THEMES IN EMERGENCY MEDICINE RESEARCH - 2010

Technology Utilization to analyse and improve patient flow

- patient tracking technologies
- discrete event simulation
- patient flow simulation
- performance indicator analysis
- implementation of information technology

Pediatric Pain in the Acutely ill and Injured Setting

- Assessment of pain
- Therapeutics of pain
- Non-pharmacological management of pain
- Knowledge translation of pain management to clinicians

Health Services Research

- Utilization of non-physicians in the care during emergencies
- Left without being seen by a physician
- Returning to the emergency department for care shortly after discharge
- Emergency Department (ED) overcrowding
- Efficient management of common childhood acute infections in ED
Evidence-based therapeutics in the Emergency
www.pretx.org

- Translational Therapeutics
- Medication Safety
- Adverse Events
- Patient Advocacy
- Safe and effective Sedation
- Infectious Diseases
- Toxicology
- Complementary and Alternative Medicine

Simulation

- Simulation Based Education
- Pediatric Resuscitation
- Debriefing

Other

- Obesity as a risk factor in pediatric acute injury
- Determinants of Influenza vaccination uptake in Canadian Adolescents
- Orthopedic management in the emergency
- Abdominal trauma
- Risk of admission to ICU from the Emergency

Who to contact to chat about research in Emergency:

Call Jenni at #7333

Ran Goldman – Research Director
Quynh Doan
Geoffery Hung
Adam Cheng
Ann-Marie White – Research Coordinator
Any other Emergency Doc
More Details about Our Themes:

**Technology Utilization to analyse and improve patient flow**

**Systematic Reviews**
Which patient tracking technologies have been applied successfully in pediatrics, emergency medicine, and pediatric emergency medicine?

For those technologies in which clinically relevant patient care information (e.g. time seen by a physician, length of time under direct physician/nurse/clinician care) is collected, what is the accuracy and precision of the collected data?

**Prototype Design and Testing**
Based on the findings of the reviews, our research team, in collaboration with faculty from Emily Carr University, will develop a prototype system of devices and sensors to collect information on simulated pediatric emergency department patient care encounters in a controlled environment to understand the accuracy and precision of data collection. This information will further the understanding of which technologies might be successfully implemented in actual pediatric emergency department conditions.

**Discrete Event Simulation/Operations Research**
My previous research in discrete event simulation of pediatric emergency medicine patient care has demonstrated that a validated model (the Patient Flow Model) of patient flow and resource use can be implemented. In this research, we had demonstrated the successful simulation of changes in emergency department operations that produced more efficient use of resources and improved access to patient care, which in turn led to the introduction of successful actual operational changes.

Ongoing research in refining the Patient Flow Model will be undertaken to study new change ideas without actual disruption of emergency department operations. The Patient Flow Model will also be used to assist in the development of a data collection tool with the prototype patient tracking system to ensure that valid information is collected.

**Health Services Research**

A 4 stages study of the impact of using Physician assistants (PA) in the Pediatric ED at the triage level, using developed clinical guidelines allowing them to initiate treatment and discharge patients without having to receive full assessment by a pediatric emergency physician. This is a PhD thesis project and is currently in the development phase.

A piece of research titled, Oral Rehydration clinical pathway for Gastroenteritis in the Emergency Department (ED): Impact on Length of Visit and Health Care Utilization. In this study we are looking at a comparison of ED length of visits, intravenous rehydration
use, admission rate and re-visits to the ED: before, during and after implementation of a clinical guideline standardizing the management of mild to moderate dehydration due to gastroenteritis using oral rehydration therapy in children 6 months to 17 years old.

Evidence-based therapeutics in the Emergency
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Translational Therapeutics - From bench to bedside - pharmacokinetic and pharmacodynamic studies of new medication.

Medication Safety - Determining sources for therapeutic errors in the acute care setting and discovering ways of preventing them in the future.

Adverse Events - Discovering and preventing side effects of common over the counter (OTC) and prescribed medications. Promoting cost-effective monitoring modalities while under pharmacologic treatment.

Patient Advocacy - Understanding factors affecting parental and patient compliance with prescribed medications.

Pain management in children - Trialing new drugs and devices to ensure proper analgesia during procedures in pediatrics.

Safe and effective Sedation - Medication, protocols and monitoring for procedural sedations in children.

Infectious Diseases - Dosing and length of treatment with antibiotics.

Toxicology - Accidental and non-accidental overdosing of medications, natural health products and household materials.

Complementary and Alternative Medicine - Utilization, indications, physician and family attitudes, and adverse reactions of natural health products

Simulation

DASH – assisted debriefing for simulation-based learning

Development and implementation of a Crisis Resource Management Course for Paediatric Resuscitation Team Members

Characterizing qualities of novice debriefers during simulation-based video debriefing: A multi-center trial
EXPRESS Trial – Examining Pediatric Resuscitation Education using Simulation and Scripting: A multi-center trial

Validation of the Behavioural Assessment Tool (BAT) for assessment of crisis resource management skills in pediatric resuscitation teams

Debriefing Assessment for Simulation in Healthcare (DASH) – Development and validation of a novel debriefing evaluation tool: A multi-center trial

Development and validation of a Novel Cognitive Performance Tool for assessment pediatric resuscitation team performance

Development and validation of a multiple choice question test for assessment of PALS-based knowledge for PALS providers

Development and Implementation of a web-based research portal for facilitation of simulation-based research

Development and assessment of a debriefing script for PALS related learning outcomes

State of Pediatric Simulation in Canada – A Needs Assessment Survey and Report from the Canadian Pediatric Simulation Network
Recent papers Published by Investigators from the Emergency Department

2. Hung G. Principles of managing children with asthma in the emergency department. Paediatric Child Health
3. Goldman RD, Koren G: Keeping it safe in the paediatric emergency department – drug errors and ways to prevent them. Paediatric Child Health
4. Goldman RD. Paediatric emergency medicine - the new frontier. Paediatric Child Health
15. Dehghani N. Ingested Foreign Bodies in Children: BC Children’s Hospital Emergency Room Protocol. BCMJ.
17. Phillips B: Opposites Attract: A Case of magnet ingestion. CJEM


29. Bjorn, P; Burgoyne, S; Crompton, V; MacDonald, T; Pickering, B; Munro, S. Boundary factors and contextual contingencies: configuring electronic templates for healthcare professionals. European Journal of Information Systems.

