

Work-Related Musculoskeletal Disorders

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Recognizing and Preventing Occupational Disease

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Overview

- Definition of Work-Related Musculoskeletal Disorders (WMSD)
- Uncovering the iceberg of burden - issues in recognition & reporting
- Workplace factors important for development of & recovery from MSD
- Effectiveness of workplace interventions for WMSD
- Question and answer format



Some definitions

- Work-related: caused, aggravated, exacerbated by work place exposures (WHO, 1985)
- WMSD: A descriptor for disorders and diseases of the musculoskeletal system... tendon, muscle, nerve, joint, vascular structures and bursa (Hagberg, 1995)



Have you ever had pain at work?



Research finding

- In an office setting, we found (Polanyi et al., 1997):
 - 60% of workers reported having neck or upper limb pain over the past year
- In an auto parts manufacturing company, we found (Wells et al., 2000):
 - 80% of workers reporting some musculoskeletal (MSK) pain (includes back and legs as well) over the past year



Have you ever had pain that was aggravated by work?



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Pain aggravated by work

- In an office setting we found:
 - 51% reported that their MSK pain was aggravated by work, at least to some extent
- Should such pain therefore be regarded as work-related?



Have you ever reported pain you have had to your workplace?



Reporting to workplace

- Overall, we found that
 - 22% of all office workers reported pain to the workplace
- Among those workers with pain (599), 362 (the majority) did *not* report pain to the workplace (Hogg-Johnson et al., in preparation).
- So there is a *threshold* for reporting pain



Not Reporting (1)

- Of the 362 with pain in the last year:
 - Most did not give a reason
 - 85 did not report because symptoms were mild or not considered a problem

Impact of pain on productivity

- And:
 - 40 attributed their pain to non-work factors. Should they have reported?
- Among those with neck and upper limb pain:
 - 7% had difficulty sticking to work routine or schedule
 - 9% had difficulty concentrating on work
 - 16% had difficulty using pens, computer keyboards etc. for at least half of the workday
- So unreported pain was having an impact on ability to work for an important minority

