="checkbox"/> Ambulatory care clinic <input type="checkbox"/> Anesthesia <input type="checkbox"/> Blood bank <input type="checkbox"/> Cardiac cath laboratory <input type="checkbox"/> Central sterile supply <input type="checkbox"/> Dialysis <input type="checkbox"/> Dental Clinic <input type="checkbox"/> Dermatology <input type="checkbox"/> Detox unit <input type="checkbox"/> Emergency Department </td> <td style="width: 25%; vertical-align: top;"> <input type="checkbox"/> Employee health / Infection control <input type="checkbox"/> Endoscopy / bronchoscopy /cytoscopy <input type="checkbox"/> Exam room <input type="checkbox"/> Hematology / Oncology <input type="checkbox"/> Histology / pathology <input type="checkbox"/> Home health visit (home) <input type="checkbox"/> Hospital grounds <input type="checkbox"/> Intensive care unit <input type="checkbox"/> Jail unit <input type="checkbox"/> </td> <td style="width: 25%; vertical-align: top;"> <input type="checkbox"/> Labor and delivery <input type="checkbox"/> Long term care <input type="checkbox"/> Medical / surgical ward <input type="checkbox"/> Microbiology <input type="checkbox"/> Morgue / autopsy room <input type="checkbox"/> Nursery <input type="checkbox"/> Obstetrics / gynecology ward <input type="checkbox"/> Operating room <input type="checkbox"/> Pain clinic <input type="checkbox"/> Pediatrics </td> <td style="width: 25%; vertical-align: top;"> <input type="checkbox"/> Phlebotomy room <input type="checkbox"/> Post anesthesia care unit <input type="checkbox"/> Psychiatry ward <input type="checkbox"/> Radiology department room <input type="checkbox"/> Rehabilitation unit <input type="checkbox"/> Procedure room _____ <div style="text-align: center;">_____</div> <div style="text-align: center;">(specify)</div> <input type="checkbox"/> Other department _____ <div style="text-align: center;">_____</div> <div style="text-align: center;">(specify)</div> </td> </tr> </table>						<input type="checkbox"/> Ambulance <input type="checkbox"/> Ambulatory care clinic <input type="checkbox"/> Anesthesia <input type="checkbox"/> Blood bank <input type="checkbox"/> Cardiac cath laboratory <input type="checkbox"/> Central sterile supply <input type="checkbox"/> Dialysis <input type="checkbox"/> Dental Clinic <input type="checkbox"/> Dermatology <input type="checkbox"/> Detox unit <input type="checkbox"/> Emergency Department	<input type="checkbox"/> Employee health / Infection control <input type="checkbox"/> Endoscopy / bronchoscopy /cytoscopy <input type="checkbox"/> Exam room <input type="checkbox"/> Hematology / Oncology <input type="checkbox"/> Histology / pathology <input type="checkbox"/> Home health visit (home) <input type="checkbox"/> Hospital grounds <input type="checkbox"/> Intensive care unit <input type="checkbox"/> Jail unit <input type="checkbox"/>	<input type="checkbox"/> Labor and delivery <input type="checkbox"/> Long term care <input type="checkbox"/> Medical / surgical ward <input type="checkbox"/> Microbiology <input type="checkbox"/> Morgue / autopsy room <input type="checkbox"/> Nursery <input type="checkbox"/> Obstetrics / gynecology ward <input type="checkbox"/> Operating room <input type="checkbox"/> Pain clinic <input type="checkbox"/> Pediatrics	<input type="checkbox"/> Phlebotomy room <input type="checkbox"/> Post anesthesia care unit <input type="checkbox"/> Psychiatry ward <input type="checkbox"/> Radiology department room <input type="checkbox"/> Rehabilitation unit <input type="checkbox"/> Procedure room _____ <div style="text-align: center;">_____</div> <div style="text-align: center;">(specify)</div> <input type="checkbox"/> Other department _____ <div style="text-align: center;">_____</div> <div style="text-align: center;">(specify)</div>
<input type="checkbox"/> Ambulance <input type="checkbox"/> Ambulatory care clinic <input type="checkbox"/> Anesthesia <input type="checkbox"/> Blood bank <input type="checkbox"/> Cardiac cath laboratory <input type="checkbox"/> Central sterile supply <input type="checkbox"/> Dialysis <input type="checkbox"/> Dental Clinic <input type="checkbox"/> Dermatology <input type="checkbox"/> Detox unit <input type="checkbox"/> Emergency Department	<input type="checkbox"/> Employee health / Infection control <input type="checkbox"/> Endoscopy / bronchoscopy /cytoscopy <input type="checkbox"/> Exam room <input type="checkbox"/> Hematology / Oncology <input type="checkbox"/> Histology / pathology <input type="checkbox"/> Home health visit (home) <input type="checkbox"/> Hospital grounds <input type="checkbox"/> Intensive care unit <input type="checkbox"/> Jail unit <input type="checkbox"/>	<input type="checkbox"/> Labor and delivery <input type="checkbox"/> Long term care <input type="checkbox"/> Medical / surgical ward <input type="checkbox"/> Microbiology <input type="checkbox"/> Morgue / autopsy room <input type="checkbox"/> Nursery <input type="checkbox"/> Obstetrics / gynecology ward <input type="checkbox"/> Operating room <input type="checkbox"/> Pain clinic <input type="checkbox"/> Pediatrics	<input type="checkbox"/> Phlebotomy room <input type="checkbox"/> Post anesthesia care unit <input type="checkbox"/> Psychiatry ward <input type="checkbox"/> Radiology department room <input type="checkbox"/> Rehabilitation unit <input type="checkbox"/> Procedure room _____ <div style="text-align: center;">_____</div> <div style="text-align: center;">(specify)</div> <input type="checkbox"/> Other department _____ <div style="text-align: center;">_____</div> <div style="text-align: center;">(specify)</div>						
Specify area where incident occurred (room number, floor etc): _____									
Is this the department to which they are regularly assigned? ___Yes ___No ___Don't know									
TYPE OF INJURY and BODY PART (Check all that apply):									

