Canadian Pediatric Anesthesia Research Network
HIGHLIGHTS: Launch Meeting, November 5, 2009

OVERVIEW

With the support of an MICYRN Seed Grant, 13 pediatric anesthesiology team members met in Toronto on November 5, 2009 to explore the creation of a Canadian National Pediatric Anesthesia Research Network.

The group agreed to form a research network to advance excellence in pediatric research in Canada on the "big questions" that require collaborative research, under the proposed name **PINC** – the *Pediatric Anesthesia Investigators Network of Canada*.

Why a Network is Critical

The group identified four compelling reasons to form an ongoing, growing network:

- The need for a collective effort in order to develop knowledge on the "big questions" that can't be approached with either solo researchers nor small data sets
- The need for "thought partners" and collaborators in a regionally dispersed sub-specialty
- Improved access to grants, funding and other collaborations through speaking with one voice
- To mentor emerging investigators

PINC's draft *mission* and *vision* are:

Mission:

- Provide evidence for the highest quality pediatric anesthesia practice through excellence in research

Vision:

- Promote multi-centred interdisciplinary collaboration in research
- Identify priorities in pediatric anesthesia research
- Promote excellence in research methodology
- Mentor emerging investigators
- Promote knowledge translation to improve practice through affiliation with CPAS and other organizations
- Advocate for evidence-based improvement in the provision of healthcare for children
- Establish research links with community practitioners providing anesthesia care for children

Research Agenda:

The group also developed an initial research agenda, with four high impact research areas identified as core questions:

1. *How can we safely provide transfusions to infants?*
   - Complications associated with transfusion of blood components to infants
   - What is the current practice? Complication type and rate? Tease out factors that are promoting serious complications. (Lead: David Rosen)
2. *What is the incidence of hyponatremia in post-operative children, and what factors contribute?*
   - Pre-op, intra-op and hospital stay -- could be expanded to hospital stays in general—not just perioperative (Leads: Richard Lee, Davinia Withington, Desi Reddy)
3. *What are the complications of the different approaches of providing parenteral opioids to patients—PCA, NCA, opioid infusions?*
   - Collect data to enable evidence-based decision making (Lead: Gill Lauder)
4. *What factors lead to adverse outcomes in scoliosis surgery?*
   - Morbidity and complications in scoliosis surgery country-wide (Lead: Philipp Mossdorf)

Agreements and Next Steps:

1. The group agreed to form an Interim Executive with the goal of identifying 3 or 4 research proposals by June. The role of the Interim Executive is to organize the next meeting and guide initial development of projects. (David Rosen; Thomas Hackmann; Dermot Doherty; Jason Hayes)

2. Finalization of name, mission, vision

3. Project leads for four key topics were identified; they will draft proposals for review by other members of the group; Gill Lauder will circulate a template for proposal review

4. Outreach to other potential participants

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Interim executive:
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DETAILED HIGHLIGHTS

Scope of Network Participants
The initial meeting comprised 13 participants from across Canada, representing 8 centres, including: Ottawa, Vancouver, Calgary, Toronto, Halifax, Montreal,

Edmonton and Hamilton. The group agreed that the participants in the room were enough of a critical mass to form the core network, but that they would continue to invite additional participants to the table as the work unfolds.

Possibilities for enhancing the work of pediatric anesthesiology in Canada through a network:

1. Enhance capacity for research through creating and sharing collective data

- Creation of a national database to conduct research on a larger scale
- Standardization to improve data quality
- Creation of a common repository for anonymized data that meets privacy concerns (e.g. ICES group)

2. Enhance capacity to ask and ponder the "big questions" or those that might not be identified in isolation

- Identify common problems through comparative data/knowledge
- Identify questions specific to our practices – e.g. Each country has its own methods of managing blood – there are variations within the country provincially on the availability. Who's using what age of what blood product, and what is the impact on patient outcomes?
- Can ask bigger questions – e.g. rare conditions: centers with small numbers can ask bigger questions
- Tracking rare complications -- need large numbers to capture rare but important adverse outcomes
    - Complications with rare conditions (e.g. DMD)
    - Rare complications of common interventions (e.g. anaphylaxis)

3. Create deeper, better research and knowledge development through collaboration

- Get support for collaborative work by sharing common resources – study design, writing grants together, pressure for funding when multiple centres interested in same question
- Find thought partners to identify/work through questions
- Telehealth rounds – many centres working in isolation – sharing approaches
- Mentorship for new or emerging researchers
- Reach out to non-specialist anesthesiologists working with children

4. Take subspecialty to another level through coordinated response

- Coordinated representation to government and pharmaceutical companies Ensure that a variety of advances can be translated (e.g. ensure medications are tested in children prior to release, improve approval process for medications specific for pediatric anesthesia practice)
- Support development of practice and policy through our research

- Provide a distinct "voice" for anesthesia research focused on children's issues

Initial thoughts for "big questions":
(Note: four of these were identified as initial priorities; the remainder may be the next wave of research)

1. How can we safely provide **transfusions** to infants? Complications associated with transfusion of blood components into infants
   - What are we doing now? Complication rate? Tease out factors that are promoting serious complications.
2. Prevalence or incidence of **metabolic derangement** associated with GA: comparison of IV vs. inhalation anesthetic – does volatile cause rhabdomyolisis in DMD – identify those who have decompensation – why it happens
3. Comparison of **GA** with **regional** analgesia – current practice vs. standardized protocol that may be difficult to follow
4. How does anesthetic practice influence **post-op morbidity** and complications? Would include all patients who undergo anesthesia – post-op database for complications – for day cases, would need robust system to gather data
   - There are many sedations going on we have no idea about at all
   - Maybe we should establish a national database for all sedations
5. **Hyponatremia**
   - hypotonic solutions have been removed from our practice for the most part – what is the risk? Is there a risk in standard pediatric practice?
   - Pre-op, intra-op and hospital stay
   - Could be expanded to hospital stays in general – institutionally based, not just perioperative
6. **Corrective surgery** -- Scoliosis and craniofacial, database –track techniques and complications
7. What are the complications of the different approaches to **parenteral opioid** delivery—national perspective on efficacy, side-effects and complications
8. **Neonates** complications related to anesthesia – may help guide decision-making around non-urgent procedures and investigations
9. **Laparoscopic** vs. open procedures--outcomes
10. Prevention of perioperative **neurological injury**

What people are encouraged by:
At the end of the session people were heartened by the willingness and energy of the group to work together and how much had been accomplished in one day. While acknowledging the size of the "bite" taken, the group were clear that by the upcoming Montreal meeting, they wanted to have a clear project to go forward with and readiness to reach out beyond the core group.

Participants

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