Green Clean Schools Webinar: Participatory Ergonomics and Taking Care of Your Green Cleaning Team

May 30, 2019

Welcome

About Healthy Schools Campaign

Green Clean Schools
greencleanschools.org

HEALTHY SCHOOLS
CAMPAIGN

Speakers

Gene Woodard, *Director of the Building Services Department, University of Washington*

Tracey Mosier, *Safety Manager for Facilities at the University of Washington*

Debra Milek, M.D., Ph.D., MPH, *Associate Professor in General Internal Medicine at the the University of Washington*

HEALTHY BUILDINGS REQUIRE HEALTHY WORKERS

UW PARTICIPATORY ERGONOMICS PROGRAM

- **DEBRA MILEK, MD, PHD, MPH**
- **GENE WOODARD, Director, Building Services**
- **TRACEY MOSIER, Interim Safety Dir., UW Facilities**

ERGONOMICS:

ADAPTING THE WORK OR TOOLS TO THE PEOPLE WHO PERFORM THE WORK

BECAUSE BODY SIZES, SHAPES AND ABILITIES DIFFER

MAYBE ONE SIZE DOESN'T FIT ALL

BACKGROUND

Within UW Facilities the most common injuries cause musculoskeletal pain in the following:

- **Shoulders**
- **Back**
- **Knees**

BACKGROUND

60% of injuries resulting in time loss at UW due to stress on the body are caused by:

- **Lifting, carrying**
- **Pushing, pulling, reaching**
- **Twisting, throwing**
- **Repetitive motion**

Source: UW Workers' Comp Data 2017

STAFF BACKGROUND

- Highly engaged staff
- 239 full-time custodians/48,536 sq. feet each
- English is often second or third language
- 14% absentee rate
- Day cleaning

BASIC CONCEPTS

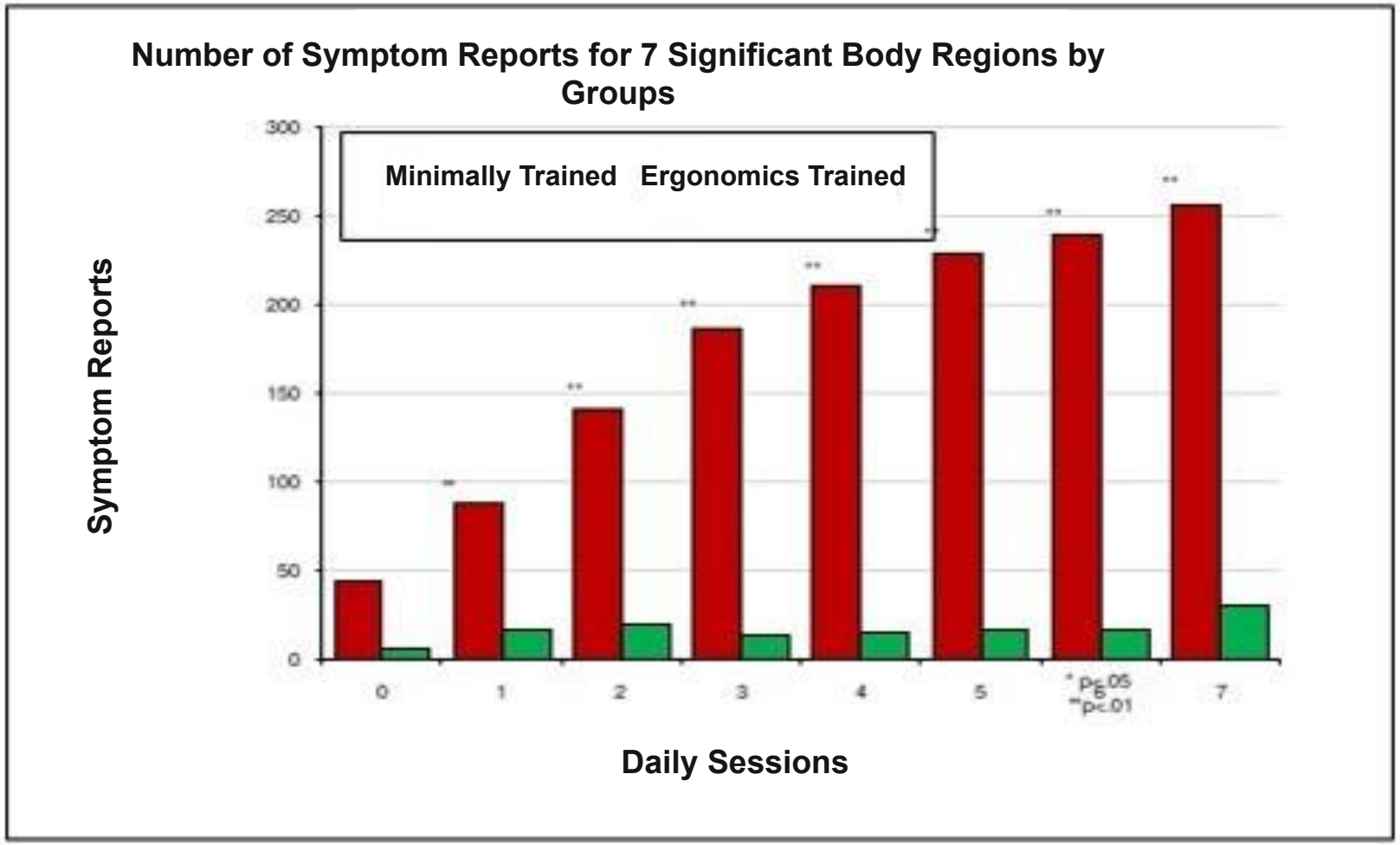
- Custodians have a high injury rate
- Discomfort is a predictor of future injury
- Workers know their jobs better than anyone
- Participation by all levels within the department plus outside expertise would be our strategic approach
- Identifying and changing tasks that cause discomfort allows us to reduce custodial injuries
- Scalable
- Can be implemented for almost any work force

