

# MANGAR

## USA POST FALL MANAGEMENT WHITE PAPER



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## INTRODUCTION

In the United States, there is a strong desire to ensure that patients receive the right treatment in the right place at the right time. The advent of the Covid pandemic has also caused a change in practice with initiatives such as Treatment in Place (TIP), Treatment in Lieu of Transport (TILT) and federally mandated demonstration projects such as the ET3 program.

It is generally the wish of both the health system and the patient that the patient be kept at home for as long and as comfortably possible. An inherent risk with this approach is that the likelihood of falls and the possibility of spending a long time on the floor before help arrives. This scenario can lead to poor outcomes and further long term conditions.

Healthcare professionals and caregivers responsible for lifting people who fall, regularly sustain injuries and complain of low back pain (LBP), - which can be attributed to manual lifting activities. This is currently one of the leading occupational health and safety issues facing preventive medicine. Despite efforts at control, including programs directed at both workers and jobs, work-related back injuries still account for a significant proportion of human suffering and economic cost to this nation<sup>1</sup>.

To combat risk to both the patient and the EMS provider, this white paper considers risks and mitigation to all those involved in both falling and lifting.



## FALLS

A fall is defined as an event which results in a person coming to rest inadvertently on the ground or floor or other lower level. Approximately 28-35% of people aged 65 and over fall each year increasing to 32-42% for those over 70 years of age.

In 2022, unintentional falls were the leading cause of nonfatal injury for adults age 65 and older treated in emergency departments in the United States, with over 2.4 million occurrences<sup>2</sup>. Most of these patients do not require hospital admission – approximately 70% are treated and released from the emergency department<sup>3</sup>.

The evidence also confirms that frequency of falls increases with age as well as other long-term conditions. Anyone can fall and the reasons can be varied from altered gait, the environment or the specific risk associated with a task being performed.

Many older adults who fall reside in assisted living facilities, some of which have policies requiring emergency medical transport to an emergency department for evaluation regardless of the fall's severity or circumstance<sup>4</sup>.

A fall can have such a negative impact on the person, but a long lie<sup>5</sup> (waiting on the floor for help to arrive) can be devastating. There are a considerable number of complications that can ensue from lying on the floor for a long period of time. For example, pressure sores (often exacerbated by unavoidable incontinence), carpet burns, dehydration, hypothermia or pneumonia, all of which can shorten life or have a significant impact on future quality of life.



