



School of
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REACHING FURTHER

DIFFERENCES IN DISABILITY MANAGEMENT OUTCOMES IN FIRST RESPONDERS COMPARED TO HIGH AND LOW PHYSICAL DEMAND WORKERS

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BACKGROUND:

HOW ARE FIRST RESPONDERS ARE UNIQUE?

- Unique work characteristics¹
 - High physical and psychological demands^{2,3}
 - Dangerous and unpredictable work environments^{1,2,4}
- Increased risk of injury and mental health issues^{2,5}
 - Higher than the general population
- Do these unique characteristics affect the return to work process for first responders?
 - Lack of disability management research in first responders



PURPOSE

To analyse disability management claims to determine if there was a difference between first responders and high physical demand or low physical demand occupations when comparing:

- (1) the duration of time off work
- (2) the duration of the claim
- (3) the types of duties performed when returning to work
- (4) the types of injuries and illnesses



METHODS



DATA SOURCE AND DATASET VARIABLES

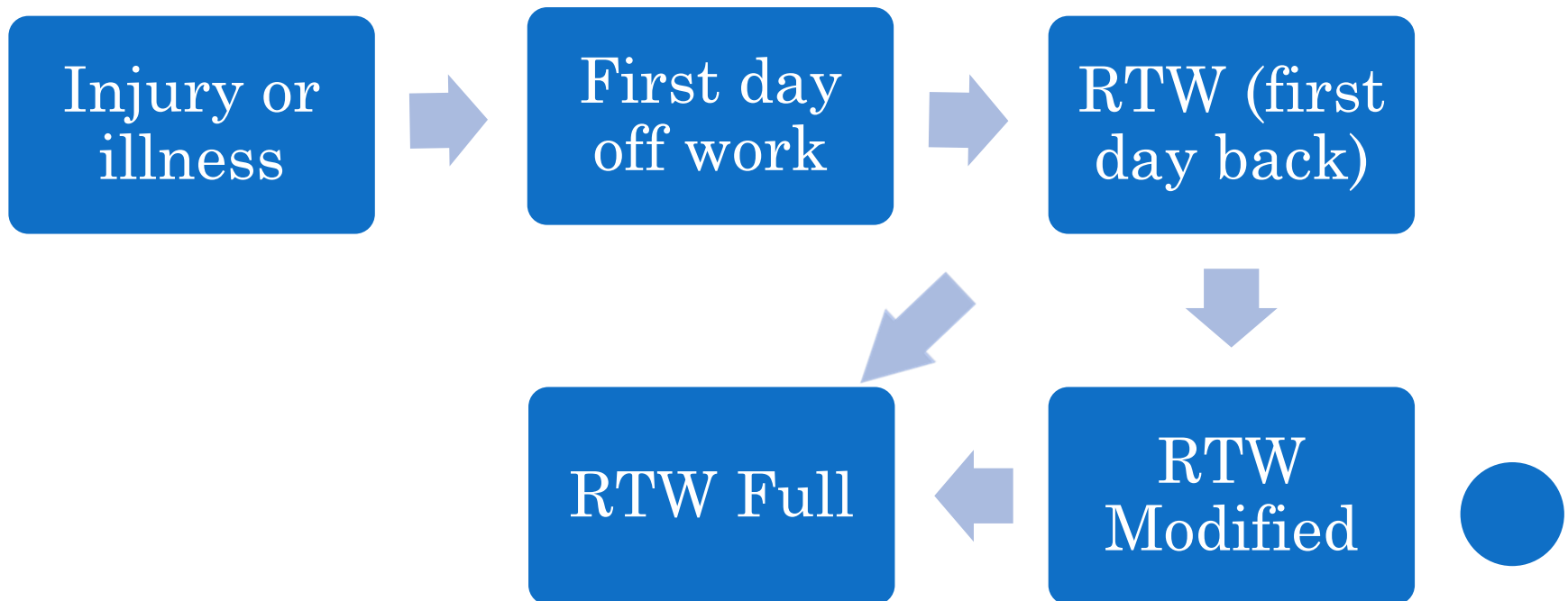
- Data from a National Disability Management Company
 - Claims collected from January 2, 2012 – July 25, 2017
 - 27,650 claims in the database
- All claims contained
 - Demographic and employment details
 - Injury or illness diagnosis
 - Duties performed upon return to work (RTW)
 - Claim details
 - Relevant dates used to calculate:
 - Duration of time off work
 - Duration of the claim



RETURN TO WORK, THE ASSOCIATED DURATION, AND THE TYPE OF DUTIES PERFORMED

- General RTW

- Duration: first day off to first day back at work



METHODS: INCLUSION CRITERIA FOR “CASES AND CONTROLS”

- Only MSK and mental health claims
- Must have had time off work
- RTW occurred by the last day of data collection
- Cases:
 - All first responders
- Controls
 - High physical demand (HD) occupations
 - “Heavy” or “Very Heavy” job classification
 - Male dominated occupations
 - Low physical demand (LD) occupations
 - “Sedentary” or “Light” job classification
 - Male dominated occupations



