September 1989
20-25 intensivists
Commitment to collaborate in multicentre clinical research in critical care
CCCTG Track Record

- >300 members
- >50 active research programs
- >100 publications
- High success rate with granting agencies
- Community mentorship/trainee education
- International Collaborations: Brazil, Europe, ANZICS, Saudi Arabia
Functional Disability 5 Years after Acute Respiratory Distress Syndrome

Margaret S. Herridge, M.D., M.P.H., Catherine M. Tansey, M.Sc., Andrea Matté, B.Sc., George Tomlinson, Ph.D., Natalia Diaz-Granados, M.Sc., Andrew Cooper, M.D., Cameron B. Guest, M.D., C. David Mazer, M.D., Sangeeta Mehta, M.D., Thomas E. Stewart, M.D., Paul Kudlow, B.Sc., Deborah Cook, M.D., Arthur S. Slutsky, M.D., and Angela M. Cheung, M.D., Ph.D., for the Canadian Critical Care Trials Group

Dalteparin versus Unfractionated Heparin in Critically Ill Patients

The PROTECT Investigators for the Canadian Critical Care Trials Group and the Australian and New Zealand Intensive Care Society Clinical Trials Group
• 63 ICU member sites

• Pivotal large RCTs:
  SAFE
  NICE/SUGAR
  RENAL

• 70+ manuscripts
• 11 sites
• NIH-funded
• 5 papers in *New England Journal of Medicine*
<table>
<thead>
<tr>
<th>Author</th>
<th>Focus</th>
<th>Year</th>
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<td>Van den Berghe</td>
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<td>Annane</td>
<td>Steroids</td>
<td>2002</td>
<td>1052</td>
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## Most Cited RCTs in Critical Care

<table>
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<tr>
<th>Author</th>
<th>Journal</th>
<th>Year</th>
<th>Focus</th>
<th>Citations</th>
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<td>van den Berghe</td>
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<td>Kress</td>
<td>NEJM</td>
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<td>Sedation</td>
<td>756</td>
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<td>Brunkhorst</td>
<td>NEJM</td>
<td>2008</td>
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<td>NICE SUGAR</td>
<td>NEJM</td>
<td>2009</td>
<td>Glucose</td>
<td>652</td>
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Investigator-Led Critical Care Trials Groups
International Forum for Acute Care Trialists
Interim Executive

Derek Angus (Treasurer)
John Marshall (Chair)
Kathy Rowan (Secretary)
Steve Webb (Vice-chair)
The International Forum for Acute Care Trialists (InFACT) seeks to improve the care of acutely ill patients around the world through the promotion of high quality clinical research into the causes, prevention, and optimal management of acute, life-threatening illness.
Critically Ill Patients With 2009 Influenza A(H1N1) Infection in Canada

Anand Kumar, MD
Ryan Zarychanski, MD
Ruxandra Pinto, PhD
Deborah J. Cook, MD, MSc
John Marshall, MD
Jacques Lacroix, MD
Tom Stelfox, MD, PhD
Sean Bagshaw, MD, MSc
Karen Choong, MD
Francois Lamontagne, MD
Alexis F. Turgeon, MD, MSc
Stephen Lapinsky, MD
Stéphane P. Ahern, MD
Orla Smith, MSc

Context Between March and July 2009, the largest number of confirmed cases of 2009 influenza A(H1N1) infection occurred in North America.

Objective To describe characteristics, treatment, and outcomes of critically ill patients in Canada with 2009 influenza A(H1N1) infection.

Design, Setting, and Patients A prospective observational study of 168 critically ill patients with 2009 influenza A(H1N1) infection in 38 adult and pediatric intensive care units (ICUs) in Canada between April 16 and August 12, 2009.

Main Outcome Measures The primary outcome measures were 28-day and 90-day mortality. Secondary outcomes included frequency and duration of mechanical ventilation and duration of ICU stay.