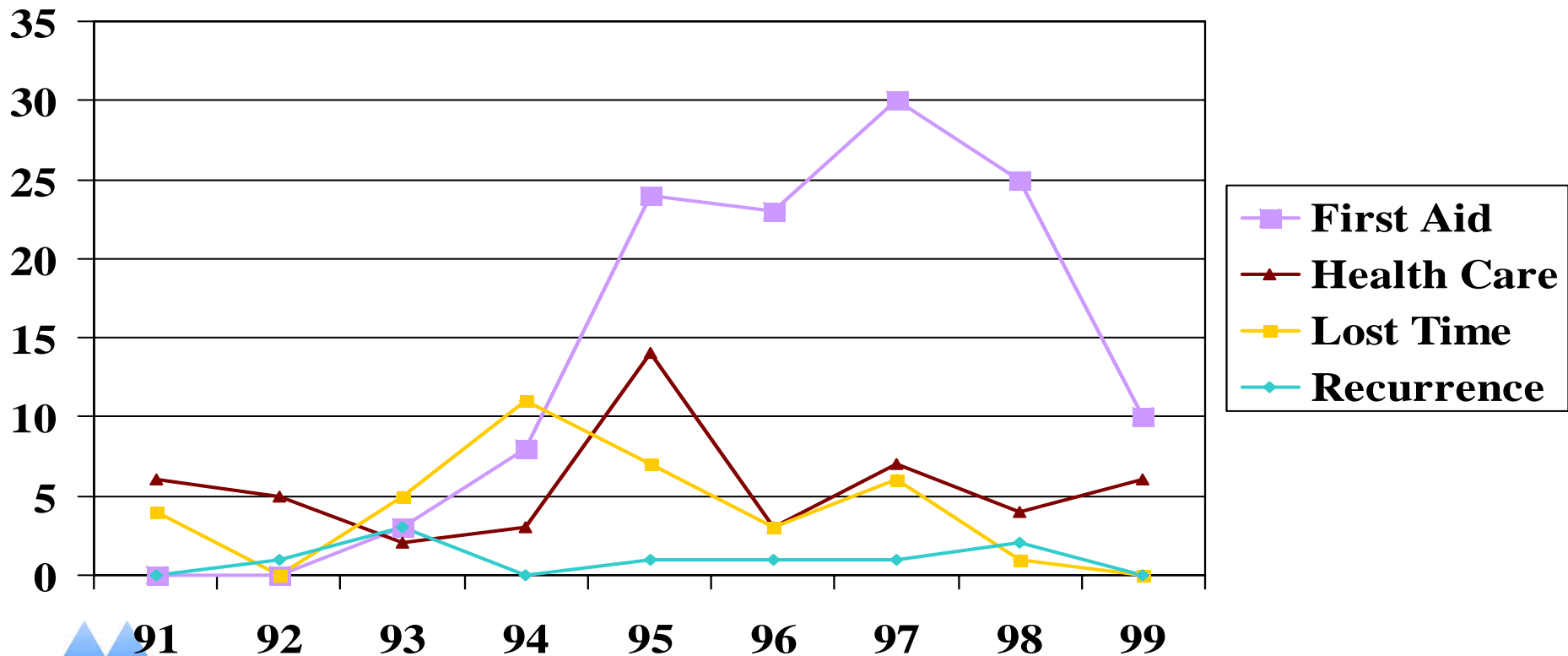


Not Reporting (2)

- As well:
 - 37 expressed fear of layoff, harassment, unemployment or “company’s response”
 - “He wouldn’t report even if he was feeling pain, because he was afraid it would show up on his work record and prejudice his future. He’s just going to work with it.”
- Have any of you feared the consequences of reporting pain at work?



“RSI” Reports at workplace which raised awareness & encouraged reporting





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Would you go to see a doctor if you had pain?



Reporting to a health care practitioner

- We found that
 - 29% of all workers had seen a health care practitioner (most physiotherapy and family doctor) due to pain or symptoms (Beaton et al., 2000)
- Now it gets really interesting
 - What do health practitioners do with the kinds of symptoms you describe and clinical signs they find?



Ever been told you have one of these 44 disorders?

- **Radiating neck complaints**
- Cervical degenerative disease
- Cervico-brachial fibromyalgia
- **Tension neck syndrome**
- Trapezius myalgia
- Levator scapulae myalgia
- Status post-whiplash
- Non-specific musculoskeletal pain (neck)
- **Thoracic outlet syndrome**
- **Frozen shoulder syndrome**
- **Rotator cuff syndrome**
- **Acromioclavicular syndrome**
- Gleno-humeral degenerative joint disease
- **Bicipital tendinitis**
- Shoulder pain
- Scapulothoracic pain syndrome
- Thoracalgia
- Arm myalgia
- Triceps tendinitis
- Olecranon bursitis
- **Lateral epicondylitis**
- **Medial epicondylitis**
- Pronator syndrome
- Radial nerve entrapment
- **Ulnar nerve entrapment (elbow)**
- Posterior interosseus nerve entrapment
- Lateral antebrachial neuritis
- Forearm myalgia
- Non-specific diffuse forearm pain
- **Tendon disorders**
- Wartenberg's syndrome
- Ganglion cyst
- **Ulnar nerve entrapment (wrist)**
- **Carpal tunnel syndrome**
- **deQuervain's**
- Trigger finger
- Painful 1st carpometacarpal joint
- Osteoarthritis
- Arthralgia
- Digital neuritis
- Non-specific discomfort
- Intrinsic hand myalgia
- Myalgia
- Hand arm vibration syndrome



Does your doctor report your WMSD to the WSIB?



Cost shifting research

- In a recent physician survey (Murphy, 2003) 56 family physicians were asked:
- “how many new cases of overuse injury have you seen in the past 3 months”
- The physicians estimated that together they had seen 840 cases, 384 of which they thought were work-related