<input type="checkbox"/> Muscle strain, sprain or tear: Diagnosis, if known: _____ <input type="checkbox"/> Neck, including throat <input type="checkbox"/> Shoulder, including clavicle/scapula <input type="checkbox"/> Chest <input type="checkbox"/> Back, including spine and spinal cord <input type="checkbox"/> Abdomen <input type="checkbox"/> Hips <input type="checkbox"/> Arms <input type="checkbox"/> Wrists <input type="checkbox"/> Hands, fingers <input type="checkbox"/> Legs <input type="checkbox"/> Ankles <input type="checkbox"/> Feet, toes <input type="checkbox"/> Other body parts: specify _____ <input type="checkbox"/> Unknown	<input type="checkbox"/> Contusion/bruise: <input type="checkbox"/> Head, including face <input type="checkbox"/> Neck, including throat <input type="checkbox"/> Shoulder, including clavicle/scapula <input type="checkbox"/> Chest, including ribs/internal organs <input type="checkbox"/> Back, including spine and spinal cord <input type="checkbox"/> Abdomen <input type="checkbox"/> Hips, pelvic region <input type="checkbox"/> Arms <input type="checkbox"/> Wrists <input type="checkbox"/> Hands, fingers <input type="checkbox"/> Legs <input type="checkbox"/> Ankles <input type="checkbox"/> Feet, toes <input type="checkbox"/> Body system <input type="checkbox"/> Other body parts: specify _____ <input type="checkbox"/> Unknown	<input type="checkbox"/> Crush injury <input type="checkbox"/> Head, including face <input type="checkbox"/> Neck, including throat <input type="checkbox"/> Shoulder, including clavicle/scapula <input type="checkbox"/> Chest, including ribs/internal organs <input type="checkbox"/> Back, including spine and spinal cord <input type="checkbox"/> Abdomen <input type="checkbox"/> Pelvic region <input type="checkbox"/> Arms <input type="checkbox"/> Wrists <input type="checkbox"/> Hands, fingers <input type="checkbox"/> Legs <input type="checkbox"/> Ankles <input type="checkbox"/> Feet, toes <input type="checkbox"/> Body system <input type="checkbox"/> Other body parts: specify _____ <input type="checkbox"/> Unknown
<input type="checkbox"/> Cut/laceration <input type="checkbox"/> Head, including face <input type="checkbox"/> Neck, including throat <input type="checkbox"/> Shoulder, including clavicle/scapula <input type="checkbox"/> Chest <input type="checkbox"/> Back, including spine and spinal cord <input type="checkbox"/> Abdomen <input type="checkbox"/> Pelvic region <input type="checkbox"/> Arms <input type="checkbox"/> Wrists <input type="checkbox"/> Hands, fingers <input type="checkbox"/> Legs <input type="checkbox"/> Ankles <input type="checkbox"/> Feet, toes <input type="checkbox"/> Other body parts: specify _____ <input type="checkbox"/> Unknown	<input type="checkbox"/> Fracture <input type="checkbox"/> Head, including face <input type="checkbox"/> Neck, including throat <input type="checkbox"/> Shoulder, including clavicle/scapula <input type="checkbox"/> Chest, including ribs/internal organs <input type="checkbox"/> Back, including spine and spinal cord <input type="checkbox"/> Hips, pelvic region <input type="checkbox"/> Arms <input type="checkbox"/> Wrists <input type="checkbox"/> Hands, fingers <input type="checkbox"/> Legs <input type="checkbox"/> Ankles <input type="checkbox"/> Feet, toes <input type="checkbox"/> Other body parts: specify _____ <input type="checkbox"/> Unknown	<input type="checkbox"/> Soreness, pain, hurt, injury unspecified: <input type="checkbox"/> Head, including face <input type="checkbox"/> Neck, including throat <input type="checkbox"/> Shoulder, including clavicle/scapula <input type="checkbox"/> Chest, including ribs/internal organs <input type="checkbox"/> Back, including spine and spinal cord <input type="checkbox"/> Abdomen <input type="checkbox"/> Hips <input type="checkbox"/> Arms <input type="checkbox"/> Wrists <input type="checkbox"/> Hands, fingers <input type="checkbox"/> Legs <input type="checkbox"/> Ankles <input type="checkbox"/> Feet, toes <input type="checkbox"/> Other body parts: specify _____ <input type="checkbox"/> Unknown
<input type="checkbox"/> Bite Specific body part: _____	<input type="checkbox"/> Anxiety/stress	<input type="checkbox"/> Other, specify _____
PATIENT CARE ACTIVITY AT TIME OF INCIDENT (Check one):		
<input type="checkbox"/> Hygiene: Unspecified <input type="checkbox"/> Hygiene: Bathing patient in bed <input type="checkbox"/> Hygiene: Bathing/toileting patient in bathroom <input type="checkbox"/> Hygiene: Dressing/undressing or diapering patient <input type="checkbox"/> Positioning: Unspecified <input type="checkbox"/> Positioning: Positioning/repositioning in bed or stretcher <input type="checkbox"/> Positioning: Positioning/repositioning in chair <input type="checkbox"/> Positioning: Positioning/repositioning in bed or stretcher w/o hygiene <input type="checkbox"/> Positioning: Positioning/repositioning in chair w/o hygiene <input type="checkbox"/> Responding to patient medical emergency <input type="checkbox"/> Sustained lifting/holding of body parts	<input type="checkbox"/> Transfer: Unspecified <input type="checkbox"/> Transfer: Transferring/lifting to/from bed or chair <input type="checkbox"/> Transfer: Transferring/lifting from floor <input type="checkbox"/> Transfer: Lateral transfer of patient to/from bed <input type="checkbox"/> Transfer: Transferring/lifting deceased patient <input type="checkbox"/> Transport: Unspecified <input type="checkbox"/> Transport: Moving patient by wheelchair <input type="checkbox"/> Transport: Moving patient by stretcher, bed, litter, trolley, etc <input type="checkbox"/> Other _____ (specify) <input type="checkbox"/> No single precipitating incident	
Did the incident involve physical aggression by a patient? ___ Yes ___ No ___ Don't know		

