



Determinants of Healthcare Workers' Compliance with Infection Control Procedures

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On behalf of the CIHR SARS Study Team





Objectives



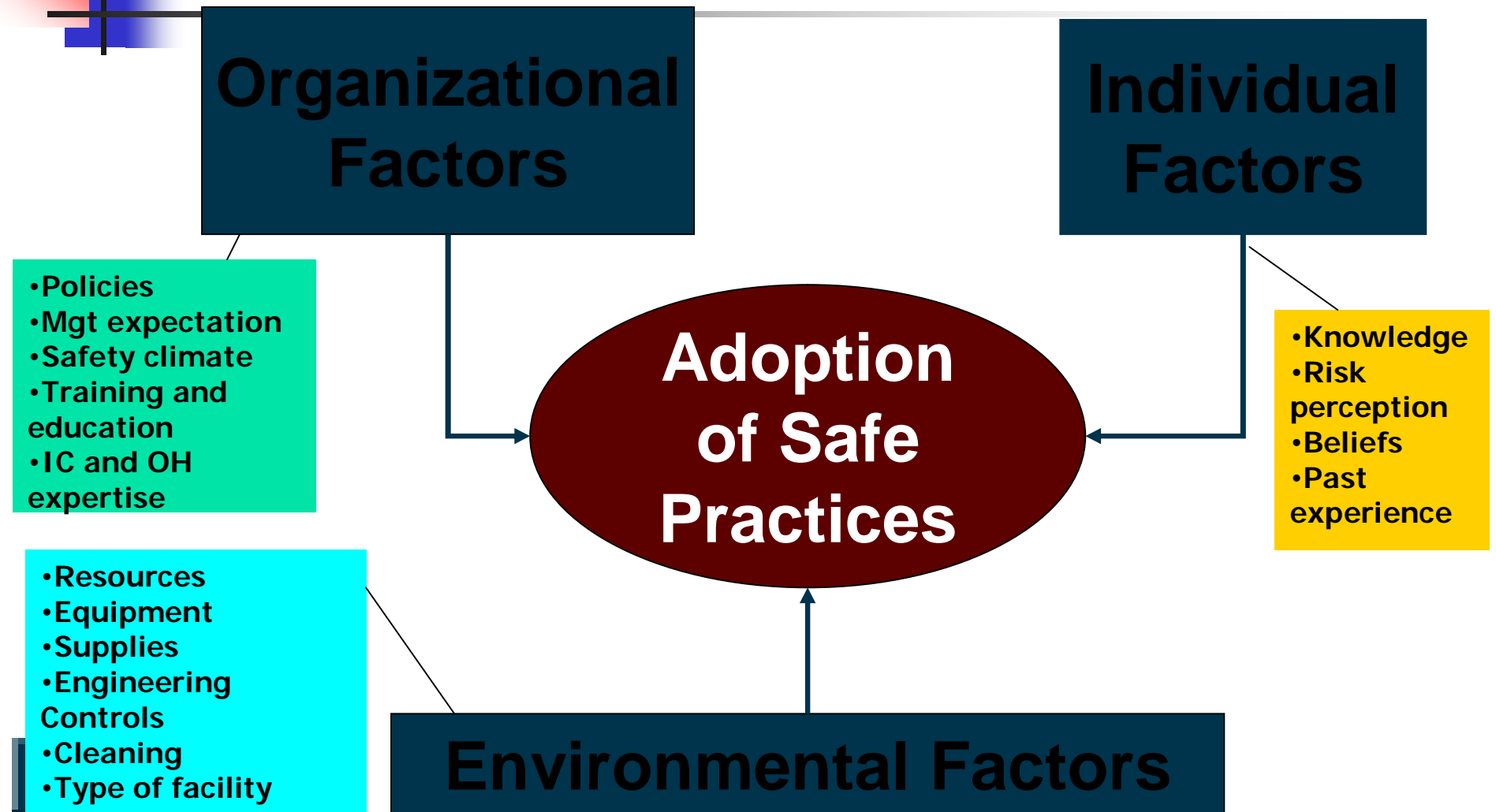
- Outline results of cross-sectional survey of HCWs regarding compliance with IC procedures in 16 acute care facilities
- Summarize the conclusions from the study
- Suggest areas for future research



Methods

- Cross-sectional survey approach in 16 acute care facilities (Oct 2004-August 2005)
- Based on PRECEDE framework and based on previous work done as part of Change Foundation Report on Facial Protection
- Administered to ICU, ER, General Med staff
- 103 item questionnaire/20 minutes to complete

