



RACP Foundation Research Awards

FINAL REPORT

Project / Program Title		Fluids in sepsis study
Name		Dr Elliot Long
Award Received		2016 Shields Research Entry Scholarship
Report Date		19 January 2016
Chief Investigator / Supervisor		Dr Elliot Long
Administering Institution		Murdoch Children's Research Institute
Funding Period	Start Date:	4 January 2016
	Finish Date:	4 January 2017

PROJECT SUMMARY

This project evaluates the effects of intravenous fluid resuscitation during the initial treatment for life-threatening infections. The intent of giving fluid is to improve the blood flow from the heart to vital organs, but several areas of uncertainty exist. Firstly, the magnitude and duration of improved blood flow are unclear. Secondly, the ability of ultrasound to predict those patients likely to have improved blood flow is unclear. Lastly, it is unclear if fluid subsequently builds up in the lungs after it is administered. These questions will be addressed as part of the "fluids in sepsis" study.

PROJECT AIMS / OBJECTIVES

The aim of this project is to use ultrasound of the heart, lungs, and inferior vena cava to assess the physiological response to fluid resuscitation for paediatric sepsis.

SIGNIFICANCE AND OUTCOMES

This study is important because fluid resuscitation is the universal initial treatment for paediatric and adult sepsis. The only randomised evidence to date suggests this practice may be harmful. If this study finds that fluid resuscitation results in small or transient changes in cardiac output, it would provide robust physiological rationale for conducting a randomised controlled trial of non-use of fluid resuscitation for paediatric sepsis.

PUBLICATIONS / PRESENTATIONS

Does respiratory variation in inferior vena cave diameter predict fluid responsiveness: a systematic review and meta-analysis. Shock. 2016

An observational study using ultrasound to assess physiological changes following fluid bolus administration in paediatric sepsis in the emergency department. BMC Paediatrics. 2016

A prospective quality improvement study in the Emergency Department targeting paediatric sepsis. Archives of Disease in Childhood. 2016

Fluid resuscitation therapy for paediatric sepsis. The Journal of Paediatrics and Child Health. 2016

Fluid resuscitation for paediatric sepsis: a survey of senior emergency physicians in Australia and New Zealand. Emergency Medicine Australasia. 2015

Loni! E, Delaney A. Paediatric Sepsis. Cameron's Textbook of PED

Sepsis- assessment and management. Victorian Statewide Guideline.

[\(http://www.rch.org.au/clinicalguide/guideline_index/SEPSIS_assessment_and_management/\)](http://www.rch.org.au/clinicalguide/guideline_index/SEPSIS_assessment_and_management/)