

OR Injuries: Mitigating¹ the Physical and Financial Pain

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Miki Patterson, PHD ONP the authoring clinician of this presentation, is a paid consultant to Olympus America Inc., Medical Systems Group.

Executive Summary

- ▶ Discover high risk tasks in the OR and learn best practices
- ▶ Understand current regulation and legislation driving increased adoption of patient lift technology
- ▶ Reduce costs associated with OR Injury, while maximizing return on investment with safe patient handling technology

The Problem

Physical Pain

Top 3 health concerns*

- ▶ (74%) Acute /chronic effects of stress /overwork
- ▶ **(62%) Disabling musculoskeletal injury**
- ▶ (43%) Contacting an infectious disease

*2011 Surveyed >4,614 RNs

Ogg (2011) Introduction to the Safe Patient Handling and Movement Series. AORN Journal Vol 93 Issue 3

Physical Pain (cont)

▶ **Health Care Worker Protection Act 2013**

- ▶ **52%** of nurses c/o chronic back pain
- ▶ **38%** pain severe enough to leave work
- ▶ Patients are not safe when being lifted transferred or repositioned manually

▶ **American Nurses Association**

- ▶ **12 %** leaving due to back pain
- ▶ **8 of 10** nurses work in pain

Aging Workforce

- ▶ **37%** surgeons are over **55** (source ACS 2010)
- ▶ Avg. age RN is 50 (source ANA 2014)
- ▶ Avg. age OR RN is 53 (source AORN 2013)
- ▶ Staff have been exposed to repetitive stress and injuries

Financial Pain

▶ Direct cost

\$ 27k – \$83k (staff per claim)

▶ Patient injured

\$ 27k- over \$1 million (staff per claim)

▶ Indirect cost

3xs



Financial Pain

- ▶ Indirect cost 3xs
 - ▶ Lost work time – ↑ Stress and workload to remaining staff
 - ▶ Replacement staff- OR personnel shortage
 - ▶ Loss of highly skilled experienced staff
 - ▶ Longer case times- reduction of margins
 - ▶ Worker's compensation rates increase
 - ▶ Fear of reinjury
 - ▶ Surgeon – lost revenue \$\$\$\$