CONTRIBUTING FACTORS (Check all that apply): <input type="checkbox"/> Patient factor: Unspecified <input type="checkbox"/> Patient factor: Slipped <input type="checkbox"/> Patient factor: Sudden movement <input type="checkbox"/> Patient factor: Cognitive dysfunction <input type="checkbox"/> Patient factor: Patient equipment or tubes <input type="checkbox"/> Patient factor: Patient size or weight <input type="checkbox"/> Patient factor: Patient's inability to assist <input type="checkbox"/> Patient factor: Patient unwilling to assist <input type="checkbox"/> Patient factor: Other _____ <input type="checkbox"/> Patient Handling equipment: equipment failure <input type="checkbox"/> Patient Handling equipment: wrong sling used <input type="checkbox"/> Patient Handling equipment: inappropriate equipment used		<input type="checkbox"/> Patient Handling equipment not used: Reason unspecified <input type="checkbox"/> Patient Handling equipment not used: No equipment available <input type="checkbox"/> Patient Handling equipment not used: Refused by patient or family <input type="checkbox"/> Patient Handling equipment not used: Equipment not accessible <input type="checkbox"/> Patient Handling equipment not used: Equipment not suitable for use <input type="checkbox"/> Patient Handling equipment not used: Equipment difficult to use <input type="checkbox"/> Equipment not used: Space constraints <input type="checkbox"/> Equipment not used: Lack of training <input type="checkbox"/> Equipment not used: Urgent medical situation <input type="checkbox"/> Equipment not used: Other reason <input type="checkbox"/> Administrative factors: Insufficient staffing <input type="checkbox"/> Inadequate furniture (non-lifting e.g., beds) <input type="checkbox"/> Other _____	
PATIENT HANDLING EQUIPMENT INVOLVED (Check one): <input type="checkbox"/> Unspecified <input type="checkbox"/> Full body sling lift – unspecified <input type="checkbox"/> Full body sling lift – ceiling <input type="checkbox"/> Full body sling lift – floor-based lift <input type="checkbox"/> Sit to stand lift	<input type="checkbox"/> Gait belt <input type="checkbox"/> Other _____ <input type="checkbox"/> Mechanical lateral transfer device <input type="checkbox"/> Friction reducing lateral transfer device <input type="checkbox"/> Lateral transfer device – unspecified <input type="checkbox"/> Air assisted lateral transfer device	<input type="checkbox"/> Repositioning aid for bed/chair <input type="checkbox"/> Motorized bed/stretchers/wheelchair <input type="checkbox"/> Specialty function bed <input type="checkbox"/> Shower chair <input type="checkbox"/> Height adjustable exam table <input type="checkbox"/> No equipment involved	
MANUFACTURER OF EQUIPMENT: _____			
BRAND OF EQUIPMENT: _____			
MODEL OF EQUIPMENT: _____			
WHEN WAS THE WORKER LAST TRAINED IN THE PROPER USE OF PATIENT HANDLING EQUIPMENT / TRANSFER TECHNIQUES (Check one)? <input type="checkbox"/> within the last 6 months <input type="checkbox"/> 6 months to 1 year ago <input type="checkbox"/> more than 1 year ago <input type="checkbox"/> never at this institution			
WHAT WAS THE PATIENT'S FUNCTIONAL TRANSFER STATUS PRIOR TO INCIDENT (Check one)? <input type="checkbox"/> Independent - Patient does not use a device, requires no assistance from a helper, requires no set up <input type="checkbox"/> Modified Independent- Patient requires use of a device, requires more than a reasonable amount of time to complete activity and has no helper <input type="checkbox"/> Supervised – Patient requires verbal cueing, coaxing, encouragement or instructions, requires set up from a helper to perform activity <input type="checkbox"/> Minimal Assist – A helper provides touching, contact guard, or guidance assistance, or the patient performs 75% or more of activity <input type="checkbox"/> Moderate Assistance - A helper provides lifting assistance, or the patient performs 50-74% of activity <input type="checkbox"/> Maximum Assistance - A helper provides lifting assistance in both directions, or the patient performs 25-49% of activity <input type="checkbox"/> Dependent – The patient requires assist from 2 helpers or performs less than 25% of the activity <input type="checkbox"/> Not known			
Incident description: (Narrative text that describes what happened, including functional status of patient at the time of the incident. If no single precipitating incident reported, describe factors the worker reports to have contributed to injury/pain.)			
WHAT SUGGESTIONS DOES THE WORKER HAVE FOR PREVENTING SIMILAR INJURIES IN THE FUTURE?			
Prepared by: _____		Date: _____	
Title: _____			

Appendix C

Survey of Hospital Based Safe Patient Handling Activities: Survey Instrument

Survey of Hospital Based Safe Patient Handling Activities

The Occupational Health Surveillance Program of the Massachusetts Department of Public Health is gathering information about the components and scope of existing safe patient handling activities in Massachusetts hospitals. Names of hospitals and respondents are being collected for follow-up purposes. The names of all hospitals and respondents will be kept confidential and not available to the public upon request. Results will be presented in aggregate only and will be shared with all hospitals. **If you have any questions, please call or email Angela Laramie at angela.laramie@state.ma.us or 617-624-5641.**

GENERAL INFORMATION

1. Facility name: _____
2. Your name: _____
3. Today's date: _____
4. Email: _____
5. Phone number: _____
6. What is your current position/title? _____
7. What other departments were consulted to complete the survey? _____

8. Approximately, how many employees are currently working at your facility? _____
 - A. Estimate the % involved in direct patient care _____

PATIENT MOBILITY ASSESSMENT

9. Does your facility have a protocol regarding the assessment of patient functional mobility and transfer needs on admission:

For inpatients:	For outpatients:
a. <input type="checkbox"/> Yes	a. <input type="checkbox"/> Yes
b. <input type="checkbox"/> No	b. <input type="checkbox"/> No

If you selected yes for inpatients, please answer questions 9A-B. If no, please skip to question 10.

- A. Does the protocol require care staff to determine the appropriate equipment match for patient's functional mobility status and transfer needs?
- a. ☐ Yes
 - b. ☐ No

If you selected yes for 9A:

- B. Is this information written in a patient's care plan or (electronic) medical record?
- a. ☐ Yes
 - b. ☐ No (please specify where _____)

10. How often is a patient's mobility status updated?

- a. ☐ Only when necessary
- b. ☐ On a daily basis
- c. ☐ Weekly
- d. ☐ Other, please specify _____

11. Who updates or make changes to the patient assessment/care plan? Select all that apply.

- a. ☐ Nurses
- b. ☐ Physical therapists
- c. ☐ Other, please specify _____

SAFE PATIENT HANDLING POLICIES & PROCEDURES

12. Does your facility have a written policy regarding safe patient handling?

- a. ☐ Yes, in practice
- b. ☐ Yes, in development
- c. ☐ No

If you selected yes, please answer questions 12A-C. Otherwise, please skip to question 13.

- A. Which of the following statements best describes the safe patient handling policy in your facility?
- a. ☐ No-lift policy (manual lift is not permitted)
 - b. ☐ Minimal lift policy (manual lift is limited to emergency situations)
 - c. ☐ Manual lift and device assisted lift policy
 - d. ☐ Other, please specify _____

B. How long has the policy been implemented?

- a. ☐ Less than 1 years
- b. ☐ 1-4 years
- c. ☐ 4+ years

C. Does the policy address the following? Select all that apply.

- a. ☐ Accessibility, maintenance, and replacement of lifting equipment
- b. ☐ Assessment of patient functional mobility and transfer needs
- c. ☐ Compliance of employees with the policy requirements
- d. ☐ Guidelines for selecting the appropriate patient handling method
- e. ☐ Reporting of injuries that are related to patient handling
- f. ☐ Reporting of near misses or incidents without injury that are related to patient handling
- g. ☐ Training of employees on the use of lifting equipment
- h. ☐ Special provisions for employees under the age of 18
- i. ☐ Training in assessment of patient mobility and transfer needs
- j. ☐ Patient and family education
- k. ☐ Patient skin integrity / prevention of breakdown
- l. ☐ Prevention of patient falls

13. Does your facility have designated lift teams that are trained on the use of lifting equipment?

- a. ☐ Yes
- b. ☐ No

14. Which department in your facility is responsible for oversight of patient handling programming, policies and procedures?

