



Waiting Time for Triage Children with Emergency Signs in Emergency  
Paediatric Unit of Mulago National Referral Hospital

By: Dr. Justin Bruno Tongun

MBChB (Mbarara University of Science and Technology)

**Supervisors:**

Dr. Irene Lubega

MBChB and MMED (Makerere University) and DTM&H (London)

Dr. Robert Opika Opoka

MBChB (Makerere University) MMED- (Guangxi Medical University, China),

MPH- (University of California, Berkeley) and

MHPE – (Maastricht University in Holland)

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## ABSTRACT

### **Background:**

Triage is an essential tool for early recognition of very sick participants, rapid initiation of treatment and has been shown to reduce morbidity and mortality in high-income countries. In Low-income countries there was paucity of data demonstrating waiting time in emergency room where the triage system is used. The study aimed to determine the proportion of participants categorized as emergency who received treatment within acceptable waiting time, factors associated with prolonged waiting time and to explore the relationship between prolonged waiting time and outcome at 24 hours from triage.

**Method:** This was a cross-sectional observation study, at Emergency Paediatric Unit of Mulago National Referral Hospital. The study population was children 0 to 12 years. This study determined whether the participants categorized as emergency received initial treatment within acceptable waiting time by recording time from triage to initiation of treatment. Logistic regression was then used to determine the factors associated with prolonged waiting time. The relationship between waiting time and outcome at 24 hours was explored using the log rank and Kaplan Meier survival curve.

**Results:** This study enrolled 399 participants, of these 175/399 (44%) were females. The majority of the participants 206/399 (51.6%) were above one year. Severe respiratory distress was the most common emergency sign identified among the study participants 221/399 (55%). The other emergency signs were convulsion 81(20%), confusion/coma 68 (17%), acute watery diarrhoea/ severe dehydration 26(7%), and shock 3(1%). This study found 121/399 (33%) of the

participants received initial treatment within acceptable waiting time. The average waiting time for all participants was 30 minutes (SD=29.25). Factors associated with prolonged waiting time included high participants to doctor ratio OR 8.01 (95% CI 2.52-7.71) p-value < 0.001, severely ill participants (disease severity level 2) OR 2.18 (95% CI 1.09- 4.35) p-value 0.03, when the intern doctor was alone in the emergency room OR 1.90 (95% CI 1.07-3.35) p-value 0.03, and participants who were not referred OR 1.65 (95% CI 1.03-2.62) p-value 0.04.

Twenty four of the study participants (5.6%) died within 24 hours of admission, of which 11(45.83%) were treated within acceptable waiting time. There was no association between deaths and prolonged waiting time OR 1.42 (95% CI 1.14-2.04) p-value 0.98.

**Conclusion:** Only a third of the participants triaged with emergency signs received initial treatment within acceptable waiting time.

Presence of more participants to health care providers in emergency room, inadequate supervision of intern doctors and participants not referred were factors associated to prolonged waiting time.

Prolonged waiting time had no association with mortality.

**Recommendations:** In order to improve on the emergency care in ED there is need to put in place steps to reduce participants' congestion to improve on participants to doctor ratio. Secondly, there is need to ensure that intern doctors working in emergency departments are trained in recognition and prompt treatment of critically ill children.

A larger study needed to assess in detail causes of prolonged waiting and impact on the quality of emergency care in resource limited settings.