**SKIN DAMAGE RESULTING  
IN PRESSURE ULCERS**



**DEHYDRATION**



**PNEUMONIA**



**HYPOTHERMIA**



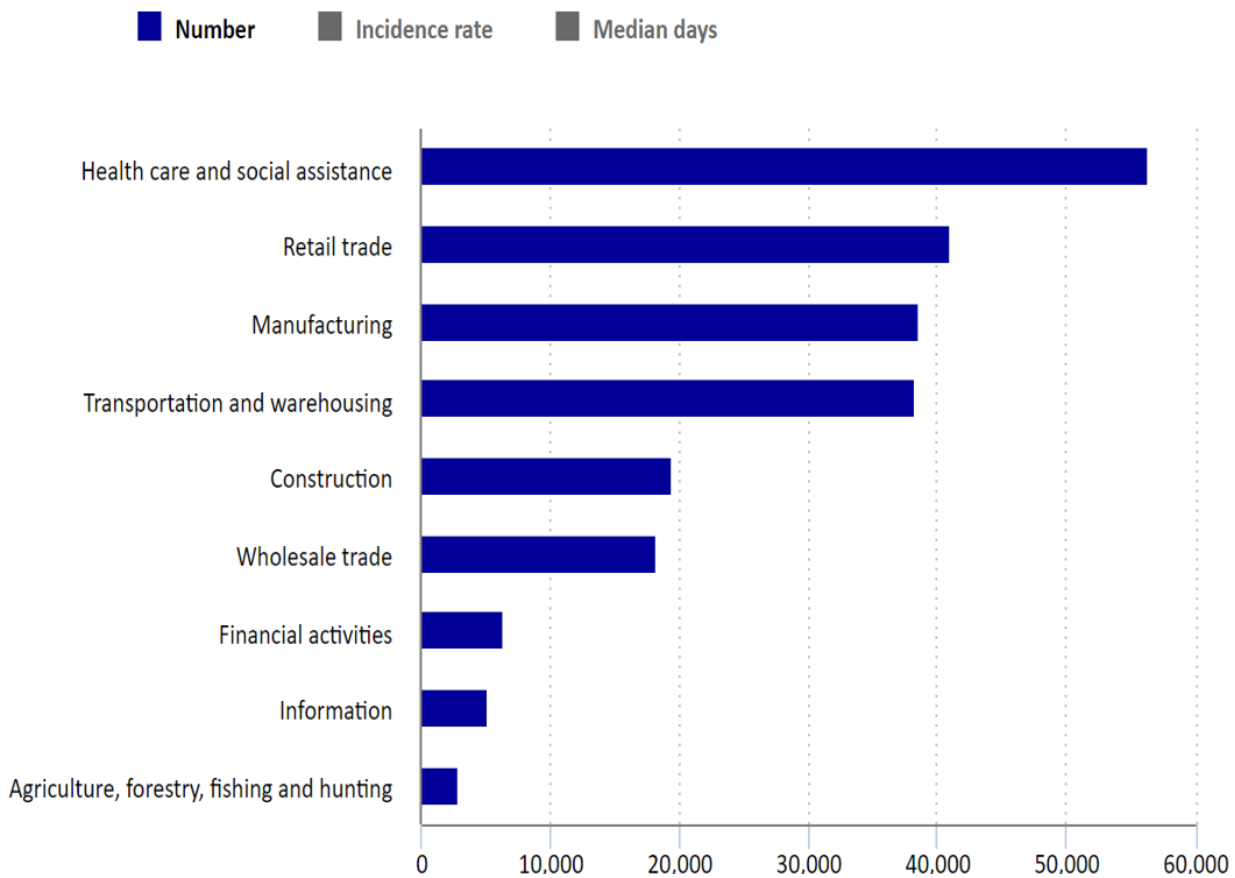
**INCREASED ANXIETY**

We are also acutely aware that a fall can result in post-fall syndrome that includes confusion, dependence, loss of autonomy, immobilization and increased mental health issues, including depression and anxiety, which will lead to a further social isolation or occupational deprivation.

## WHY SAFE LIFTING MUST BE A PRIORITY FOR EVERYONE THAT WORKS IN HEALTHCARE

Musculoskeletal disorders (MSDs), sometimes called “ergonomic injuries”, occur when the body uses muscles, tendons, and ligaments to perform tasks, often times in awkward positions or in frequent activities which over time can create pain and injury. Overexertion and repetitive motion are the primary causes of these injuries.

Examples of the nature of the injury or illness may include pinched nerves, carpal or tarsal tunnel syndrome, and other connective tissue disorders, resulting from overexertion or bodily reaction, among others<sup>6</sup>.



*Median days away from work of injuries and illnesses involving MSD disorders by selected industries 2018*

The Survey of Occupational Injuries and Illnesses cites that In 2018, there were 900,380 Days Away From Work (DAFW) cases in the U.S. private sector with 272,780 (or 30%) being MSD cases.

In 2011, there were 311,840 cases involving MSDs. The incidence rate of MSD cases was 27.2 per 10,000 full time workers in 2018, and 35.4 in 2011. The median days away from work for MSD cases was 12 in 2018 and was 11 days in 2011

Retail trade, manufacturing, and healthcare and social assistance had 50 percent of all MSD cases in the private sector in 2018.

The healthcare and social assistance industry had 56,360 MSD cases in 2018. Healthcare workers often experience musculoskeletal disorders (MSDs) at a rate exceeding that of workers in construction, mining, and manufacturing. These injuries are due in large part to repeated manual patient handling activities, often involving heavy manual lifting associated with transferring, and repositioning patients and working in extremely awkward postures. The problem of lifting patients is compounded by the increasing weight of patients being lifted across the United States. The Centers for Disease Control and Prevention (CDC) reports 93.3 million or 39.8 percent of adults in the U.S. had obesity in 2015-2016, and no state had a prevalence of obesity under 20 percent. The ASMBBS estimates about 24 million people have severe obesity.