PREVENTIVE PRINCIPLES: INJURY CONTINUUM

D. Darren McDonald, 2007 Regulatory Craft Conference Workers' Compensation Board of Nova Scotia

IMPACT OF TRAINING ON DISCOMFORT

Reported Musculoskeletal Discomfort for Top 7 Body Parts All Daily Sessions (Liberty Mutual)



LEADERSHIP PRINCIPLES

Without Lean process improvement, BSD would not have been as prepared to implement the ergonomic program with as much enthusiastic team participation. Lean put us all on the same page.

Shingo Leadership Principles:

- Respect everyone
- Lead with humility
- Constancy of purpose

ACTION STEPS

Identified 16 custodial tasks & developed pictorial survey in order to:

- **Have custodians identify most uncomfortable tasks**
- **Direct task selection**
- **Assemble small groups of experts to create modifications to reduce discomfort**
- **Trained staff and implemented changes**
- **Conduct post-modification survey**
- **Determine pre- and post-risk assessments**

SURVEY RESULTS

- Participation: **60%** of custodians took survey
- Communication: **35%** felt most relaxed listening to questions in their first language
- Height: most were **5’ to 5’5** inches tall
- Age range averaged: **40-69** years; peak: **50-59**
- Job longevity: average **11-20** years

SURVEY RESULTS: BODY AREAS MOST AFFECTED

Confirmation of institutional data and our survey:

