

Joining the Ranks: Mannequins and the Inside Story
Dr. Ghazwan Altabbaa and Dione Kolodka, Alberta Health Services
Broadcast live from the 2018 IPAC Canada conference

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Infection Prevention and Control Canada – Banff, Alberta



Joining the Ranks: Mannequins and the Inside Story

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www.webbertraining.com

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CME Disclosure

- Ghazwan Altabbaa is a physician at Alberta Health Services and Faculty member at University of Calgary.
- Dione Kolodka is a staff at Infection Prevention Control at Alberta Health Service.

- No financial disclosures for both.

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Agenda

What is simulation?

How does simulation look like for Infection Control?

IPC and Medical Education

Our story & their story: Mannequins reporting

Healthcare providers joining the conversation

What is next?

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What is simulation

The technique of imitating the behaviour of some situation or process by means of a suitably analogous situation or apparatus, especially for the purpose of study or personal training.

Some definitions

- Fidelity refers to the accuracy with which the simulation and/or simulation device imitates reality.
- High, Medium, Low: high would be full body mannequin with physiologic modelling and low would be basic CPR manikin.
- **Task trainers:** devices designated to provide experiences in specific skills or simulation (e.g. airway management).
- **Full-body simulator:** electromechanical outfitted manikin of varying fidelity.
- **VR:** computer-generated representation of a physical entity (e.g. bronchoscopy)
- **Haptic:** physical feedback of device.
- **Immersive environment:** full-scale simulation by physical devices alone or in combination with VR to recreate a health-care setting.
- **Debriefing:** reflective post-scenario discussion of key activities, events and principles from experience.

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Some history

- First introduced in 1960's in anaesthesia, then expanded to other medical specialties. Dr. Stephen Abrahamson at USC.
- Especially in the 1990's widespread: ability of simulation to provide a unique procedural and cognitive training platform and train repetitively on complex tasks where mistakes become powerful learning vehicles rather than negative outcomes at bedside.
- The old axiom of see one, do one, teach one (practising on patients) may no longer be appropriate given concern with patient safety.
- Now it is expected that trigness have some basic competencies before and during learning with actual patients.
- This applies to all levels of education from UME to PGME and CME.

- More ingrained in medical education given move towards development and demonstration of learner competencies.
- Identified as a high research priority in medical education.
- At the regulatory level, simulation is allowed to meet the minimum quotas for procedures, situations, and management challenges.
- American board of anesthesiology has mandated simulation as part of its maintenance of certification program since 2000.
- It's category 3 in our MOC according to RC.
- It is likely that simulation will play an increasing role in recertification activities.

Video 1

- This is a sample video of a simulation based activity.

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Video 2

- This is a sample video of a simulation based activity that has an IPC learning objective.

IPC and Medical Education

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How much do medical students know about infection control?

C.M. Mann ^{a,*}, A. Wood ^b

Journal of Hospital Infection (2006) 64, 366–370

Survey of teaching/learning of healthcare-associated infections in UK and Irish medical schools

D. O'Brien ^{a,b}, J. Richards ^c, K.E. Walton ^d, M.G.A. Phillips ^e,
H. Humphreys ^{a,b,*}

Journal of Hospital Infection (2009) 73, 171–175

Brief Report

Knowledge, source of information, and perception of Portuguese medical students and junior doctors of infection control precautions

David Peres MD, MPH ^{a,*}, Milton Severo PhD ^{b,c,d}, Maria Amélia Ferreira MD, PhD ^b

American Journal of Infection Control 44 (2015) 1223–5

SHORT COMMUNICATION

Do medical students receive training in correct use of personal protective equipment?

Amrita John^{a,b}, Myreen E. Tomas^{a,b}, Aditya Hari^c, Brigid M. Wilson^b and Curtis J. Donskey^{b,c}

^aDepartment of Medicine, Division of Infectious Diseases and HIV Medicine, University Hospitals Case Medical Center, Cleveland, OH, USA; ^bGeriatric Research, Education and Clinical Center, Cleveland VA Medical Center, Cleveland, OH, USA; ^cCase Western Reserve University School of Medicine, Cleveland, OH, USA

ABSTRACT

Background: Healthcare personnel often use incorrect technique for donning and doffing of personal protective equipment (PPE).

Objective: We tested the hypothesis that medical students receive insufficient training on correct methods for donning and doffing PPE.

Methods: We conducted a cross-sectional survey of medical students on clinical rotations at two teaching hospitals to determine the type of training they received in PPE technique. The students performed simulations of contaminated PPE removal with fluorescent lotion on gloves and were assessed for correct PPE technique and skin and/or clothing contamination. To obtain additional information on PPE training during medical education, residents, fellows, and attending physicians completed written questionnaires on PPE training received during medical school and on knowledge of PPE protocols recommended by the Centers for Disease Control and Prevention.

Results: Of 27 medical students surveyed, only 11 (41%) reported receiving PPE training, and none had received training requiring demonstration of proficiency. During simulations, 25 of 27 (92.5%) students had one or more lapses in technique and 12 (44%) contaminated their skin with fluorescent lotion. For 100 residents, fellows and attending physicians representing 67 different medical schools, only 53% reported receiving training in use of PPE and only 39% selected correct donning and doffing sequence.

