



## Assessing workplace training for skin exposure prevention

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Centre for  
Research Expertise  
in Occupational Disease

*Research that makes a Difference*



# Disclosures

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# Study team

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- Physiotherapy student research project (Sharon Switzer-McIntyre)
- Tanya Gupta (MES student)
- Bethany Zack (MPH student)



# Objectives

- From a series of studies obtaining information from workers with possible contact dermatitis
  - Present results of serial quantitative studies on workplace training
  - Present results of serial detailed quantitative studies on skin specific workplace training
  - Present results of serial qualitative studies on workplace training
- Reflect on implications



# Background – occupational skin disease

- Occupational contact dermatitis (OCD)
- Common
  - Irritants and allergens
- Preventable
- Earlier the diagnosis and definitive management the better the outcome



# Background – regulatory context

- Workplace training/education
  - Legal requirement
- Content
  - Broad OHS training
  - WHMIS training
  - Job specific

# Background – evidence for training for OHS prevention

- General OHS training
  - IWH review
  - General positive impact on OHS behaviours but not stand alone
- Skin specific training (SST)
  - Nicholson et al – BOHRF – 2010 - evidence based guidelines for prevention, identification and management of occ CD and urticaria
    - UK standards of care – translates BOHRF into practice
  - Bauer et al - Cochrane 2010 – prevention of occ irritant CD
    - Updated in 2018
  - Recommend education and training
  - Currently Public Health Ontario project – Hand Dermatitis in Health Care Workers – systematic review

# Background – skin specific training (SST)

- Review of skin specific training programs
  - 12 studies, many focused on wet workers
  - Few provided content on allergic contact dermatitis
  - Effective programs similar in
    - Content
    - Delivery
    - Timing
  - Features included
    - Industry specificity
    - Multimodal learning
    - Participatory elements
    - Skin care resource provision
    - Repeated sessions
    - Management engagement





# SMH context

- Clinic started in 1978
- Dermatitis stream
- Serial studies on the range of prevention, health services, diagnostic, RTW and impacts related to OCD
- Patch test database – patch test results, demographic and clinical information – 2012 and ongoing



# Do workers report receiving workplace training?

# General and skin specific training: study results over time

- 4 questionnaire studies
- Eligibility – being assessed for possible contact dermatitis (W-R, hand)

Year	Number	OHS	WHMIS	SST
2000	100	52%	61%	28%
2000 WR	78	58%	68%	34%
2011	105	77%	84%	44% (glove)
2014	140	81%	80%	49%
2015-16	122	80%	76%	39%

# General and skin specific training: PT surveillance system

- PT all seen (WR and non WR) by year seen

Year	Number	OHS	WHMIS	SST
2012	287	64%	59%	40%
2013	346	66%	61%	40%
2014	352	72%	70%	43%
Overall	985	68%	63%	41%

# General and skin specific training: PT surveillance system

- PT all seen all years WR and non WR

Year	Number	OHS	WHMIS	SST
Overall	984	68%	63%	41%
Work-rel	451	77%	75%	54%
Non work-rel	533	60%	53%	30%



# Workers' description of SST: quantitative studies

# SST: Study 1: 2000

- 100 participants with possible OCD with hand involvement
- 78 with WR CD
- Key exposures
  - Cleaning agents, metals, solvents, oils and greases, plastics
- 34% skin specific training
  - If used gloves, 36% reported glove specific training
  - 35% training specific to hand washing
- Unionized workplaces more likely to report training



## SST: Study 2: 2011

- Physiotherapy student project
- 105 participants with possible WR CD with hand involvement
- Focus on glove use
- Sectors:
  - Manufacturing and automotive – 31%
  - Healthcare - 23%
  - Services – 14%
- Unionized – 44%
- Unionized workplaces and larger workplaces more likely to report training



## SST: Study 2: 2011 cont'd

- 90% reported using gloves
- 44% received training related to gloves
- If received training
  - Employer provided training – 81%
  - Seminars (65%), brochure (16%), video (13%)