One of the major daily activities in the delivery of Emergency Medical Services is the frequent heavy lifting and maneuvering of patients that exceed the lifting capacity of most EMS providers. Numerous studies have shown that training on the use of proper body mechanics to lift patients alone is not an effective prevention measure because lifting the weight of adult patients is intrinsically unsafe.

Costs associated with overexertion injuries in the healthcare industry were estimated to be \$1.7 billion<sup>7</sup> in 2015. Additionally, nursing aides and orderlies suffer the highest prevalence (18.8%) and report the most annual cases (269,000) of work-related back pain among female workers in the United States. In 2000, 10,983 registered nurses (RNs) suffered lost-time work injuries due to lifting patients. Twelve percent of nurses report that they left the nursing profession because of back pain.



## **BENEFITS OF A POST FALL RECOVERY PROGRAM**

The creation of a post fall recovery program will benefit employers, healthcare workers, patients and their families.

**Employers** - Injuries to healthcare professionals cost employers in terms of lost productivity and work days, recruitment and compensation claims.

A US study, where medical care and indemnity costs are also a factor found costs ranged between \$9,000 and \$30,000 per injury.

A major factor employer's face when employees take time off or leave because of musculoskeletal injury is the loss of skilled, experienced staff. With the current staffing shortages brought on by the Covid Public Health emergency this now becomes a critical issue. Continuity of staff is particularly important for homes supporting residents with dementia.

A safe patient lifting programming for employers means;

- Reduced number and severity of staff injuries
- Reduced workers' compensation medical and indemnity costs
- Reduced restricted workdays
- Reduced overtime and sick leave
- Improved recruitment and retention of caregivers
- Fewer resources required to replace injured staff

**Healthcare workers and caregivers** - A vital component in the healthcare network – both paid and unpaid – play an essential role. Extremely vulnerable to moving and handling acquired injury, a safe lifting program will protect them from injury. This means;

- Reduced risk of injury
- Less pain and muscle fatigue on a daily basis
- Improved job satisfaction
- Increased morale
- Injured caregivers are less likely to be re-injured
- Pregnant caregivers can work longer
- Staff can work to an older age
- More energy at the end of the work shift

## SAFEGUARDING PATIENTS

Most falls do not result in serious injury for patients, but they can cause the person to lose confidence, become withdrawn, and feel as if they have lost their independence. The length of time it takes to help the fallen person into a safe and upright (standing or seated) position can have a significant impact on their recovery. A safe lifting program will;

- Improve dignity and the quality of care
- Improve patient safety and comfort
- Reduce risk of further falls, being dropped, friction burns, dislocated shoulders
- Reduced skin tears and bruises
- Reduce the likelihood of post fall syndrome and a fear of falling

Post Fall Syndrome or Psychomotor Regression Syndrome (PRS) is defined as: ‘Decompensation of the systems and mechanisms implicated in postural and walking automatisms<sup>8</sup> it appears either insidiously due to an increase of frailty or either brutally after a trauma (fall) or an operation. This syndrome is composed of a combination of neurological signs, motor symptoms and psychological disorder.’<sup>9</sup>

- Psychological impacts
- Keeping people at home
- Reducing infections rates through less contact
- ET3



## **WHY USING A FALL RECOVERY DEVICE MAKES SENSE**

Nothing can completely eliminate fall risk, especially among the elderly and people with mobility challenges. If a fall does occur, it's imperative not to add to the trauma. Lifting a patient from the floor after a fall also exposes the person performing the lift to a greater risk of injury. Back, neck, and shoulder overuse causes the most common caregiver injuries. Pushing and pulling to get a patient up is not good for the patient or the care provider.