- a. ☐ Nursing
- b. ☐ Occupational health / employee health
- c. ☐ Safety office
- d. ☐ Risk management
- e. ☐ Other, please specify _____

15. In what ways do you assess the effectiveness of the policies and procedures? Select all that apply.

- a. ☐ Staff surveys
- b. ☐ Interviews with staff
- c. ☐ Patient satisfaction surveys
- d. ☐ Reviewing staff injury rates relating to patient handling
- e. ☐ Reviewing individual adverse events relating to patient handling
- f. ☐ Reviewing injury cost data

g. ☐ Other, please specify _____

COMMITTEE ADDRESSING SAFE PATIENT HANDLING

16. Is there a formal committee or group working to prevent patient handling injuries?

- a. ☐ Yes
- b. ☐ No

If you selected yes, please answer questions 16A-B. Otherwise, please skip to question 17.

A. What is the committee/group? Select all that apply.

- a. ☐ Health and safety committee
- b. ☐ Ergonomics committee
- c. ☐ Risk management committee
- d. ☐ Other, please specify _____

B. Who is on the committee? Select all that apply.

- a. ☐ Physicians
- b. ☐ Nurses
- c. ☐ Occupational Therapists
- d. ☐ Physical Therapists
- e. ☐ Other direct patient care staff
- f. ☐ Occupational health staff
- g. ☐ Other, please specify _____

17. Are incidents / events relating to patient handling (harm to providers *and/or* harm to patients) formally assessed?

Incidents / Events Affecting Providers

- a. ☐ Always
- b. ☐ Sometimes
- c. ☐ Rarely
- d. ☐ Never

Incidents / Events Affecting Patients

- a. ☐ Always
- b. ☐ Sometimes
- c. ☐ Rarely
- d. ☐ Never

INJURY SURVEILLANCE

18. Is there a system for tracking injuries among healthcare workers related to patient handling?

- a. ☐ Yes
- b. ☐ No

If you selected yes for question 18, please answer the following question:

A. Does the system use:

- a. ☐ OSHA logs
- b. ☐ Other formal computerized system
- c. ☐ Other formal log
- d. ☐ Other, please specify _____

19. Does the system allow for identification of the specific patient handling task associated with an injury? (e.g., transfer to bed, transfer to wheel chair, repositioning in bed)

- a. ☐ Yes
- b. ☐ No

20. Are reports of patient handling injuries among healthcare workers summarized and analyzed to characterize the nature, and cause of these injuries?

- a. ☐ Yes
- b. ☐ No

21. Who reviews the summaries of patient handling injuries among healthcare workers?

- a. ☐ Departments where injuries occurred
- b. ☐ Occupational / employee health
- c. ☐ Safety office
- d. ☐ Risk management
- e. ☐ Workers' compensation (self-insured)
- f. ☐ Third party payor (if not self insured)
- g. ☐ Other (please specify)

PATIENT HANDLING EQUIPMENT

22. Available Equipment

Please check the types of devices available in each unit listed. Complete all that apply.

Please put "NA" in all cells on a line for a unit that is not present in the hospital.

Please put "none" if no equipment is available on a particular unit.

	Mechanical Lifts				Assistive Devices		
	Floor Lifts						
	Total / full body lift	Sit/stand lift	Ceiling lifts	Air assisted lateral transfer device	Slide boards	Gait belts	Low friction draw sheets
Med/Surg							
Pediatrics							
Obstetrics / Labor & Delivery							
Mental health							
ICU							
OR							
PACU							
Emergency Dept							
Radiology							
Radiation Therapy							
Dialysis							
Infusion							
PT / OT / Respiratory Therapy							
Oncology							
Clinics							

Approximate number available on inpatient units: _____ mechanical lifts _____ assistive devices

23. Is patient lifting equipment:

- a. ☐ Leased
- b. ☐ Purchased
- c. ☐ Both

24. Does the safe patient handling policy include provisions for preventive maintenance?

- a. ☐ Yes
- b. ☐ No

If yes, which of the following are included? Select all that apply.

- a. Battery re-charging and replacement
- b. Sling laundering and replacement
- c. Replacement of lifts or devices

25. Who is involved in evaluation of patient lifting devices prior to purchase? Select all that apply.

- a. ☐ Safety committee
- b. ☐ Front line nursing staff
- c. ☐ Materials management
- d. ☐ Other direct patient care staff
- e. ☐ Other, please specify _____

TRAINING

26. Does your facility provide training to direct patient care staff on procedures for safe patient handling, either through use of equipment or manual lifting?

Mechanical Lifts

- a. ☐ Yes
- b. ☐ No

Assistive Devices

- a. ☐ Yes
- b. ☐ No

Manual Lifting

- a. ☐ Yes
- b. ☐ No

If you selected yes to any of the above, please answer questions 26A-B. Otherwise, please skip to question 27.

A. How is training done? Select all that apply.

Mechanical Lifts

- a. ☐ Watch instructional videos
- b. ☐ Mandatory online modules
- c. ☐ In-service of the equipment
- d. ☐ Hands-on training
- e. ☐ Other, please specify

Assistive Devices

- a. ☐ Watch instructional videos
- b. ☐ Mandatory online modules
- c. ☐ In-service of the equipment
- d. ☐ Hands-on training
- e. ☐ Other, please specify

Manual Lifting

- a. ☐ Watch instructional videos
- b. ☐ Mandatory online modules
- c. ☐ In-service of the equipment
- d. ☐ Hands-on training
- e. ☐ Other, please specify

B. How frequently is direct care staff required to have re-training on safe-patient handling?

- a. ☐ Upon hire
- b. ☐ Twice a year
- c. ☐ Annually
- d. ☐ Other, please specify _____

QUALITY & IMPROVEMENT

27. What are some of the barriers to your institutions effort at addressing safe patient handling? Please identify the 5 most important barriers at your facility. Please rank-order them with 1 being the most important.

- | | |
|---|--|
| ___ Equipment size/capabilities | ___ Family / patient resistance to use |
| ___ Room size | ___ Problems with slings (get lost, size, difficult to use, damaged) |
| ___ Lack of enough lift equipment or slings | ___ Available equipment is not an appropriate match for patient's mobility needs |
| ___ Not enough staff | ___ Difficult to update old equipment |
| ___ Perceived increase in time required to use appropriate equipment | ___ Consistent training programs do not exist |
| ___ No time for training | ___ Unfamiliar with new equipment |
| ___ Concerns for patient safety/comfort when using handling equipment | ___ Hard for staff to break habits |
| ___ Storage space | ___ Other, please specify _____ |
| ___ Cost of equipment/Lack of funds | _____ |
| | _____ |

28. If staff perceive barriers to use of proper patient handling techniques or equipment (e.g., need for additional equipment, patient and family resistance to use of techniques and equipment, need for additional training, etc), do you have a system or process staff can use to share their concerns?

