

Conference



West Virginia
Rural Health Association

31st Annual WV Rural Health Conference

Oglebay Resort
Wheeling, WV

LIGHTING THE WAY for RURAL HEALTH

ACCESS - EQUITY - EXCELLENCE

A B S T R A C T S

CONFERENCE ABSTRACT

Volume 10 Issue 2

ABSTRACT

The mission of the West Virginia Rural Health Association (WVRHA) is to unite people, communities, and organizations to strengthen rural health in West Virginia. The WVRHA annual conference brought together healthcare professionals, community leaders, and researchers, showcasing their efforts to improve the quality of life and access to excellent healthcare in rural areas. The abstracts covered a wide range of topics, including innovative healthcare delivery models, community health interventions, policy analysis, and the impacts of social determinants on health. These contributions reflect the dynamic work being done and the future directions in rural health, underscoring the WVRHA's commitment to advancing health services and addressing the needs of rural communities. These abstracts serve as valuable resources for those committed to enhancing rural health in West Virginia.

Author affiliations are listed at the end of this article.

Corresponding Author:

Rich Sutphin
West Virginia
Rural Health Association
rich@wvrha.org

KEYWORDS

Conference Abstracts, Rural health

.....



CONFERENCE ABSTRACT*Volume 10 Issue 2****Comparing Disability of Patients With or Without Adjunct Opioid Therapy Undergoing Intervention for Low Back Pain*****Brianna Ritz¹, Shoji Ishigami¹, Nicholas Nestor¹****BACKGROUND**

The advent of interventional spine and pain procedures changed how chronic pain can be treated. Physicians now focus on the etiology of pain instead of masking it with medication.

OBJECTIVE

While opioids are still utilized today as an adjunct therapy for managing chronic low back pain, we question whether such usage may actually hinder functional restoration during the rehabilitation process when combined with interventional procedures. We hypothesize that adjunct opioid therapy may not provide a greater quality of life outcome compared to the otherwise successful interventional procedure.

METHODS

We reviewed charts of patients undergoing radiofrequency ablation (RFA) for facet joint-mediated low back pain. Before and after RFA, patients were surveyed by the Oswestry Disability Index (ODI), which gives a numerical score to the amount of disability caused by the patient's low back pain. These values were recorded, along with whether the patient was also taking opioids to control their pain. Patients were included in the study only if they had a 50% or greater improvement in their back pain at their follow-up after RFA. The change in ODI (ODI before – ODI after) was calculated for each patient and evaluated to see if there is a difference in the amount of disability between patients who only undergo RFA and those who undergo RFA and are prescribed

opioids. 75 patients with L4-S1 facet-associated low back pain were included in the study. 57 participants did not receive opioids, and 18 participants received opioids. Patients were only included if they endorsed greater than 50% improvement in their pain after RFA.

RESULTS

The amount of disability reported by patients who underwent RFA and took opioid medications increased by 2%, whereas patients who only underwent RFA had a decreased perceived amount of disability by 8%. There was a 10% difference in the level of disability perceived between groups, with a p-value of 0.0163. The results suggest patients taking opioids and undergoing RFA do not perceive a benefit regarding their quality of life, while patients not prescribed opioids do endorse an overall improvement in quality of life, even though on analogue pain scales, both groups reported at least a 50% decrease in pain.

CONCLUSION

This calls into question the benefit of prescribing opioids to patients with low back pain with facet etiology. The project was approved by West Virginia University's IRB board, protocol 2210661944.

AUTHOR AFFILIATION

1. West Virginia University, Morgantown, West Virginia



CONFERENCE ABSTRACT

Volume 10 Issue 2

Adolescent Vulnerabilities: Impact of Electronic Nicotine Delivery Systems on Prefrontal Cortex Excitability and Nicotine Dependence

Brandon Henderson¹; M. Alex Simpkins¹; Mathew C. Dudich¹; Samuel Tetteh-Quarshie¹; Nate O. Olszewski¹; Lauren E. Young¹; Zoie C. Weinsweig¹; and M. Sage McGlauglin¹

BACKGROUND

Electronic nicotine delivery systems (ENDS) are popular flavored nicotine alternatives popular amongst the adolescent population. To date, there have been no preclinical investigations of their effect on late-developing brain regions such as the prefrontal cortex.

OBJECTIVE

This investigation aimed to determine how neuronal function and drug self-administration differed between adult and adolescent exposure timepoints.

METHODS

Both adolescent and adult mice were used in an e-Vape[®] self-administration (EVSA) assay. Self-administration occurred over several weeks with increasing fixed-ratios of nicotine administration. Brain sections of the ventral tegmental area (VTA) and prelimbic area of the medial prefrontal cortex (mPFC) were collected to assess neuron excitability.

RESULTS

We observed that adolescent and adult mice self-administered nicotine plus menthol with similar magnitudes of reinforcement-related behaviors. Both groups also exhibited similar changes in VTA dopamine neuron excitability, with a significant increase in mPFC pyramidal neuron excitability in adolescents. Additionally, the reinforcement-related behavior observed during EVSA assays correlated

with adolescent mPFC neuronal excitability, which was not seen in adults.

CONCLUSION

These observations show that adolescent exposure may uniquely change the prelimbic area of the mPFC. This suggests that mPFC neuronal excitability in adolescent mice may play a causal role in drug intake and the importance of adolescent nicotine dependence.

AUTHOR AFFILIATION

1. Marshall University Joan C. Edwards School of Medicine, Department of Biomedical Sciences, Huntington, West Virginia



CONFERENCE ABSTRACT*Volume 10 Issue 2****FARMacy WV: Demonstrating the Effectiveness of “Food is Medicine” Initiatives in Rural West Virginia*****Gina Wood¹ ; Samantha Shawley-Brzoska¹;
Carol Antonelli- Greco²; Amanda Cummins²****BACKGROUND**

West Virginia (WV) is one of the most challenged states in the nation in terms of its persistently high rates of chronic disease, poverty, and nutrition insecurity. Limited access to healthy, affordable food options leaves many to rely on convenience stores, gas stations, and charitable assistance as their primary source of nutrition. Food deserts and poverty lie at the heart of poor-quality diets in our state, demonstrating the need to improve food access for the more vulnerable.

OBJECTIVE

FARMacy WV, a 15-week produce prescription program that originated at Wheeling Health Right Inc. in 2016, is designed to serve patients with or at risk for chronic conditions and nutrition insecurity through 1) increased access/availability of fresh, locally grown produce and 2) participation in a nutrition education and culinary instruction program.

METHODS

Clinical measures and dietary behavior and food insecurity assessments were collected pre and post-program. Utilizing HIPAA-compliant software and standardized data collection processes facilitated analyses of common measures across all program delivery sites.

RESULTS

The program has facilitated connections between key systems (agriculture, health care, community service agencies, and academia) and helped improve diet quality and health outcomes. Results from 2020-2022 demonstrate improvements in HbA1c control (0.4%, n=487), body weight (1.6 lbs., n=452), and total cholesterol (6.1 mg/dL n=360). Additionally, participants have received over 247,000 pounds of fresh, locally grown produce.

CONCLUSION

Through state and private foundation grants, FARMacy WV has expanded to serve patients in over 20 counties and has provided consistently supported local agriculture and food systems. This expansion was supported by the WVU Extension Family Nutrition Program and the WVU Office of Health Services Research through Walmart Foundation funding.

AUTHOR AFFILIATION

1. West Virginia University School of Public Health, Social and Behavior Sciences
2. FARMacy West Virginia



CONFERENCE ABSTRACT*Volume 10 Issue 2****Medical Emergency Preparedness of Rural Health Facilities in West Virginia*****Porter Green¹; Jason Mitton¹; Ryan Relyea¹; Tabitha Fox MSN² ; Aaron McGuffin MD^{1,2}****BACKGROUND**

Access to health resources is typically limited in rural areas. However, in a medical emergency, patients in rural areas are still more likely to go to their local rural health clinic rather than drive to a tertiary care center.

OBJECTIVE

This research aimed to gather survey data regarding the medical emergency preparedness of rural health facilities in West Virginia and identify opportunities for improvement to ensure patients receive optimal care before their transfer to a tertiary care center.

METHODS

After IRB approval for our study, we developed a survey to assess the emergency preparedness of rural health facilities in West Virginia, including their training policies, available emergency equipment, requirements of staff to be certified in basic life support (BLS), emergency medical service (EMS) response times, and the perspective of staff members regarding their overall medical emergency readiness. The survey also asked specifically about the staff's confidence in providing medical emergency treatment to patients of different ages. In August 2022, the directors for the Partners in Health Network and the West Virginia Health Network sent the survey to their member network. The network recipients were administrative leaders at 108 rural health facilities across West Virginia. The recipients were given 4 months to complete the survey and were sent monthly email reminders. Overall, 19 recipients (17%) responded to the survey. Participation in the survey

was voluntary, and respondents were anonymous. The survey closed on December 31, 2022.

RESULTS

The study results suggest that the emergency preparedness of rural healthcare facilities in West Virginia should be evaluated further. Questions regarding equipment availability and storage methods indicated wide variability. Patients requiring emergency care at 50% of clinics wait 16 minutes or more for EMS response. Thirty-nine percent of clinics are 31 minutes or more away from the nearest tertiary care center. American Heart Association BLS training was not required by 37% of responding clinics. Twenty-four percent of clinics do not conduct any emergency simulations. Of the clinics that do conduct emergency simulations, only 55% do so annually. Forty-seven percent of healthcare clinics do not store emergency naloxone. There was a 45% decrease in confidence level in caring for a newborn with a medical emergency compared to an adult. There was also a decrease in reported pediatric-specific medical emergency equipment.

CONCLUSION

While our overall survey response was low, it is suspected that the results are likely generalizable across the state. Consequently, our study identified a need for statewide assessment, standardization, and training in emergency preparedness at West Virginia rural healthcare facilities. Time for rapid interventions before hospital arrival may be greater in these settings, and therefore, training for medical emergencies is vital. Emergency preparedness



should be evaluated through on-site interviews with staff and clinicians to assess specific barriers and implement targeted changes to improve emergency preparedness. In addition, rural health clinics would benefit from increased staff BLS training, more frequent emergency simulation training, and pediatric-specific simulations in medical emergency treatment to improve confidence. There should also be assurance that each clinic is stocked with appropriate pediatric emergency medical supplies in addition to naloxone. Further consideration should be given to creating a centralized statewide reporting website to document medical emergencies at West Virginia rural health clinics to track responses and outcomes.

AUTHOR AFFILIATIONS

1. West Virginia School of Osteopathic Medicine
2. Robert C. Byrd Clinic



CONFERENCE ABSTRACT

Volume 10 Issue 2

Implementing Telemedicine into the Physician Assistant Curriculum to Improve Healthcare Disparities in Rural West Virginia

Forrest Olgers¹

BACKGROUND

Rural West Virginia communities experience health disparities secondary to a lack of access to medical care.

OBJECTIVE

The West Virginia University Physician Assistant Program recognized that telemedicine is currently the best solution to improve healthcare access.

METHODS

A formal telemedicine education module was implemented into the didactic curriculum to improve confidence and the likelihood of implementing it in their future practice. The module includes best practices of medico-legal, physical examination, and ethical considerations when utilizing telemedicine.

RESULTS

After completing the module, physician assistant students' confidence levels significantly improved, and they were more likely to implement telemedicine in their future practice.

CONCLUSION

Expanding the module to future students, other institutions, and currently practicing providers will improve access to care and healthcare disparities in West Virginia.

AUTHOR AFFILIATIONS

1. West Virginia University, University of Pittsburgh



CONFERENCE ABSTRACT*Volume 10 Issue 2****Efficacy of Self-Measured Blood Pressure Monitoring in West Virginia Primary Care***

Andrya Durr¹; Craig Robinson, MPH²; Robin Seabur, MS², Andrea Calkins, MPH¹; Cecil Pollard, MA¹; Jessica McColley, DO²; Emma White, BSN RN, PCMH CCE²; N. Marcus Thygeson, MD, MPH³; Curt Lindberg, MHA, DMan⁴ with Partners in Complexity; Emily Davis¹; Adam Baus, PhD¹

BACKGROUND

Hypertension is a leading cause of cardiovascular complications, stroke, and mortality globally. Self-measured blood pressure monitoring (SMBP) has been shown to improve patient-provider communication, patient health literacy, and blood pressure (BP) control when integrated into clinical management approaches.

OBJECTIVE

This study aimed to evaluate an SMBP pilot implemented by Cabin Creek Health Systems (CCHS) and its impact on BP control.

METHODS

SMBP programming took place from January 2020 – March 2023 and enrolled 750 patients with current or historically uncontrolled hypertension (systolic ≥ 140 and/or diastolic ≥ 90). Following exclusions, 401 (53.5%) patients who met three inclusion criteria were used for evaluation: 1) uncontrolled at enrollment, 2) enrolled for at least 30 days, and 3) documenting at least 10 remote BP readings.