# SST: Study 2: 2011 cont'd

Topic	Received training: Reporting content	Received training: Most helpful	If no training: What would be most helpful
Tasks that require glove use	74%	76%	43%
Type of glove to be worn	55%	40%	35%
How to done and doff	55%		15%
When to throw away	48%	24%	15%
Skin care when using gloves	31%		48%
Warning signs of size problems	31%	21%	65%
Glove size	26%	19%	20%

## SST: Study 3: 2014

- Tanya Gupta (MES student)
- 140 participants with possible CD
- Focus on SST
- Exposures
  - Chemicals - 83%
  - Wet work - 74%
- Unionized – 48%
- Unionized workplaces and larger workplaces more likely to report training

# SST: Study 3: 2014 cont'd

Topic	Received training: Reporting content	Received training: Most helpful	If no training: What would be most helpful
Avoiding exposure	87%	61%	72%
Tasks require glove use	78%	23%	36%
Use of creams	52%	25%	67%
Hand washing	92%	56%	36%
Warning signs of size problems	34%	22%	73%
Skin care while using gloves	34%	13%	46%



## SST: Study 4: 2016

- Bethany Zack (MPH student)
- 122 participants with possible CD
- Focus on SST – more detailed understanding of training
- Sectors:
  - Health care - 25%
  - Manufacturing and automotive - 24%
  - Services – 24%
- Unionized – 43%
- Size:
  - <20 – 30%
  - 20-100 - 30%
  - >100 – 40%

## SST: Study 4: 2016 – cont'd

- Employer see OSD as a problem – 31%
- Employer provides skin exams – 9%
- Co-workers experience skin problems – 54%
- MSDS available – 77%
- Use MSDS - 41%

# SST: Study 4: 2016 – cont'd

- Training characteristics
- Who did the training
  - Health and safety staff - 40%
  - Supervisor or manager - 40%
  - Self – 15%
  - External agency – 13%
- Method of delivery
  - Video - 34%
  - Classroom demonstration - 32%
  - Online – 30%
  - Seminar – 19%
  - Workstation demonstration – 17%
  - Posters – 17%
  - Brochures – 15%

# SST: Study 4: 2016 – cont'd

- Content
  - Use of gloves – 92%
  - Avoiding exposure -77%
  - Hand washing – 75%
  - Skin problems resulting from exposure – 32%
  - Use of creams – 28%
  - Early symptoms of skin problems – 19%
- Content was specific to job task – 60%
- Duration
  - < 15m – 41%
  - 15m - 30m - 48%
  - > 60m – 11%
- Attendance recorded – 68%
- Quiz – 51%



## SST: Study 4: 2016 – cont'd

- Amount retained
  - <25% – 13%
  - 50% -51%
  - >75% – 36%
- Supervisor or manager followed up – 28%
- SST was useful – 85%
- SST was common sense – 100%

# SST: Study 2,3,4: Summary

Topic	2011	2014	2016
Avoiding exposure		87%	77%
Tasks that require glove use	74%	78%	92%
Skin care when using gloves	31%	34%	
Warning signs of size problems	31%	34%	19%
Use of hand creams		52%	28%
Hand washing		92%	75%



# Workers' perspectives on training: qualitative studies



## SST: Qualitative study 1: 2015

- Bethany Zack (MPH student)
- Participants being assessed for CD that was possibly WR
- 14 participants
- Age range 20-64, 57% male
- Health care, manufacturing, automotive, food and beverage, services, municipal and construction
- Varying size of workplace, 36% unionized
- Varying duration of dermatitis from < 3m to > 5y
- 71% general OHS training, 86% WHMIS training

# SST: Qualitative study 1: 2015 cont'd

- Training characteristics
  - Most had had general OHS/WHMIS training, few SST
  - Healthcare workers – hand hygiene
  - Term “training” associated with safety and injury prevention rather than exposure or disease
  - Varied delivery methods, often passive – signing documents, completing online training during downtime, being able to locate a manual rather than understand it
  - Reinforcement rare, few described supervisors leading by example or refresher training
  - Not memorable – either forgetting content or being saturated
  - Questioned whether the training had been effective – had they changed their behaviours?