METHODS: AGE AND SEX MATCHING

- First responder claims were used to determine age and sex matched HD worker claims and LD worker claims
 - Allowed for a 2 year difference in age
 - Randomly selected based on a 1:1:1 ratio
- STATAIC 14



STATISTICAL METHODS

- Descriptive statistics
- Analysis of Covariance (ANCOVA)
 - Differences in the number of days off work and the claim duration between job types
- Chi Square Tests of Homogeneity
 - Differences in diagnosis and duties performed at the time of RTW between occupation groups
 - Odd ratios (OR) for significant comparisons
- STATAIC 14
 - two tailed and significant at $\alpha=0.05$



RESULTS



RESULTS: DEMOGRAPHICS

- N=177
- 59 workers per group, only 17% were female
- Median age: 44.5 years of age



RESULTS: DIFFERENCES IN THE NUMBER OF DAYS OFF WORK

- First responders returned to work sooner than HD workers
 - Mean difference=19.8 days
- First responders returned to work sooner than LD workers
 - Mean difference=23.0 days

Adjusted mean number of days off work after ANCOVA

	Mean (days*)	95% Confidence Interval (days*)
First responders	33.6	26.3 – 42.8
High demand work	52.7	40.9 – 68.0
Low demand work	60.7	47.5 – 77.6

*Adjusted mean back-transformed from natural log units to original calendar day units

RESULTS: DIFFERENCES IN THE CLAIM DURATION

- First responder disability claims were closed sooner than HD worker claims
 - Mean difference=19.1 days
- First responder disability claims were closed sooner than LD worker claims
 - Mean difference=27.1 days

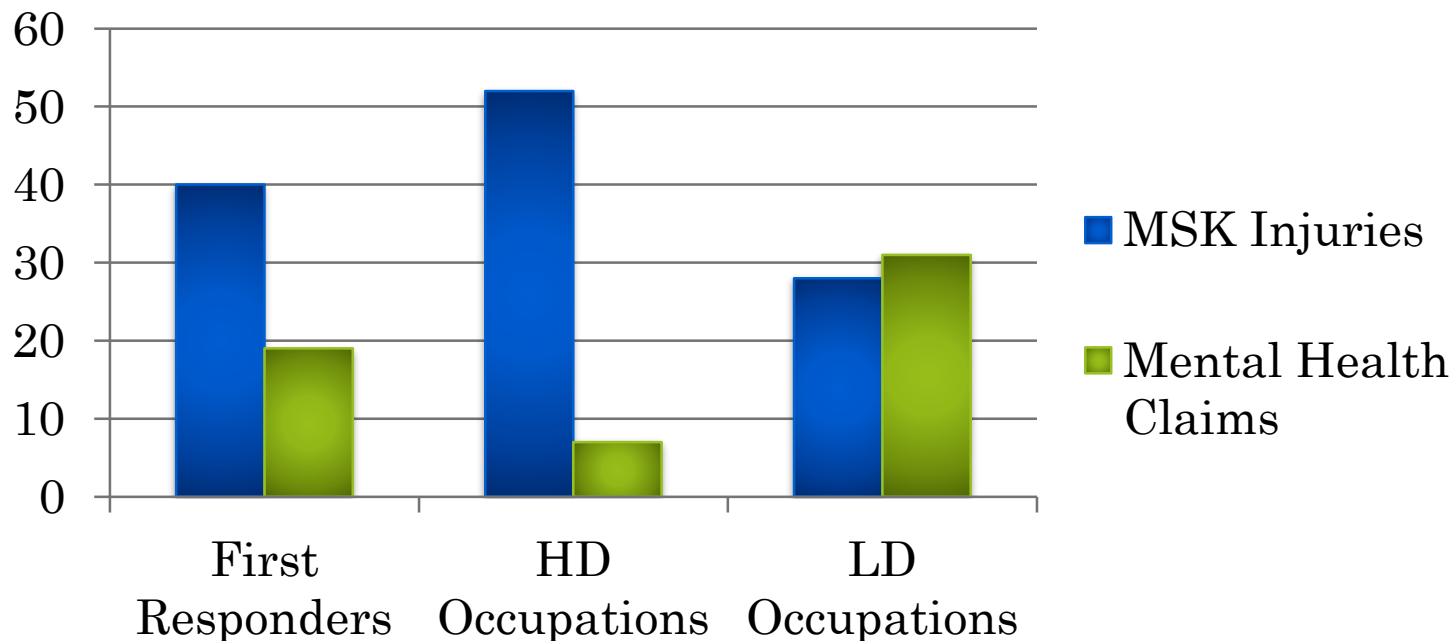
Adjusted mean number of days off work based on the effects of the covariates

	Mean (days*)	95% Confidence Interval (days*)
First responders	42.0	33.2 – 53.0
High demand work	61.8	49.0 – 78.1
Low demand work	65.0	51.4 – 82.1

*Adjusted mean back-transformed from natural log units to original calendar day units

