Mel & Enid Zuckerman College of Public Health, University of Arizona, Tucson, USA

Background: Primary care settings and Community Health Workers (CHWs) have traditionally been used to address communicable diseases in low and middle income countries (LMICs). However, there is a paucity of evidence regarding the effects of childhood overweight/obesity treatment and prevention interventions delivered in primary care settings or by CHWs.

Objective: To conduct a systematic review of the effect of childhood overweight/obesity treatment and prevention interventions delivered in primary care settings or by CHWs on health and behavioral outcomes for children, parents, and caregivers.

Methods: The review was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRSMA). Major databases were searched (from inception to October 2015) to identify relevant randomized controlled trials (RCT) and cohort studies. Three reviewers independently assessed titles and abstracts to identify potentially relevant articles. Discrepancies were resolved by repeated review, discussion, and consensus.

Findings: Twenty studies involving over 7000 individuals were included; 16 were conducted in predominantly low-income and minority communities in the United States, and 2 in LMICs. Eleven were RCTs and 9 were cohort studies. Outcome measures included dietary/physical activity behaviors and Body Mass Index (BMI) z-scores, and duration of follow-up ranged from 6 months to 3 years. Pooled results revealed a moderate beneficial effect of interventions on participants' BMI and dietary/physical behaviors. The effect was most apparent in participants whose baseline BMI z-scores were in the normal BMI range (0.01 mean BMI z-score change, $P<0.05$), compared to participants whose baseline BMI z-scores were in the overweight or at-risk for overweight range (-0.09 mean BMI z-score change, $P=0.04$), and mean BMI z-scores decreased from 1.05 at baseline to 0.81 at follow-up ($P<0.001$). There was also a significant reduction in intake of sugary drinks from 33% pre-intervention to 21% post-intervention ($P<0.05$).

Interpretation: Interventions delivered in primary care settings or by CHWs have moderate beneficial effect on children's BMI, and dietary and physical activity behaviors. Interventions of longer duration, and which focus of hard evidence of biomedical indicators of overweight and obesity reduction are needed. Interventions conducted in LMIC contexts are particularly needed to inform policy and practice in these settings.

Funding: None.

Abstract #: *1.041_NEP*

Development of a nurse-paramedic model for acute STEMI/SCA care in India

T. Erickson[1], A. Ramesh[3], T. VandenHoek[1], N. Shetty[3], K. LaBresh[2], M. Edison[1], R. Begeman[1], P. Kotini[1], B. Prabhakar[1,3]; [1]UIC Center for Global Health, Chicago, USA, [2]RTI International, USA, [3]MS Ramaiah U, Bengaluru, India

Background: India has more cardiovascular disease (CVD) than any other country claiming 5 million lives annually. ST segment elevation myocardial infarction (STEMI) and sudden cardiac arrest (SCA) are major contributors to disability and death with over half of patients dying prior to reaching hospitals. It is projected that by 2020, more than half of the world's CVD burden will be in India.

Methods: Development of a pre-hospital system of STEMI/SCA care in Bengaluru, India using nurse-paramedics on scooters followed by nurse-physician ambulance teams mobilized for acute CVD events. STEMI patients are rapidly identified, treated with fibrinolytic agents on the ambulance when indicated, and transferred to comprehensive cardiac centers of excellence or "hub" hospitals for percutaneous coronary intervention (PCI). Standardized data elements will be used for acute CVD care in the pre- and post-hospital setting for acute STEMI/SCA using web-portal data entry and quality metric reporting.

Findings: Five spoke hospitals and 2 hub hospitals within a surrounding population of 400,000 have been identified. The system includes 24/7 first responders on scooters trained to transmit ECGs to designated hub hospitals, ambulance nurse-physician teams trained in emergency care, all equipped with AED defibrillators for SCA. Community education programs identify at-risk individuals to increase use of these heart attack action plans. Data metrics include: time of call by chest pain patients, time to arrival by scooter and ambulance, time from ECG to thrombolytic administration at the spoke hospital, or cardiac catheterization at the hub hospital. Goals are to have chest pain patients call within 30 minutes from symptom onset, ECG diagnosis of STEMI within 15 minutes of initial call, and fibrinolytics or PCI administered within 90 minutes of STEMI diagnosis.

Interpretation: This innovative pre-hospital care system using nurse-paramedic and physician responders, when combined with community risk screening and education, will provide rapid STEMI/SCA identification and treatment. The goals are to increase the capacity of the paramedic response system, develop standard protocols for acute CVD management and improve patient survival. The project provides a scalable model that can be integrated into the current healthcare system and large urban centers throughout India.

Funding: Medtronic Philanthropy HeartRescue.

Abstract #: *1.042_NEP*

Mapping disparities in access to surgical care: an application of geographic information systems to evaluate surgical infrastructure in Zambia

M.M. Esquivel[1], T. Uribe-Leitz[1], E. Makasa[2], K. Bowman[3], T.G. Weiser[1]; [1]Stanford University School of Medicine, Stanford, CA, USA, [2]Ministry of Health, Zambia, [3]Children's Hospital of Wisconsin, Milwaukee, WI, USA

Background: Global surgery has recently emerged as a high priority in developing countries, and access to surgical care is a significant limitation to safe and timely surgery in these settings. We hypothesize that timely access to safe surgical care is limited in Zambia. We used a geospatial visualization tool to analyze surgical infrastructure, capacity, and availability of surgical care in Zambia.