- c. ☐ Yes (describe) _____
- d. ☐ No

29. Please tell us about any successes related to implementing a safe patient handling program. (Examples may be related to any aspect such as reduction in staff injuries, reduction in WC costs, staff satisfaction, etc)

30. What can the Massachusetts Department of Public Health do to help your facility in promoting safe patient handling?
(select all that apply)

- a. ☐ Provide training and technical assistance for hospital staff in
- b. ☐ How to establish safe patient handling policies and procedures
- c. ☐ How to develop a surveillance system to assess potential risk factors for injuries related to patient handling
- d. ☐ How to improve use of existing data to track injuries to healthcare workers associated with patient handling
- e. ☐ Root cause analysis of injury incidents and near misses involving patient handling
- f. ☐ Equipment options
- g. ☐ Assessment of patient functionality mobility and transfer needs and matching appropriate solutions for safe patient handling
- h. ☐ Facilitate exchange of successful practices in safe patient handling

If you selected answer choice “h,” please select the method(s) you would prefer:

- a. ☐ Conferences/workshops
- b. ☐ Written materials
- c. ☐ Electronic materials/website
- d. ☐ Webinars
- e. ☐ Notice of new developments in the field.
- f. ☐ Other, please specify

31. Any additional comments:

END OF SURVEY

RETURN BY MARCH 21 to
ANGELA LARAMIE
OHSP-DPH
250 Washington St, 6th Floor Boston, MA 02108

If you have any questions, please call Angela Laramie at 617-624-5641.

Appendix D

Suggested Modifications to the DPH Adverse Incident Report

(modifications are italicized and in red)

HOSPITAL AND AMBULATORY SURGICAL CENTER FAX REPORTING OF INCIDENTS AND ABUSE

GENERAL INSTRUCTIONS:

1. These instructions apply to reporting all hospital and ASC incidents, and suspected abuse, neglect, mistreatment and misappropriation of patient property under the Patient Abuse Law.
2. Complete a separate blank form for each occurrence following the instructions below.
3. Use the attached tables to enter a description for those items that are marked “see table.”
4. Submit your completed report by fax to the Department immediately for (1) fires; (2) suicide; (3) serious criminal acts; (4) pending or actual strike; (5) serious physical injury or harm to a patient resulting from accident or unknown cause; and, (6) suspected abuse, neglect, mistreatment or misappropriation involving nursing home, rest home, home health, homemaker and hospice patients. **Notify the Department immediately by phone at 617-753-8150 of any deaths resulting from incidents, medication errors, abuse or neglect; and full or partial evacuation of the facility for any reason.** Submit other completed reports within seven days of the date of the occurrence of an incident seriously affecting the health and safety of patients.
5. Fax your completed report to the Department at **617-753-8165**.

LINE BY LINE INSTRUCTIONS

FROM: Please provide the name and address of the facility making the report.

DATE OF REPORT: Enter the date that you are submitting your report to the Department.

FOR ABUSE, NEGLECT, MISTREATMENT or MISAPPROPRIATION OCCURRING IN NURSING HOME, REST HOME, HOME HEALTH, HOMEMAKER OR HOSPICE SETTING, NOT AT THE REPORTING HOSPITAL/ASC:

FACILITY/AGENCY NAME: Indicate the name of the provider at which the suspected abuse, neglect, mistreatment or misappropriation occurred.

ADDRESS: Indicate the address (city or town, if street address is not known) of the provider at which the suspected abuse, neglect or misappropriation occurred.

Please indicate the date and time of the occurrence. If you are not able to determine when the event occurred, state “unknown”.

PATIENT INFORMATION: Please provide information here regarding the patient involved. The information reported here should reflect the patient's condition prior to the occurrence. If more than one patient was injured, or if one patient has injured another patient, provide additional patient information under the narrative portion of the report or on an additional page. Please indicate:

NAME: The patient's first and last name.

AGE; SEX; ADMISSION DATE: Enter each for the named patient.

AMBULATORY STATUS: Select the term from Table #1, "Ambulatory Status", that most closely describes the patient's ability to walk.

ADL STATUS: Activities of Daily Living (ADLs) such as eating, dressing or personal grooming. Select the term from Table #2, "Patient ADL Status", that most closely describes the patient's ability to perform these functions.

COGNITIVE LEVEL: Select the term from Table #3, "Patient Cognitive Status", that best describes the patient's cognitive status at the time of the occurrence.

MENTALLY RETARDED/DEVELOPMENTALLY DISABLED: Indicate whether or not the patient is mentally retarded or developmentally disabled. If the resident is either, indicate the name of the Service Coordinator (mentally retarded) or Case Manager (developmentally disabled) assigned to the patient, if known.

RACE/ETHNICITY: Indicate the Patient's Race and Ethnicity. Complete the Hispanic Indicator. The rules for coding race and ethnicity and the Hispanic Indicator are the same as used by the Division of Health Care Finance and Policy in its inpatient discharge data submission regulations. See the instructions in the Electronic Records Submission Specification:

http://www.mass.gov/Eeohhs2/docs/dhcfp/g/regs/114_1_17_hdd_data_specs.doc

The details are on page 25 of this document.

DPH OCCURRENCE TYPE: For all reports, select the term from Table #4, "Occurrence Type", that best describes the occurrence you are reporting. You may select "Other" and describe what happened in one or two words if none of the examples listed are applicable to your report.

SERIOUS REPORTABLE EVENT: Indicate whether or not this is a report of a "serious reportable event" as described in the current National Quality Forum (NQF) list of serious reportable events (SRE). If it is an SRE, check of the type of SRE on the table on page 2. For additional information regarding NQF see <http://www.qualityforum.org/pdf/news/prSeriousReportableEvents10-15-06.pdf>

TYPE OF HARM: Select the term from Table #5, “Type of Harm”, that best describes the harm or injury that resulted from the occurrence. You may select “Other” and describe what happened in one or two words if none of the examples listed are applicable to your report. Note that harm includes psychological injury as well as physical harm, and **SHOULD NOT BE DESCRIBED AS “NONE” SIMPLY BECAUSE THERE WAS NO PHYSICAL HARM.**

BODY PART AFFECTED: Use terms such as “arm”, “foot”, etc.; indicate left or right when it applies.

PATIENT’S ACTIVITY AT TIME OF OCCURRENCE: Select the term from Table #6, “Patient’s Activity” that best describes the patient’s activity at the time of the occurrence. You may select “Other” and describe what happened in one or two words if none of the examples listed are applicable to your report.

PLACE OF OCCURRENCE: Specify where the event occurred. Examples would include: “patient’s room”, “dining room”, “shower room”, or any other short phrase that specifies the type of setting in which the occurrence took place.

WHAT EQUIPMENT, IF ANY, WAS BEING USED AT TIME OF OCCURRENCE: Specify if any equipment was in use, such as “Hoyer lift”, or “walker”.

ANY SAFETY PRECAUTIONS IN PLACE: Check the “yes” or “no”. If “yes”, describe the precautions that were in place.

NARRATIVE: Describe fully what occurred. Indicate who, what, when, where, why and how what is being reported occurred. Include information on how any person injured was treated. If there were any unusual circumstances involved, describe these fully.

CORRECTIVE MEASURES NARRATIVE: Describe what actions have been taken in response to the occurrence.

GENERAL INFORMATION: Please indicate your name and title, as the person preparing this report, a phone number at which we can contact you if we need additional information, and the date and time of the occurrence. If you are not able to determine when the event occurred, state “unknown”.