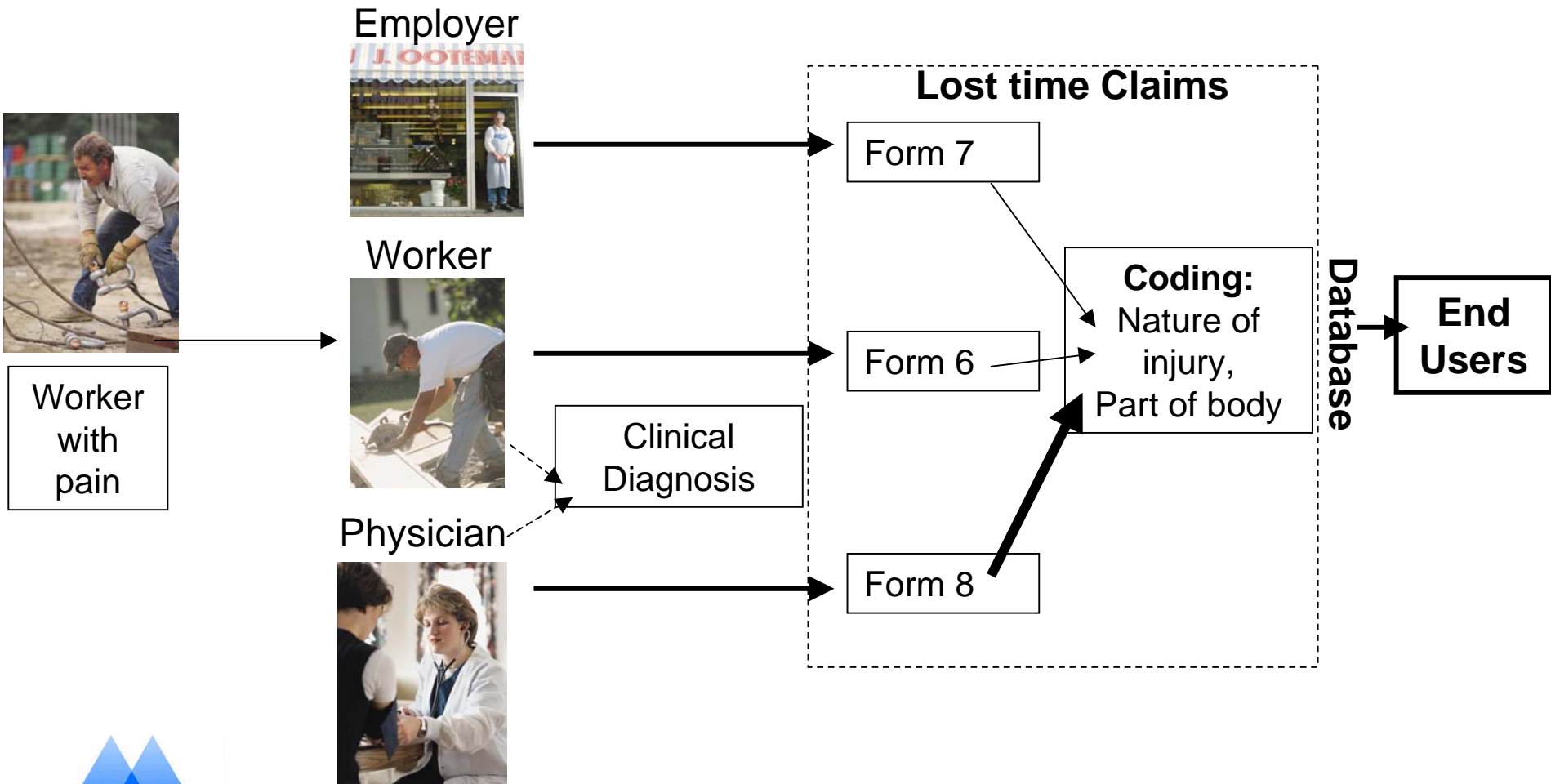


Who pays?

- Of the 384 work-related overuse disorders patients indicated the following involvement:
 - 152, *WSIB*
 - 38, *employer insurance* & not *WSIB*
 - 30, *EI* & not *WSIB*
- Of the 384, the family physicians billed 208 to *OHIP*



So how does WSIB handle WMSD?



Classification of WMSD

- For no lost time claims, little information
- For lost time (LT) claims only, the Ontario WSIB follows the National Work Injuries Statistics Program standardized coding procedures which help us understand more.



