

# Survey of Pediatric Critical Care Clinician-Researchers in Low to Middle Income Countries

Dear Colleague,

We invite you to participate in this brief survey on the state of pediatric critical care research activities in limited-resource settings.

This survey was developed by the Pediatric Acute Lung Injury & Sepsis Investigators (PALISI) Global Health subgroup.

The objectives of this survey are to report on the state of research activities in the field of pediatric critical illness in Low, Lower-Middle and Middle Income countries, address current barriers to research in this field and setting, prioritize research needs, and promote research networks and collaborations.

Survey participation is voluntary. Participation is anonymous, unless you choose to leave your contact information at the end of the survey. The Seattle Children's institutional review board (IRB) has determined this survey exempt from IRB review.

The survey will take 5-10 minutes to complete. Thank you for your interest and time in responding to this survey.

Please forward this survey to your colleagues from Low, Lower-Middle and Middle Income countries involved in pediatric critical care research.

Sincerely,

Amelie von Saint Andre, Ericka Fink, Niranjana (Tex) Kissoon

and the PALISI Global Health subgroup

For questions, please contact [ameliev@uw.edu](mailto:ameliev@uw.edu) or [FinkEL@ccm.upmc.edu](mailto:FinkEL@ccm.upmc.edu).

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## Respondent Demographics

What city and country do you live in?

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What are your professional credentials?

- ☐ Pediatric intensivist by training
- ☐ Pediatrician with ICU experience
- ☐ General practitioner with PICU experience
- ☐ Nurse/nurse practitioner
- ☐ Other, please specify (write-in)

Other credentials

\_\_\_\_\_

For how many years have you practiced critical care medicine?

\_\_\_\_\_

Are you involved in research?

- ☐ Yes  
☐ No

How much protected time do you have for research?

- ☐ Full time research  
☐ > 10 hours / week  
☐ 1-10 hours / week  
☐ None

What is your primary research category?

- ☐ Basic science  
☐ Clinical  
☐ Quality improvement  
☐ Other, please specify:

Other research category

\_\_\_\_\_

What is your primary research subject?

\_\_\_\_\_

What is your research experience and training?  
(Please check all that apply)

- ☐ Advanced degree in research methodology (i.e. Masters, PhD)  
☐ University-level courses in research methodology  
☐ Research methodology seminar at conference (local, national or international)  
☐ Participation in research project  
☐ Other, please specify:  
☐ None

Other experience

\_\_\_\_\_

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## What resources do you have available in the area where you care for the critically-ill or in your ICU?

### Basic Resources

|             | Not available         | Intermittently available | Reliably available    |
|-------------|-----------------------|--------------------------|-----------------------|
| Clean Water | <input type="radio"/> | <input type="radio"/>    | <input type="radio"/> |
| Electricity | <input type="radio"/> | <input type="radio"/>    | <input type="radio"/> |

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### Respiratory Support

|                                     | Not available         | Intermittently available | Reliably Available    |
|-------------------------------------|-----------------------|--------------------------|-----------------------|
| Nasal cannula oxygen                | <input type="radio"/> | <input type="radio"/>    | <input type="radio"/> |
| Face mask oxygen                    | <input type="radio"/> | <input type="radio"/>    | <input type="radio"/> |
| Non-rebreather oxygen               | <input type="radio"/> | <input type="radio"/>    | <input type="radio"/> |
| CPAP                                | <input type="radio"/> | <input type="radio"/>    | <input type="radio"/> |
| Non-invasive mechanical ventilation | <input type="radio"/> | <input type="radio"/>    | <input type="radio"/> |
| Invasive mechanical ventilation     | <input type="radio"/> | <input type="radio"/>    | <input type="radio"/> |

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**Extracorporeal support**

|  | Not available         | Intermittently available | Reliably Available    |
|--|-----------------------|--------------------------|-----------------------|
| Dialysis capability (either hemodialysis or peritoneal dialysis) | <input type="radio"/> | <input type="radio"/>    | <input type="radio"/> |
| Extracorporeal membrane oxygenation capability (ECMO)            | <input type="radio"/> | <input type="radio"/>    | <input type="radio"/> |

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**Monitoring**

|                                  | Not available         | Intermittently available | Reliably available    |
|----------------------------------|-----------------------|--------------------------|-----------------------|
| Intracranial pressure monitoring | <input type="radio"/> | <input type="radio"/>    | <input type="radio"/> |
| Electroencephalography           | <input type="radio"/> | <input type="radio"/>    | <input type="radio"/> |