A fall recovery device is specifically created to safely and efficiently get patients up after a fall. There are several kinds to choose from, and each design has its own benefits. The best option for you depends on your environment and your individual needs.

Research conducted by the National Institute for Occupational Safety and Health (NIOSH), the Veterans' Health Administration (VHA), and the University of Wisconsin-Milwaukee has shown that safe resident lifting programs that incorporate mechanical lifting equipment can protect workers from injury, reduce workers' compensation costs, and improve the quality of care delivered to residents. This guide also presents a business case to show that the investment in lifting equipment and training can be recovered through reduced workers' compensation expenses and costs associated with lost and restricted work days.

Also, because of the trend towards shorter hospital stays, patients who are being transferred to nursing homes are becoming increasingly frail. Factors that contribute to the difficulty of lifting and moving a patient include the size and weight of the person, combativeness, and propensity to fall or lose balance. In addition, performing transfers in the confines of small bathrooms and rooms cluttered with medical equipment and furniture works against the caregiver being able to use good body mechanics.

## **CURRENT FALL RECOVERY DEVICE OPTIONS**

Recognizing the need to better protect workers from MSD is the first step in the challenge of change. The injury statistics equate to \$1.7 billion in associated sickness costs in the US annually so the mantra 'safe today, save tomorrow' has never been more relevant.

How ever good fall prevention measures are, people will still fall. It is vital for all healthcare workers to think about equipment that will both protect their backs, while ensuring patients receive a dignified lift assist. Across the nation, lifting people who have fallen to the floor but are not injured is generally done use manual handling techniques or using a lifting belt. Both methods require a degree of physical lifting from the caregiver.

In the UK, Australia and Europe, inflatable lifting cushions are widely and routinely used by the emergency services and have been for nearly 20 years. Protecting workers from injuries using these products has saved millions of dollars since being placed on every ambulance in the emergency fleet. No physical moving or lifting is required by the EMS worker or caregiver when using a lifting cushion and the equipment has been designed to be used in very tight spaces. The cushion can lift up to 1,000 lbs and one size fits all.



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## GRANTS

Funding lifting equipment can be a challenge but there are grants available to help you. We encourage you to look at grant funding available at a State and local level. You may be surprised to find how many grant opportunities there are available in your area. Why not investigate the following;

- Helping Brothers Grant Program- [Home | Brothers Helping Brothers](#)
- Gran Enbridge safe community grants- [Safe Community First Responder Program- Enbridge Inc.](#)
- Grant assistance to firefighters grant- [Assistance to Firefighters Grants Documents | FEMA.gov](#)
- Grant csx community service grants- [Community Service Grants- CSX.com](#)
- Grant Rural Emergency Medical Services Training Grant- [Rural Emergency Medical Services Training Grant | SAMHSA](#)
- Firehouse Subs Grant Program- [Firehouse Grants Application \(firehousesubs.com\)](#)

One consolidated source of available grants can be found by registering for the Lexipol Grant Finder Service. Lexipol's pre-award grant services provide customized solutions enabling applicants to tap into federal, state and private grants. <https://www.lexipol.com/solutions/grant-services/>

## SUMMARY

A 2017 report called Improving Decisions About Transport to the Emergency for Assisted Living Residents that Fall, concluded that shared decision making between paramedics, primary care physicians can prevent unnecessary transportation to the emergency department for many residents of assisted living facilities who fall<sup>10</sup>. The report found that of 840 falls, 553 did not need transportation onto hospital after a consultation between a paramedic and physician.

The human cost of falling includes distress, pain, injury, loss of confidence, loss of independence and mortality. Falling also affects the patient, healthcare worker, care giver and family members. Whilst interventions to reduce risks of falls are necessary there must also be an acceptance that despite the best efforts elderly and fragile patients who are engaging in activity and ambulant remain at risk. It is crucial therefore, given all of the information above, that a post-fall recovery program is considered as critically as a part of fall reduction strategies.