PRECEDE Framework Approach





Analysis

- Compliance = dependent variable measured by six “questions”
- Independent variables (based on Precede framework) examined for association with compliance
- Variables sig by bivariate analyses further analyzed by multinomial logistic regression model for association with the categorical compliancy measure



Results: Demographics

Characteristic	N (Percent)
Female	1,037 (82)
Male	235 (18)
ICU nurse	227 (18)
ER nurse	240 (19)
GM nurse	465 (35)
Physician	114 (9)
Respiratory Therapist	118 (9)
Physiotherapist	126 (10)
Full-time	862 (68)
Part-time	270 (21)
Casual	138 (11)



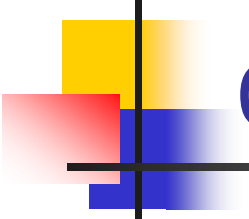
Response to Questions Pertaining to Infection Control

Statement	Number of Responses (percent)				
	Always	Often	Sometimes	Rarely	Never
I follow the safety rules for IC	48	47	4	<1	0



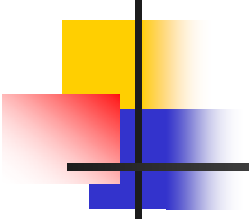
Compliance with IC measures

Variable	Response > 70% of time
Wear N95 for airborne exposure situations	71%
Wear protective eyewear for BBF exposure	52%
Gloves for BBF exposure	91%
Gown for BBF exposure	62%



Other items of note re compliance....

- Males less compliant
- Physicians less compliant
- Older workers less compliant
- No difference between HCWs with direct contact with SARS pts and those who had no contact



Response to questions related to Infection Control...

Statement	Response			
	Excellent	Sufficient	Moderate	Insufficient
I believe my current level of training re protective measures against Infectious Diseases to be....	5%	37%	41%	18%

Perception of Training

Variable	Response				
	Strongly Disagree	Somewhat Disagree	Neutral	Agree	Strongly Agree
Employees encouraged to obtain training in OH and safety issues, such as safe pt-handling techniques	6	17	21	38	17
Received sufficient training in IC during staff training	12	25	21	34	7
Offered the necessary training to protect myself from communicable respiratory diseases such as SARS	10	20	20	40	10
Received proper training, including fit-check	14	15	11	41	18

Multinomial logistic model of compliance with respect to total environmental, organizational and individual scores

Variable	Low Total Score		Medium Total Score		High Total Score	
	OR	<i>p</i>	OR	<i>p</i>	OR	<i>p</i>
<i>Environmental Total Score</i>						
Low	1.00		1.00		1.00	
Medium	1.84	0.50	1.57	.121	2.66	.003
High	2.26	.026	2.49	.006	4.62	<.001
<i>Organizational Total Score</i>						
Low	1.00		1.00		1.00	
Medium	1.60	.139	1.92	.026	2.21	.016
High	1.86	.094	2.45	.008	3.96	<.001
<i>Individual Total Score</i>						
Low	1.00		1.00		1.00	
Medium	0.63	.134	0.64	.105	0.79	.451
High	0.97	.031	0.83	.567	1.22	.547



Other points of note

- People scoring high on environmental factors 12X as likely to also report high compliance
- Those scoring high on organizational factors were 10X as likely to report high compliance
- No stat sig associations b/w high self-reported compliance and individual factors



Conclusions

- Clear differences between occupation, gender and age with regard to compliance
- Compliance with IC procedures sig affected by **organization and environment** they work in but not by their personal beliefs or attitudes
- Study suggests that importance of training may be less related to building knowledge and more to demonstrating organizational commitment to HCWs.



Conclusions

- Training should focus less on changing beliefs and more on ensuring that HCWs know organizational policies, procedures and expectations
- New initiatives should focus on availability of resources, equipment and supplies, management support and policy and procedure development



Research questions/Next Steps:

- a) How can the **safety climate** of HC institutions be improved? What approaches best facilitate an organizational culture that promotes safety?

- b) What are the **best mechanisms to provide communication** to front-line workers in order to 1) ensure appropriate infection control practices and 2) ensure HCWs feel safe?



Research....(cont'd)

- c) What are the **best mechanisms to provide/receive feed-back** to front-line HCWs in order to ensure infection control measures are practical and feasible while still enhancing safety?

- d) What are the **best ways to train** HCWs on appropriate use of personal protection equipment? What is the feasibility for fit-testing and “just-in-time training”?



Thank you



Annalee Yassi, Chun-Yip Hon, Ray Copes, Bruce Gamage, Karen Lockhart, Catherine Kidd, Mickey Kerr, Elizabeth Smailes, Sharon Saunders, Marc Corbiere, Robyn Gershon, Kristine Qureshi, Philip Bigelow