RESULTS

The percentage of patients in the controlled range increased from 0.0% to 56.1%, with a 20.5 and 11.2-point decrease in systolic and diastolic BPs ($P < .0001$ for both). The number of comorbidities did not appear to negatively impede improvements

in blood pressure control, with patients having ≥ 5 achieving a 20.5 and 11.3-point reduction in systolic and diastolic BPs. Further, significant decreases in total cholesterol ($P = .002$), triglycerides ($P = .038$), low-density lipoprotein ($P = .004$), and very low-density lipoprotein ($P = .017$) were observed, as well as significant increases in female high-density lipoprotein ($P = .027$).

CONCLUSION

CCHS successfully implemented SMBP in rural southern WV and demonstrated improvements in BP control across all demographic indices and several vulnerable populations. This represents a foundational study whose findings can inform others interested in hypertension control.

AUTHOR AFFILIATIONS

1. West Virginia University Office of Health Services Research
2. Cabin Creek Health Systems
3. Adaptive Health
4. Partners in Complexity
5. West Virginia University School of Medicine



CONFERENCE ABSTRACT

Volume 10 Issue 2

Building Nurse-led Access to Care Points Within Rural WV Communities

Angela Smothers¹; Stephanie Young, PhD, RN²; Shea Gallagher²; Erin Young³; Kylie Young³

BACKGROUND

With its status as the third most rural state in the United States, West Virginia faces significant health challenges. The state's residents experience some of the most adverse health outcomes nationwide, including high rates of diabetes, heart disease, chronic obstructive pulmonary disease (COPD), smoking, and addiction. Additionally, the state's poverty rate exceeds the national average, with the southern counties of McDowell, Mingo, and Mercer facing even more substantial economic hardships.

OBJECTIVE

To address these health disparities, the WVU School of Nursing initiated a faith community nursing program over the past ten years, concentrating its efforts in the southernmost counties. By training and equipping nurses native to these regions to establish programs within local churches, these faith community initiatives led by nurses have become crucial healthcare access points for community members.

METHODS

In the last 10 years, the initiative identified and trained nurses in West Virginia's rural communities through a national faith community nursing program. These nurses received the training, the essential supplies, and the ongoing mentorship required to establish and grow nurse-led healthcare access points within their communities. This support enabled them to create programs tailored to the specific health needs identified through community assessments.

RESULTS

Through the Westberg Institute's National Foundations of Faith Community Nursing curriculum, the initiative successfully trained over 100 nurses from various parts of West Virginia. Consequently, nurse-led healthcare access points have been established in 15 counties throughout the state, providing crucial health services to underserved populations.

CONCLUSION

With sustained growth and generous financial backing from organizations like the Pallottine Foundation of Huntington and the Pallottine Foundation of Buckhannon, as well as additional donations from various supporters, the initiative is poised for continued success. Looking ahead, the program aims to foster collaboration with community stakeholders and form partnerships to further support and advance its objectives in enhancing healthcare access and outcomes in West Virginia's rural communities.

AUTHOR AFFILIATIONS

1. West Virginia University School of Nursing, Faith Community Nursing Program
2. West Virginia University School of Nursing
3. West Virginia University AmeriCorp VISTA



CONFERENCE ABSTRACT*Volume 10 Issue 2****Preparing Leaders for the Transition from Volume to Value: Development of the Master of Science in Population Health Program at West Virginia University*****Erik Carlton¹; Steve Davis¹****BACKGROUND**

Spiraling costs coupled with suboptimal clinical outcomes have driven a shift in healthcare reimbursement. Payment is increasingly tied to keeping people healthy (i.e., value) versus treating illness (i.e., volume). This requires integrating clinical science with public health and public policy. However, existing training programs do not integrate these principal components. Population health addresses this by preparing leaders to describe and diagnose problems within populations from a systems-thinking lens.

OBJECTIVE

We designed and implemented a Master of Science in Population Health degree to meet the needs of the 21st-century healthcare workforce.

METHODS

The program was established through input from national stakeholders and guidance from the Commission on Accreditation of Healthcare Management Education (CAHME). Courses address epidemiology, cultural competence, systems thinking, leadership, and building public health capacity. The 30-credit hour program launched in 2021. It is delivered in an asynchronous online format, matching the needs of working professionals. The program can be completed in as little as one year.

RESULTS

The program currently has 8 students completing the degree. One student working at NIOSH received a significant promotion upon degree completion. In 2022, the program became one of only 5 nationally to achieve CAHME certification. As 1 of 5 founding members, the program is working to establish accreditation standards for population health programs.

CONCLUSION

The transition of healthcare reimbursement from volume to value-based will accelerate in the coming years. This transformation requires a well-prepared and trained workforce with the skills to implement evidence-based, multilevel interventions to keep populations healthy.

AUTHOR AFFILIATIONS

1. West Virginia University School of Public Health



CONFERENCE ABSTRACT

Volume 10 Issue 2

Creation of a Diversity Committee to Promote Principles of Diversity, Equity, and Inclusion in Family Medicine Resident Education

Johnny Walker¹; Kimberly Ballard, DO¹; Allie Caudill, DO¹

BACKGROUND

West Virginia is often thought to have a monolithic and uniform culture lacking diversity. However, those of us living and practicing medicine in West Virginia know firsthand that our state has quite a diverse and culturally rich population. As we strive to provide medical care in rural West Virginia, the medical community must be well-trained and competent to provide high-quality care to individuals of all cultural groups. It is now estimated that 4 percent of the West Virginia adult population identifies as being a part of the LGBTQ community. It is also estimated that just under 5 percent of West Virginians between the ages of 25 and 64 are hearing-impaired or deaf. Patients who identify as part of these communities present with unique medical needs that West Virginia's physicians must be prepared to address.

OBJECTIVE

Access Health Teaching Health Center Family Medicine Residency Program is a family medicine residency program based in Beckley, West Virginia. We are an Accreditation Council for Graduate Medical Education accredited 3-year program, training 4 residents in each program year. Based upon recent ACGME survey results and faculty self-reflection, our program lacked diversity education. Our faculty felt that this deficiency warranted decisive action and quick improvement.

METHODS

After internal discussion among faculty and residents, it was decided that the first step in addressing this concern would be the creation of a Diversity

Committee. This committee would comprise a core faculty member and resident representatives from each program year. This committee would meet regularly and aim to further the diversity goals of the program. For their first initiative, the committee created a quarterly lecture series for our resident physicians that would focus on providing high-quality healthcare to minority and underrepresented groups. This lecture series aimed to ensure that all residents will have appropriate exposure to education regarding the unique medical needs of diverse populations and that our program's residents achieve a reasonable level of cultural competency and comfort in dealing with underrepresented populations in the medical setting. For the initial lectures in this series, the committee focused on LGBTQ populations and the hearing-impaired community, as these groups were known to be well-represented in our resident clinic patient population. After 2 years of exposure to this lecture series, second and third-year residents were confidentially surveyed on the impact of the lecture series on improving their comfort level and providing high-quality medical care to these populations.

RESULTS

Through the Diversity Committee lecture series, resident physicians received multiple lectures on providing medical care to the LGBTQ population and the hearing-impaired community. A guest speaker was also brought in to educate resident physicians on rudimentary American Sign Language, hoping this would foster increased basic communication. It was also ensured that the resident continuity clinic had an audiovisual ASL interpretive service always available and that all residents were comfortable using this technology. After completion of 2 years of this lecture



series from the Diversity Committee, confidential resident surveys showed that 85.7% of resident physicians felt that these lectures had improved their ability to provide high-quality medical care to the LGBTQ population, and 71% of resident physicians felt that these lectures had improved their ability to provide high-quality medical care to the hearing-impaired community. In addition to these survey results, multiple patients within the hearing-impaired community also noted that they greatly appreciated our focus on providing high-quality healthcare to the ASL community. Patient summary responses emphasized the importance of communication in healthcare and their appreciation of our commitment to this issue.

CONCLUSION

Based on the survey results, creating a Diversity Committee and implementing a lecture series within our residency program increased cultural competency among our resident physicians. The data above shows that after completing a 2-year lecture series, our resident physicians are now more comfortable with providing care to the LGBTQ population and hearing-impaired communities. While we are encouraged by our initial success, it must be noted that the goal of diversity, equity, and inclusion is an important ongoing commitment that must be addressed through multiple avenues and constantly monitored to ensure appropriate growth and success. We continue to feel that commitment to diversity is crucial in rural West Virginia. As medical providers, we must be able to provide high-quality care to all patient populations, even those that may appear to be underrepresented in our community. As we advance, we plan to build upon the successes noted here by expanding our educational lecture series to other underrepresented and diverse groups and continue to provide updates and reaffirmation on caring for the LGBTQ and hearing-impaired communities. We will also continue to survey residents to monitor this committee's success as we continue to ensure high-quality medical care for all people in rural West Virginia.

AUTHOR AFFILIATIONS

1. Access Health Teaching mEdical Center Family Medicine Residency Program



CONFERENCE ABSTRACT*Volume 10 Issue 2****Evidence of a Digital Divide Amongst Rural and Older Adult Patients in a Medical Weight Management Clinic*****Robert Snedegar¹; Rachel Salyer, PhD²; Jesse Thompson, PhD²; Courtney Pilkerton, MD/PhD²; Laura Davisson, MD, MPH, FACP²; Treah Haggerty MD¹****BACKGROUND**

The 21st century has spurred exponential growth of technology and an increase in the use of telemedicine, which was only expedited by the COVID-19 pandemic. Telehealth in rural areas is growing and improving access to healthcare; however, few studies have examined the utilization of telemedicine in rural and older adult populations.

OBJECTIVE

In this study, we examined the digital divide that exists in telemedicine use for rural and older patients.

METHODS

A retrospective cohort study was performed using patients from a Medical Weight Management Clinic in West Virginia from September 2019 through March 2020 and divided into categories of pre-COVID and post-COVID. The post-COVID group was stratified by rurality (based on Rural-Urban Community Area codes) and age (> 65 and <65).

RESULTS

There were 221 patients in the in-person pre-COVID group and 206 patients in the in-person/telemedicine post-COVID group. No statistically significant difference was found between the number of older or rural patients seen pre- or post-COVID. When comparing the difference in visit type post-COVID between older adults and younger adults, there was a significant difference between mean in-person

visits (2.93 >65 and 2.04 <65, $p < 0.041$) and mean telemedicine visits (1.30 > 65 and 2.16 <65, $p = 0.013$). No significant difference was seen between rural and non-rural mean in-person visits (2.20 rural and 2.13 non-rural, $p = 0.473$) and mean telemedicine visits (1.90 rural and 2.14 non-rural, $p = 0.433$).

CONCLUSION

There was no evidence of a digital divide amongst rural populations compared to their non-rural counterparts; however, a digital divide was present in older adult populations compared to younger adults. While telemedicine services have been shown to increase access to care, older adult populations are not taking advantage of these options. Further research should examine why older adults utilize telemedicine less than their younger counterparts.

AUTHOR AFFILIATIONS

1. West Virginia University Department of Family Medicine
2. West Virginia University Department of Medicine



CONFERENCE ABSTRACT

Volume 10 Issue 2

Expanding Family and Community Services to Improve Health Outcomes in Older Adults: The Visiting Neighbor Pilot Program

Susan McKenrick¹; Ubolrat Piamjariyakul, PhD, RN¹; Angel Smothers, DNP, APRN, FNP-BC, CNE¹; Angelo Giolzetti, PsyD, ABPP²; Helen Melnick, MSN¹; Molly Beaver, MSN¹; Saima Shafique, PhD, MPH¹; Kesheng Wang, PhD¹

BACKGROUND

Older adults living alone in rural areas frequently experience health challenges, social isolation, and limited access to services.

OBJECTIVE

We developed and evaluated a Visiting Neighbors program in 2 Appalachian counties to address these challenges. Ten volunteer neighbors were trained to provide 4 home visits and 4 phone visits over 3 months to 15 older participants in each of these counties (N=30) to guide rural older adults in healthy activities. These age-appropriate activities (Mingle, Manage, and Move—3Ms) were designed to improve the functional health of older adults living alone and to empower them to continue living independently as long as possible.

METHODS

A mixed methods approach was taken to evaluate the project. Quantitative data were obtained at 3 points during the pilot using validated tools to measure quality of life, resilience, loneliness, depression, and social support, and an overall Program Helpfulness survey at the end of the project. Qualitative data included visitor notes from each in-person and phone visit and stakeholder focus groups held at the end of the pilot to ascertain the perception of the project's value in the community. The project was submitted to West Virginia University's Institutional Review Board and determined to be a Quality Improvement/Not Human Subject Research (NHSR) with less than minimal risk to participants.