- **Back**
- **Shoulders**
- **Knees**

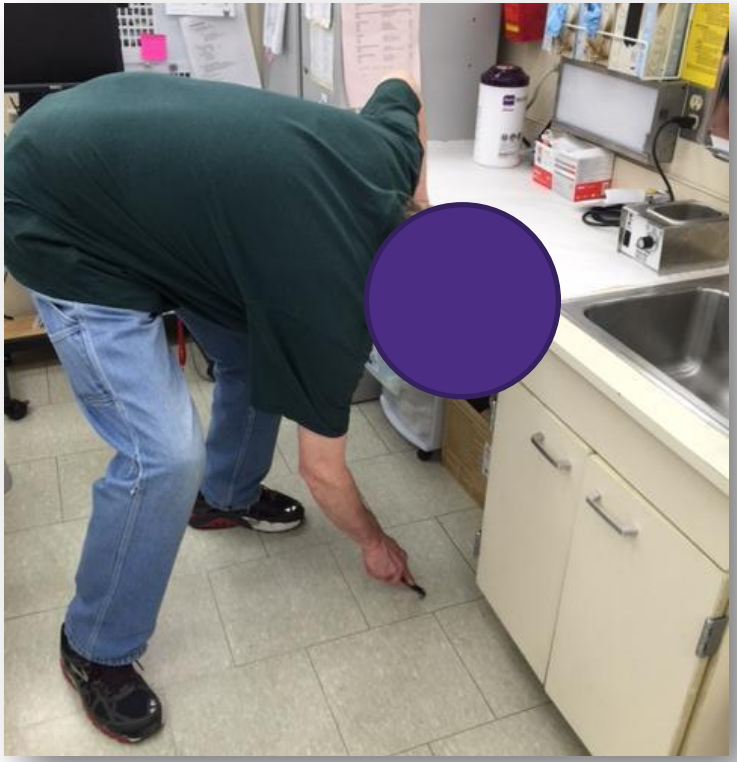
BACKPACK VACUUMING

Complexities of addressing the discomfort:

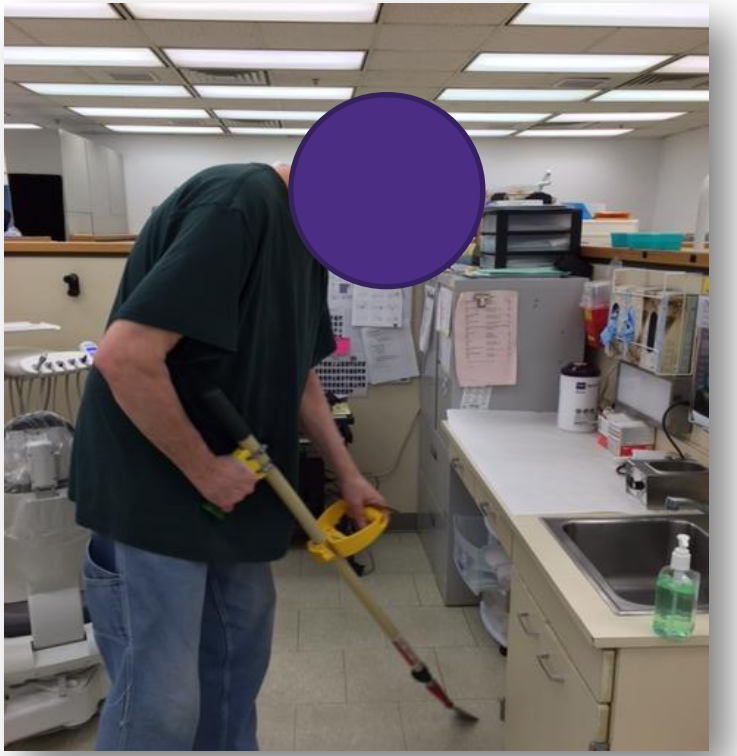
- **Extensive hands-on training**
- **Individual fit**
- **New harnesses**
- **Policy changes**
- **Reinforcement of training**

