International collaboration in pediatric critical care RCTs: A social network analysis

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Background
Collaboration with researchers in other countries may have advantages such as increased access to funding, research infrastructure, potential study sites and participants.

Objectives
1) To describe the degree and pattern of international collaboration among researchers who have coauthored at least one pediatric critical care RCT.
2) To compare the characteristics of RCTs conducted with international collaboration to those from a single country.

Methods
We defined international collaboration as RCT coauthors or study sites from 2 or more countries. We used the World Bank's classification of country income levels (1).

Data sources:
RCTs: We used the Evidence in Pediatric Intensive Care Database (epicc.mcmaster.ca) to identify RCTs (2). This database uses comprehensive search strategies to identify pediatric critical care RCTs (Updated Oct 2014).

Inclusion criteria: Published RCTs reporting the effect of interventions on children in a pediatric intensive care unit. Exclusion criteria: RCTs enrolling only preterm infants, crossover trials, and those only published as abstracts.

Researchers: We included all individual and group coauthors listed in the RCT publications.

Country of origin: For researchers we used the affiliations reported in the trial publications. For RCTs, we used the country of origin of the primary author.

Impact: We assessed the impact of trials using the impact factor of the journal and the number of citations (using Web of Science™).

Data extraction and analysis: Pairs of reviewers abstracted data independently. We used Fisher's Exact and Mann Whitney U tests to compare groups.

Results
1) 1,547 researchers (1,536 individuals and 11 groups) from 35 countries coauthored at least one of the 282 included RCTs. 207 (13.3%) researchers coauthored more than one RCT and 9 researchers coauthored more than 5. The maximum number of publications was 11.

2) 54 (19.1%) of the 282 RCTs had international collaboration.

3) 51 (18.1%) RCTs had coauthors from 2 or more countries. In 31 (60.8%) of these they were from high-income countries only.

4) 22 (7.8%) RCTs had sites in 2 or more countries. 19 (86.4%) of these RCTs were from high-income countries only, despite 81 (28.7%) of all RCTs including at least 1 study site in a low-middle-income country.

Conclusions
Researchers
- International collaboration in pediatric critical care RCTs: A social network analysis
- Researchers
- Country income level
- Coauthorship in 282 pediatric critical care RCTs
- Researchers from various countries
- Large cluster of researchers who have published 60 RCTs (% of RCTs)
- Small clusters
- Single RCTs

RCTs: International collaboration
- RCTs published per year
- Characteristics of pediatric critical care RCTs
- RCTs with international collaboration (% of RCTs)
- RCTs from a single country (% of RCTs)
- Characteristics
- Design
- Multicentred
- Number of centres
- Number of centres
- Number of centres
- High-risk bias
- Risk of bias
- Blinding
- Blinding
- Commercial funding
- Commercial funding
- Results
- Children randomized
- Early stopping
- Statistically significant
- Impact
- Citations per year
- Journal impact factor
- How to read this map
- International collaboration
- RCTs with international collaboration
- RCTs from a single country
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References:
1) data.worldbank.org.

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