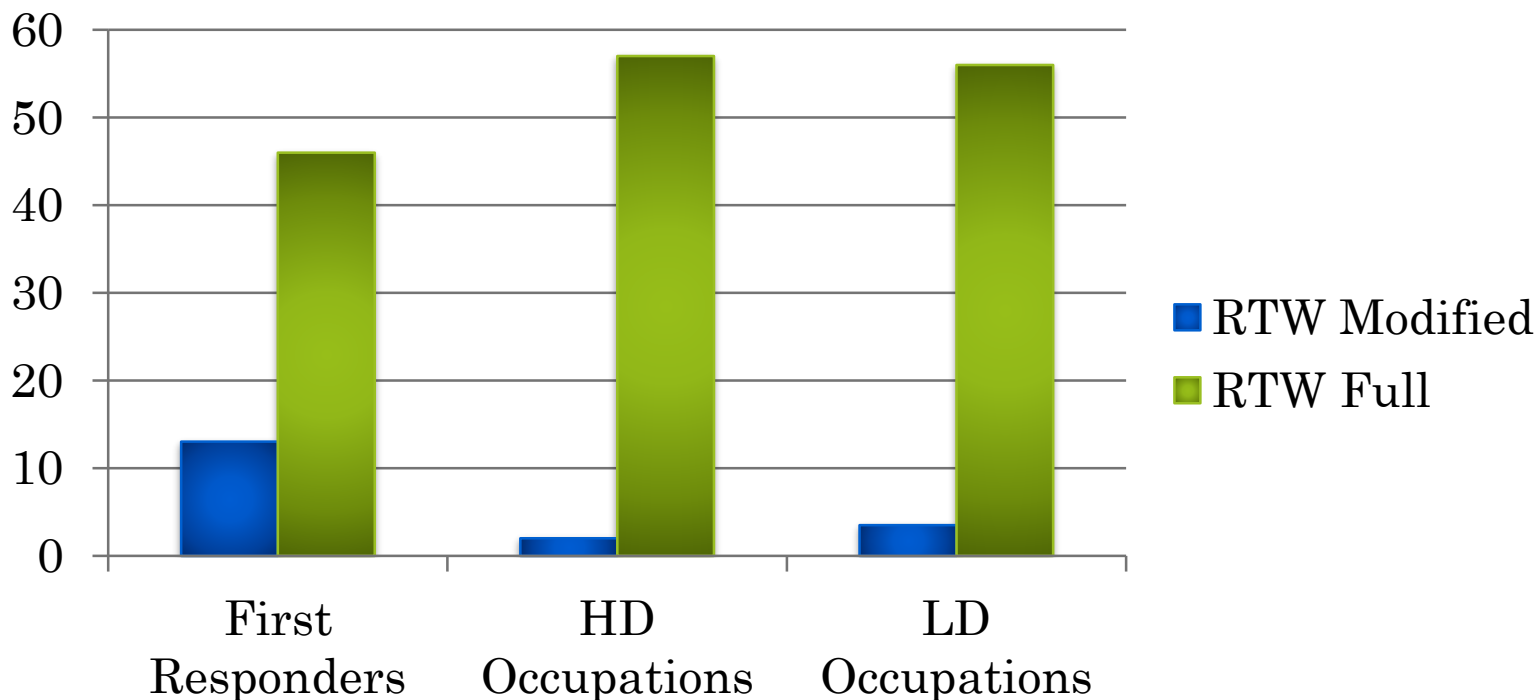
RESULTS: DIFFERENCES IN GENERAL DIAGNOSES

- First responders (FR) vs. HD workers
 - Less MSK injuries for FR (OR: 0.3)
 - More mental health claims for FR (OR: 3.5)
- First responders (FR) vs. LD workers
 - More MSK injuries for FR (OR: 2.3)
 - Less mental health claims for FR (OR: 0.4)



RESULTS: DIFFERENCES IN DUTIES PERFORMED BY THE END OF THE DATA COLLECTION PERIOD

- First responders were less likely to RTW full compared to HD workers (OR: 8.1) and LD workers (OR: 5.3)
 - First responders performed modified duties instead of transitioning to full duties



CONCLUSION AND IMPLICATIONS

First responders RTW sooner compared to other occupations, but this may be associated with the availability of modified work

○ **Positive Take-Away Point**

- Modified work is being made available for first responders
- May be more commonly available compared to other jobs

○ **Major Concern**

- First responders return to work modified instead of returning to their full duties
 - Unable to make the transition due to the high demands of the work performed
 - Modified work can be seen negatively – strong desire to rescue⁶



CONCLUSION AND IMPLICATIONS

○ **The need for future research:**

- Why are first responders unable to transfer to their regular duties?
- How can we help promote the transition to regular duties?

○ **Impact on the disability management and rehabilitation fields**

- Promote the importance of modified work
- Need for programs to facilitate the transition from modified to full duties for first responders
- Encourage health care providers to continue care (rehabilitation) even after return to work occurs
 - Although first responders seem “healthy”, they may lack the strength and fitness required to perform their normal work



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THANK YOU!

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