SCRAPING FLOORS

Before



After



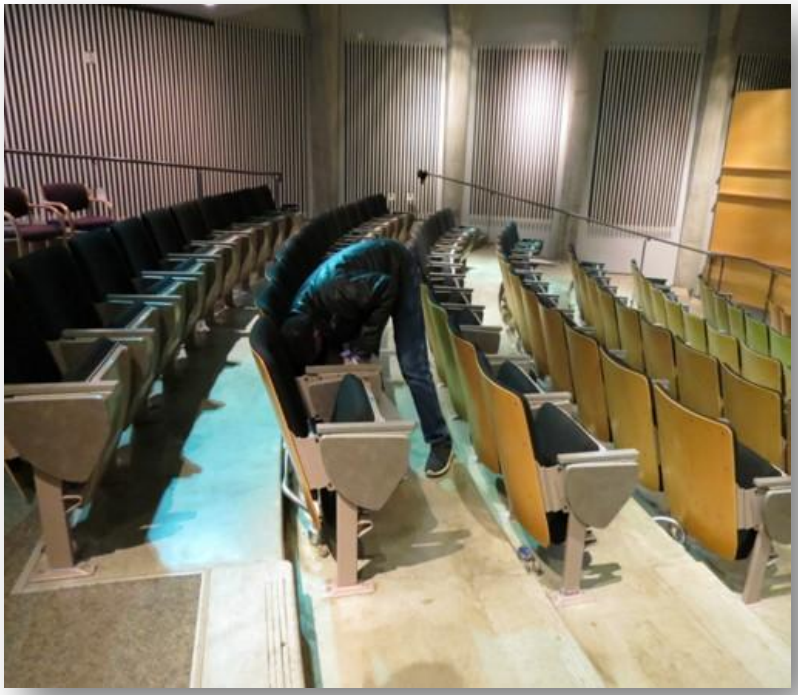
CLEANING TOILETS

Before

After

PICKING UP TRASH