STAFF PERSON IN CHARGE OF FACILITY AT TIME OF OCCURRENCE: Indicate who was present and in charge at the facility (not on the unit) when the occurrence reported happened.

NOTIFICATION: Indicate whether or not the patient’s family and physician, and police were notified. Provide the name of the physician notified.

WITNESS INFORMATION: List the name and title for individuals who saw or heard what occurred. Indicate if any of witnesses were directly involved in what occurred. Other patients, visitors and volunteers should be listed as witnesses if they have direct knowledge of what occurred.

ACCUSED INFORMATION: When reporting suspected abuse, neglect or misappropriation, indicate the name of the accused, a phone number at which the accused can be contacted, if the accused is a nurse, nurse aide or other licensed professional please indicate the individual's license or registration number. Check the appropriate block if you are not reporting abuse, or the identity of the person(s) suspected of abuse, neglect or misappropriation of a patient's money or belongings is unknown. If more than one individual is suspected, indicate on an additional sheet the other individual's names, a phone number at which they may be contacted, and if any person was acting as a nurse aide, home health aide or homemaker.

REPORTING TABLES:

Table #1: Ambulatory Status

Independent
Supervised
Ambulates with Assistance
Dependent/Assist
Walks with Cane/Walker
Wheels Self
Wheelchair
Bedfast
Other
Unknown

Table #2: Patient's ADL Status

Independent
Supervised
Dependent
Requires verbal cues
Requires physical assist
Other
Unknown

Table #3: Patient's Cognitive Status

Alert/Oriented
Confused
Alzheimer's

Developmentally Delayed
Dementia
Comatose
Mental Illness/Psych History
Unknown
Other

Table #4: Incident/Allegation Type

Abuse by Staff – Physical
Abuse by Staff – Sexual
Abuse by Staff – Verbal
Abuse by Visitor/Resident/Other
Abuse – Policies and Procedures
Administration
Advocacy Office Violation
Beds Out of Service
Blood and Transfusion Services
Change in Beds/Services

Table #4: Incident/Allegation Type (cont.)

Change of Location
Change of Ownership
Choking/Aspiration Incident
Closure
Criminal Act
Death
Dental Services
Dietary Services
Elopement/Missing Person
Emergency Care
Epidemic/Disease

Equipment Malfunction
 Fall – Fracture
 Fall – Laceration
 Fall – Other
 Fire
 Fraud/False Billing
 HCFRS Enrollment
 Infection Control
 Injury – Burn
 Injury – Fracture
 Injury – Laceration
 Injury – Other
 Laboratory Services
 Local Laws Violation (permits, etc.)
 Maternal Death
 Medical Records
 Medication Incident
 Misappropriation
 Missing Personal Property
 Neglect
 Notification of Records Destruction
 Nursing Services
 Pharmacy Services
 Physical Environment
 Physician Services
 Pressure Ulcer
 Quality of Care/Treatment
 Quality of Life
 Rehabilitation Services
 Resident/Patient Rights
 Resident/Patient to Resident/Patient Incident
 Restraint
 Staff Credentialing
 Strike/Pending Strike
 Suicide/Suicide Attempt
 Surgical Services
 Transfer/Discharge
 Unknown/Other

Table #5: Type of Harm

Bruise/Hematoma
 Burn
 Care Not Provided
 Confinement

Death
 Decline in Condition
 Dislocation
 Emotional Harm/Upset
 Fracture
 Funds
 Infection
 Laceration
 No Harm
 Other – Please Describe
 Pain
 Pressure Ulcer
 Property
 Quality of Care
 Reddened Area
 Rough Handling
 Skin Tear
 Unknown
 Unwelcome Sexual Contact/Advance

Table #6: Patient's Activity

Ambulating
Assist
Assist with equipment
 Crowded Area
 Getting Out of Bed
 Getting Up From Chair
 Other – Please Describe
 Reaching
Repositioning
 Standing/Sitting Still
 Standing
 Toileting
Transfer
Transfer with equipment
 Unknown

Table #7: Equipment

Total/full body lift
Sit/stand lift
Ceiling lifts
Air assisted lateral transfer device
Slide boards

Gait belts

Low friction draw sheets

HOSPITAL AND AMBULATORY SURGICAL CENTER FAX REPORT FORM

TO: INTAKE STAFF
DEPARTMENT OF PUBLIC HEALTH, DIVISION OF HEALTH CARE QUALITY
FAX NUMBER: 617-753-8165

FROM:

Facility Name: _____

Address (Street): _____

Address (City/Town): _____

Report _____ prepared _____ by _____ (Name/title): _____

Telephone #: _____

DATE OF REPORT: _____ NUMBER OF PAGES: _____

DATE OF OCCURRENCE: Month: _____ Day: _____ Year: _____

TIME OF OCCURRENCE: _____ am _____ pm _____

IF ABUSE, NEGLECT, or MISAPPROPRIATION IN A NURSING HOME, REST HOME, HOME HEALTH, HOMEMAKER, OR HOSPICE AGENCY AND NOT THE REPORTING HOSPITAL:

Facility/Agency Name: _____

PATIENT INFORMATION:

Name: _____ First: _____ Last: _____

Age: _____ Date of Birth: _____

Sex: _____ Male _____ Female _____

Admission Date: _____ Month: _____ Day: _____ Year: _____

Ambulatory Status (See table #1): _____

ADL Status (See table #2): _____

Cognitive Level (See table #3): _____

Developmentally Disabled: ____ Yes ____ No.

If yes, Service Coordinator or Case Manager (if known): _____

RACE:

____ Asian
____ Black/African American
____ White
____ American Indian/Alaska Native
____ Native Hawaiian or Other Pacific Islander
____ Unknown/Not Specified
____ Other Race (specify) _____

HISPANIC INDICATOR

____ Patient is Hispanic/Latino/Spanish
____ Patient is not Hispanic/Latino/Spanish

ETHNICITY: Please check all that apply:

____ Cuban	____ Asian Indian	____ Honduran
____ Dominican	____ Brazilian	____ Japanese
____ Mexican/Mexican American/Chicano	____ Cambodian	____ Korean
____ Puerto Rican	____ Cape Verdean	____ Laotian
____ Salvadoran	____ Caribbean Island	____ Middle Eastern
____ Central American (not specific)	____ Chinese	____ Portuguese
____ South American (not specific)	____ Columbian	____ Russian
____ African	____ European	____ Eastern European
____ African American	____ Filipino	____ Vietnamese
____ American	____ Guatemalan	____ Other Ethnicity
____ Asian	____ Haitian	____ Unknown/Not Specified

DPH Incident/Allegation Type (See table #4): _____

Type(s) of Harm (See table #5): _____

Body Part(s) Affected: _____ L: _____ R: _____

Patient's activity at time of occurrence (See table #6): _____

Were any staff members injured during the incident? Yes _____ No _____

Place of Occurrence: _____

What equipment, if any, was being used at time of occurrence? (*See table #7*):

NARRATIVE QUESTIONS:

Please ATTACH narrative answers to the following questions on a SEPARATE page(s).