## **CASE STUDY: CAPE FEAR VALLEY'S CUMBERLAND COUNTY EMS PROTECTS STAFF FROM CAREER SHORTENING INJURIES**

Cape Fear Valley Health System Mobile Integrated Health is based in Fayetteville, North Carolina and has a mission to provide exceptional healthcare for all their patients. But Cape Fear Valley does much more than that; their commitment to looking after their 165 paramedics and EMTs is remarkable.

After taking up the position of Chief at Cape Fear Valley's, Cumberland County EMS, David Grovdahl, an experienced EMS professional, worked quickly to assess the health of his team. His key objective was to build a well-equipped and prepared staff, but with the service recording 4-8 musculoskeletal injuries every month it became clear very quickly action was required to improve safety for the staff.

**Injury related lost time was costing the Service on average \$18,000 per injury, with annual costs escalating to in excess of \$300K.**

In addition, with so many workers off injured at any one time, it meant that there were occasions when the service could not put all their trucks on the road. The situation was not a surprise to Chief Grovdahl, who had encountered a similar position in his previous role with a governmental based EMS system.

**Here, after researching the best assistive equipment to support workers when moving and handling patients, he placed lifting cushions on ambulances and reduced injury rates by 50%.**

In the Fall of 2021, Chief Grovdahl made the decision to put ELKs (Emergency Lifting Cushions) on the four quick response vehicles at Cape Fear Valley. ELKs can be utilized for fallers weighing up to 1,000 lbs. and the vehicles became the first choice when responding to lift assist calls. If an ambulance is deployed to a lift assist situation but an ELK is the better solution for both the patient and EMT or Paramedic, the protocol has become that they call for support from the quick response team.

**In the last couple of months Chief Grovdahl has already seen injury rates reduce to just 2 a month, a significant improvement on previous rates.**

Chief Grovdahl says,

“When I started out working in EMS 22 years ago, I was told I would be lucky to survive 5 years without picking up a career shortening back injury.

I’ve always been particularly careful to protect my physical health and we’ve seen some great improvements in lifting techniques in that time, but using assistive equipment is vital for the long-term health and wellbeing of our Paramedics and EMT’s.

EMS is a rewarding career but professionalizing the way we work for the greater good of our patients and staff must be a priority if we are to attract the best people into the industry.”



The use of assistive lifting devices can reduce the risk of back injury among health care workers<sup>11</sup> and Chief Grovdahl’s team at Cape Fear Valley are seeing this for themselves firsthand.

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<sup>1</sup>Ref Applications Manual for the Revised NIOSH Lifting Equation <https://www.cdc.gov/niosh/docs/94-110/default.html>

<sup>2</sup>Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. Leading Causes of Nonfatal injury reports. [www.cdc.gov/injury/wisqars/nonfatal.html](http://www.cdc.gov/injury/wisqars/nonfatal.html). Accessed 9/1/2013

<sup>3</sup>Centers for Disease Control and Prevention. WISQARS leading causes of nonfatal injury reports, 2011-2014. Updated 28 March 2013. Accessed at <https://webappa.cdc.gov/sasweb/ncipc/nfilead2001.html> on 30 November 2016.

<sup>4</sup>Centers for Disease Control and Prevention. Nonfatal injury data. Updated 20 April 2017. Accessed at [www.cdc.gov/injury/wisqars/nonfatal.html](http://www.cdc.gov/injury/wisqars/nonfatal.html) on 30 November 2016.

<sup>5</sup>[https://www.physio-pedia.com/Long\\_Lie](https://www.physio-pedia.com/Long_Lie)

<sup>6</sup>A full definition of MSDs can be found here: <https://www.cdc.gov/workplacehealthpromotion/health-strategies/musculoskeletal-disorders/>

<sup>7</sup><https://blogs.cdc.gov/niosh-science-blog/2008/09/22/lifting/>

<sup>8</sup>(Mourey, 2009)

<sup>9</sup>US Bureau of Labor Statistics <https://www.bls.gov/iif/oshwc/case/msds.htm>

<sup>10</sup>Improving Decisions About Transport to the Emergency Department for Assisted Living Residents Who Fall

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<sup>11</sup> D’Arcy et al., 2012; Andersen et al., 2014

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