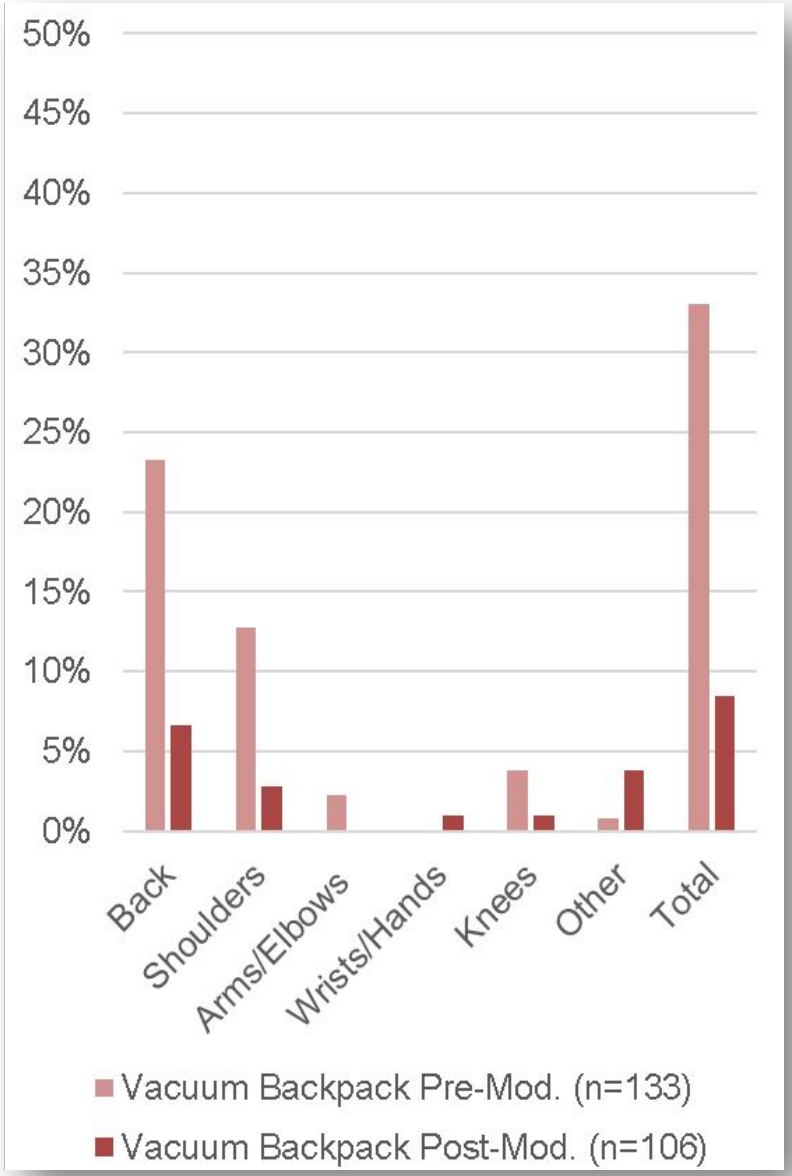
Before

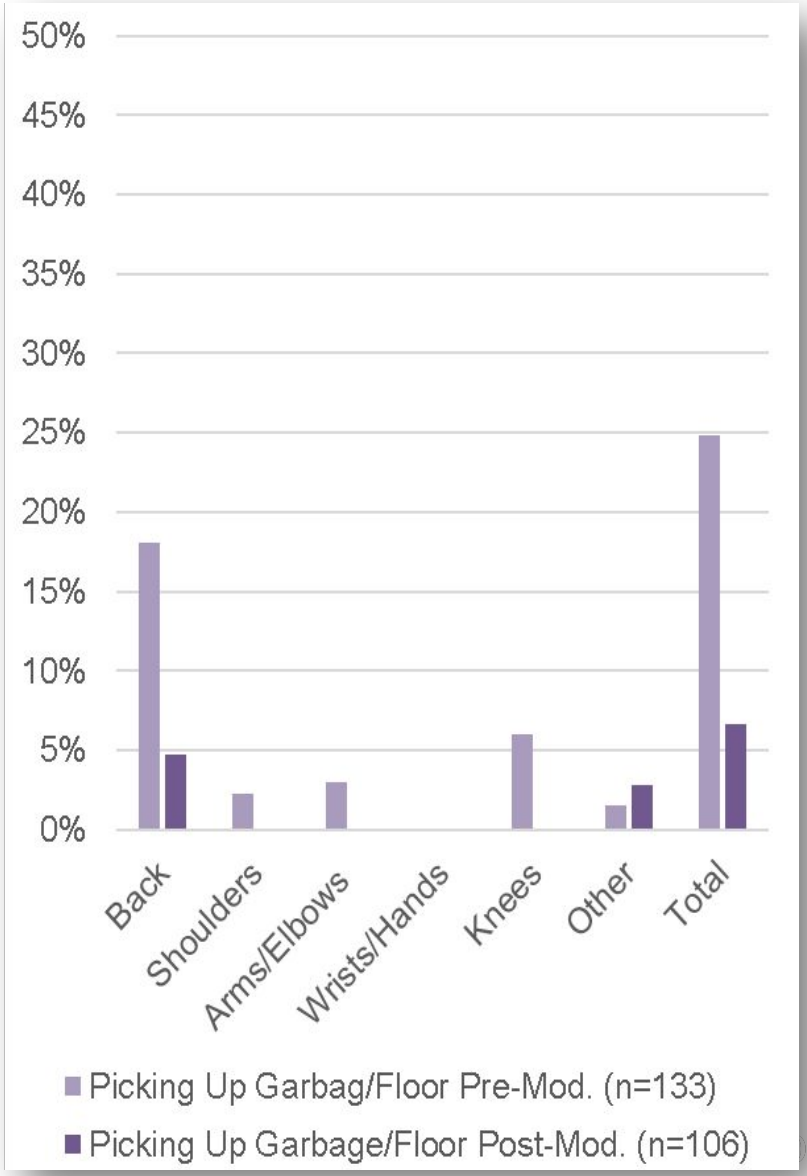


After

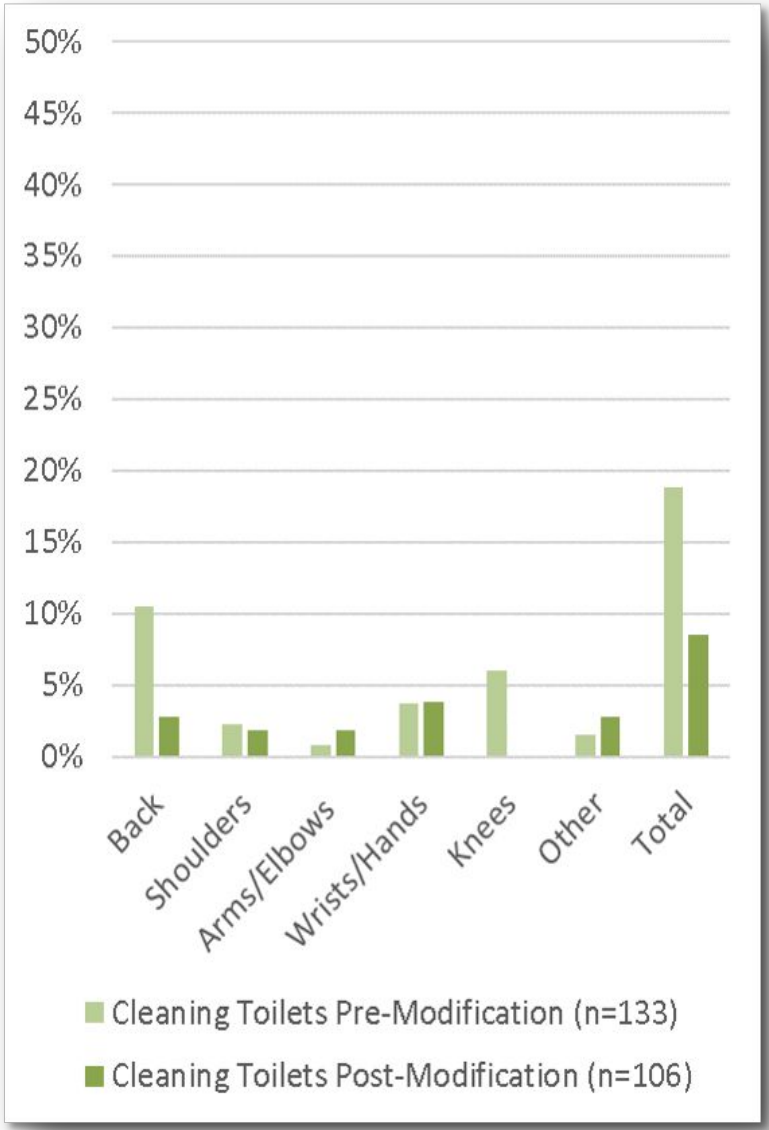
DID WE REDUCE DISCOMFORT?