RESULTS

The older adult participants' total program helpfulness scores were high (M=46.27, SD=3.77), and all volunteer visitors' helpfulness ratings were also high (M=46.89, SD = 3.77). Anecdotally, the program met its aims; full data analysis is ongoing.

CONCLUSION

Volunteer visitors can positively impact the elderly. Given the preliminary results for overall improvement in participants' sense of well-being through Visiting Neighbors, a large-scale implementation may help more West Virginian elderly age in place longer and with a greater quality of life.

AUTHOR AFFILIATIONS

1. West Virginia University, School of Nursing
2. West Virginia University Department of Behavioral Medicine & Psychiatry



CONFERENCE ABSTRACT

Volume 10 Issue 2

West Virginia University Rural Undergraduate Shadowing (RUSH) Program Evaluation

**Victoria Sanchez, PhD¹; Christie Zachary, MS¹; April Vestal, MPH¹;
Jacquelyn Copenhaver, MA¹; A. Brianna Sheppard, PhD^{2,3}**

BACKGROUND

The program evaluation study describes participants, their feedback, and outcome measures of the Rural Undergraduate Shadowing in Healthcare (RUSH) Program implemented by the West Virginia University (WVU) Institute for Community and Rural Health. The RUSH program began in 2016 to enhance interest in practicing in rural, underserved areas of WV and increase the competitiveness of rural applicants to health professions schools. The program includes a shadowing experience with a rural practitioner in WV, participation in rural-related activities, advising on the WVU Morgantown campus, and a stipend.

METHODS

A cross-sectional study conducted in July 2023 examined student application and program evaluation data from the 2016-2021 RUSH cohorts. Descriptive statistics were used.

RESULTS

RUSH program applicants (N = 143) and accepted (n = 26) participants between 2016 and 2021 mainly were college juniors studying life or health sciences at WVU. All participants who completed the end-of-program evaluation (n = 25) rated the experience as very good (16%) or excellent (84%), that the program increased their understanding of what it is like to be a health practitioner in a rural area (100%), increased (96%) or left unchanged (4%) their interest in rural health, and that the experience will strengthen their application to a health professional program (100%). Most participants indicated that they would like to

attend a health profession program that emphasizes rural health (84%) and intend to work in primary care (68%), in a medically underserved area (84%), and in a rural area (68%). A common theme in qualitative feedback collected on program improvement focuses on increasing the number of hours spent shadowing. Twenty-one (81%) program completers responded to a follow-up survey in July 2023. Most participants had completed their undergraduate degree (91%) and begun a graduate health professional program (79%). Former participants still largely intend to practice as a health professional (91%) in a medically underserved (91%) and/or rural (81%) area. Two participants who responded to the follow-up survey graduated from their health professional program. One is continuing training as a medical resident but plans to work in a rural and underserved community later, and the other is currently practicing in a rural, underserved primary care setting in WV.

CONCLUSION

The WVU RUSH program has steadily increased in popularity among WVU undergraduates interested in pursuing a career in the health professions. Participants have demonstrated their commitment to pursuing health professions careers in rural and/or underserved areas as they progress into health professions school, residency, and first practice sites. Ongoing follow-up with alumni is needed to determine if RUSH participants go on to practice in rural and/or underserved areas.

AUTHOR AFFILIATIONS

1. West Virginia University, Institute for Community



and Rural Health

2. University of Illinois College of Medicine at Rockford, National Center for Rural Health Professions
3. West Virginia Clinical and Translational Science Institute, West Virginia University, Institute for Community and Rural Health



CONFERENCE ABSTRACT

Volume 10 Issue 2

Assessing The Need To Improve Southern West Virginia's Health Outcomes

Amanda Jones¹; Jo Ann Raines, MA¹; Willie Kimler, MS⁴; Jentry Hyde, MS⁴; Vincent Morra, MD³; Taylor Adkins, MD³; James Paugh D.O.⁴; Jodi Cisco-Goff, MD⁴; Farzad Amiri, MD^{3,4}; David Denning, MD³; Paulette Wehner, MD¹

BACKGROUND

The ability to meet the medically underserved needs of southern West Virginians is often hindered by lack of finances, inadequate transportation, and the absence of outreach programs to a patient population that is aging or affected by multiple chronic conditions such as heart, kidney, and lung disease, cancer, asthma, and arthritis. These patients are also at risk for elevated risk factors, including high blood pressure, high cholesterol, and obesity. Discussions were held to address the healthcare challenges of creating a community-based outreach mobile medical service.

OBJECTIVE

As part of the planning process, a social media survey was conducted to determine whether the mobile outreach would be supported and utilized by the southern West Virginia (WV) community.

METHODS

Demographic questions such as age, gender, employment status, and health concerns and history were developed using the Survey Monkey platform. After IRB approval was obtained (1981964), a survey web link was generated and launched from various social media platforms, including Marshall School of Medicine's Facebook, Twitter, and southern WV community health, business, church, and personal social media pages.

RESULTS

245 survey results were obtained. Of those, approximately 60% of the respondents were between 18 -34 years old, with 51% male and 49% female. 75.51% of the respondents were white or Caucasian, 9.39% Black or African American, 8.98% Hispanic or Latino, and 4.49% Asian or Asian American. American Indian or Alaska Native and Biracial were .82%, respectively. 47.35% indicated they worked full-time, while 18.37% were part-time. 22.86% held an Associate Degree, 17.96% had some college, 17.55% had a Bachelor's Degree, and 10.20% had a Master's. 13.06% were high school/GED graduates. 91.84% have health insurance.

Conclusion

Despite most respondents having health insurance, there was overwhelming support for a Mobile Van Service. Transportation was identified as a critical issue for patients in obtaining healthcare services. The most requested services included wellness services (53.47%), ophthalmology services (42.04%), sports physicals (33.06%), surgical screenings (32.24%), and dental screenings (30.61%).

AUTHOR AFFILIATION

1. Marshall University Joan C. Edwards School of Medicine Office of Graduate Medical Education,
2. Marshall University Joan C. Edwards School of Medicine
3. Marshall University Joan C. Edwards School of Medicine Department of Surgery
4. Marshall Community Health Consortium Rural General Surgery Residency



CONFERENCE ABSTRACT

Volume 10 Issue 2

Improved Detection and Treatment of Hepatitis C

Heather Weaver¹

BACKGROUND

This project aimed to implement interventions to improve the detection and treatment of Hepatitis C Virus (HCV) in a rural community's medication-assisted treatment (MAT) program. Since 2010, HCV cases in West Virginia (WV) have increased to 9 times the national average due to injection drug use. As of 2017, WV ranks first in the nation for acute HCV incidence (Baus et al., 2022). WV has been profoundly affected by the substance abuse epidemic (Hansen & Gallagher, 2020). In 2020, 137 cases of acute HCV were reported in WV, and drug use was the most reported risk factor (Pack & Hudson, 2022). Deaths due to HCV now outnumber deaths due to Human Immunodeficiency Virus; HCV is the most common infectious mortality in the United States (Baus et al., 2022). Mehta et al. (2022) found that targeted HCV screening improved detection rates when combined with an alert system. Martinez Sanz et al. (2020) found that screening in an MAT program discovered more HCV-positive patients than in education programs only. Fadnes et al. (2021) discovered that integrating the treatment of direct-acting-antivirals (DAAs) with MAT increased patient willingness for necessary screening and additional follow-ups.

METHODS

This project was implemented in a Comprehensive Opioid Addiction Treatment (COAT) program. Patients admitted to the program during the last 3 years, and all new incoming COAT patients were eligible for the project interventions. Several patients had been referred before the project implementation, but only 1 patient was treated and cured. A lack of specialists and no public transportation were 2 factors that limited treatment. The project interventions included standardized ordering of HCV, provider notification of all positive HCV results, and an in-house referral

system to eliminate patient travel. All past COAT patients were reviewed, and patients who tested positive for HCV or were not screened were contacted and offered an in-house referral for treatment. Sixty patients out of 156 met the criteria.

RESULTS

Of these past patients, project results revealed 2 past patients returned and initiated treatment. There was 100% provider notification of patients who tested positive for Hepatitis C during the 16 weeks of the project. Five referrals from the community began treatment and were not in the COAT program. This is a 600% improvement in treatment in this community. Treatment in a rural community was made possible by partnering with the West Virginia Hepatitis Academic Mentorship Program (WVHAMP). This telementoring program allows patients to consult with a specialist while remaining in their community through a primary care provider.

CONCLUSION

The combination of improved screening, notification, and treatment for HCV in an MAT made a difference in this rural community.

KEYWORDS

Hepatitis C Virus, people who use drugs, medication-assisted treatment, direct-acting-antivirals, the opioid epidemic, telementoring.

AUTHOR AFFILIATIONS

1. Purdue Global, Indianapolis, Indiana



CONFERENCE ABSTRACT

Volume 10 Issue 2

WVCTSI Project ECHO: Moving Knowledge, Not Patients

Jay Mason¹; Mithra Salmassi¹; Elisabeth Minnick¹

BACKGROUND

Limited specialty care access significantly contributes to rural health disparities. Extensions for Community Healthcare Outcomes (ECHO) is an innovative training and education model to address the need for trained specialty care in rural areas, such as West Virginia (WV).

approach facilitated by the widespread use of a technology-based provider education and mentoring platform has facilitated the availability of specialty care in rural areas such as WV.

AUTHOR AFFILIATIONS

1. West Virginia Clinical and Translational Science Institute

OBJECTIVE

This poster describes the successful implementation of ECHO projects in diverse subject areas facilitated by unique partnerships between the West Virginia Clinical and Translational Science Institute (WVCTSI) and its practice partners. Since its implementation in 2016, the WVCTSI ECHO Program has been able to expand and reach participants in 10 different topic areas, including HCV/HIV, substance use disorder (SUD), psychiatry, chronic lung disease (CLD), campus mental health, and COVID-19.

METHODS

In April 2023, the WVCTSI ECHO team sent out its biannual participant survey for the WVCTSI ECHO Program to gain insights on the program and potential future directions. Participants were given 3 weeks to complete the survey. Results were shared with participants and other stakeholders via social media, infographics, and email summaries.

CONCLUSION

Key lessons learned include leveraging existing partnerships and implementing projects based on provider needs. A multi-partnered community



CONFERENCE ABSTRACT

Volume 10 Issue 2

*A Rare Case of Pulmonary Embolism from a Hemodialysis Arteriovenous Fistula Thrombosis***Ronak Patel¹; Muhammad Malik, OMS-III¹; Sanjana Nethagani, MD²;
Rupali Sangrampurkar, MD²**

Vascular access is crucial for hemodialysis patients but carries risks, including thrombosis. This case involves a 64-year-old female with end-stage renal disease (ESRD) on hemodialysis, hypertension, heart failure, diabetes, and previous thrombosis and stenosis of brachial and central veins, who presented with shortness of breath, chest pain, and left arm swelling. Hemodialysis is administered via left arm arteriovenous fistula (AVF) 3 times a week. A physical exam revealed moderate edema in the left forearm but was otherwise unremarkable. CTA confirmed pulmonary embolism (PE) in the left lower lung, while duplex ultrasound ruled out deep vein thrombosis (DVT). The PE was suspected to result from left arm AVF thrombosis due to forearm swelling. The patient received 48 hours of heparin therapy and was discharged on Eliquis for anticoagulation. Thrombosed AVFs usually resolve spontaneously but can pose a risk of PE, especially in patients with diabetes, cardiopulmonary compromise, and repeated cannulation trauma. Diagnosis is clinical and traditionally confirmed with ultrasound, which, in this case, failed due to evolving anatomical changes and turbulent blood flow within the fistula. Standard AVF care involves physical exams at each appointment to detect thrombosis signs, such as a systolic bruit, arm swelling, prolonged bleeding, or changes in pulse or thrill. Unfortunately, the patient's arm swelling was overlooked during dialysis, resulting in delayed hospital presentation and embolization risk. This case highlights the heightened PE risk in ESRD patients with AVF thrombosis and the importance of early detection and intervention. Scheduled AV fistulograms may be beneficial, especially for patients with recurrent AVF thrombosis or stenosis.

