

RURAL GRANTS 2014-2015

A smartphone application to enhance the quality of life of patients with congestive heart failure in West Virginia

Rebecca Hayes, MD PGY-1

Mentor: Christine Gilkerson, MD

The research team has developed a functional web-based, smart phone application targeting congestive heart failure patients. The app allows a patient to record daily health information, receive reminders for scheduled medications as well as learn about their disease. In addition, the app allows a patient to submit a question for the healthcare team in regards to their congestive heart failure. The research staff will serve as the health care team for this pilot study and are able to receive and reply to these messages. These functions will serve to increase compliance with medications and daily health checks, educate patients about their disease and allow them to communicate with knowledgeable healthcare professionals quickly. The last utility has great potential to benefit the people of rural West Virginia, as many have limited access to healthcare professionals.

The Use of Telemedicine to Decrease Teen Pregnancy and School Dropout Rates in Rural McDowell County, West Virginia

Rachel Whitley, MS-1 and Rebecca King-Mallory, MS-3

Mentor: Jennie Yoost, MD, MSc

This project involves teaching reproductive health and life skills to high school females in McDowell County, West Virginia using telemedicine technology. McDowell County is a rural county plagued by poverty, high teen pregnancy and increased school dropout rates. Telemedicine is an innovative technology that allows medical and educational services to reach areas where individuals with this expertise may not be available; a technology especially useful for rural underserved communities. Telemedicine sessions will be incorporated into existing afterschool programs within two McDowell County high schools. Each session will cover either a reproductive health or life skill topic. Reproductive health subjects include male and female anatomy, physiology of reproduction, contraception and abstinence, sexually transmitted disease prevention, vaccinations, menstruation, and other specific female health concerns. Reproductive health will be discussed by a physician with expertise in gynecologic care for young females and familiarity with cultural and regional nuances. Life skill topics include diet and exercise, sleep, mental health and stress management, relationship health, and self-esteem. Each of these topics will be addressed by a health professional with expertise on the given subject. The primary outcomes of this project are knowledge scores on reproductive health topics, measures of behavioral self-efficacy, and acceptance of telemedicine education. Long term outcomes are teen pregnancy rate and school dropout rate at yearly intervals following the educational intervention. Comparison populations from surrounding rural counties not receiving the telemedicine intervention will be used as a control group.

Distance to specialist care is associated with survival in patients with gynecologic malignancies

Audrey Hicks, DO PGY-1

Mentor: Nadim Bou Zgheib, MD

Women with gynecologic malignancies in rural regions may have limited access to the highly specialized care they need, and often travel long distances for cancer care. Prior reports have suggested that distance from residence to treatment facility is a barrier to care and because of this some go without treatment. We sought to investigate the effect of the distance traveled by patients with gynecologic malignancies to a university hospital on the disease presentation as well as short and long term outcomes. After IRB approval, data of patients with gynecologic malignancies treated at Marshall University and Cabell Huntington Hospital was analyzed. Distance to specialist care (DTSC) was found to be significantly associated with overall survival from gynecologic malignancies. Patients diagnosed with gynecologic cancers living closer to the hospital survived longer. Furthermore, geographic proximity to a University Hospital appears to influence survival in Caucasian patients with gynecologic malignancies.

Effect of Minimal Residual Shared Reading Experiences in Rural Children's First Year of Life

Ronald Nettey, MD, Katherine Steele, MD

Mentor: Adam Franks, MD

The effect of shared reading in the infancy period on expressive and receptive language milestone development has been studied in general and underserved populations but never in the rural population. We propose to study a minimal residual reading effect in a rural underserved population as measured by the Receptive Expressive Emergent Language Scale, 3rd edition (REEL 3), which is a standardized maternally scored language tool. Three cohorts of 30 children, selected from the patient populations at Marshall Health Family Medicine office in Lavalette and Lincoln Primary Care Center, will be created and followed from ages two weeks to one year. All three cohorts will receive a set of children's books at the initial patient visit. Group A will be a control group, whose parents will be asked to describe generally how often they read to their children each week without any direction from the research team. Group B will consist of a group of children whose parents commit to read at least one book each day to them. Group C will consist of a group of children whose parents also commit to read at least one book a day to them, but will also be shown an early child development video in the prenatal period. The infants in each group will be scored on the REEL 3 at routine developmental visits (2 weeks, 2 months, 4 months, 6 months, 9 months and 12 months of age) and the volume of shared reading exposure will be assessed.

Determination of Rural Indigent Beliefs Regarding Health Care & Smoking with emphasis on Smoking Cessation

Megan Smith, BS, Kyle Burner, BS, Alexander Vance, BS, MS

Mentor: Charles Clements, MD

Our proposed research will compare the differences in smoking characteristics and the effects of intensive counseling on smoking cessation in West Virginia's rural and urban populations. This project aims to better understand our urban patient population as compared to the surrounding

rural populations, establish more effective means of treating tobacco use, and to identify and tackle healthcare obstacles unique to our region. The goal of our project is to analyze smoking cessation rates among patients receiving repeated motivational counseling in conjunction with Nicotine Replacement Therapy (NRT), in contrast to sole NRT use. Specifically, the project aims to identify patient beliefs, risk factors, and cigarette smoking rates in the urban and rural populations we serve. This will be accomplished by having student led clinics at both a rural family practice office and Marshall Medical Outreach (MMO), a student led mobile clinic that provides medical care to the local homeless and destitute in Huntington, WV. Armed with this knowledge regarding cigarette smoking, we aim to increase the rate of smoking cessation through repeated education and the provision of smoking cessation aids. In order to accurately determine true smoking cessation we will use a Breath Carbon Monoxide test (BCO), along with self-reported cessation. Smoking cessation at the MMO and the rurally clinic will be compared to national smoking cessation rates in order to evaluate the success of our initiative.