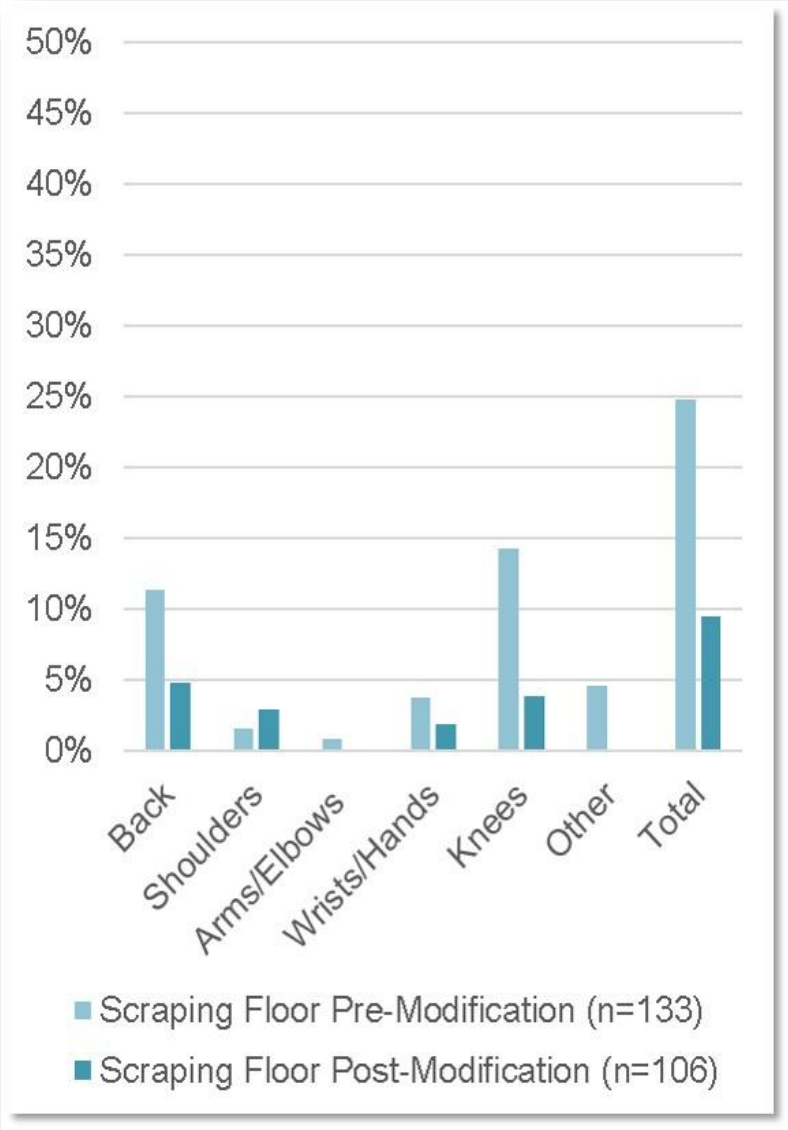
HIGH DISCOMFORT: PRE & POST MODIFICATION





HIGH DISCOMFORT: PRE & POST MODIFICATION





LESSONS LEARNED

Tasks are more complex than what's apparent

> Worker input, observations and participation are essential

Change is a process; communication is key

> Planning and follow up are very important

> Relationship building must take place

Workers must demonstrate newly-learned information

> Almost no one learns by watching only

Note:

> Be careful not to introduce new MSD problems

IMPORTANT REMINDERS

- Supervisors need the same training
- Reinforcement of new information is vital
- Health and safety culture is essential for success
- Worker and management engagement is crucial
- Findings were not unique to UW custodial work
- Most interventions were not costly

THE PROCESS CONTINUES WITHIN UW FACILITIES

> Conduct weekly participatory meetings

> Helps ergonomics safety culture mature

> Tool evaluation surveys to maximize custodian input

> Completed 30+ additional tasks from the survey and beyond

> Distribution and/or installation ongoing

ADDITIONAL ACCOMPLISHMENTS

APART FROM THE 30+ MODIFICATIONS IN TOOLS & PROCESSES, *WHERE ARE WE TODAY?*

Custodians have been increasingly engaged in providing solutions for how their work can be done more safely by voicing their concerns at our weekly meetings. More importantly, in response to them and with respect to safety, ***we've been practicing what we've preached. Consequently:***

- ✔ Custodians' and supervisors' awareness of injury prevention has increased
- ✔ Custodians are teaching each other as well as employees beyond their department
- ✔ We've expanded beyond traditional ergonomics into other safety items (flashlights, slips/trips, reflective apparel)
- ✔ We monitor hiring, open runs, 5S closet organization compliance and attendance at weekly ergonomics meetings – ***because these impact safety***

MOST ERGONOMIC EFFORTS HAVE TARGETED RISK REDUCTION IN THESE AREAS:

- Back vacuum – back and shoulder
- Scrapers – back and knees
- Long-handled toilet brush – back, *but creates difficulty in upper extremity*
- Grabbers – back, knees
- Magnets – back
- Dumpster prop – shoulder and back
- Surface wiper – shoulder and back

AS WE CONTINUED PARTICIPATORY ERGONOMICS AND SAFETY…

- Presented the results of the surveys to the custodians ***and***…

WE ASKED THE CUSTODIANS WHAT THEY NEED FROM MANAGEMENT AND EACH OTHER:

- RESPECT
- COMMUNICATION
- APPRECIATION/THANKS/ACKNOWLEDGEMENT
- TEAM WORK
- DON’T STEAL MY STUFF

ADVANCING PARTICIPATORY ERGONOMICS

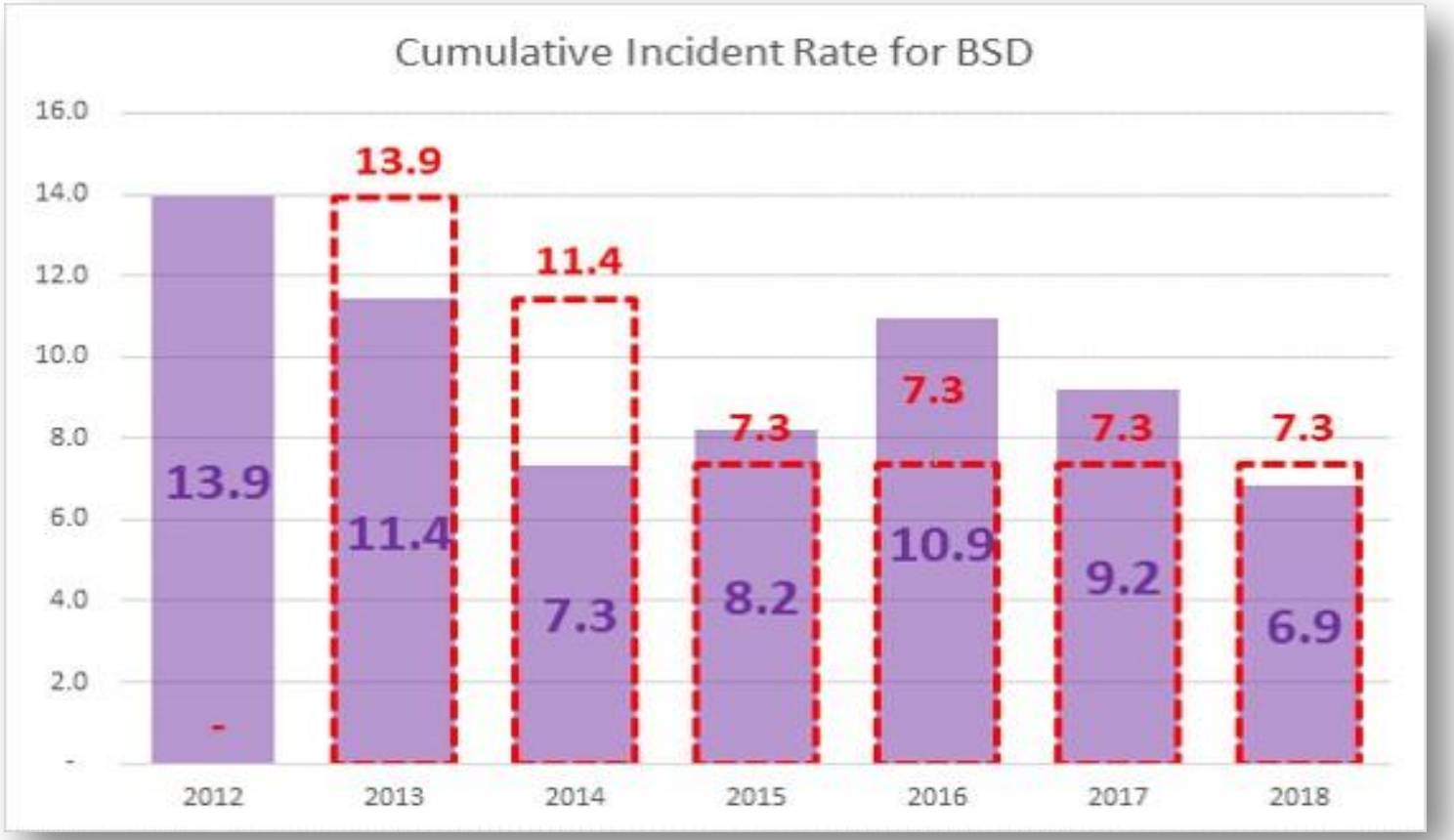
Stepping It Up Beyond Tools and Training