AUTHOR AFFILIATIONS

1. West Virginia School of Osteopathic Medicine
2. West Virginia University Camden Clark Medical Center



CONFERENCE ABSTRACT*Volume 10 Issue 2****The Effect of Nutrition on Acne: a Case Study*****Sahra Bassami¹; Dr. Brian Griffith¹; Dr. Dina Schaper¹**

Patient consent was obtained for this case study. This case study focuses on a 34-year-old woman who has been dealing with acne since she was a teenager. Despite trying various treatments, including topical applications, antibiotics, and an extended course of Accutane, her acne has not improved much. Triggers such as dietary habits, exceptionally high glycemic foods, and hormonal fluctuations related to her menstrual cycle exacerbated her condition. Notably, late-onset acne affects a significant percentage of adults and can have profound psychosocial implications. Pathogenesis of acne involves excessive sebum production and a series of inflammatory processes. Addressing sebum production and inflammation represents a less aggressive approach to managing acne. The study explores the potential efficacy of a low glycemic index/load diet in mitigating acne. Low glycemic index/load (modified carbohydrate intake) increases insulin-like growth factor 1 (IGF-1). It also eliminates spikes in blood glucose. Spikes in blood glucose cause inflammation throughout the body and increase the creation of sebum. Limiting glycemic intake in the diet, alongside essential nutrients like vitamin A, antioxidants, and zinc, helps promote healthy skin. The proposed intervention includes dietary modifications, IGF-1 monitoring, sebaceous gland function, and regular acne evaluations over a year, providing insights into a promising approach for managing persistent adult acne.

AUTHOR AFFILIATIONS

1. West Virginia School of Osteopathic Medicine



CONFERENCE ABSTRACT

Volume 10 Issue 2

“Swept Under the Carpet”: Methemoglobinemia Concomitantly Found in a Patient with Acute Pulmonary Embolism.

Leena Alhusari, MBBS¹; Teseir Hamdani MD¹;
Yara Alshawabkeh MD¹; Bisher Mustafa MD¹

CASE PRESENTATION

A 73-year-old male presented to the Emergency Department (ED) with 2 week-onset shortness of breath. His respiratory status kept worsening gradually, for which he presented to the ED for evaluation. One day before his ED presentation, he complained of a sore throat and nasal drainage and tested COVID-19 positive. He was diagnosed with bullous pemphigoid 3 months ago and was started on dapsone. Upon initial assessment, his oxygen saturation was 89% on a pulse oximeter. Chest auscultation was clear. Arterial blood gas at room air showed PH 7.47, PO₂ 68, PCO₂ 35, and oxygen saturation at 96%. CT-Angiography of the chest revealed bilateral pulmonary emboli and bibasilar atelectasis of the lungs with otherwise normal lung parenchyma. Dapsone was discontinued on admission. Hypoxia improved after the initiation of inpatient anticoagulation as a treatment of acute pulmonary embolism along with treatment of methemoglobinemia with 3% Methylene blue. The pre and post-treatment methemoglobin levels were 12.4 and 3.6, consecutively. The patient was discharged home with an oral anticoagulant for treatment of provoked pulmonary embolism, and dapsone was substituted with mycophenolate as treatment of bullous pemphigoid.

DISCUSSION

Methemoglobin is a non-functional hemoglobin that results in tissue hypoxia. Methemoglobinemia is an important albeit uncommon cause of low pulse oximeter readings. About 15% of patients who receive long-term dapsone at a standard dose can form methemoglobin. Acquired methemoglobinemia

is a treatable condition; however, it is often clinically subtle and can be missed on routine clinical assessment. Our case highlights the importance of broadening the differentials of acute hypoxic respiratory failure to include less common causes like methemoglobinemia in the relevant clinical scenarios.

CONCLUSION

We present a case of acute hypoxic respiratory failure secondary to pulmonary embolism along with dapsone-induced methemoglobinemia. Given the significant morbidity and even mortality associated with methemoglobinemia, physicians should maintain a high index of suspicion for oxygen level discrepancy in hypoxic patients and consider the possibility of acquired methemoglobinemia when clinically relevant. Hence, earlier detection and treatment of the etiology of tissue hypoxia.

AUTHOR AFFILIATIONS

1. Marshall University Joan C. Edwards School of Medicine, Internal Medicine Residency Program



CONFERENCE ABSTRACT

Volume 10 Issue 2

Hiding in Plain Sight: Advanced, HER2-Positive Gastroesophageal Junction Adenocarcinoma Presenting with the Sign of Leser-Trelat: A Case Report

**Khurram Anwar, MD¹; Abraham Titus, MD¹;
Leena Alhusari, MBBS¹; Toni Pacioles, MD¹**

BACKGROUND

The Sign of Leser-Trelat is the explosive development of multiple pruritic seborrheic keratotic lesions. It is an ominous sign classically associated with internal malignancy. It is a paraneoplastic dermatosis with clinical features of hyperkeratosis and epidermal proliferation. Classically, the Sign of Leser-Trelat has commonly been associated with gastrointestinal adenocarcinoma. The underlying pathology is likely driven by cytokines and growth factors related to the neoplasm.

METHODS

We report a case of a 75-year-old man with no known past medical history who presented to our hospital with a 3- months history of progressive weakness and weight loss. Our patient used to live alone and smoked around 10-15 cigarettes per day for the last 40 years. He noticed difficulty swallowing food for the last several weeks before admission, leading to a significant reported weight loss of around 50 pounds. His physical examination demonstrated extensive seborrheic keratotic lesions on his back, which were pruritic and first noticed several months before this presentation. The lesions were treated symptomatically. During the workup for pathological weight loss, the patient underwent CT imaging, which demonstrated a large tumor in the region of the gastroesophageal (GE) junction. He was also found to have a T9 vertebral body pathological fracture with an underlying lesion on an MRI scan. Upper Endoscopy with biopsy confirmed a large, partially obstructing friable mass in the GE junction. The pathology of the mass revealed a HER2-positive invasive, poorly differentiated adenocarcinoma of

the GE junction. The patient was offered palliative treatment options for his advanced malignancy; however, the patient opted for hospice and best supportive care only after informed decision-making.

RESULTS

N/A

CONCLUSION

Cutaneous manifestations of internal malignancies are important clinical signs that have been well-studied in the literature. These signs are often clinically subtle and can be missed on routine clinical examinations. It is paramount for health care providers to maintain a high index of suspicion for any new, unexplained skin lesions in their patients and consider the possibility of malignancy, thus potentially leading to earlier detection of an underlying neoplasm. Our case demonstrates the strong association of paraneoplastic dermatoses like the Sign of Leser-Trelat with GE junction adenocarcinoma and that it may present as a clinical sign for this malignancy months before the actual presentation of the patient to the health care services.

AUTHOR AFFILIATIONS

1. Marshall University Joan C. Edwards School of Medicine, Edwards Comprehensive Cancer Center



CONFERENCE ABSTRACT

Volume 10 Issue 2

What Did COVID-19 Medicaid Policy Changes Tell Us?

Johnna S. Beane, BA¹; Charles Mueller, PhD¹

BACKGROUND

The COVID-19 pandemic was a unique experience for everyone, especially the healthcare delivery system. Working with the West Virginia Department of Health and Human Resources and the Bureau for Medical Services, the West Virginia University Health Affairs Institute evaluated 26 Medicaid policies.

OBJECTIVE

The purpose was to provide data to help inform the usefulness of policies post-pandemic and for future public health emergencies.

METHODS

Healthcare outcomes were evaluated using a combination of Medicaid claims data analysis and information from focus groups, interviews, surveys, document review, policies that impacted the retainment of health providers, efficiency of healthcare delivery, beneficiary service utilization, and Medicaid spending. Analyses of the following policies are included here: 1) a policy that allowed emergency medical services (EMS) to triage patients and not transport them to the emergency departments when patients met specific criteria 2) a policy that allowed telehealth modalities to deliver Medication Assisted Treatment (MAT) and Assertive Community Treatment (ACT) services, and 3) policies that allowed 90-day refills for certain medications and the waiver of patient signatures at pharmacies.

RESULTS

Using EMS protocol allowed providers to transport members with severe issues while still providing emergency care to those who could care for themselves at home. Regarding the MAT and ACT telehealth policy, the face-to-face phone and video options made access more accessible for members needing check-ins, counseling/therapy, and other behavioral health services. The changes in how pharmacy services were provided worked; members took advantage of the 90-day prescription refills, and pharmacists supported the policy changes.

CONCLUSION

Communication was key among stakeholders as policies were changed. The ability of healthcare providers to be flexible during the pandemic helped improve the delivery of services. Lessons from this Medicaid policy evaluation are valuable for future preparedness planning whenever the healthcare delivery system may be disrupted.

AUTHOR AFFILIATIONS

1. West Virginia University Health Affairs Institute



CONFERENCE ABSTRACT*Volume 10 Issue 2****Building Capacity for Food is Medicine Programs in West Virginia 2023*****Rachel Baker¹; Megan Govindan¹; Visakha Turner¹; Madelin Gardner¹; Emily Sarkees¹; Tonya Taylor¹; Shawna Chapman¹; Diane Gross¹****BACKGROUND**

Millions of Americans are impacted by food insecurity and diet-related health concerns, such as diabetes and other chronic diseases.¹ An umbrella term for activities and services that respond to the link between nutrition and health is “Food is Medicine” (FIM).² FIM programs are funded by the private and public sectors. FIM programs can support clinical-community linkages, which aim to improve community health by supporting meaningful improvements in food security, health biomarkers such as A1C, and health quality indicators.³

METHODS

A landscape analysis was conducted examining the West Virginia (WV) FIM medicine website to identify FIM programs and services for a 5-county state region.⁴ The analysis also searched county health department websites, non-profit hospital community health needs assessments (CHNA), and community health implementation plans (CHIP),⁵ National GusNIP data, and SNAP-ED data.

RESULTS

The spectrum of FIM programs found in web searches included medically tailored meals (MTMs), medically tailored and healthy food packages or groceries, nutritious food referrals or vouchers, prescriptions for nutritious groceries or produce, culinary medicine and teaching kitchen programs, and population-based healthy food services including SNAP, WIC, and emergency food programs.^{2,6} This study found 4 FIM programs in the 5-county region. Three counties had

a nutrition-related health disparity identified in their CHNA, and 2 had related actions in their CHIP. Of the programs identified, 1 was a medically tailored meal program, and 3 were produce-prescription programs.

CONCLUSION

Opportunities exist for FIM program expansion in WV through various funding sources. Charitable foundations like the Highmark Foundation have recently supported FIM programs,⁷ and others have opportunities to join them in expanding the reach of FIM in WV. Non-profit hospitals could also explore using Community Benefit dollars to expand FIM programming to combat chronic disease.

AUTHOR AFFILIATIONS

1. West Virginia University Health Affairs Institute



CONFERENCE ABSTRACT

Volume 10 Issue 2

Accelerating Institutional Investment in West Virginia: The West Virginia Anchors in Resilient Communities (ARC) Project

Megan Govindan¹; Kacey Gantzer²; Patty Miller³; Visakha, Turner¹, WVU Health Affairs Institute; Rachel Baker¹; Emily Sarkees¹; Tonya Taylor¹; Kelsey Abad³

BACKGROUND

In 2021, a cross-sectional team of West Virginia (WV) food systems leaders was selected for the Institutional Investment Accelerator, receiving mentorship from the Director of Regional Innovation and Community Resilience at Health Care Without Harm (HCWH). The team worked to build capacity for integrating agriculture and health to develop and sustain an Anchors in Resilient Communities (ARC) initiative in WV. ARC is a multi-stakeholder initiative that leverages the assets and capacities of large place-based anchor institutions such as hospitals, universities, and local governments to improve the health, economies, and climate resilience of low-income communities of color.

OBJECTIVE

Co-convened by the HCWH and the Emerald Cities Collaborative, ARC facilitates resources and training to support initiatives across the county to strengthen community-based partnerships that leverage anchor institutions' purchasing and investment power to bolster the communities they serve.

METHODS

Using a policy, systems, and environment approach, the team focused on the provisions in the Affordable Care Act, which require nonprofit hospitals to complete Community Health Needs Assessments (CHNA) and Community Health Implementation Plans (CHIP) every 3 years. Over 18 months, the team 1) conducted a power map of the food system, 2) applied the HCWH resource Delivering Community

Benefit: Healthy Food Playbook to the WV CHNA and CHIP reports, 3) applied ARC theory of change, 4) developed strategic goals and objectives, 5) reviewed goals and objectives with equity consultants, and 6) hosted a community conversation to discuss goals and objectives with a graphic illustrator.

RESULTS

Sixteen scalable agriculture and health activities were identified, and a collective vision was captured with a graphic illustration.

CONCLUSION

The WV ARC group will survey state producers, aggregators, and distributors to understand challenges and opportunities for conducting agricultural activities at the community level to further develop a community-led food is medicine plan.

