

Surveying the Surgeons: A Unique Approach to Determine Curriculum Needs of Future Rural Surgeons

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The July 2023 start date of the inaugural class for the nation's first separately accredited rural surgery residency program is fast approaching, one of the first steps in preparing for the rural residency surgery program was to launch a survey of the Logan community stakeholders, hospital employees and Chamber of Commerce members to gauge their level of support and interest in establishing a surgery residency program in their community. The survey also helped us identify potential barriers and obstacles to starting the training program.

The second step imperative to the development of the rural surgery residency program is surveying the West Virginia practicing surgeons for their assistance in identifying surgeries/procedures rural residents need to be prepared to perform that are not a focused part of residency. We will also ask the practicing surgeons of their level of support for the new training program, as well as their current satisfaction level with current surgical practice, practice type and plans to retire or move out of WV.

By gathering the current surgeons' input into curriculum development, and data on the percentage of the types of surgeries they currently perform, we can provide comprehensive educational and clinical experiences for our trainees. With the practicing surgeons' input, we can help our trainees develop the surgical knowledge and procedural skills necessary to meet the unique challenges faced by rural practice. Since we will also gather data on the surgeon's anticipated years of continued surgical service in the state, we can determine how their plans to retire or move outside the WV will impact the State's anticipated general surgeon shortage.

Assessment of the Methylation of the NR3C1 in Cortisol Levels as a Potential Indicator of Success in Abstinence Based Rural Recovery Programs for Substance Use Disorder

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This study proposes to examine whether substantial changes in the methylation of the NR3C1 (neuron-specific glucocorticoid receptor promoter) are predictive of success in Abstinence based programs for substance use disorder (SUD) in a rural population. We have demonstrated that cortisol levels have the potential to serve as a useful numerical indicator of stress. Patient stress handling is a major component of program success but is personal and difficult to determine early in recovery. It is probable that the cortisol negative feedback loop that is responsible for maintaining healthy cortisol responses to stress is inhibited by epigenetic modulation through methylation of the NR3C1 promoter. This modulation is known to occur with significant levels of childhood trauma. Such evidence could lead to a realistic biomarker for recovery success and

resiliency. This project will analyze the association between this epigenetic modulation and success in an abstinence-based peer recovery program in Bluefield, WV.

Assessing the Need to Improve Southern West Virginia's Health Outcomes Through Mobile Medical Outreach

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It is widely known that the overall health of adults and children within the State of West Virginia continues to rank among the nation's highest as being fair or poor. According to the West Virginia Behavioral Risk Factor Surveillance System's (BRFSS), West Virginia (WV) ranked 2nd highest nationally in the prevalence of general fair or poor health of adults. The State also ranked highest in the nation for the prevalence of poor physical health, poor mental health, and activity limitations due to poor physical or mental health. The BRFSS report also indicated the prevalence of fair or poor health was highest in the southern counties of Boone, Fayette, Lincoln, Logan, McDowell, Mercer, Mingo, and Wyoming.

Throughout the southern coalfields of West Virginia, Logan and other southern Counties continue to struggle with its residents' healthy behavior and health outcomes. According to the 2020 Logan County Community Health Needs and Risk Assessment, Logan and the other southern WV counties face the additional challenges of an aging population, opiate use, obesity, and some transportation issues- all contributing to the poor healthy behavior and health outcomes. The Appalachian Mountains of southern West Virginia have also impeded the flow of resources and development opportunities leading to socioeconomic disparity throughout the region. The ability to meet the medically underserved needs of southern WV countians is further hindered by lack of finances, inadequate transportation, and the absence of outreach programs.

This proposal seeks to conduct a community health assessment (CHA) to identify key health needs and issues through systematic, comprehensive data collection and analysis. To ensure broad community involvement, we plan to collaborate with local health care workers, other community outreach programs, churches, and engage social media networks throughout southern WV. The assessment will be utilized to determine whether tailoring a community-based outreach program to provide mobile medical services throughout southern West Virginia residents will be supported and utilized by the community.

Impact of Books with Diverse Characters on Cultural Competence, Depression, and Anxiety on Adolescents ages 8-17

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While there is no preliminary data on a study like this before, it has been shown that in the wake of COVID-19, adolescents experience a higher rate of loneliness associated with depression and anxiety (Loades et al., 2020). This indicates that intervention for loneliness must be done in order to connect adolescents. Furthermore, it has been found that decreased cultural competence can be linked to more difficulty in interaction with peers and potentially harmful for mental health (Oppedal et al., 2020). With an intervention that could potentially improve literacy, stress responses, and cultural competency, we hope that this will alleviate some of this burden on patients. We will provide books to pediatric patients (8 to 18yo) at Coalfield Medical Outreach Center and Cabell Huntington Hospital Family Medicine. In doing so, we hope to evaluate the possible impact of books with diverse characters on cultural competency. We will provide pre- and post-intervention qualitative and quantitative interviews in order to evaluate differences.