EXPANDED DEFINITION OF ERGONOMICS

"The applied science of fitting tools and tasks to the persons performing them in such a way that the strengths of the human body and **psychology** are maximized and exposure of weaknesses to stressors is minimized."

–National Ag Safety Database

BSD [INJURY] INCIDENT RATE 2012-2018



EXPANDED DESIRABLE ERGONOMIC CRITERIA

- Doesn't decrease productivity or capability
- Doesn't create new problems
- Doesn't have an unworkable cost benefit ratio
- Doesn't displace the worker
- Doesn't decrease comfort, safety or health –
  - **INCREASES COMFORT, SAFETY AND/OR HEALTH**

SPECIFIC TOOLS AND TASKS ON THE HORIZON

- Toilet brush re-design
- Liquid waste elimination
- More ergonomic transfer of trash into dumpster
- Addressing snow and other weather

ISSUES AND CHALLENGES

- AGING WORKERS MAY HAVE YEARS OF WEAR AND TEAR AND THEIR REPAIR MECHANISMS ARE NOT AS YOUNG AS THEY USED TO BE
- WITHOUT PROPER ERGONOMIC TRAINING, YOUNGER WORKERS MAY EXPERIENCE WEAR AND TEAR AT AN EARLIER AGE
- MISTAKEN BELIEFS TO OVERCOME: YOUNGER WORKERS THINK THEY'RE INVINCIBLE AND WON'T BE INJURED AND OLDER WORKERS THINK IT'S TOO LATE

CONCLUSIONS

- PARTICIPATORY ERGONOMICS HAS EXPANDED TO INCLUDE SAFETY ISSUES AS WELL
- WE HAVE IMPROVED OUR SAFETY CULTURE
- IT IS A COLLABORATIVE EFFORT BETWEEN CUSTODIANS, MANAGEMENT AND HEALTH AND SAFETY
- OUR PROGRAM HAS RESULTED IN GREATER ENGAGEMENT OF THE WORKERS, DECREASING INJURY RATES AND IMPORTANT RECOGNITION FROM WITHIN AND OUTSIDE OUR INSTITUTION OF THE WORK WE ARE DOING
- SUSTAINING GAINS REQUIRES ONGOING MAINTENANCE AND INNOVATION, HOWEVER HEALTHY BUILDINGS REQUIRE HEALTHY WORKERS

COMMENTS OR QUESTIONS?