SPONSOR

Wallace Center at Winrock International

AUTHOR AFFILIATIONS

1. WVU Health Affairs Institute
2. WV Department of Agriculture
3. WV Producer, Aggregator, Distributor Network



CONFERENCE ABSTRACT

Volume 10 Issue 2

Expanding Genetic Services in West Virginia

Megan Yoho¹; Radhika N. Sawh²; Kimberly Kelly³; Safalta Khadka⁴; West Virginia University Health Service Outcome Research

BACKGROUND

West Virginia (WV) residents are primarily medically underserved and rural. These factors influence the landscape of the state's access to and delivery of medical services, specifically genetic services. The demand for genetic services is only increasing as our understanding of the genetic contribution to disease expands. Despite this, at the time of this study, West Virginia was one of 3 states with fewer than 1 genetic counselor per 500,000 residents. In addition, WV residents only had access to 1 clinical geneticist who saw patients part-time via telemedicine. West Virginia is part of the New York-Mid Atlantic Caribbean (NYMAC) Regional Genetics Network, an organization funded by a Health Resources and Services Administration grant to support improved access to genetics services. To address the paucity of genetic providers in the state, NYMAC assembled a team of local genetic and non-genetics healthcare providers, families, and public health professionals to identify potential solutions to this significant barrier preventing West Virginians from obtaining needed genetic services.

OBJECTIVE

With funding provided by NYMAC, Dr. Colleen Campbell, a genetic counselor consultant, was invited to West Virginia University (WVU), the largest medical provider in the state, to deliver education via a Grand Rounds presentation and subsequently meet with university leadership. Objectives for the visit included demonstrating the need for quality genetics services, offering guidance regarding implementation feasibility, identifying barriers specific to West Virginia, and providing examples of how these issues

have been broached successfully in healthcare systems with similar demographics and challenges.

METHODS

All members of the department of pediatrics, obstetrics and gynecology, cytogenetics, cancer center, and key administrative leaders were invited to the January 2023 combined grand rounds. An online survey, which included "The Relative Advantage of a Genomic Medicine Intervention of Current Practice," was administered to all in attendance before the grand rounds to quantify priori support for this initiative within the healthcare system. The survey was administered again after the presentation. Basic descriptives and t-tests were planned to examine changes in perceptions. One reminder for survey completion was sent out 1 week after the grand rounds, and the survey was closed 4 weeks after the event. This project was designated as non-human research by the WVU IRB and was therefore exempt.

RESULTS

Participants (N=140) attended the presentation by Dr. Campbell in person or virtually, of which 64 responded to at least 1 part of the survey and 21 responded to both the pre- and post-survey. Among the 64 respondents, 27 (42%) were pediatricians and 12 (19%) were obstetricians/gynecologists. Most of the respondents' primary role was to provide clinical care (47%), followed by trainees (8%). When asked if WVU needs to deliver genetic services to patients, the results showed no significant change from pre-test (M=4.7 out of 5) to post-test (M=4.7) assessments. When asked if WVU should prioritize improving



genetic services, the results showed no significant change from pre-test (M=4.4 out of 5) to post-test (M=4.6) assessments.

CONCLUSION

These results indicate a ceiling effect, demonstrating that respondents highly endorsed needs and priorities for genetic services even before the presentation. At the time of the grand rounds, WVU had hired 1 locum geneticist on an annual contract while continuing their efforts to fill an open chief of genetics position and pediatric genetic counselor position. Due to overwhelming support at the presentation and other meetings during the visit, WVU hired 2 pediatric genetic counselors and approved an additional FTE for a prenatal genetic counselor. There was also encouraging discussion about the value of embedding genetic counselors within various sub-specialties, including neurology and cardiology, once funding could be secured. In addition, WVU committed to supporting legislation for the licensure of genetic counselors in WV to be introduced in January 2024. This suggests that this type of educational intervention can effectively establish support for and subsequently initiate the expansion of genetic services.

AUTHOR AFFILIATIONS

1. West Virginia University School of Medicine
2. New York Mid-Atlantic Caribbean Regional Genetics Network
3. University of Tennessee Health Science Center College of Medicine
4. West Virginia University School of Pharmacy, Department of Pharmaceutical Systems and Policy



CONFERENCE ABSTRACT

Volume 10 Issue 2

Rural Appalachia Patient Self-Identification of Barriers to Hypertension Control

Jay Jensen, MD¹; Benjamin Frear, MD¹; Josh Wyner, MD¹; Rodrigo Aguillar, MD¹; Momin Noor, MS¹; Joan Raines¹; Paulette Wehner, MD¹

BACKGROUND

Hypertension control is identified as a national priority by the Surgeon General and has been documented in other studies to affect those in rural areas to a greater extent than those in urban environments. It is a primary risk factor influencing overall cardiovascular health and mortality. Close to a quarter of West Virginians are increasingly reporting "poor health." Hypertension affects more than 40% of West Virginians, disproportionately affecting those with lower income, those without education beyond the high school level, and those of advanced age. Despite 80% of all hypertensive patients endorsing their disease being treated in West Virginia, there is no documentation as to whether they are treated successfully, nor recognition of how or if they are receiving appropriate instruction on lifestyle modification, nor whether they are being treated with "first-line" agents. Hypertension is a disease with significant health and social consequences, and its effective treatment is essential in rural communities to help reduce health disparities, a multitude of hypertension-associated cardiovascular events, and hypertension-related kidney disease. The treatment of hypertension and all health-related consequences not only contributes a physical and financial burden to those affected by the disease but also contributes a multifactorial burden to the healthcare system.

METHODS

This study will use an anonymous survey of randomly selected participants to evaluate their possible determinants of adequate hypertension control, such as access to transportation, compliance, education about healthy lifestyle from their Primary Care Physician, evaluation of related health issues

such as obesity, sleep disturbance, drug and alcohol consumption, their physical ability and activity level, as well as their diet, tobacco, alcohol and drug habits. The study of hypertension treatment in this demographic will help strengthen those areas' healthcare infrastructure and impact other rural Appalachian communities. Therefore, it supports the communities that suffer from profound resource limitations across West Virginia.

RESULTS

In summary, hypertension in West Virginia, as well as in other rural areas, is significantly worse than its urban counterparts. Though most of the cases of reported hypertension are treated, the adequacy and method of treatment are still unknown. This study examines the factors affecting patients' and physicians' control of hypertension in rural West Virginian communities. It is a grant-funded study that is still ongoing.

CONCLUSION

When completed, the data will be interpreted, and findings reported. The study will also provide quality data to help guide further research into disease and healthcare costs and quality improvement initiatives in rural Appalachian hospitals by better understanding their patient population.

AUTHOR AFFILIATIONS

1. Marshall University Joan C. Edwards School of Medicine, Huntington, West Virginia



CONFERENCE ABSTRACT*Volume 10 Issue 2****An Update Regarding Attitudes of Rural West Virginia Primary Care Providers Related to Patients with Obesity*****Luis Nieto, MD¹; Sharon I. Narvaez, MD¹; Laura Davisson, MD¹, MPH;
Trea S. Haggerty, MD, MS¹****BACKGROUND**

Obesity is a global pandemic, with a prevalence of more than 40% in the USA, with West Virginia (WV) surpassing this rate.

OBJECTIVE

The purpose of this survey-based study was to determine self-reported knowledge, attitude, and treatment option recommendations for the management of patients with obesity within WV primary care centers.

METHODS

After IRB granted an exemption, the data was collected through the West Virginia Practice-based Research Network's (WVPBRN) annual Collective and Research Engagement (CORE) survey. The CORE survey consists of a limited number of questions compiled throughout the year and released annually to healthcare providers and administrators from WVPBRN sites. A snowball sampling technique was used to collect data from 67 healthcare workers. This survey included a 3-point Likert scale using the options agree, disagree, and unsure to answer 5 questions about attitudes toward obesity and 5 questions about obesity treatment. Pearson's product-moment correlations were run to assess the relationships between currency and obesity options, routinely talking with patients about treatment options and discussing the 3 different evidence-based treatment options (pharmacology, behavioral counseling, and bariatric surgery).

RESULTS

In total, 61 of the eligible 67 participants completed the survey (30 physicians, 5 nurses, 13 mid-level practitioners, 2 pharmacists, 5 psychologists, and 3 allied professionals). Most participants were from West Virginia University Medicine (18, 29.5%) and had 1 to 3 years working in their institution (13, 21.3%). Twenty-four responders were from the family medicine specialty (39.3%). Most responders felt that obesity is a chronic disease (52, 91.2%), and all of them agreed that this medical condition is a problem in their community; only 8.8% tend to be less sympathetic toward people with obesity. More than half of providers believe that the ability to control one's weight goes beyond willpower. Sixty percent of participants believe that proper diet and regular exercise alone cannot treat obesity. More than 19% of the responders were unsure about recommending or discussing pharmacotherapy options. When discussing or recommending a surgical option, 10.5% reported that they wouldn't recommend or were unsure about having this discussion (26.3%). There were statistically significant, moderate positive correlations between discussing pharmacology treatment options with patients and discussing bariatric surgery, $r(55) = .39, p < .001$, and behavioral counseling, $r(55) = .27, p = .003$.

AUTHOR AFFILIATIONS

1. West Virginia University



CONFERENCE ABSTRACT

Volume 10 Issue 2

Attitudes of Medical Students Towards the Delivery of Healthcare to Rural Populations Following a Dedicated Workshop

Robert Snedegar, MD¹; Kendra Unger, MD¹; Jason Oreskovich, DO¹;
Courtney Pikerton, MD¹; Treah Haggerty, MD¹; Amie Ashcraft, MPH, PhD¹

BACKGROUND

Many patients in rural areas do not readily have access to the type of healthcare professionals or services they need to treat their medical conditions properly. As a result, rural patients often have to travel large distances for health care and face many barriers to receiving proper medical care.

OBJECTIVE

This project aims to evaluate the effectiveness of student participation in a virtual workshop based on barriers to care for rural patients and to evaluate student learning about these particular barriers.

METHODS

During the workshop, students listen to a lecture on this topic, hear stories from patients about the issues they have faced while seeking medical care, and develop a mock plan on how to creatively but efficiently provide care while minimizing barriers to the patient. Students complete the workshop and can then identify and discuss barriers to care for rural patients and proactively address these to provide better overall care. Secondary outcomes from this workshop are assessing if participation influences medical students' intentions to practice in a rural setting after completion of training.

RESULTS/CONCLUSIONS

This project has been ongoing for over 16 months and has trained more than 80 medical students. Data

analysis is ongoing; however, anecdotal evidence demonstrates a significant change in student attitudes toward rural patients seeking healthcare and increased creativity and problem-solving abilities in students to address the particular challenges posed by these patients. At this time, there are no challenges to the completion of this project, and we look forward to collecting more data to share with the rest of STFM.

AUTHOR AFFILIATIONS

1. West Virginia University Department of Family Medicine



CONFERENCE ABSTRACT

Volume 10 Issue 2

Assessing PM_{2.5} Exposure in School Zones of Coal Mining Regions: A Study from Logan County, West Virginia

Charles Williams¹; Richard McKown¹; Raghav Puri²; Bruno deSouza Goncalves³; Ellen Thompson, MD³

BACKGROUND

Cardiovascular disease and its risk factors are higher in Appalachia than in the rest of the country. West Virginia (WV) has among the highest rates of cardiovascular risk factors, including smoking, obesity, and diabetes. According to the CDC, the prevalence of coronary heart disease in West Virginia is nearly twice the national average (6.2 and 3.7, respectively.) Logan County is consistently one of the worst in WV for health and risk factors for disease. It ranks 52 of 55 for health care outcomes and 51 on health factors, based on weighted scores for health behaviors, clinical care, social and economic factors, and the physical environment. Air quality has emerged as a critical global issue due to its profound impact on public health. Among the various pollutants, particulate matter, particularly PM_{2.5} (particulate matter with a diameter of less than 2.5 micrometers), has been the focal point of numerous studies due to its capability to deeply infiltrate the respiratory system.³ The association of PM_{2.5} with various health issues, from respiratory diseases to cardiovascular complications, further underscores its significance. Notably, PM_{2.5} has been pinpointed as a pollutant stemming from coal mining activities, which raises alarms for communities near these mining zones. Schools are essential hubs in Appalachia where communities come together. Given their still-developing respiratory systems, children are more prone to the detrimental effects of polluted air. In regions with a high prevalence of coal mining, such as specific districts of West Virginia, the coexistence of schools and mining operations necessitates an inquiry into the air quality that students encounter. We evaluated the PM_{2.5} levels near schools situated within the coal mining regions of West Virginia, specifically Logan County.

OBJECTIVE

This investigation offers an initial insight into the potential exposure to the local population that may contribute to the high prevalence of disease in the West Virginia coal fields. In future studies, we aim to incorporate factors like altitude, closeness to mining operations, and meteorological conditions to comprehensively grasp the PM_{2.5} concentrations surrounding these educational hubs in West Virginia.