Conclusions: Our findings suggest that there is a need for development of effective strategies to train medical students in correct use of PPE.

Abbreviations: PPE: Personal protective equipment; MRSA: Methicillin-resistant *Staphylococcus aureus*; SARS: Severe acute respiratory syndrome; MERS: Middle East respiratory syndrome; WHO: World Health Organization; CDC: Centers for Disease Control and Prevention; OSCE: Objective structured clinical examination

ARTICLE HISTORY

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Ebola; medical students; infection control; training; education

MEDICAL EDUCATION ONLINE, 2017

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Newsweek
SARS
 What You Need to Know

TORONTO STAR
Mystery Bug Shuts Hospital Emergency Room

Annals of Internal Medicine | **IDEAS AND OPINIONS**
Protecting Health Care Workers From Ebola: Personal Protective Equipment Is Critical but Is Not Enough
 William A. Fischer II, MD, Noreen A. Hynes, MD, MPH, and Trish A. Perl, MD, MSc

AIC state of the science report

Protecting health care workers from SARS and other respiratory pathogens: A review of the infection control literature

Bruce Gamage, RN, BSN, CIC,* David Moore, MDCM, MSc, FRCPC,[†] Ray Copes, MD, MSc,^{††} Annalee Yaasi, MD, MSc, FRCPC,^{††} Elizabeth Bryce, MD, FRCPC,^{††} and members of The BC Interdisciplinary Respiratory Protection Study Group Vancouver, British Columbia, Canada

Country / State	Probable	Confirmed	Total of confirmed and probable/investigated
Guinea	Cases: 207	950	~1,157 deaths
	Deaths: 175	535	~1,157 cases
Liberia	Cases: 2,769	927	~3,298 deaths
	Deaths: 1,108	490	~3,098 cases
Sierra Leone	Cases: 238	2,016	~2,254 deaths
	Deaths: 48	574	~2,304 cases
USA	Cases: 1	19	~8 deaths
	Deaths: 1	7	~20 cases
Spain	Cases: 40	30	~42 deaths
	Deaths: N/A	42	~70 cases
Philippines	Cases: 0	1	~1 case
Malaysia	Cases: 0	0	~1 case
France	Cases: 0	1	~1 case
Germany	Cases: 0	0	~1 case

Original Investigation

Contamination of Health Care Personnel During Removal of Personal Protective Equipment

Myreen E. Tomas, MD, Srisha Kundrapu, MD, Priyaleela Thota, MD, Venkata C. K. Sunkesara, MD; Jennifer L. Cadnum, BS; Thirveen Sankar Chittoor Maria, MS; Annette Jenckson, BS, CIC; Marguerite O'Donnell, RN; Trina F. Zaporsky, RN; Michelle T. Hecker, MD; Amy J. Ray, MD; Brigid M. Wilson, PhD; Curtis J. Donskey, MD

A method for evaluating health care workers' personal protective equipment technique

Elizabeth L. Bearn, MSN, RN,[‡] Shawn G. Gibbs, PhD, CIH,[§] Kathleen C. Boultier, BA, RN,[¶] Marcia E. Beckerdite, MSN, RN, CIC,[¶] and Philip W. Smith, MD[†]
(Am J Infect Control 2017;39:415-20.)

Most HCWs not very good at donning and doffing PPE with high rates of skin/clothing contamination

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Our story & their story: Mannequins reporting

- Here we would like to review some of the observations from our Internal Medicine Residency Program

Healthcare providers joining the conversation

- Here we would like to review some of the results in conversations with front line healthcare providers.

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What is next?

- Discuss some of the action steps applied at this time in residency program.

Discussion

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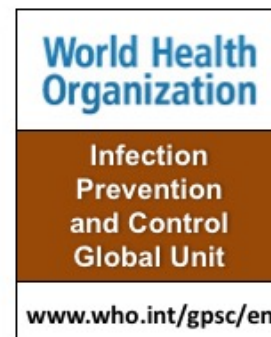


www.webbertraining.com/schedulep1.php	
June 13, 2018	<p><i>(South Pacific Teleclass)</i> <u>INVOLVING PATIENTS IN UNDERSTANDING HOSPITAL INFECTION PREVENTION AND CONTROL USING VIDEO-REFLEXIVE METHODS</u> Speaker: Dr. Mary Wyer, University of Sydney, Australia</p>
June 21, 2018	<p><i>(FREE Teleclass)</i> <u>THE FUTURE OF INFECTION CONTROL – BRIGHT OR BLEAK?</u> Speaker: Martin Kiernan, University of West London</p>
July 17, 2018	<p><i>(FREE European Teleclass)</i> <u>HOSPITAL INFECTION CONTROL FROM A DEVELOPING COUNTRY'S PERSPECTIVE</u> Speaker: Dr. Aamer Ikram, Director, National Institute of Health, Islamabad, Pakistan</p>
July 19, 2018	<p><u>FLOOD REMEDIATION IN HEALTHCARE FACILITIES – INFECTION CONTROL IMPLICATIONS</u> Speaker: Andrew Streifel, University of Minnesota</p>

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