1. Were there any safety precautions in place? Yes _____ No _____
If yes, describe what precautions were in place:

2. NARRATIVE: (Please address the following: What happened? What factors contributed to the occurrence? Any relevant information which establishes cause? Have there been similar incidents in the past? How were the injuries treated?)

3. Were there any unusual circumstances involved? Yes _____ No _____ If yes, please describe.

5. CORRECTIVE MEASURES NARRATIVE – Please address the following:

N/A - Incident occurred with another provider _____.

Was there an internal investigation: Yes _____ No _____ If No - why? If yes - what are the investigation findings?

What action was taken with regard to: Patient?; Staff?; Facility practice? What is the patient's current status?

What corrective action taken regarding equipment involved, if applicable?

STAFF PERSON IN CHARGE OF FACILITY AT TIME OF OCCURRENCE:

N/A (Incident occurred with another provider): _____

Name:	Title:	Directly Involved:
_____	_____	YES _____ NO _____

NOTIFICATION:

Was family notified: Yes _____ No _____

Was MD notified: Yes _____ No _____

Name of MD if notified: _____

Were police notified: Yes _____ No _____

WITNESS INFORMATION:

(Check here if unwitnessed: _____)

Name:

Title:

Directly Involved:

_____ YES _____ NO _____

_____ YES _____ NO _____

ACCUSED INFORMATION:

(Check here if unknown or not applicable: _____)

Name:

Telephone:

(____) ____ - _____

AIDE ____; RN/LPN ____

If RN/LPN or other licensed individual, indicate license #: _____

SERIOUS REPORTABLE EVENT:

Is this a serious reportable incident (SRE) as defined by NQF ____ Yes ____ No.

SRE TYPE: Indicate the type(s) of SRE below:

1. SURGICAL OR INVASIVE PROCEDURE EVENTS

- ☐ Surgery or other invasive procedure performed on the wrong site
- ☐ Surgery or other invasive procedure performed on the wrong patient
- ☐ Wrong surgical or other invasive procedure performed on a patient
- ☐ Unintended retention of a foreign object in a patient after surgery or other invasive procedure
- ☐ Intraoperative or immediately postoperative/postprocedure death in an ASA Class 1 patient

2. PRODUCT OR DEVICE EVENTS

- ☐ Patient death or serious injury associated with the use of contaminated drugs, devices, or biologics provided by the healthcare setting
- ☐ Patient death or serious injury associated with the use or function of a device in patient care, in which the device is used or functions other than as intended
- ☐ Patient death or serious injury associated with intravascular air embolism that occurs while being cared for in a healthcare setting

3. PATIENT PROTECTION EVENTS

- ☐ Discharge or release of a patient/resident of any age, who is unable to make decisions, to other than an authorized person.
- ☐ Patient death or serious injury associated with patient elopement (disappearance)
- ☐ Patient suicide, attempted suicide, or self-harm that results in serious injury, while being cared for in a healthcare setting

4. CARE MANAGEMENT EVENTS

- ☐ Patient death or serious injury associated with a medication error (e.g., errors involving the wrong drug, wrong dose, wrong patient, wrong time, wrong rate, wrong preparation, or wrong route of administration)
- ☐ Patient death or serious injury associated with unsafe administration of blood products
- ☐ Maternal death or serious injury associated with labor or delivery in a low-risk pregnancy while being cared for in a healthcare setting
- ☐ Death or serious injury of a neonate associated with labor or delivery in a low-risk pregnancy
- ☐ Patient death or serious injury associated with a fall while being cared for in a healthcare setting
- ☐ Any Stage 3, Stage 4, and unstageable pressure ulcers acquired after admission/presentation to a healthcare setting
- ☐ Artificial insemination with the wrong donor sperm or wrong egg
- ☐ Patient death or serious injury resulting from the irretrievable loss of an irreplaceable biological specimen
- ☐ Patient death or serious injury resulting from failure to follow up or communicate laboratory, pathology, or radiology test results

5. ENVIRONMENTAL EVENTS

- ☐ Patient or staff death or serious injury associated with an electric shock in the course of a patient care process in a healthcare setting
- ☐ Any incident in which systems designated for oxygen or other gas to be delivered to a patient

6. RADIOLOGIC EVENTS

___ Death or serious injury of a patient or staff associated with the introduction of a metallic object into the MRI area

7. POTENTIAL CRIMINAL EVENTS

___ Any instance of care ordered by or provided by someone impersonating a physician, nurse, pharmacist, or other licensed healthcare provider

___ Abduction of a patient/resident of any age

___ Sexual abuse/assault on a patient or staff member within or on the grounds of a healthcare setting

___ Death or serious injury of a patient or staff member resulting from a physical assault (i.e.,

SRE ATTESTATION: (please check boxes to confirm the statements):

☐ This report is being made within 7 calendar days of the discovery of the event.

☐ The patient or patient's representative has been notified verbally and in writing about:

- the occurrence of the SRE including unanticipated outcomes of care, treatment and services provided as the result of an SRE
- the facility's policies and procedures and documented review process for making a preventability determination
- the option to receive a copy of the report filed with the Department

☐ A copy of this report is being provided to any responsible third-party payer.

PATIENT INSURER: _____

INSURANCE IDENTIFICATION NUMBER: _____

SRE REPORT UPDATE: If this is an SRE, the following update to this report is required within 30 days of the initial reporting

REPORTING FACILITY: _____ DATE OF OCCURRENCE:

PATIENT NAME _____

DATE OF REPORT: _____

Please check the boxes below to confirm the following statements:

- ☐ This updated report is being made within 30 days of the initial reporting of the event.
- ☐ The patient or patient's representative has been provided with a copy of this updated report.
- ☐ Any responsible third party payer has been provided with a copy of this updated report.

PATIENT INSURER: _____

INSURANCE IDENTIFICATION NUMBER: _____

PREVENTABILITY DETERMINATION NARRATIVE: [Attach additional pages as needed.]

DECISION TO SEEK PAYMENT:

- ☐ The facility is seeking payment for services provided as a result of this SRE.
- ☐ The facility is **not** seeking payment for services provided as a result of this SRE.
- ☐ The patient is a Medicare and/or MassHealth patient. Medicare and/or MassHealth rules apply.