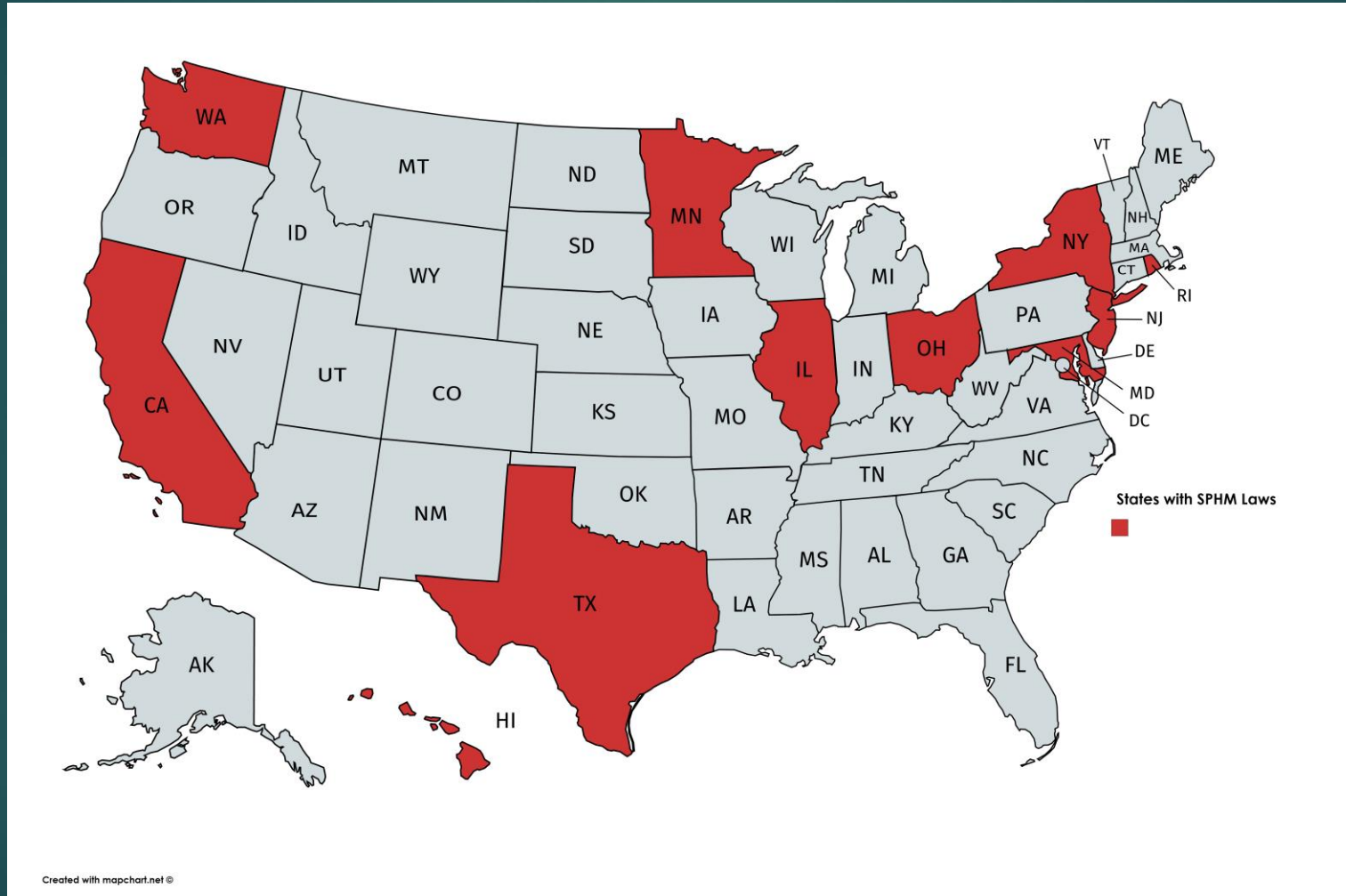
Regulatory/ Legislation

Nurses and Health Care Worker's Protection Act 2016

- ▶ Third time this bill has been introduced in Congress
- ▶ Department of Labor unscheduled visits



11 States with Worker Protection Laws



Joint Commission Accreditation:

Recommendations Improve Safety Related to Patient Handling

Intervention Focus	Examples of strategies	Example of settings	Potential benefits to Patients	Potential benefits to Employees	Potential benefits to Health Care Organization
Safe patient handling	Patient lifting equipment; no-lift policies; specialized lift teams	Acute care hospitals, rehabilitation facilities, skilled nursing facilities	Increased patient satisfaction; quicker ambulation; fewer falls; improved outcomes	Increased worker satisfaction; decreased musculoskeletal injuries	Decreased worker compensation; increased staff retention; increased patient satisfaction, returns, recommendations

Industry Guidelines

The Association of Perioperative Nurses (AORN) ~ 7 High Risk Tasks

- ▶ Transferring patient laterally (OR table to stretcher)
- ▶ Positioning patient on OR table
- ▶ Lifting and holding patients limbs
- ▶ Prolonged standing in one place
- ▶ Holding manual retraction
- ▶ Lifting supplies and equipment in the OR
- ▶ Pushing, & pulling wheeled objects & equipment

Ogg (2011) Introduction to the Safe Patient Handling and Movement Series. AORN Journal Vol93 Issue 3

Transferring Patient Stretcher to OR Table

- ▶ Posture- reaching
- ▶ Force - load and movement
- ▶ “dead weight”
- ▶ Floppy
- ▶ No handles

Positioning a patient on the OR table

- ▶ Reaching
- ▶ Lifting
- ▶ More than 35 lbs
- ▶ Unstable
- ▶ Possible fall
- ▶ Sheer injury

Holding Limbs

- ▶ 1 hand 6 lbs
- ▶ 2 hands 11 lbs
- ▶ Hold <3 minutes

150 lb. person

Arm = 9.7 lbs.

Leg= 29.8 lbs.

Standing long periods of time

- ▶ Table height
- ▶ Neck flexion
- ▶ Lumbar spine load
- ▶ Repetitive actions

Holding Manual Traction

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- ▶ Constant holding traction
- ▶ Stress shoulders, elbows, wrist and spine.
- ▶ Repetitive injuries over years

Used with permission Deb Spatt AORN

Lifting supplies and equipment

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- ▶ Instrument trays
- ▶ Irrigation fluid bags – 3 liters = 7.5 lbs
- ▶ Repetitive
- ▶ Lifting needs to be higher than waist height

Reaching, Lifting, & Moving equipment

- ▶ Posture pushing
pulling
- ▶ RN pushes pulls
and lifts 1.8 ton in
an 8 hour shift

Economic Case Study

Case Study #1

Hunter (2010) Nursing Economic\$, Vol 28/No 2

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- ▶ Decision to implement safe patient handling (no lift practice)
- ▶ NWTHS 2002-2004 Avg. 20 inj /year
- ▶ Direct cost \$27,206 per claim
- ▶ Indirect costs \$54,804- \$84,206 per claim(3xs)
- ▶ Avg. spend \$548,040 per year direct cost
- ▶ 3 year direct costs over \$1,644,120
- ▶ 2005 additional \$268,463 while planning change
- ▶ Texas Legislation begun in 2005
- ▶ Results
 - ▶ 2005 -\$300,000
 - ▶ 2006 -\$24,245
 - ▶ 2007 -\$1,628
 - ▶ 2008 -\$2,050
 - ▶ 2009- \$1,320

Other Benefits

- ▶ Nurses and assistants were less fatigued
- ▶ Decreased workman's compensation rates for the hospital
- ▶ Fewer patient falls or injuries
- ▶ Higher morale
- ▶ Careers extended
- ▶ ROI less than 3 years
- ▶ Growing culture of safety

Case Study #2 OR Staff Injury costs

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- ▶ RN injured her back flipping a spine patient that was anesthetized
 - ▶ Direct Costs ER visit – Workman’s comp...delay payment
 - ▶ Traveler RN for OR \$100/hr 40 hr, \$4000 x 13 weeks \$52,000
 - ▶ RN to step in for this case, increase burden, result 30 minutes overtime for spine case. OR room cost \$83/min = \$2,490
 - ▶ RN work OT at time and a half- 1 hour at \$60
 - ▶ RN to orient the new traveler 1 week @ loss of \$4000
 - ▶ Union contract cannot let per diem go if traveler present. Traveler gets paid anyway
- | | |
|---|-------------|
| ▶ | 52000 |
| ▶ | 2490 |
| ▶ | 60 |
| ▶ | <u>4000</u> |
| | \$58,550 |

How
important
are
ergonomics
to your
facility?