Coding of work related injuries

- Nature of injury or disease
- Part of body
- Source of injury or disease
- Injury event/exposure
- Secondary source of injury or disease

Inform case identification

Coding order

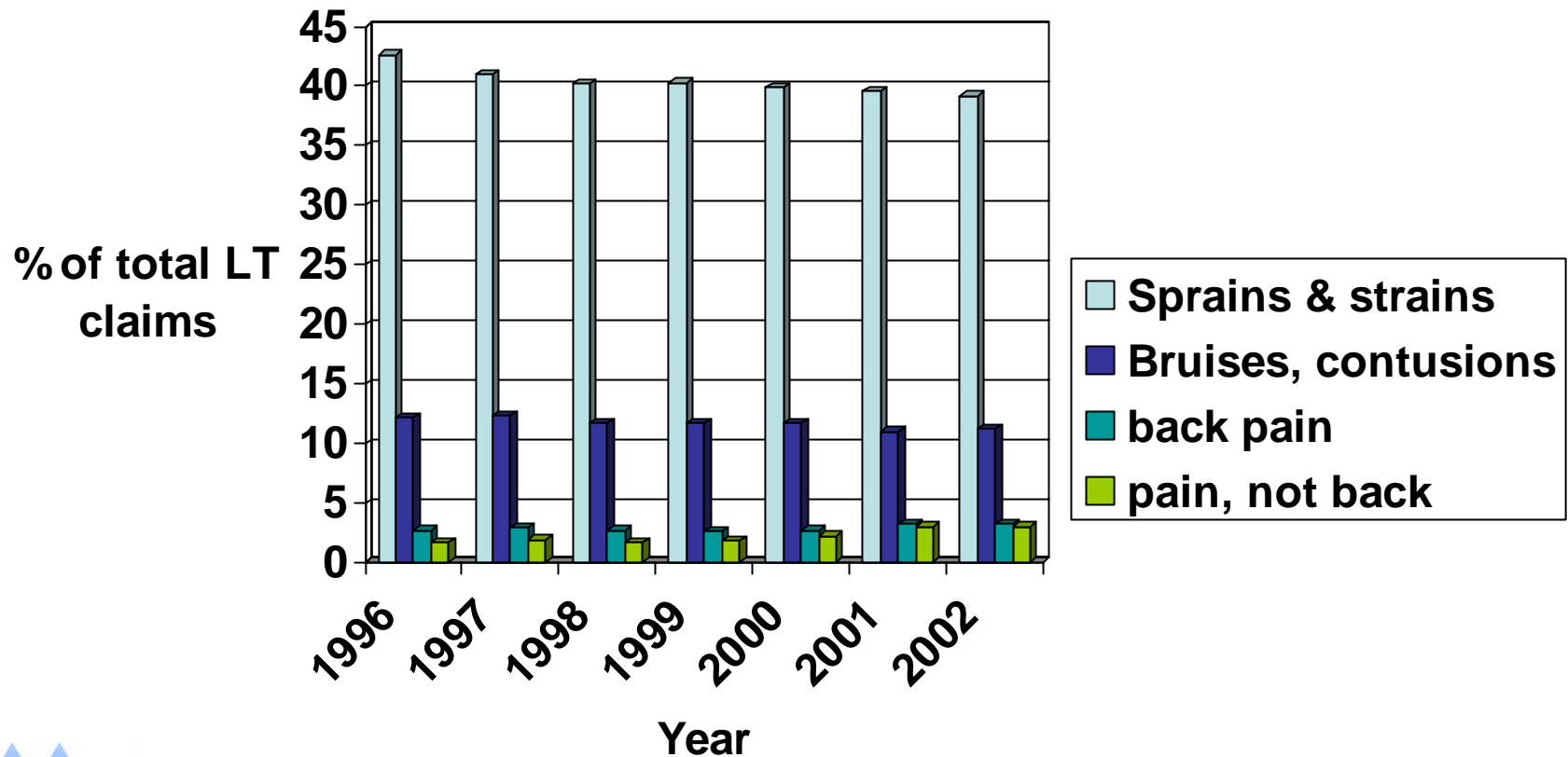


Definitions

- Nature of injury or disease (NOI):
 - “the principal physical characteristics of the injury or the disease”
 - Strain/sprain, fracture, systemic diseases
 - > 1, choose most severe, order provided
 - Laceration, concussion > soft tissue.
- Part of body:
 - part or parts of the injured person’s body directly affected by the injury or disease classification code (NOI)



2002 Ontario WSIB lost-time (LT) claims data



Source: statistical supplement of the 2002 WSIB annual report

But Remember the WMSD Iceberg!