METHODS

Study Area: The study was conducted in Logan County, West Virginia. **Instrumentation:** Air quality measurements were obtained using the AirBeam 2, a portable device designed to measure fine particulate matter (PM_{2.5}) concentrations in real time. The AirBeam 2 utilizes a light scattering method to detect and quantify PM_{2.5} particles in the air. This device has been previously validated. **Sampling Protocol:** To capture children's exposure during school hours, measurements will be taken between 12 pm and 3 pm on regular school days. The AirBeam 2 device was positioned at a standardized height of 1 meter above ground level, simulating the average breathing height of children. At each school, 2 locations were measured: the main entrance or front yard, representing the primary access point for students, and the school's playground or outdoor activity area, where children spend a significant portion of their break time.

Each location was sampled for a continuous 1-minute period, ensuring a representation of the air quality during the chosen hours. This will be compared to baseline samples taken on Sundays in the exact



locations with unoccupied locations and no vehicular pollution.

RESULTS

Incomplete data. Current data collection is included here:

Location	Temp	PM1	PM2.5	PM10	Rel Humidity
CRHS	101	9	9	10	44
JGS	98	8	9	9	47
LMS	97	7	8	8	49
LGS	100	8	9	10	43

CONCLUSION

This study intends to underscore the significance of PM2.5 concentrations in school zones located within coal mining regions of West Virginia. Schools, as primary centers of learning and development, house a particularly vulnerable segment of the population: children. The levels of PM2.5 observed in these zones may raise concerns about the potential health implications for this demographic. Several studies have previously highlighted the adverse health effects of PM2.5 exposure, ranging from respiratory ailments to cardiovascular complications. Given children's developing respiratory systems and their generally higher breathing rates, they are more susceptible to the harmful effects of these fine particulates. The proximity of schools to coal mining activities in Logan County may exacerbate this exposure. Any spatial variations observed in PM2.5 concentrations across different school zones may suggest that factors beyond proximity to coal mining activities play a role. Altitude, prevailing wind patterns, vehicular pollution, and other meteorological conditions could influence the dispersion and concentration of particulate matter. Further research is needed to dissect these contributing factors and their relative impacts.

AUTHOR AFFILIATIONS

1. Huntington High School Dept of Science,
2. Cabell Midland High School
3. Marshall University JCE School of Medicine Dept of Cardiology, Huntington High School / Marshall University JCE School of Medicine



CONFERENCE ABSTRACT*Volume 10 Issue 2****Poor Mental Health Among West Virginia Residents with Veteran Status*****Jennifer Cooper¹; Carly E. Pullen¹; Julie Hicks Patrick¹****INTRODUCTION**

Many factors contribute to the poor mental health of West Virginia residents, including age, sex, education, and veteran status. West Virginia veterans in rural areas tend to be older, less educated and have less access to mental health resources (Bernardy et al., 2023).

OBJECTIVE

We examined the influence of military status on the number of poor mental health days among West Virginians.

METHODS

West Virginia adults (N = 6567) completed the 2021 Behavioral Risk Factor Surveillance System. We used a 2-step hierarchical regression to assess whether veteran status would add to the prediction of poor mental health days above and beyond that explained by age, sex, and education.

RESULTS

At step 1, age ($\beta = -.177^{***}$), sex ($\beta = .119^{***}$), and education ($\beta = -.106^{***}$) each contributed to the variance explained, $F(3, 6563) = 116.78$, $p < .001$, $R^2 = .051$. At step 2, veteran status added to the variance explained ($\beta = -.045^{***}$), $F(1, 6562) = 11.55$, $p < .001$. However, the 4-variable model accounted for only 5.2% of the variance in poor mental health days, $F(4, 3562) = 90.61$, $p < .001$.

Conclusion

Although veteran status significantly adds to our understanding of poor mental health, the effect is small; however, minor effects can still inform policies and programs aimed at supporting our West Virginia veterans in rural areas.

AUTHOR AFFILIATIONS

1. West Virginia University AGE-ADAR Program



CONFERENCE ABSTRACT

Volume 10 Issue 2

Understanding Hypertension Awareness and Management in Appalachian Minority Communities

Logan Christian¹; Evonne Richards, MEd, MPH¹; Dawn Roberts, EdD¹

BACKGROUND

The Westside, a predominantly minority neighborhood in Charleston, West Virginia, grapples with elevated rates of hypertension.

OBJECTIVE

This quality improvement project aimed to assess the community's awareness of hypertension and its complications and knowledge about lifestyle modifications to mitigate the condition, especially in Appalachian minority populations.

METHODS

A blood pressure drive was organized at a health fair focused on minorities in the region. Before blood pressure screenings, a survey gauged participants' understanding of hypertension and their approaches to its management.

RESULTS

Forty patients participated in the survey at the health fair. The majority expressed awareness of hypertension, understanding of associated risk factors, and confidence in managing the condition. However, participants identified barriers such as a lack of home monitoring devices, limited access to blood pressure cuffs, elevated stress levels, insufficient physical activity, and restricted access to healthy foods. Additionally, a significant number of

patients reported not attending workshops, seminars, or programs related to hypertension awareness or management.

CONCLUSION

Although the results indicate a generally adequate level of knowledge about hypertension, the identified barriers suggest an opportunity for improvement. This underscores the potential benefits of implementing culturally appropriate hypertension educational outreach tailored to address the specific challenges faced by this community in the future.

AUTHOR AFFILIATIONS

1. West Virginia School of Osteopathic Medicine



CONFERENCE ABSTRACT

Volume 10 Issue 2

Walking A Mile in Their Shoes: Examining the Social Determinants of Health in Rural Appalachia

Madison Robinson¹; Evonne Richards, M. Ed, MPH¹

BACKGROUND

Research studies show that unconscious biases affect equitable, compassionate care. Unintended biases can lower the quality-of-care experiences for minoritized patients, especially those in rural areas. This instructional scenario simulation was developed to assist medical students in better understanding the SDOH in rural areas and their potential impacts on health outcomes.

OBJECTIVE

By providing insight into lived experiences, the project aimed to influence future patient care equity and quality by raising awareness of situational barriers.

METHODS

Scenarios developed allowed students to experience a week in the life of 1 of 7 characters from rural areas that also faced challenges due to being un-housed, unemployed, pregnant, LGBTQ+, a coal miner, having an SUD, or raising grandchildren. Learning was assessed through scoring calculated throughout the scenario, pre and post-tests, a post-event forum, and surveys, which provided quantitative and qualitative data to evaluate the effectiveness of the project.

RESULTS

Health equity can be increased by eliminating cultural biases that affect marginalized communities. Increasing cultural competence and humility skills

during medical school through scenario-based learning experiences can positively impact future practices.

CONCLUSION

Scenario-based learning can help future physicians uncover hidden biases and acquire cultural competence and humility skills to become more effective in their practices.

AUTHOR AFFILIATIONS

1. West Virginia School of Osteopathic Medicine



CONFERENCE ABSTRACT*Volume 10 Issue 2****Using Narrative Skills to Help Rural Patients Cope with Pain***

**Richard Llerena¹; Rachel Ford, OMS-2¹; Daniel Feldman, OMS-2¹;
Kelsie Moeller, OMS-2¹; Christina Wise, MAHP, CHSE, CHES¹; Gretchen Lovett, Ph.D.¹**

BACKGROUND

Pain can be described by a tripartite model, which links objective nociceptive, subjective sensory, and emotional suffering. Developing effective strategies to address and manage pain is essential for medical providers to serve patients in rural areas effectively.

OBJECTIVE

This study investigates the usefulness of narrative skills in coping with pain, utilizing the tripartite model by rural standardized patients (SPs).

METHODS

Forty-seven SPs from rural WV participated in IRB-approved training for coping with pain. Pre- and post-questionnaires captured SPs' experiences with physical and emotional pain and how such experiences manifest in their role as SPs. The didactic session, "Pain Narratives: Learning and Talking About 3 Types of Pain," presented the tripartite model and was delivered by a second-year osteopathic medical student (OMS-II). The collected questionnaire data was analyzed using statistical comparative analysis of the Likert Scale data and thematic analysis of the open-ended responses.

RESULTS

There were several commonalities in the perceptions of the word "suffering": as long-term and continuous, as intense physical pain, and as emotional distress. Responses revealed that 85% had experienced

significant emotional pain, and 80.8% had experienced significant physical pain in the past. Additionally, 45% of SPs felt that their religious/spiritual beliefs influence their physical pain and 55% their emotional pain. 72% are willing to seek help for physical pain, while 92% are willing to seek help for emotional pain. Responses showed a self-reported increase in the ability to effectively discuss pain, with some participants reporting that they would advise scheduling refresher discussions about pain in the future.

CONCLUSION

SPs are interested in training on models of pain and how to discuss pain for improved coping. Feedback corroborates the program's effectiveness, with participants acknowledging its potential to impact their personal and professional lives. This research underscores the vital role that narrative skills can play in empowering rural patients to facilitate resilience and wellness.

AUTHOR AFFILIATIONS

1. West Virginia School of Osteopathic Medicine



CONFERENCE ABSTRACT

Volume 10 Issue 2

Evaluating a Healthy Food Initiative in Clay County, West Virginia

David Lovett¹; Kimberly Becher²; Adam Baus¹

BACKGROUND

The lack of fresh and healthy food in low-income rural communities in the United States requires innovative solutions. Clay, West Virginia (WV), a county with twice the poverty rate as high as the national average, lost its only grocery store in 2019. That loss and the lack of public transportation left many people in the community with minimal or no access to fresh produce. Food banks are commonly used in the community, but those food banks often require people to wait in line for hours and usually do not provide sufficient nutrients for healthy meals.

OBJECTIVE

This project aims to evaluate whether a food delivery service, which eliminates distribution lines and provides ingredients for more balanced meals, can be a successful alternative to food bank distribution.

METHODS

The project will take place over 8 weeks, and 25 households will participate. Each household has indicated long-term food insecurity and the desire for help. The food kit company HelloFresh, which sends a meal kit to each participating household every Friday, has already made 4 of the 8 deliveries. In total, 1,200 meals will be delivered. The participants were initially surveyed to assess their desire for and access to fresh produce. A follow-up survey will be conducted at the end of the 8 weeks. This study received a Not Human Subjects Research designation IRB, WVU Protocol #2309843369.

Results: Data collection started with the initial survey and will end after the 8 weeks, concluding October 27, 2023.

CONCLUSION

The project will address the results of the meal kit delivery program and assess whether such a program can increase the availability and consumption of healthy food in rural areas. Primary evaluation questions include: Can the meals be delivered in a rural area efficiently, and will the participants be willing and able to cook them? Does this project improve the participants' willingness to cook whole, healthy meals? Is this alternative food distribution system economically viable compared to current food bank food distribution?

AUTHOR AFFILIATIONS

1. West Virginia University, 2Community Care of West Virginia



CONFERENCE ABSTRACT*Volume 10 Issue 2****Nutritional Status and Patient Education in Chronic Wound Patients with Diabetes Mellitus*****Dr. Ranjita Misra¹; Silpa Beegala²****BACKGROUND**

One of the most common complications of diabetes is chronic wounds that affect approximately 7 million people in the USA. Low serum prealbumin level indicates malnutrition and is associated with delayed healing, infection, and inflammation.

OBJECTIVE

This retrospective study examined the association of low serum prealbumin, high C-reactive protein (CRP), and nutrition education provided to patients with diabetes.

METHODS

1,003 patients were treated for chronic wounds at a hospital-affiliated Comprehensive Wound Center (2006-2009), providing advanced outpatient care for 16 weeks. Data included demographic information, CRP, number of wounds, appetite, and infection collected at baseline, 4, 8, 12, and 16 weeks. Patient education included nutrition, foot care, and infection. Bivariate and linear regression analysis examined the association of patient education with prealbumin levels. The study was approved by the IRB committee at the Ohio State University.

RESULTS

Of the 1,003 patients with chronic wound treatment, 36% had diabetes (50% females, 71.5% Whites). The mean age, number of wounds, and HbA1c were 57.5 ± 12.6 years, 2.0 ± 1.4 , and 7.5 ± 2.1 mg/

dL, respectively. Most patients used insulin (56.2%) and/or oral pills (51.5%). Mean serum prealbumin was 20.1 ± 8.2 mg/dL, and 27.5% of patients had <16 mg/dL, a sign of malnutrition. In addition, 90.2% had high CRP levels of >10 mg/dL. Multivariate linear regression analysis showed patients with low prealbumin (or at risk for malnutrition) had significantly poor appetite, poor knowledge of their health problems, higher inflammation (CRP level), and infection ($p < 0.05$). In addition, these patients received nutrition education ($P = .05$). The model explained 38.8% of the variance in prealbumin ($F = 6.18$, $p < .001$).

CONCLUSION

Patient assessment of low prealbumin levels during wound treatment and patient education to mitigate malnutrition is crucial to promoting wound healing.