Results Critical illness occurred in 215 patients with confirmed (n=162), probable (n=6), or suspected (n=47) community-acquired 2009 influenza A(H1N1) infection. Among the 168 patients with confirmed or probable 2009 influenza A(H1N1), the mean (SD) age was 32.3 (21.4) years; 113 were female (67.3%) and 50 were children (29.8%). Overall mortality among critically ill patients at 28 days was 14.3% (95% confidence interval, 9.5%-20.7%). There were 43 patients who were aboriginal Canadians (25.6%). The median time from symptom onset to hospital admission was 4 days (interquartile range [IQR], 2-7 days) and from hospitalization to ICU admission was 1 day (IQR, 0-2 days). Shock
Critical Care Services and 2009 H1N1 Influenza in Australia and New Zealand

The ANZIC Influenza Investigators*

ABSTRACT

BACKGROUND

Planning for the treatment of infection with the 2009 pandemic influenza A (H1N1) virus through health care systems in developed countries during winter in the North-Hemisphere is important to control the spread of infection. Strategies include:…
InFACT: a global critical care research response to H1N1

The H1N1 pandemic presents acute care researchers with an extraordinary challenge and an unprecedented opportunity. By early October, 2009, there had been more than 340 000 reported cases of H1N1 infection in 191 countries, with more than 4100 deaths.1 WHO initially projected that up to 2 billion people could become infected with the virus over the next 2 years.2 Although vaccination programmes and other factors should reduce this number, plausible estimates of the number of infected individuals who might benefit from admission to intensive care range from 200 000 to 10 million. Influenza killed at least 50 million people during the 1918 pandemic.3 Today, with antibiotics and antiviral agents, mechanical ventilation, and the and treatment of severe H1N1 disease. In parallel, we will develop a biobank to facilitate studies of genetic susceptibility and clinical biology.

We are starting a programme of collaborative, investigator-led randomised trials of treatment strategies that target both the virus and the host response. Our initial three studies will evaluate inexpensive interventions that are available in both the developed and the developing world: corticosteroids and statins. They use adaptive designs to ensure that results can be quickly incorporated into practice, and that ineffective treatments are dropped. As measures of efficacy, they will measure survival of individual patients and the rapidity with which patients can be liberated from limited intensive-care resources.

- Lancet 375:11, 2010
• Epidemiology
• Therapy
• Process of research
To create a global registry of critically ill patients with H1N1 infection by harmonizing existing databases:

- ARDSNet
- Australia and New Zealand (ANZICS)
- Canadian CCTG
- ESICM
- ICNARC
To facilitate global studies of genetic susceptibility and biologic response to severe H1N1 disease
InFACT-Affiliated Clinical Trials

- **STIP Trial**  Rosuvastatin vs Placebo
  
  USA  Gordon Bernard, PI

- **CortiFlu**  Hydrocortisone vs Placebo
  
  France  Djillali Annane, PI

- **CHAT Trial**  Rosuvastatin vs Placebo
  
  Canada  Karen Burns, John Marshall, PIs
To explore ethical issues guiding clinical research during a global pandemic

International Severe Acute Respiratory Infection Consortium (ISARIC)

- Heads of International Research Organizations
- Severe acute respiratory infection top priority
- Global research network for emerging infectious threats
InFACT / Li Ka Shing Knowledge Institute Colloquium on Pandemic Research Preparedness

Toronto, Canada

June 27-29, 2011
InFACT Working Groups

- Pandemic research preparedness
- Outcome measures
- Global research capacity
InFACT Working Group on Metrics and Outcome Measures

- Formal data-driven process
- International buy-in
- Empiric validation
Global VOICES

A Virtual Organization of Intensive Care and Emergency Services

• Definition of acute care services

• Characterization of clinical and research capacity

• Web-based network
A Perpetual RCT on SARI

- Focus – severe respiratory infection
- 12 – 15 national trials groups
- Adaptive design
- Multiple interventions
- Goal: Eliminate SARI as one of top ten causes of death globally
Other InFACT Initiatives

• ACCESS study
• Education and mentoring
• Global point prevalence study
• Meetings
InFACT Partners

• World Federation of Societies of Intensive and Critical Care Medicine

• World Federation of Societies of Paediatric Intensive Care Medicine

World Health Organization
Conclusions

- The foundation for global critical care collaborative research is strong
- These collaborations will change critical care research
Thank you!!