



# THE CRAIG MCCLAIN LAB @ PGSSC: Global anesthesia

## **CRAIG D. MCCLAIN, MD, MPH**

I am a pediatric anesthesiologist practicing at Boston Children's Hospital. In addition to being Co-Director of the Pediatric Neuroanesthesia Service at BCH, I am faculty at the Program in Global Surgery and Social Change at Harvard Medical School. My work through PGSSC has focused on a variety of aspects of improving the delivery of anesthesia and perioperative care to vulnerable populations throughout LMICs. In partnership with Dr. Nandakumar Menon (Gudalur, Tamil Nadu, India) and the Association of Rural Surgeons in India we have looked at developing novel and attainable solutions to the anesthesia workforce crisis in rural India. Additionally, we are in the early stages of defining and exploring anesthesia workforce issues in rural Mexico in Chiapas in partnership with Compañeros en Salud. We work very closely with Dr. Nakul Raykar of the PGSSC (please see the Raykar Lab page). Finally, our group partners with the Center for Surgery and Public Health at Brigham and Women's Hospital to explore the intersection of global surgery and anesthesia and the existential threat of climate change.

PGSSC trainees working with our group may be involved with several different projects exploring the role of anesthesia services in surgical systems. These projects involve defining and exploring issues around access to safe anesthesia, looking at anesthesia workforce issues in LMICs, policy and advocacy efforts towards promoting safe surgery and anesthesia (e.g anesthesia and NSOAPs). Climate change projects involve looking at the intersection of surgical and anesthesia services and climate change. Projects involve both mitigation strategies as well as defining the influence of climate change on outcomes of surgical patients. The Global Anesthesia (as well as Climate Change) group is committed to decolonizing global health and all that implies. As such, we will follow the PGSSC

## **PROJECTS (# FELLOWS, JUNIOR OR SENIOR/# RA)**

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### **Scaling Spinal Anesthesia Training of Medical Officers in Rural India**

We recently completed a randomized controlled trial in Southern India demonstrating non-inferiority of medical officers in the delivery of spinal anesthesia after completion of a three-phase training program. Based on these results, we are partnering with ARSI and Martin Luther Christian College to scale the program. We will need to continue to assess the impact and effectiveness of this program as more medical officers are trained and begin to utilize their new skills in rural India to improve the availability of safe anesthesia and improve access to life saving surgical care. Expected involvement will be from July 2021-June 2023.  
Needed: 1 Research Fellow

### **Quality of Anesthetic Care**

Assessments of quality of anesthetic care are challenging in HICs. In LMICs, there has been a focus on simply providing access. We believe that an important aspect of access should be safety and quality of anesthetic care. In 2020, our group published a paper in *Anaesthesia* that made consensus recommendations using a modified Delphi approach around provision of quality anesthesia services in LMICs. Ongoing evaluation and exploration of how LMICs can achieve not only improved access to anesthesia, but also improve quality is an important part of achieving healthcare equity and universal healthcare. Expected involvement will be ongoing.  
Needed: 1 Research Fellow and/or 1 Research Associate

### **Modelling Access to Safe Anesthesia**

Modelling access to surgical care is crucial and its value was demonstrated definitively in the 2015 LCOGS Report. Available data to inform the accuracy of such models has improved significantly in the intervening period. Our group is working with Dr. Blake Alkire of the PGSSC (an expert in statistical modeling) to develop new estimates of access to surgical care in general and specifically, access to anesthesia services. Expected involvement will be from August 2021-July 2022.  
Needed: 1 Research Fellow OR 1 Research Associate

### **Evaluation of how NSOAPs Address Anesthesia Services**

NSOAPs are recognized as the definitive policy statement of nations regarding their surgical care systems. Anesthetic services are clearly an integral and essential component of

recommendation around authorship on publications involving this group. Specifically, this will involve every effort to not simply include partners as authors, but involve them in first and senior author roles.

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any functional surgical system. However, there is no accepted approach to how anesthetic services should be accounted for in NSOAP planning or implementation. Our group is partnering with UCSF and several anesthesiologists throughout Africa to better analyze existing NSOAPs for robust inclusion of anesthetic services. The ultimate goal is to be able to offer evidence-based recommendations around these findings to optimize NSOAP planning and implementation for policy makers. Expected involvement will be from July 2021-June 2022.

### **The Intersection of Surgical Systems and Climate Change**

The Climate in Obstetric, Anesthesia and Surgical Team (COAST) is a partnership with CSPH. We have projects exploring climate change mitigation strategies in global surgery, obstetrics and anesthesia. Additionally, we are currently performing several systematic reviews that will examine the influence of climate change on outcomes of surgical patients as well as how NSOAP planning and implementation should take climate change concerns into consideration. Expected involvement will be ongoing.  
Needed: 1 Research Associate

## **REGIONS**

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India, Mexico, Western Pacific