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**Blood Bank**

|                            | Not available         | Intermittently available | Reliably available    |
|----------------------------|-----------------------|--------------------------|-----------------------|
| Blood bank for transfusion | <input type="radio"/> | <input type="radio"/>    | <input type="radio"/> |

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**Maintenance**

|  | Not available         | Intermittently available | Reliably available    |
|--|-----------------------|--------------------------|-----------------------|
| Maintenance personnel for medical equipment (i.e., mechanical ventilators) | <input type="radio"/> | <input type="radio"/>    | <input type="radio"/> |

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**Laboratory services**

|   | Not available         | Intermittently available | Reliably available    |
|---|-----------------------|--------------------------|-----------------------|
| Microbiological cultures (i.e., blood, cerebrospinal fluid) | <input type="radio"/> | <input type="radio"/>    | <input type="radio"/> |
| Electrolytes  | <input type="radio"/> | <input type="radio"/>    | <input type="radio"/> |
| Blood counts  | <input type="radio"/> | <input type="radio"/>    | <input type="radio"/> |
| Kidney function   | <input type="radio"/> | <input type="radio"/>    | <input type="radio"/> |
| Liver function  | <input type="radio"/> | <input type="radio"/>    | <input type="radio"/> |
| Blood gas analysis  | <input type="radio"/> | <input type="radio"/>    | <input type="radio"/> |

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**Echocardiogram**

|                | Not available         | Intermittently available | Reliably available    |
|----------------|-----------------------|--------------------------|-----------------------|
| Echocardiogram | <input type="radio"/> | <input type="radio"/>    | <input type="radio"/> |

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**Transport**

|                  | Not available         | Intermittently available | Reliably available    |
|------------------|-----------------------|--------------------------|-----------------------|
| Air transport    | <input type="radio"/> | <input type="radio"/>    | <input type="radio"/> |
| Ground transport | <input type="radio"/> | <input type="radio"/>    | <input type="radio"/> |

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**Other characteristics of your hospital**

What patient age range does your ICU or area for critically-ill patients serve?

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What best describes your hospital's characteristics?  
Please check all that apply.

- ☐ Rural
- ☐ Suburban
- ☐ Urban
- ☐ Private
- ☐ Public
- ☐ Teaching hospital
- ☐ Non-teaching hospital
- ☐ Free-standing children's hospital

How many pediatric beds does your hospital have?

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How many pediatric hospital admissions occur per year?

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How many beds does your ICU have?

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How many ICU admissions occur per year?

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How many doctors total are available to work in the ICU?

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How many doctors work in the ICU during the day?

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How many trainee doctors work in the ICU during the day?

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How many trainee doctors total are available to work in the ICU?

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How many nurses total are available to work in the ICU?

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How many respiratory therapists total are available to work in the ICU?

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How many respiratory therapists work in the ICU during the day?

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What is the average bedside nurse:patient ratio in your ICU during the day?

- ☐ 1:1  
☐ 1:2  
☐ 1:3  
☐ 1:4  
☐ 1:5  
☐ > 1:5

What are the top 5 diagnoses for admission to your ICU?

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## Research

How important do you think conducting research in your community is for improving your patient's health?

- ☐ Not important  
☐ Less important  
☐ Important  
☐ Very important  
☐ Critically important

What would be your most important reasons to perform research involving critically-ill children?

- ☐ To generate data that affects positive change in clinical care  
☐ To establish guidelines/protocols/pathways to standardize care  
☐ To gain greater understanding of specific diseases  
☐ To establish quality and safety assurance  
☐ To increase availability of resources (i.e., medical supplies, equipment)  
☐ Other, please describe:

Other

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What are the 5 key areas of research that you feel are crucial to study for pediatric critical care in resource-poor settings?

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What types of research are you currently participating in that involve critically-ill children ? Check all that apply.

- ☐ Clinical Research: Observational  
☐ Clinical Research: Randomized Control Trial  
☐ Clinical Research: Case/Case Series  
☐ Quality Improvement/Quality Assurance Research  
☐ Basic Science Research

For each project, please describe:

Your role (Primary investigator, co-investigator, data collection, etc.)

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The research topic or question

Was your research funded?

- ☐ Yes  
☐ No

If yes, please list source (government grant, foundation, etc.)

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Was this published in a peer reviewed journal?