“The goal of ergonomics is to design jobs and work tasks so they are safe for workers but maintain productivity and efficiency”

Tom Waters PhD CPE Research Safety Engineer, Division of Applied Research and Technology,

National Institute of Occupational Safety and Health (NIOSH)

AORN (2012) 96/3 p.239

How to begin...

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- ▶ US Department of Labor
- ▶ https://www.osha.gov/dsg/hospitals/patient_handling.html
- ▶ American Nurses Association



What are supposed to do?

- ▶ Recommended weight for lifting and holding a limb
- ▶ Max 1 handed lift is 6 lbs.
Max lift and hold is 11 lbs.<3 minutes
Waters,(2009)
- ▶ At the height of waist to chest. Manual lifting 22-25 lbs. (OR Manager (2008))

Utilize mechanical devices to lift
transfer turn or reposition

Tony Hilton

Safe Patient Handling and
Mobility National Program
Manager at Veterans
Health Administration
Central Office
Loma Linda University

“Even with our (Veterans Health) success, operating rooms are the hardest to get to, for many reasons. We need to because they are responsible for 60% of the hospital’s revenue.

Need manufacturers to develop & trial technologies for the operating room.”

OR Needs

- ▶ Cleanable
- ▶ Built in
- ▶ Able to lift heavy weight
- ▶ Sterile vs. clean slings
- ▶ Education program
/audit
- ▶ Champion
- ▶ Should be in all new room
designs

Barriers to OR

- ▶ Attitude
- ▶ Time
- ▶ Space – wheeling in another piece of equipment
- ▶ Culture is stronger



What technologies exist?

- ▶ Transferring patient laterally (OR table to stretcher)
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Return on Investment

Staff Injuries

Number of Injury Incidents/Year **2**

Estimated Medical Cost of Patient Handling Staff Injuries

	Percent of Claims	Average Total Cost	Annual Cost of Injuries
Back	51.34%	\$8,700	\$8,933
Shoulder	20.06%	\$13,400	\$5,376
Wrist	6.74%	\$5,500	\$741
Arm	4.16%	\$8,500	\$707
Knee	3.98%	\$11,300	\$899
Neck	2.50%	\$12,700	\$635
Other	11.22%	\$2,000	\$449
Total Annual Estimated Medical Cost of Injuries			\$17,741.12

Estimated Salary Cost of Injuries

Percent of injuries incurring missed days	50%
Average # Working Days Missed / Incident	4
Average Hourly Staff Salary	\$32.91
Total Cost of Turnover	\$64,000.00
Average Hourly Replacement Staff Salary	\$56.00
Total Annual Estimated Additional Cost of Injuries	\$2,845.12

Total Annual Estimated Cost of Injuries \$20,586.24

OR Procedures

Number of Procedures/Year **1000**

Estimated Expenses to add Boom Lift System

Amount of the Olympus quote for the Olympus boom lift(s) and sling(s)	\$17,000.00
Depreciation Term in Years	7
Sling type	Reusable
Sling laundering cost	\$1.01
Additional costs per procedure not included (describe)	\$0.00
Total Annual Estimated Cost of Lift	\$2,428.57

FTE Savings Utilizing Lift

Current # FTEs utilized to transfer	5
FTEs utilized to transfer using Olympus Boom Lift System	3
FTEs reduced for transfer	2
Time saved waiting for lifting help (in minutes)	10
Current #FTEs utilized to Elevate / Prep	2
FTEs utilized to Elevate / Prep using Olympus Boom Lift System	1
FTEs reduced for Elevate / Prep	1
Reduced limb holding time (in minutes)	6
Average Hourly Staff Salary	\$32.91
Total Annual Estimated Personnel Savings Utilizing Lift	\$14,261.00

Total Annual Estimated Cost of Lift -\$11,832.43

Total Potential Annual Estimated Savings Utilizing Lift \$32,419

Summary

Summary

- ▶ Physical Pain
 - ▶ Increasing risk for staff and patient injury
- ▶ Financial pain
 - ▶ Real cost direct and indirect
- ▶ The OR loss of highly skilled personnel that are not easily replaced can lead to:
 - ▶ Increased set up times , Longer case times
 - ▶ Errors or missing cues, Surgeon / staff frustration
 - ▶ Lower margins
- ▶ Preventing Injuries is the right thing to do
- ▶ ROI – with 1-3 years in most cases



Questions?

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