Northwestern Medicine®

Ergonomics and Work Related Injuries in Radiology

Executive Sponsor James Carr, MD

BACKGROUND

Problem:

Radiologists develop work related repetitive stress injuries (RSIs) as their work revolves around sitting at a PACS workstation all day

- 90 % of radiologist survey respondents here (53/59) feel some "burn out" and most attribute it to:
 - 1) Work overload (61 %)
 - 2) Lack of control (51 %)
- 23 radiologists (faculty and trainees) have an RSI currently
- Many radiologists feel that leadership doesn't care about their safety and wellness
 - 44 % responded that administration does not care about safety of their working conditions 49 % are somewhat or very unsatisfied with

Objectives physical workstation

- Promote radiology wellness improvement efforts
- Improve PACS workstation satisfaction
- Decrease percentage of radiologists with RSIs
- Form Ergonomics Committee
- Improve Ergonomics knowledge
- Test and install improved ergonomic equipment Mice and Wrist Pads
- Replace broken workstation tables and chairs

Figure 1: Broken workstations and chairs



NM Occupational Health Evaluation and Recommendations For NM radiology workstations

- Sit/stand desk



One size does not fit all



Clinical Sponsors Ellie Kruk Blair Faber

Process Owners Sara Sheehan Gloria Harston-Moore

Team Members: Michael Choe, MD; Lauren East, MD; Fred Hoff, MD; Cecil Wood, MD; Dave Casalino, MD; Roksana Birkos

METHODS

Figure 2: From survey to Northwestern radiologists February 2019 59 respondents/147 radiologists; 40% response rate; faculty and trainees

Repetitive stress
injuries in:
Back 16 (36%)
Neck 17 (38%)
Finger 12 (27%)
Wrist 27 (60%)

tables 🛑
chairs 🛑
mouse 🛑
wrist nads





- 22 (49%) blame chair
- 31 (69%) blame mouse

Top 3 physical workstation items radiologists want to fix

RSIs decrease radiologist productivity

40 % with RSIs interpreted imaging more slowly

• 42 % with RSIs have symptoms can lead to burnout

RSIs and burnout can cause faculty to leave

25% with RSIs thought about leaving NM; Cost to replace faculty \$250,000-\$1,000,000 OSHA's \$afety Pays Program - \$64,852 Total cost to employer per employee with carpal tunnel

• Ergo-friendly, programmable mice

• Ergo-friendly computer chair

• Headsets or mount for Dictaphone

• Keyboard platforms may trap thighs

 Under desk recommend decluttering and organizing cords • Recommend radiologists take breaks at least every 45 min

for stretching and position changes.

How to Improve Ergonomics and Reduce Injuries:

• Ergonomics committee of radiologists formed to work with radiology managers and IT • Samples and makes recommendations on ergonomic equipment for reading rooms



• Mouse models chosen by committee and tested by radiologists • Mouse pad/wrist cushions tested by radiologists Chair samples tested by 29 radiologists at a "chair party"

Figure 5: "Chair party" Radiologists testing ergo chairs 5/3/19





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	$\left(\right)$
Upper Back	
Lower Back	3
(support lumbar curve)	0
Sitting Bones (distributed pressure)	/
Thigh Behind the Knee (distributed pressure)	/

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Project Coach Katie Dienes

Wellness Medical Director Joan Anzia, MD

SOW Scholar



Figure 3: NM Occupational Health



RESULTS

Interventions to decrease work related injuries in radiology:

- Under desk cord organization by IT; 41/114 complete (36%)
- Broken workstation tables and chairs inventoried
- 4 broken/old workstations replaced this year, 23 to go
- 16 broken chairs, 20 old chairs, 16 high "stool" chairs
- Replace 1st broken chairs with Allsteel Evo, fully adjustable

Figure 6: Wrist pads in each reading room



Radiologists can now "choose" equipment:

- Added "bucket" of 3 different wrist pads per room
- Plan to add Logitech M705 wireless mice for all stations -
- Add some "gaming" Logitech G502 mice for larger hands
- Fly wheel for easier scrolling and programmable buttons

Occupational health speaker at radiology faculty meeting

- What to do if you have an RSI, what to do to prevent an RSI
- Improves radiologists knowledge about ergonomics
- Aug 2019; additional conference for trainees

Control Plan (DMAIC)

- Ergonomics committee meeting every 6 months led by radiologist
- Proposal for improved reading room maintenance with checklist
- Collaboration between management, IT, and radiologists

CONCLUSIONS

Ergonomic improvements has potential to improve physician wellness:

- Prevent physician injuries
- Support physicians with injuries
- Increased physicians' sense of control over their workspace **Ergonomic improvements have potential to benefit the NM hospital system:**
- Improved physician engagement
- **Other lessons learned:**

Jeanne M Horowitz, MD



Scholars Of Wellness

Figure 7: The winning chair!



Cost savings from increased physician productivity and decreased faculty turnover

Can attract physicians to work at NM and can serve as an example for other health systems

• It's difficult for physicians to navigate who owns and operates components of a large hospital This work can lead to lead to larger wellness and faculty development programs



Figure 8: Cords organized Broken table replaced

Figure 9: Mice chosen by radiologists