A Pilot Study to Incorporate POCUS Cardiac Exam in Preparticipation Sports Medicine Physical Exam to Evaluate Student Athlete Heart Health in Rural Appalachia

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Sudden cardiac death is a rare occurrence for young athletes. While the exact prevalence of the disease remains unknown, estimates from different studies range between 1:40,000-1:80,000 (Harmon, 2014). The causes of sudden cardiac death in athletes can be from many different causes (such as arrhythmia, connective tissue disorders, and coronary artery disease). Among young athletes, the greatest risks that have a potential for screening are abnormal rhythm and the inherited structural cardiac disease, hypertrophic cardiomyopathy (HCM). The prevalence of HCM has been documented to be 2:1000 people. (Harmon, Drezner, Wilson, and Sharma) Few warning signs exist to indicate the presence of an abnormality capable of cause of sudden cardiac death (SCD) and as a result, death itself can be the first indication of an underlying undetected cardiac condition. It is the leading cause of death in young athletes.

This pilot project incorporates the use of Point of Care Cardiac Ultrasound (POCUS) cardiac exams and electrocardiograms (ECG) in preparticipation sports medicine screening examinations to aid in the detection of cardiovascular abnormalities in the rural community of Logan, West Virginia. The rural community of Logan was selected primarily due to scarce resources available in the community to offer full echocardiograms to those with limited financial resources even if family history or other findings suggest it. More intensive family history questions will also be incorporated as part of the preparticipation history to serve as an additional cardiac risk indicator.

Rural Appalachia Patient Self- Identification of Barriers to Hypertension Control

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Mentor: Paulette Wehner, MD

Hypertension control is identified as a national priority by the Surgeon General and has been documented to affect those in rural areas to a greater degree than those in urban environments. It is a primary risk factor influencing overall cardiovascular health and mortality. Hypertension affects greater than 40% of West Virginians, disproportionately affecting those with lower income and those without education beyond the high school level, as well as those of advanced age. Despite 80% of all hypertensive patients endorsing their disease in West Virginia, there is no documentation as to whether they are treated successfully, nor why they are or are not.

The treatment of hypertension, and all health-related consequences, not only contributes a physical burden to the people but also a financial burden to both the people affected by the disease as well as the health care system. Hypertension is a disease with large health and social consequences, and its effective treatment is important in rural communities to help reduce its burden of disease, reduce health disparities, and to help address the determinants of Appalachian health. Study of hypertension treatment in this demographic will help strengthen the healthcare infrastructure in those areas, and therefore help the communities which suffer from profound resource limitations around West Virginia.

This study will examine the factors affecting patients' and physicians' control of hypertension in rural communities. It will also provide opportunities for physicians to increase their knowledge about effective hypertension control by offering CME opportunities to physicians. The project will focus on collecting data from Logan County at Logan Regional Medical Center/Logan General Hospital, as well as Mason County at Pleasant Valley Hospital.

Establishing a Rural Psychiatry Residency Program: Identifying Community Stakeholder Perception and Obstacles to a Rural Residency Program in Appalachia.

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The Marshall Community Health Consortium (MCHC) has received funding from the United States Health Resources and Services Administration (HRSA) to plan and develop a rural training psychiatry residency program accredited by the Accreditation Council for Graduate Medical Education (ACGME). This separated accredited rural training track residency will blend psychiatric training experiences at the Huntington, West Virginia based Consortium founding member campuses of Cabell Huntington Hospital, an urban 303-bed medical center academic medical center and Marshall Health outpatient clinics, with those at a rural community-based hospital. Our rural site of preference is Pleasant Valley Hospital in Point Pleasant, West Virginia. Point Pleasant is located approximately 42 miles north of Huntington, and is rurally located, 49 bed not for profit hospital. Pleasant Valley Hospital (PVH) is the newest member of the Mountain Health Network.

Before applying for accreditation in 2022 for the first rural surgery residency program in the nation, we learned community involvement is essential to its planning and development to ensure its success on the local level. As such, we launched a community stakeholder survey (funded by the Rural Health Initiative Pilot Project) to involve the Logan community and develop a baseline of their knowledge of residency training.

The community survey was phenomenally successful and resulted in additional surveys being conducted such as surveying WV surgeons and the Chamber of Commerce. Several poster presentations and a publication submission have resulted from the Logan survey project. This project will build upon the success of the Logan Regional Medical Center community stakeholder survey to help us identify the community perception and potential obstacles in establishing a rural psychiatry residency program in Point Pleasant.