10. Resources for Hospitals and Hospital Workers

Safe Patient Handling Resources		
Title	Web Address	Description
Implementation		
Safe Patient Handling Programs: A Best Practices Guide for Washington Hospitals	http://www.washingtonsafepatienthandling.org/bestpractices.html	This guide offers a step-by-step process on how to implement safe patient handling programs in hospitals and emphasizes the importance of culture change. Throughout the guide, suggestions on how to overcome possible barriers are discussed. Additionally, outside resources are highlighted throughout the text.
Beyond Getting Started: A Resource Guide for Implementing a Safe Patient Handling Program in the Acute Care Setting	http://www.aohp.org/aohp/Portals/0/Documents/ToolsForYourWork/free_publications/Beyond%20Getting%20Started%20Safe%20Patient%20Handling%20-%20May%202014.pdf.pdf	The resource guide provides direction on building a foundation for a successful SPH program, implementing a safe patient handling program, and includes tools that may be helpful during the implementation process.
Manual Handling Guide for Nurses	http://www.workcover.nsw.gov.au/formspublications/publications/Documents/manual_handling_guide_for_nurses_4799.pdf	This report discusses the process of starting and managing a SPH program, the development of SPH policies and procedures, facility planning, the selection of equipment, training employees, and performing evaluations. Care for bariatric patients is also highlighted.
Implementing a Safer Patient Handling Program	http://trove.nla.gov.au/work/20197853?q&versionId=186668249	This guide discusses what is meant by a minimal lift approach and how to implement such an approach. The six phases of change, case studies, and tools to help the development of a SPH program are also included.
Patient movement		
The Case for Caring Technology: Why New York Patients and Nursing Home Residents Should Be Entitled to the Use of Safer, Technology-Based Methods for Lifting and Moving	http://patientandfamily.org/files/2012/09/The-Case-for-Caring-Technology-report-20131.pdf	This paper discusses ways to move patients and the importance of doing so, SPH programs in New York, policies regarding SPH in other states, and the value of disclosing lifting and moving protocols with patients and family members.

Educational Materials		
Safe Patient Handling Training for Schools of Nursing: Curricular Materials	http://www.cdc.gov/niosh/docs/2009-127/pdfs/2009-127.pdf	This document contains information about implementing and teaching safe patient handling curricula, informing others about the benefits of implementing a SPH curriculum, background materials for faculty, and suggested readings, presentations, and laboratory activities for students.
Reference Guidelines for Safe Patient Handling	http://www.washingtonsafepatienthandling.org/images/Reference_Guidelines_for_Safe_Patient_Handling.pdf	This report contains a literature review patient handling topics, a section on organizational considerations when developing a safe patient handling program, a summary of previous findings on biomechanics of patient handling and symptoms of MSDs, information on how to identify, assess, and control risk factors. The report also contains guidelines for SPH for 20 select patient handling tasks.
Safe Patient Handling for Occupational Therapy Students and Practitioners: A Course Development Plan	http://utdr.utoledo.edu/graduate-projects/111/	This resource provides a syllabus, and other teaching materials regarding safe patient handling. The relationship between objectives and learning experiences are covered as well.
Bariatric		
Safe Bariatric Patient Handling Toolkit	http://www.visn8.va.gov/visn8/patientsafetycenter/safePtHandling/toolkitBariatrics.asp	This tool kit contains information relating to medical conditions affecting bariatric patients, handling and movement of bariatric patients, and equipment suggestions.
Standard of Care: Bariatric	http://www.brighamandwomens.org/Patients_Visitors/pcs/RehabilitationServices/Physical%20Therapy%20Standards%20of%20Care%20and%20Protocols/Inpt%20-%20Bariatic.doc	This document covers a wide range of information relating to obesity, and specifically highlights patient handling tasks such as transfers, bed mobility, and gait training.
Equipment		
Patient Care Sling Selection and Usage Toolkit	http://www.visn8.va.gov/visn8/patientsafetycenter/safePtHandling/toolkitSlings.asp	The toolkit discusses such information as medical conditions affecting sling selections, and sling selection guidelines.

Transfer Assist Devices for Safer Handling of Patients: A Guide for Selection and Safe Use	http://www.worksafebc.com/publications/health_and_safety/by_topic/assets/pdf/transfer_assist_devices.pdf	This guide explains reasons for use of transfer assist devices, infection control considerations, best practices, and descriptions of transfer assist devices. Risk assessments are also discussed.
Facility planning		
Patient Handling and Movement Assessments: A White Paper	http://www.fgiguideguidelines.org/pdfs/FGI_PHAMA_whitepaper_042810.pdf	This whitepaper explains the rationale for the inclusion of patient handling in design considerations, the business case for SPH programs, how to conduct a unit needs assessment, how to facilitate culture change, and keeping facilities up to date.
A Guide to Designing Workplaces for Safer Handling of People	http://www.worksafe.vic.gov.au/__data/assets/pdf_file/0019/9208/VWA531.pdf	The guide discusses incorporating safe patient handling in the planning stage of building design, how safe patient handling influences design, generic design considerations, spatial recommendations for patient handling, and department specific design considerations.
Patient Handling (Lifting) Equipment Coverage and Space Recommendations	http://www.publichealth.va.gov/docs/employeehealth/Pt_Hdlg_Design_Equip_Coverage_Space_Recs.pdf	The equipment recommendations address ceiling-mounted sling lifts, portable lifts, and storage considerations.
Patient handling in non-acute care settings		
Guidelines for Nursing Homes: Ergonomics for the Prevention of Musculoskeletal Disorders	https://www.osha.gov/ergonomics/guidelines/nursinghome/final_nh_guidelines.html	The guidelines in this report outline a process for protecting workers, how to identify problems and implement solutions for resident lifting and repositioning, the process of equipment purchasing, and includes algorithms for patient handling and movement.
Safe Patient Handling Toolkit (ARN)	http://www.rehabnurse.org/members/content/SafePatientHandling.html	This toolkit includes a discussion on the business case for SPH, information on conducting risk assessments in rehabilitation environments, myths and facts about SPH in rehabilitation settings, and equipment selection.
Miscellaneous		
Incident rate calculator and comparison tool	http://data.bls.gov/iirc/	This website allows for the calculation of incident rates and comparison of injury rates to similar facilities across the United States.

Multiple topics		
Patient Care Ergonomics Resource Guide: Safe Patient Handling and Movement	<p>Part 1: http://www.visn8.va.gov/patientsafetycenter/resguide/ErgoGuidePtOne.pdf</p> <p>Part 2: http://www.visn8.va.gov/VISN8/PatientSafetyCenter/resguide/ErgoGuidePtTwo.pdf</p>	This guide includes sections on performing ergonomic assessments of units, choosing the correct safe patient handling technology and equipment, assessing patients and their care needs, evaluating the needs of patient care areas in regards to SPH, developing SPH policies, training of nurses, and evaluating outcomes. Additionally, the guide includes algorithms for patient movement and highlights proper movement of bariatric patients.
Safe Patient Handling Guidebook for Facility Champions/ Coordinators	http://www.visn8.va.gov/PatientSafetyCenter/safePtHandling/SPHGuidebook.doc	These guidebooks include sections on SPH equipment, SPH program components, program monitoring and evaluation, bariatric patient handling, and training programs.
Handle with Care: Patient Handling and the Application of Ergonomics (MSI) Requirements	http://www2.worksafebc.com/pdfs/healthcare/HWC/HWC_L.pdf	This resource describes how to develop policies to reduce Musculoskeletal Disorders (MSDs), and how to perform risk identification, assessment, and control. Education and training methods are also discussed.