AUTHOR AFFILIATIONS

1. West Virginia University, School of Public Health,
2. West Virginia University, Human and Community Development



CONFERENCE ABSTRACT

Volume 10 Issue 2

Preparing Future Surgeons for Rural Practice: A Qualitative Study Analyzing Practicing Appalachian Surgeons' Survey Responses Regarding Curriculum Development

Jacy Baxter¹; James Paugh, DO¹; Jodi Cisco-Goff, MD²; Jo Ann Raines, MA³; Farzad Amiri, MD²; Toufeeq Suliman, MD²; Amanda Jones, C-TAGME¹; Armein Rahimpour, MD²; David Denning, MD¹; Paulette Wehner, MD²

BACKGROUND

The Marshall Community Health Consortium recently received approval to become the nation's first separately accredited rural training track for a Surgery Rural Training Program at Logan. The establishment of the nation's first separately accredited program is in response to the anticipated need to produce more general surgeons, especially in rural areas. 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. Their firsthand knowledge of experience needed to practice within the state 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 West Virginia (WV) will impact the state's anticipated general surgeon shortage.

OBJECTIVE

Our project aims to determine the best curriculum to prepare our trainees for rural surgery practice in West Virginia. To accomplish this, we have the following objectives: 1) Involve West Virginia's practicing surgeons in the process of curriculum development for the nation's first separately accredited rural surgery program, 2) seek practicing surgeons' opinions about what procedures, skills and knowledge the trainees must possess to successfully practice in a rural area, 3) identify practicing surgeons'

most performed surgeries and their perceptions on mastering those specific procedures/skills to be successful in a rural hospital, 4) study the anticipated retirement/moving out of state response rate to determine if impact upon anticipated general surgeon shortage, and 5) identify cultural traits significant to rural West Virginia and identify ways to familiarize residents with those traits during training.

METHODS

To assess the general surgeon's thoughts about the preparation of residents to become rural surgeons, a short survey will be created to evaluate their most performed surgeries, the importance of mastering specific procedures, their current level of satisfaction with their surgical practice, hours per week usually worked and whether they would choose to go into surgery again. Demographics such as age, gender, board certification status, and years of practice will be asked. To assist in disseminating the survey, we have contacted the WV Chapter of American College of Surgeons (WVACS). An e-mail from Ashely Wiley, Chapter Administrator, West Virginia Chapter of American College of Surgeons, indicating their willingness to send the Survey Monkey link for the survey out to their membership on our behalf, is included in our package. Reminders to complete the survey will be sent out to the WVACS membership frequently to increase the response rate. All surveys will be anonymous, and no IP addresses will be collected. To increase willingness to participate, 5 randomly selected winners will receive registration to the WV Chapter Academy of Surgeons Annual Meeting registration. A separate link will be provided at the end of the survey to direct them to a Marshall



site to submit entry registration information. There are no risks or benefits associated with this survey.

COMPLETE INCLUSION/EXCLUSION CRITERIA (MAY BE SUBMITTED SEPARATELY IF EXTENSIVE)

Only surgeons who are members of the WV Chapter of The American College of Surgeons and have e-mail addresses will be contacted to participate.

AUTHOR AFFILIATIONS

1. Marshall University Joan C. Edwards School of Medicine
2. Marshall University Joan C. Edwards School of Medicine, Department of Surgery
3. Marshall University Joan C. Edwards School of medicine, Graduate Medical Education



CONFERENCE ABSTRACT

Volume 10 Issue 2

Creating Independence for Rural Individuals with Mobility Limitations

Robynn Statam¹; Julie Hicks Patrick²

BACKGROUND

Rural residents often experience disparities in health care due to many factors, including wages and distance from medical assistance. This particularly affects those in the West Virginia region.

OBJECTIVE

This study investigates the difference between urban and rural residents and what can be done to improve their independence.

METHODS

Using data from 4,852 adults (M age = 56.9, SD = 16.8; range 18 to 80+) who completed the 2022 Behavioral Risk Factor Surveillance System interview, we examined predictors of difficulty walking or taking the stairs. Approximately 57.1% identified as female, and 24.8% stated difficulty walking or using stairs. Binary logistic regression was used to analyze difficulty based on living situations, and significance was shown.

RESULTS

The regression equation was statistically significant $X^2 (DF = 2) = 441.2, p < .001$. Inspection of the odds ratios showed that older adults were 1.05 times more likely to report difficulty, and urban residents were only 91.7% more likely to report difficulty than their rural counterparts.

CONCLUSION

Our results suggest differences within rural states that influence functional ability. This study shows the need to consider environmental factors and research needed to improve the abilities of the rural populations. We also identify a need for simpler mobility devices for users in rural areas. Given the difficulty in walking and using the stairs, there is a need to enhance the design of certain mobility devices for those living independently or with caregivers. These improvements are seen to increase the quality of life for rural residents and address the disparity as simply as possible. Further research is needed to provide rural residents with better healthcare and add autonomy to those with mobility issues.

AUTHOR AFFILIATIONS

1. AGE-ADAR
2. West Virginia University



CONFERENCE ABSTRACT*Volume 10 Issue 2****Profiles in Caregiving: Differences Among West Virginians Who Do and Do Not Anticipate Becoming Family Caregivers*****S. Alison Bolling¹; Julie Hicks Patrick, Ph.D.¹****BACKGROUND**

Informal caregivers help family or friends who are limited due to illnesses or age-related declines. Most care for older adults is provided by informal caregivers. Although informal care saves billions of tax-payer dollars each year, it may come at a cost to families and communities. Informal caregivers experience poorer health (CDC, 2019), with 38% to 70% having depression (Weisman de Mamani et al., 2018). Thus, it is important to assess the needs of future caregivers. The current study aimed to examine the well-being of adults who anticipate becoming caregivers in the near future to inform future policies and programs.

METHODS

Participants included 5497 West Virginians who completed the CDC's 2020 BRFSS interview (WVU #107363352).

RESULTS

The average age was 57.0 years ($SD = 16.6$), and 57% were female. No participant was currently a caregiver, although 26% anticipated becoming one in the next 2 years, 9.1% were unsure, and 64.9% did not anticipate becoming a caregiver. One-way ANOVAs examined differences among these groups. Expected caregivers were younger than those who were unsure or did not expect to become caregivers, $F(2, 5494) = 16.62$, $p < .00$, and reported fewer poor health days ($M = 5.46$) than those who did not anticipate taking on the role ($M = 7.23$, $p < .001$; $F(2, 3002) = 8.77$, $p < .001$). However, despite being younger and

physically healthier, expected caregivers reported higher depression (35%) than the unsure (25.4%) and those who did not anticipate becoming caregivers (26.1%; $F(2, 5471) = 19.36$, $p < .001$).

CONCLUSION

Despite having some resources to buffer the effects of informal caregiving, those who anticipated taking on the role may enter the role with lowered resilience. Additional research is needed to prepare the state for the needs of these future caregivers.

AUTHOR AFFILIATIONS

1. West Virginia University - Life-Span Developmental Psychology



CONFERENCE ABSTRACT*Volume 10 Issue 2****The Association between Patient Education and Pain Intensity During Wound Healing in Persons with Type II Diabetes Mellitus*****Ranjita Misra, PhD¹ ; Renee Riffle McGinnis, PT, DPT, OCS¹****BACKGROUND**

Diabetes Mellitus (DM) and poor wound healing create significant health and economic burdens. In persons with DM treated for chronic wounds, pain education on pain and neuropathy can decrease foot-related disability and perceived pain levels. This retrospective study examined the association of patient education (pain management and neuropathy) with pain rating (intensity) at discharge.

METHODS

1003 patients (53% females, 37% diabetics) were treated for chronic wounds at a hospital-affiliated Comprehensive Wound Center (2006-2009) that provided advanced outpatient care for 16 weeks. Data included demographic information, health knowledge and perceptions, health risk behaviors, BMI, and pain intensity collected at baseline, 4 weeks, 8 weeks, 12 weeks, and 16 weeks. Regression analysis examined the association of patient education and pain rating at discharge while controlling for known confounders of age, past medical history of cancer and DVT, and knowledge of health problems.

RESULTS

The mean age and number of wounds were 55.2 ± 17 years and 1.9 ± 1.4 , respectively. Twenty percent of the patients received education on pain and/or neuropathy. The mean pain intensity at baseline was 6.11 (SD 2.52), and the mean pain intensity at discharge was 6.02 (SD 2.50) on a 0-10 numeric scale. Multivariate linear regression analysis showed patient education on pain neuropathy was significantly

associated with pain intensity at discharge ($p=.05$). PMH of cancer and DV, older age, and health knowledge were also significantly associated with pain. The model explained 26.2% of the variance in pain intensity ($F=3.84$, $p<.001$).

CONCLUSION

The results support including patient education on pain in comprehensive pain management and diabetic wound care. Appropriate patient education can improve health literacy, strategies to modulate pain, and understanding disease treatment among high-risk individuals.

AUTHOR AFFILIATIONS

1. West Virginia University School of Public Health



CONFERENCE ABSTRACT

Volume 10 Issue 2

Dust in a Rural West Virginia Community

Raihan Khan¹, PhD; Junu Shrestha¹; Zatherine Zeman¹

BACKGROUND

Road dust is an emerging environmental health issue. However, community members, researchers, and policymakers often overlook it. This is especially true for rural populations, such as rural Appalachia.

OBJECTIVE

This study aimed to identify the views of rural Appalachian community members on their road dust issue.

METHOD

Community members were invited for one-to-one interviews. Zoom video conferencing system was used for the interviews. A total of 12 interviews were conducted for the qualitative study. Recorded conversations were transcribed by the researchers. Transcribed data were used for the qualitative analysis. Data were categorized into multiple categories and later recategorized into several themes. Analysis was conducted using NVIVO version 12.0

RESULTS

Major themes that were identified were health concerns, methods of dust mitigation, financing problems, aesthetic issues, property value, and relationships among neighbors. The majority of the interviewees expressed their concern about the health impact of long-term dust exposure. They observed dust formation in spring/summer/fall when

vehicles drive through unpaved roads. Although most expressed concern about the health impact of dust, they differed on dust mitigation strategies. Some expressed concern about the effectiveness of annual soy treatment on roads, while some were satisfied with the results. Some also mentioned that the cost of permanent dust mitigation (paved roads) would burden the community (roads are privately managed). Some were worried that differences in opinion would reduce neighborly and friendly relationships in their neighborhood. Nevertheless, most of them expressed interest in learning the composition of their road dust so the researchers could help them understand the health risks of exposure to those components in the dust.

CONCLUSION

Dust mitigation requires a proper understanding of dust composition. A complete chemical analysis of local dust would convince and unite community members to take steps toward a permanent solution.

AUTHOR AFFILIATIONS

1. James Madison University



CONFERENCE ABSTRACT

Volume 10 Issue 2

Attitudes, Perceptions, and Readiness to Treat Substance Use Disorder amongst West Virginia Healthcare Students

Brooke Seamans, OMS II¹; Brett Miller MS-IV²; Alexandria Arvon, MD³

BACKGROUND

West Virginia has a notorious history of substance abuse and overdoses, skyrocketing from 35.5 to 81.4 drug-related overdose deaths per 100,000 individuals between 2014 and 2020. West Virginia is at the forefront of the opioid epidemic and general substance abuse. This cycle will only be broken with adequate education and training. Studies have shown that stigma toward patients suffering from substance abuse impacts the quality of treatment.

OBJECTIVE

Training duration is minimal concerning addiction medicine, and students often enter clinical years with an engraved stigma.

METHODS

We collected qualitative data via a survey from West Virginia Healthcare students currently in nursing, medical, physician assistant, and nurse practitioner programs. Data was collected and analyzed using the Qualtrics software. In this study, approved by the West Virginia University Institutional Review Board (protocol 2302726825), subjects participated voluntarily and anonymously without compensation.

RESULTS

(N= 185) showed discordance between individual negative attitudes (15.7%) compared to perceived colleagues' attitudes (45.4%) towards patients with substance use disorder (SUD). Respondents feel

unprepared to manage patients with SUD (34.6%). The most polarizing question was regarding treatment by specialists, which poses captivating implications regarding students' confidence in generalists to manage SUD. Limitations include self-reported bias and population size.

CONCLUSION

This ongoing project aims to conduct a curriculum analysis of higher education healthcare programs in West Virginia by exploring the attitudes and preparedness of our upcoming healthcare providers in the treatment and management of substance use disorder.

AUTHOR AFFILIATIONS

1. West Virginia School of Osteopathic Medicine
2. West Virginia University School of Medicine
3. West Virginia University Eastern Campus



CONFERENCE ABSTRACT

Volume 10 Issue 2

A Pediatric Case Study: Alpha-Gal Sensitivity, Tick Exposure, and Meat Aversion in Southern West Virginia

Mohamad Sulieman, OMS¹; James Bailes, MD¹

BACKGROUND

This case study investigates a unique medical scenario involving a 4-year-old pediatric patient in southern West Virginia who presented with a profound aversion to red meats and recurrent episodes of nausea, vomiting, and abdominal pain.