(Sullivan & Cole, 2002)

Lost days at work

Pain > 12 times or > 7 days in last year, moderate intensity

Reported to workplace

Saw health practitioner

Work aggravates pain

Any neck or upper limb pain

15%

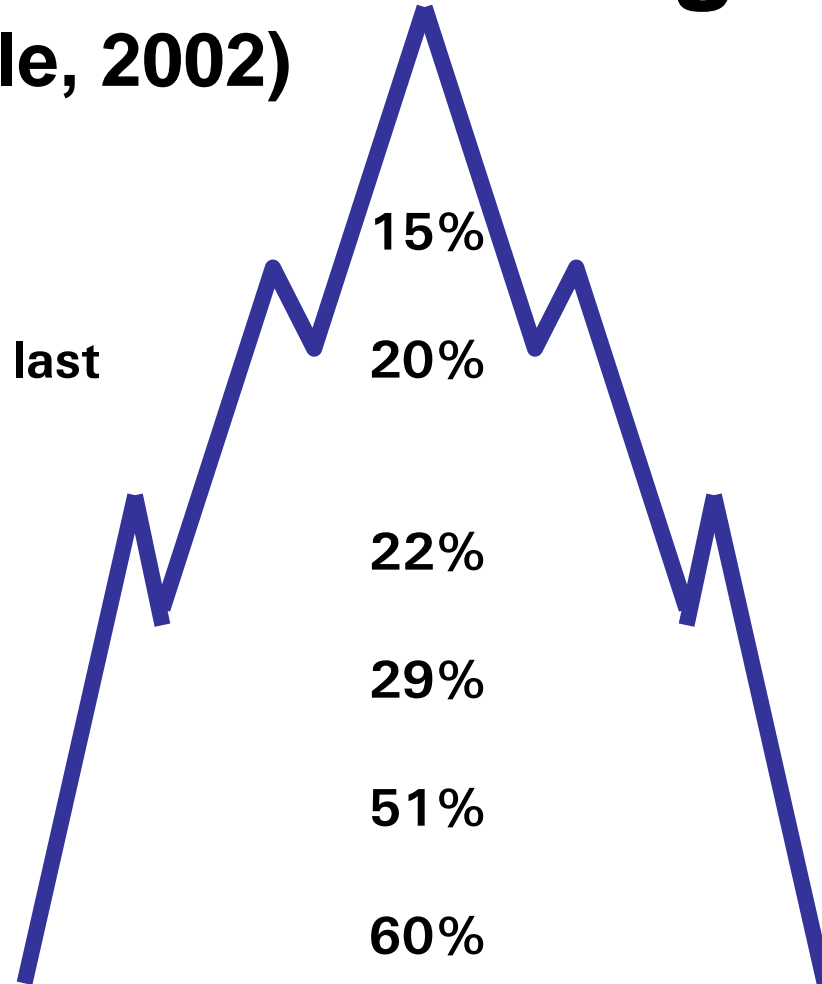
