Objective
The aim of the research project was to describe the current state of emergency and critical care services in Tanzania.

Background
In 2005 & 2006 I worked for two years as a volunteer doctor through VSO (Voluntary Services Overseas) in a rural district hospital in Tanzania. During this time it became clear to me that the patients who received the worst care in the hospital were those who were acutely and critically ill. A lack of knowledge, skills, equipment and drugs plus a fatalism that the sicker patients inevitably die led to a lack of attempts to resuscitate or care for these patients.

It seemed that this situation was not unique to my hospital. Several other hospitals I visited had a similar lack of acute and critical care. Discussing these issues with Anaesthesia colleagues in Dar es Salaam helped to understand the situation at a national level. There are no Emergency Physicians and only 13 specialist Anaesthetists in the whole country. Triage, casualty departments and intensive care units are rare. Emergency care, Critical Care and Anaesthesia has very low priority both politically and within hospitals.

Reviewing the literature gave a similar picture in other low income countries. The burden of critical illness is especially high in low income countries. As the majority of critically ill patients in developing countries are children and young adults there is a good potential for recovery. Emergency and Critical Care need not be expensive. Simple and effective methods that are feasible in a low-resource setting can be used such as adequate fluid resuscitation to children with diarrhoea and intravenous dextrose for hypoglycaemia. Unfortunately these methods are not used and the care that critically ill patients receive in hospital is often informal and uncoordinated or even absent. The result is high reported fatality rates. For example, mortality for head injury in Benin 70% and for eclampsia in Senegal and Nigeria 40%.

Little research has been done looking specifically at emergency and critical care in low income countries. Although my literature review found 60 publications, much of them were anecdotal or viewpoint-based or focused on another specialty such as paediatrics or anaesthetics. Many of the authors highlight the urgent need for further research in this area. There are no systematic analyses of critical care services in one developing country, no trials comparing different types of critical care services and no studies looking at the optimal methods and cost-effectiveness of critical care.

The state of Emergency and Critical Care in Tanzania is not known and there are no national guidelines or policies. There are no studies looking at Emergency and Critical Care in Tanzania. I decided that I would like to understand more formally the situation in Tanzania, so that I could subsequently investigate the best ways to make improvements. The research would make up part of my PhD based at Karolinska Institutet in Stockholm, Sweden.

Methodology
The study design was analytical cross-sectional based on a detailed survey of ten hospitals in Tanzania using a newly developed survey instrument. Planning of the study was conducted in autumn 2008 and spring 2009. A quality standards tool was developed from the current literature and international guidelines and revised following expert consultations. A data collection tool was developed together with my local Tanzanian counterpart, Dr. Edwin Lugazia. A visit to Tanzania
in April 2009 enabled close collaboration in the planning of the study, and a pilot hospital was selected to test the tool. Ethical clearance and research permission were secured at this time.

Fieldwork and data collection was conducted in October-November 2009 in four regions of Tanzania: Dar es Salaam, Puanı, Arusha and Kilimanjaro. Data entry, analysis and write-up have been ongoing in 2010 and 2011. A preliminary abstract has been written:

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| **Background:** Emergency and Critical Care (EaCC) can be defined as all care given in hospital to patients with sudden, serious reversible disease. The majority of the burden of such disease is in low-income countries, and mortality rates are high. Basic EaCC can be cheap and is likely to be cost-effective, but not much is known about the current structure of EACC services in low-income countries. We sought to describe the state of EACC in one low-income country, Tanzania, and to assess the quality of the services.  
**Methods:** Ten hospitals were assessed in four regions of Tanzania. Site visits utilized direct inspection and interviews with administrative and clinical staff using a specially designed data collection tool. EaCC was sub-divided into Triage, Emergency Care and Critical Care. Quality was assessed using key indicators drawn from the current literature.  
**Results:** Triage for adult patients was absent or informal at a majority of hospitals. Emergency care was similarly lacking in structure and facilities at most hospitals. Seven of the ten hospitals had no Intensive Care unit. District and Regional hospitals had on average 52% and 68% of the Key Indicators for adequate EaCC for adults and children respectively. Hospitals had 92% of the Key Indicators for Basic Critical Care but only 23% for Advanced Critical Care. The importance of EACC was well recognised and there was a clear desire to improve services.  
**Conclusions:** The quality of care for critically ill patients in Tanzania is suboptimal. Hospitals are not well organised for the management of acutely ill and critically ill patients. Interventional studies are required to assess if specific improvements in EaCC can lower mortality rates. |

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<td>Data analysis and write-up will be completed and the paper will be submitted for publication by the end of 2011. The final paper will be sent to the AAGBI as a final report.</td>
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| **Money in:**  
Laerdal Foundation: £20000  
AAGBI: £2000  
KI Travel Fund: £1000  
**TOTAL**: £23000  
| **Money out:**  
Salary costs (inc taxes, fees): £18700  
Travel to Tanzania: £1640  
Accommodation Tanzania: £1050  
Fieldwork costs: £1120  
**TOTAL**: £22510 |

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<th>References/ Further Reading:</th>
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• Baker T. Pediatric emergency & critical care in low-income countries *Pediatric Anesthesia* 2009;19:23–27  