Improving the safety of pediatric drug dosing with the SAFE-D Tape

Melissa Clark1, Ross Donaldson2; 1University of California San Francisco, Department of Emergency Medicine and Global Health Sciences, San Francisco, CA, 2Harbor-UCLA Medical Center, UCLA Fielding School of Public Health, David Geffen School of Medicine at UCLA, Los Angeles, CA

Program/Project Purpose: Pediatric drug dosing is a complicated process, requiring weighing the patient and multiple, sometimes complicated, calculations. In high resource settings this process is error-prone and potentially unsafe. In low resource settings there are added obstacles to correct dosing including less educated providers, higher numbers of patients seen by each provider and, at times, limited access to a calibrated scale.

We propose development of a new height-based tool called the SAFE-D Tape (short for Safe and Fast Estimation of Dosages) to simplify drug dosing, hence improving patient safety by reducing errors in low resource settings. A simple, height-based tool called the Broselow Tape has been successful in reducing medication errors and provider stress in pediatric resuscitations by removing the required calculations. It is so helpful that it can be found in most US emergency departments and ambulances. It is a highly effective tool in high resource settings, but low resource settings have key differences that limit the utility of this tool there.

The SAFE-D Tape is designed with similar principles but contextually appropriate modifications for low resource settings.

Structure/Method/Design: In low resource settings, aggressive resuscitation measures, which the Broselow Tape focuses on, are often not in the scope of practice. The SAFE-D Tape is being designed to simplify dosages for clinically relevant medications such as antibiotics, anti-malarial and anti-parasitic medications.

Our new tape will use anthropometric measurements more representative of the target populations than the Broselow Tape, which was developed using measurements from American children. Additionally, low and low-middle income countries have higher rates of malnutrition, thus the SAFE-D Tape has one side for adequately nourished children and another for malnourished children with different measurements and pharmacokinetic considerations.

Outcome/Evaluation: Primary outcome measure is reduction in dosage related errors compared to techniques currently being used in low resource pediatric treatment centers. We also need to demonstrate providers can use the tool correctly with minimal training.

Going Forward: If this is determined to be an effective tool in improving safety we need to determine a low cost method of distribution and education on using the tool.

Funding: None currently.

Abstract #: 2.002_TEC