## SST: Qualitative study 1: 2015 cont'd

- Worker Perspectives: trust in information sources
  - Trusted those who had experience with their job tasks (supervisors, co-workers)
  - OHS reps – not as important or trustworthy – no experience on the job
  - Some trusted health care provider, trust in scholarly resources found online from medical reference websites
- Worker Perspectives: confidence in prevention knowledge
  - Mixed responses
  - Those that felt confident attributed to years on job, outside knowledge from educational background and workplace training

# SST: Qualitative study 1: 2015 cont'd

- Worker Perspectives: perceptions about OSD
  - OSD uncommon – they are unique, few others had problems
    - therefore not addressed, no SST, also cost
    - Perceived that unionized workers had more ability to address workplace health and safety concerns
    - Even though they had a OSD, they thought their workplace contained no hazards and materials labelled as environmentally friendly were not hazardous
- Worker Perspectives: concerns for co-workers
  - Concern for co-workers, particularly young and new workers



## SST: Qualitative study 1: 2015 cont'd

- Workplace health and safety culture
  - Employer focused on productivity, product protection, patient protection
  - Little embodiment of health and safety practices from supervisors
  - Employer desired to limit reporting of lost time injuries
  - Some training not provided in workplace because employer thought it had been provided in their vocational training
  - Training not high priority
  - Training motivated by fear of penalty, legal obligation



# SST: Qualitative study 1: 2015 cont'd

- Worker attitude toward training
  - Training they had was vague, irrelevant to their daily tasks which lead to lack of interest in training, feeling overwhelmed or saturated by training
  - Wanted training early in employment
  - Content - workplace hazards and potential for OD
  - Hands-on
  - Specific to job task
  - Wanted training delivered in a visual manner as opposed to written word or oral presentations
  - Most training content common sense

# SST: Qualitative study 1: 2015 cont'd

- Summary
  - Few had SST
  - Desire hands-on training relevant to specific job tasks
  - Place trust in supervisors who have practical experience
  - Conflicted about employer motivation for training
    - Concern for worker health and safety vs financial and legal motivators
  - Some questioned value and effectiveness of training received



## SST: Qualitative study 2: 2017

- Participants being assessed for CD that was possibly WR
- 24 participants, all OCD
- Age range 21-62, 54% male
- Health care, manufacturing, automotive, food and beverage, services, municipal and construction
- Varying size of workplace, 58% unionized
- 58% general OHS training, 88% WHMIS training
- None had received SST training

# SST: Qualitative study 2: 2017 cont'd

- Past training experience
  - Lacking depth of information
  - Too much or too little information
  - Forgettable (content, passive delivery, lack of follow-up)
  - Focused on injury
  - Questioned usefulness
  - “Good” training: first aid, CPR
  - “Bad” training: WHMIS

# SST: Qualitative study 2: 2017 cont'd

- Desired training
  - Content
    - Exposures, health effects, prevention
  - Methods
    - Multimodal, in-person, hands-on
  - Trainer
    - Different views: external expert vs internal knew job
  - Timing
    - Start of employment
    - If not mandatory doesn't get done

# SST: Qualitative study 2: 2017 cont'd

- Barriers and facilitators
- Worker/training level
  - Value beyond workplace
  - Engaging the healthy worker
  - Language
  - Generational differences
- Organizational level
  - Priority/problem recognition/statistics
  - OHS culture
  - Time
  - Supervisor support
  - Business size
- Regulatory level
  - Mandatory



# Conclusions

- Value of mixed methods – quantitative and qualitative
- Value of tracking over time (PT surveillance database)
  - while there has been some improvement of worker reporting workplace training over 20 years, still a significant portion with no training, particularly SST
- Even if workers receive SST, gaps in content
- How training is being delivered is not necessarily how workers want it delivered
- Views on who best to deliver training varies
- Importance of workplace culture, role of supervisor and regulatory context