20%

22%

29%

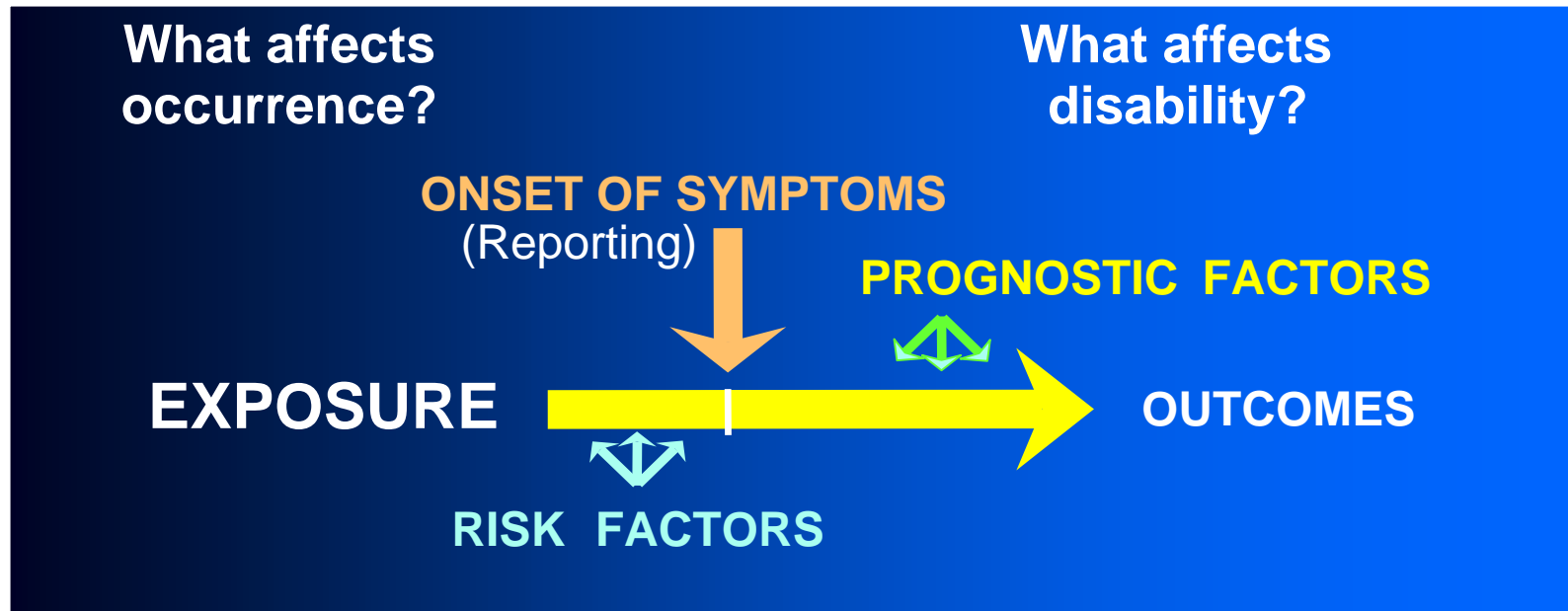
51%

60%



Where should we draw thresholds for Action?

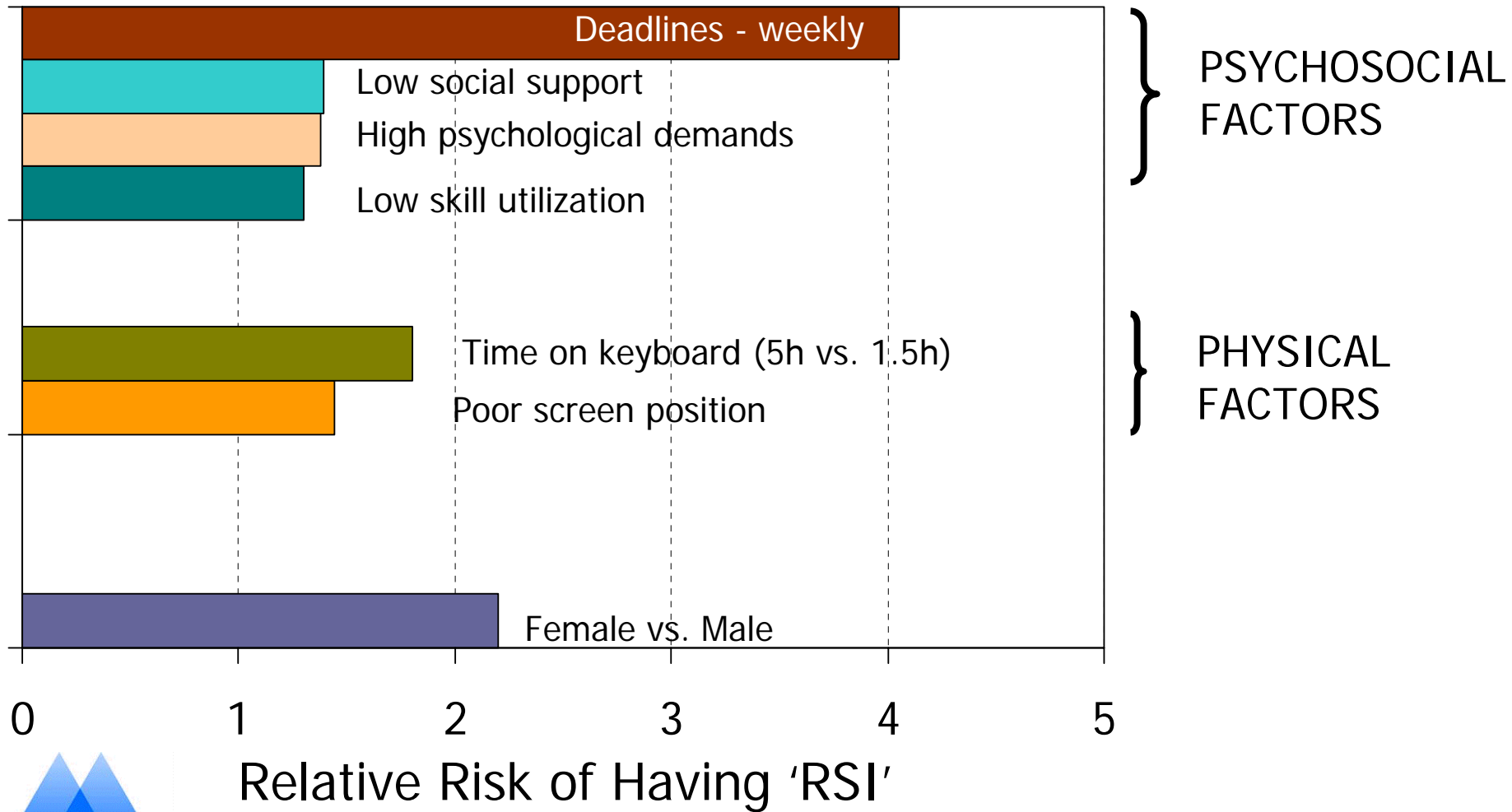
Where Do Workplace Factors Operate in the Course of a MSK disorder?