- ☐ Yes  
☐ No

If yes, please upload publication

What are the major challenges of performing research in your settings? Please rank the top 3 major challenges.

Research Challenge #1

Other research challenge

Research Challenge #2

Other research challenge

Research Challenge #3

Other research challenge

- ☐ No ethical review board available
  - ☐ Administrative time burden to get ethical review board approval
  - ☐ Ethical review board requirements too burdensome
  - ☐ Cost to obtain ethical review board approval
  - ☐ Cultural issues with consenting patients
  - ☐ Lack of research funding sources
  - ☐ Limited pool of trained research support staff
  - ☐ Lack of availability of reliable medical records
  - ☐ Lack of statistical support, data management personnel
  - ☐ Difficulty with publication of research data
  - ☐ Finding research mentor(s)
  - ☐ Limited opportunities for research training
  - ☐ Recruitment of study subjects
  - ☐ Clinical burden too large - no time for research
  - ☐ Other, please describe: (free text)
- 

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  - ☐ Other, please describe: (free text)
-

Rank the potential solutions to these challenges.  
Please rank the top 3.

Solution #1

Other solution

Solution #2

Other solution

Solution #3

Other solution

Have you collaborated with researchers in high income countries?

How important is this for your research?

What country(ies) were your collaborators from?

What were some benefits of this collaboration? Click all that apply.

Other benefits

- ☐ Improved medical record keeping
  - ☐ Streamlined ethics review
  - ☐ Research network with centralized resource lists
  - ☐ More funding designated for low resource settings
  - ☐ Access to research training
  - ☐ Opportunities to present research
  - ☐ Access to mentors in high resourced countries
  - ☐ Other
- 

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  - ☐ Other
- 

- ☐ Yes
- ☐ No

- ☐ Not important
  - ☐ Less important
  - ☐ Important
  - ☐ Very important
  - ☐ Critically important
- 

- ☐ Formal research training and experience
  - ☐ Availability of medical supplies
  - ☐ Experience in manuscript preparation/publication
  - ☐ Established guidelines/protocols/pathways to guide protocol development
  - ☐ Financial support
  - ☐ Other, please describe
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What were some problems experienced in collaborating with researchers from high-income countries? Please rank the top 3.

Problem #1

- ☐ Inability to sustain benefit
  - ☐ Ethical conflict(s)
  - ☐ Communication limitations
  - ☐ Political barriers
  - ☐ Dissimilar vision(s) goals
  - ☐ Lack of understanding of local setting
  - ☐ Lack of local research administration
  - ☐ Lack of proper acknowledgement in publications/presentations
  - ☐ Lack of access to data-sharing
  - ☐ Other
- 

Other problem

Problem #2

- ☐ Inability to sustain benefit
  - ☐ Ethical conflict(s)
  - ☐ Communication limitations
  - ☐ Political barriers
  - ☐ Dissimilar vision(s) goals
  - ☐ Lack of understanding of local setting
  - ☐ Lack of local research administration
  - ☐ Lack of proper acknowledgement in publications/presentations
  - ☐ Lack of access to data-sharing
  - ☐ Other
- 

Other problem

Problem #3

- ☐ Inability to sustain benefit
  - ☐ Ethical conflict(s)
  - ☐ Communication limitations
  - ☐ Political barriers
  - ☐ Dissimilar vision(s) goals
  - ☐ Lack of understanding of local setting
  - ☐ Lack of local research administration
  - ☐ Lack of proper acknowledgement in publications/presentations
  - ☐ Lack of access to data-sharing
  - ☐ Other
- 

Other problem

Do the benefits of collaboration outweigh the problems?

- ☐ Yes
- ☐ No

What are the major benefits to you personally for performing research in your setting (please select all that apply)?

- ☐ Increased salary benefits
  - ☐ Peer recognition of expertise
  - ☐ Opportunities for research collaboration
  - ☐ Career advancement (promotion)
  - ☐ Other, please describe
- 

Other benefits

What is the typical source of funding for research in your region (select all that apply)?

- ☐ None usually available
- ☐ Collaborating with international investigators
- ☐ Local foundation/hospital
- ☐ Government
- ☐ Applying for international grants

Is there a local network of researchers with whom you have collaborated with or know about?

- ☐ Yes
- ☐ No



Please provide network name and contact information if available.

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Please provide your contact information for future collaboration and research network membership. Please note that providing your contact information is voluntary.

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