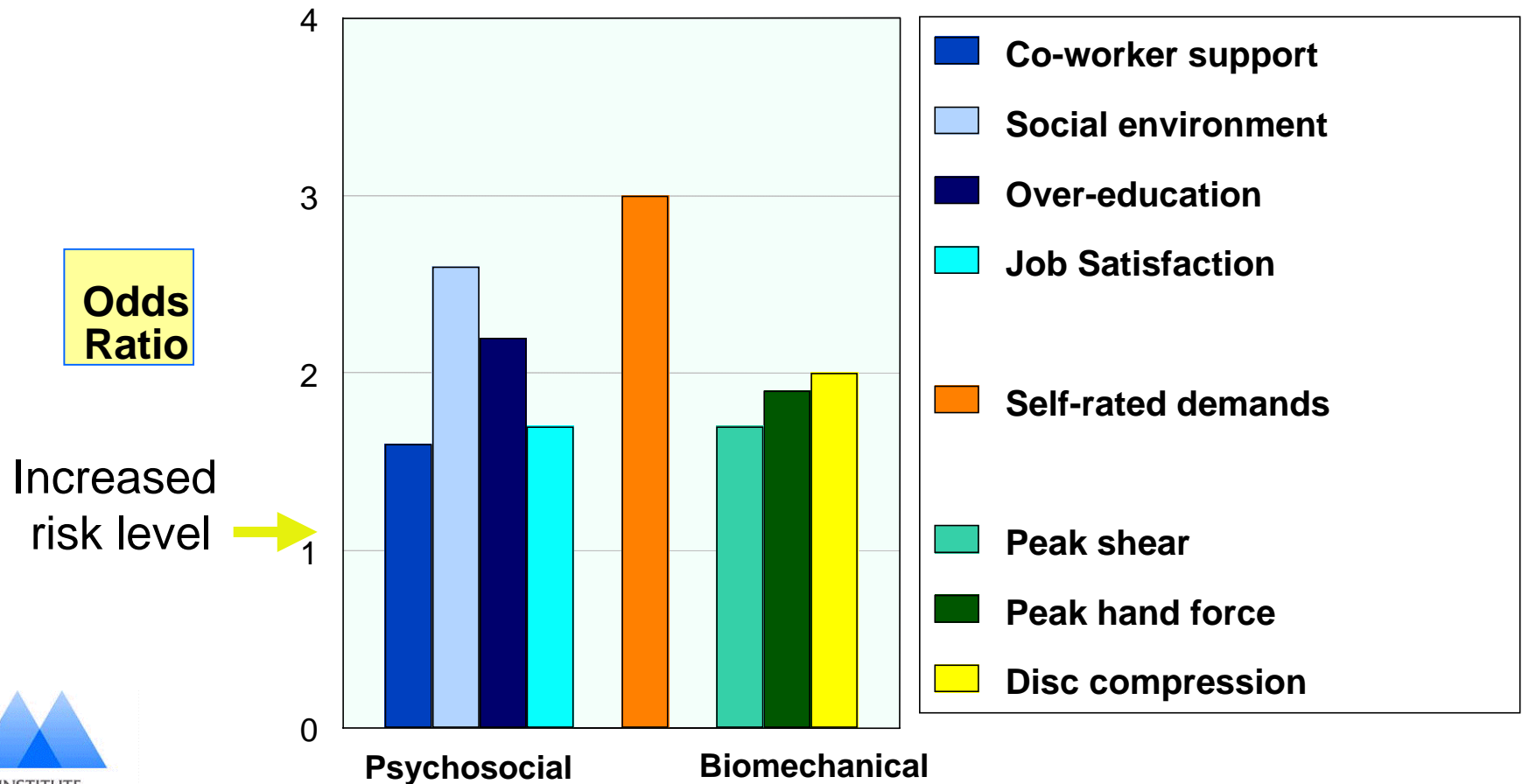
Etiologic Risk Factors for WMSD

- Broad range of physical, psychological and work organization factors epidemiologically established and plausibly explained as etiological **risk factors** for WMSD (Panel on Musculoskeletal Disorders and the Workplace, 2001).

Risk Factors for 'RSI/WMSD'



Risk Factors for Reporting Low-Back Pain in a Manufacturing Workplace



Relative Contribution of Different Risk Factors to reporting LBP at work

Domain(s) in Model	Percent of variance explained by factors (%)
Individual characteristics: BMI*, prior WC claim for LBP	4.7
Workplace psychosocial	11.5
Workplace psychophysical	11.8
Workplace biomechanical	18.3
Full model (all above domains)	43.2



* Body Mass Index Kerr et al., (2001)

Prognostic Factors for WMSD

- Broad range of workplace factors have been associated with variable recovery and return them to work including:
 - On-site Ergonomic changes
 - Improved communication among relevant parties
 - Offers of accommodation

Median days on benefits (95% CI) for combinations of key factors among Ontario workers with WMSD

Workplace Offers for RTW

Change in Pain Grade ^a	Recovery Expectations	Workplace Offers for RTW		% reporting workplace offers
		Yes	No	
improving	soon	14 (7, 25) N=57	14 (13,19) N=95	37.5%
	not soon	26 (15, 35) N=49	29 (23, 42) N=93	34.5%
worsening ^c	soon /not soon	32.5 (16, 113) N=18	112.5 (86, 150) N=76	19.1%

Interventions to Reduce WMSD Burden (1)

- Preventing occurrence of WMSD
 - Proving primary prevention hard given prevalence of MSD among workers
 - In recent systematic review, some limited evidence that participatory ergonomic interventions are effective in reducing MSD
- What would you suggest? How would you evaluate whether it worked?



Interventions to Reduce WMSD Burden (2)

- Promoting recovery from WMSD. In a recent systematic review, moderate evidence that workplace based:
 - Early contact, work accommodation and workplace-health care provider contact promote reductions in work disability
 - Workplace visits and labour management cooperation reduce work disability
- What would you suggest? How would you evaluate whether it worked?



Healthy Workplaces for WMSD?

- The proportion of workplaces actually implementing ways to reduce etiological risk factors and promoting recovery appears limited
- For example, monitoring of relevant psychosocial and physical risk factors and using such information to inform programmes was rare in Canadian health care organizations



Biggest Challenges

- Achieving coverage i.e.
 - Workplaces acting upon evidence of effective preventive and rehabilitative interventions
 - Clinicians acting upon observations and being supported in interacting with workplace parties to achieve change
 - Policy makers using tools to promote both

Acknowledgements

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Key Reference

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