OBJECTIVE

The study aims to deepen our understanding of alpha-gal syndrome's impact on pediatric health by examining the intricate relationship between tick exposure and the emergence of alpha-gal sensitivity. This case exemplifies the significance of regional variations in tick-related allergies and underscores the potential severity of alpha-gal sensitivity in children.

METHODS

The study encompasses a detailed analysis of the patient's medical history, tick encounters, immunization schedule, and laboratory results. It explores the potential link between tick exposure and alpha-gal sensitivity. The duration of data collection extends over the past year, with over 30 documented tick bites, mainly from non-deer ticks. Notably, the patient's immunization regimen was temporarily halted due to a severe rash following the administration of vaccines at the age of three. Alpha Gal-specific IgE levels were assessed, revealing Class IV positivity, indicative of markedly elevated specific IgE antibodies. This report describes a single patient and does not meet the regulatory definition of human subjects research. Therefore, it does not require IRB review.

RESULTS

The case highlights a compelling association between tick bites and the emergence of alpha-gal sensitivity in pediatric patients. The patient's pronounced aversion to red meats and severe allergic reactions, coupled with the elevated specific IgE antibodies, suggest a robust immune-mediated response to alpha-gal. These findings underscore the need for heightened awareness of alpha-gal sensitivity in tick-endemic regions.

CONCLUSION

This case study provides essential insights into the complex interplay between tick exposure, alpha-gal sensitivity, and clinical manifestations in pediatric patients. It reinforces the significance of regional variations in tick-related allergies and emphasizes the potential severity of alpha-gal sensitivity in children. Understanding such cases contributes to the broader field of allergy research and underscores the importance of early diagnosis and interdisciplinary collaboration in managing alpha-gal syndrome in young patients. This study is valuable to our understanding of alpha-gal sensitivity and its implications for pediatric health.

AUTHOR AFFILIATIONS

1. West Virginia School of Osteopathic Medicine



CONFERENCE ABSTRACT*Volume 10 Issue 2****Strengthening Connections between Neurology Patients and Healthcare Providers in Rural West Virginia Through the Arts*****Danielle Sblendorio, MS-IV¹; Lincey Wilson, MS, MD²; Krithika Peshwe, MD²; John Brick, MD²; Eric Seachrist, MD²; Gauri Pawar, MD²; Jessica Frey, MD²****INTRODUCTION**

Residents and patients face stress from challenging clinical experiences. The Synapses Humanities magazine provides an environment that strengthens connections between patients and providers using the arts.

OBJECTIVE

A sub-project within this study promotes wellness in rural West Virginia patient populations by developing a community program through a neurology outreach clinic.

METHODS

This is an ongoing prospective survey study evaluating patients and providers before and after involvement with the magazine. Providers conduct interviews about patients' emotions regarding their neurologic condition. Patients and providers are then encouraged to make art that expresses their experiences, which is evaluated for publication. Surveys are collected before and after creating art, and IRB approval is on file. Patient surveys include the Patient Health Questionnaire-9 and Generalized Anxiety Disorder Questionnaire-7. Provider surveys include the Professional Fulfillment Index. Of the 37 contributors to the 2023 magazine, 23 providers and 2 patients participated in the survey. Surveys were collected from Art Day events and inpatient encounters spanning 2 years (Fall 2021-current). Paired t-test was used for statistical analysis, and thematic analysis was used for free-response.

RESULTS

There was a statistically significant increase in workplace happiness (mean of 28.71 vs. 31.29, $p = 0.020$), empathy towards patients and colleagues (6.71 vs. 9.18, $p = 0.012$), self-esteem (6.35 vs. 7.18, $p = 0.002$), and patient connection (6.94 vs 7.65, $p = 0.014$). Thematic analysis revealed enhanced connections between patients and providers. Two iterations of the magazine have been published. Data collection is ongoing. We anticipate monthly rural data collection throughout 2023-2024.

CONCLUSION

Artistic expression helps patients and providers connect uniquely. A third edition of the magazine is planned to be published in 2024. Additional data collection is underway to explore this sub-project's aims, which include promoting wellness through rural neurology community outreach and artistic expression.

AUTHOR AFFILIATIONS

1. West Virginia University School of Medicine, MD Program, Rural Track Program
2. West Virginia University School of Medicine, Department of Neurology



CONFERENCE ABSTRACT

Volume 10 Issue 2

Homesickness Among Rural Appalachian University Students

**Katrina A. Roxas¹; April L. Shapiro, PhD, RN, CNE²; Sheri C. Chisholm, PhD³;
Diana L. Niland, PhD, APRN, FNP-BC, FCN²; Michelle A. House, MSW³**

BACKGROUND

Homesickness among university students may impact their well-being and academic success.

to meet student needs may promote a sense of comfort and decrease homesickness. An educational intervention to improve homesickness among university students is warranted.

OBJECTIVE

The study examined homesickness and self-reported outcomes/university life events among students on a rural Appalachian campus.

AUTHOR AFFILIATIONS

1. West Virginia University
2. West Virginia University School of Nursing
3. West Virginia University Potomac State College

METHODS

A descriptive study (N = 91) using electronic questionnaires was conducted.

RESULTS

Most participants (65%) reported homesickness, especially around move-in time, with several events making it better/worse. They were more likely to reside in-state, be at sophomore level or above, and live in an apartment or dormitory. There were significant associations between homesickness and self-reported outcomes (anxiety, depression, wanting to drop out).

CONCLUSION

Homesickness is prevalent among rural Appalachian students. Interprofessional collaboration is critical to identifying and mitigating effects on students' well-being and academic success. Tailoring campus life, including food options and on-campus activities,



CONFERENCE ABSTRACT

Volume 10 Issue 2

*Therapeutic Challenges in Treating Statin-Induced Autoimmune Necrotizing Myopathy: A Case Study*Joud Hassoun, OMS¹, Christopher Kennedy, DO¹

Statin-Induced Autoimmune Necrotizing Myopathy (SIANM) is an autoimmune muscle disorder characterized by proximal muscle weakness, pauci-immune myofiber necrosis, increased creatine kinase levels, and anti-HMGCR (3-hydroxy-3-methylglutaryl Coenzyme A reductase) autoantibodies. This case of SIANM is presented to describe key clinical features and therapeutic challenges associated with management. A 54-year-old male with a history of obesity, depression, and hyperlipidemia presented to the clinic with proximal muscle weakness and elevated CK levels while taking a statin. A muscle biopsy, electromyography, and HMG-CoA Reductase Antibody assay were conducted to confirm the diagnosis of SIANM. Over the next 8 years, he was placed on varying doses of prednisone and was tapered off 2 separate times, but CK levels would rise each time he was tapered off. Remission was achieved after combining mycophenolate mofetil, IVIG, tramadol, and a prolonged prednisone taper. Therapeutic challenges arise because antibody production continues even after the statin is stopped, resulting in ongoing tissue damage. Steroid tapering should be considered once the patient has improved clinically and has steady CK levels. The potential long-term side effects of steroids, such as osteoporosis and diabetes mellitus, occurred in the patient, which reemphasizes the importance of prioritizing tapering patients off steroids. Lastly, non-statin cholesterol medications must be explored to treat the initial hyperlipidemia. In this particular case, the patient was started on ezetimibe. Pain control was achieved with tramadol, and the patient's rehabilitation is ongoing with physical therapy. An IRB exemption was obtained as this case report was designated as a non-research scholarly activity.

AUTHOR AFFILIATIONS

1. West Virginia School of Osteopathic Medicine



CONFERENCE ABSTRACT

Volume 10 Issue 2

Improving Diabetic Foot Exam Screening at a Rural Outpatient Clinic: A Quality Improvement Project

Mohamad Sulieman, OMS¹; Jacob Solanki, OMS¹; Chelsea Feger, DO^{1,2}

BACKGROUND

Diabetes is the 8th leading cause of death in the United States, and West Virginia has the highest number of diagnosed cases. Among the complications associated with diabetes, foot ulcers are particularly concerning due to their potential to deteriorate, become infected, and necessitate foot amputation. Effectively managing diabetes demands a comprehensive approach, often involving a collaborative healthcare team.

METHODS

To enhance the care provided to diabetic patients, we introduced a diabetic foot exam template. This template was seamlessly integrated into the Electronic Health Record (EHR) system at the Robert C. Byrd Clinic (RCBC) to prompt physicians to perform this essential examination. Before patient encounters with the physician, diabetic patients are screened by the nursing staff or medical assistants to determine their eligibility for a diabetic foot exam. Patients with a newly established diagnosis of diabetes or those who have not had a foot exam in the past year qualify for this examination, and the template is incorporated for that visit. The facility's Institutional Review Board reviewed and exempted this quality improvement project.

RESULTS

We measured the satisfaction rate of diabetic foot exams at RCBC to gauge our progress. Before the incorporation of this template, RCBC had a satisfaction rate of 38% for the completion of foot

exams in qualifying patients. After 12 months of implementing the new template, RCBC's satisfaction rate increased to 49%.

CONCLUSION

A collaborative team effort significantly improved the satisfaction rate of diabetic foot exams. Acknowledging the demanding workload already carried by physicians, the valuable contributions of our nursing and medical assistant departments significantly improved the quality of care provided to diabetic patients. This translates to more patients benefiting from essential foot exams, mitigating the associated risks of ulcers and amputations.

AUTHOR AFFILIATIONS

1. West Virginia School of Osteopathic Medicine,
2. Robert C Byrd Clinic (RCBC)



CONFERENCE ABSTRACT

Volume 10 Issue 2

*A Diagnostic Dilemma: A Central Nervous System Lymphoma or Age-Related Cognitive Decline***Muhammad Malik, OMS¹; Ronak Patel, OMS-IV¹; Abhi Lohana, MD²; Tejveer Singh, MD²; Muhammad Husain, MD²**

Primary central nervous system lymphoma (PCNSL) involves malignant lymphocytic cells forming tumors in the cerebrum, leptomeninges, eyes, and spinal cord, resulting in neurologic deficits, neuropsychiatric disturbances, and seizures. This case describes a patient who presented with deteriorating cognitive function and bilateral lower extremity (BLE) weakness. However, due to comorbidities and old age, a diagnosis of PCNSL was not initially considered. An 80-year-old male presented to the hospital with confusion, decreased oral intake, and BLE weakness. Six months prior, he started experiencing rapidly worsening memory decline and forgetfulness. Medical history includes cardiac arrest and bilateral pulmonary embolism. On exam, the patient was alert but disoriented with poor memory recall. Labs showed mild hyponatremia. CT brain showed age-related cortical atrophy, and MRI indicated neoplastic process signs, including white matter enhancement of lateral ventricles and frontoparietal regions. Lumbar puncture (LP) revealed elevated protein and WBCs with lymphocytic predominance. MRI and LP findings were suggestive of CNS Lymphoma but require brain biopsy for confirmation. The patient will follow up with Oncology upon discharge for outpatient care. Initially, symptoms were attributed to infections, dehydration, or age-related dementia, delaying diagnostic studies such as MRI and CSF analysis. Recognizing the chronic nature of cognitive decline and its rapid progression prompted consideration of PCNSL. Detailed history-taking enabled the correct diagnosis, highlighting the importance of early detection and treatment for PCNSL despite its rarity. This case portrays PCNSL's potential to mimic cognitive decline and emphasizes the critical role of comprehensive patient history in enhancing diagnostic accuracy.

AUTHOR AFFILIATIONS

1. West Virginia School of Osteopathic Medicine
2. West Virginia University Camden Clark Medical Center



CONFERENCE ABSTRACT*Volume 10 Issue 2****Spiritual Well-Being in Appalachian Family Caregivers*****Nathaniel Palmer¹; Ubolrat Piamjariyakul, PhD, RN²; Stephanie Young, MSN, RN, PhD Candidate², Saima Shafique, PhD, MPH¹; Kesheng Wang, PhD¹****BACKGROUND**

Dementia and heart failure (HF) are the most common co-existing end-of-life conditions among rural older adults requiring extensive caregiving. Our Appalachian studies have found that these caregivers report a lack of information for managing complex home caregiving, palliative care, and spiritual needs.

OBJECTIVE

This study aimed to assess the factors contributing to caregivers' spiritual well-being in rural Appalachia.

METHODS

This explanatory, descriptive design collected surveys from caregivers (N= 20) of loved ones with end-of-life HF, dementia, and palliative care. A regression analysis was conducted on caregivers' spiritual well-being scores as the dependent variable. Factors impacting caregiving were the regression independent variables (i.e., caregivers' demographics, preparedness for HF and dementia care, and patients' palliative care scale needs).

RESULTS

The average age of these family caregivers was 64.95 years (SD =12.42). These caregivers had a high median score of spiritual well-being (32.5 out of the top score of 45). In the regression analysis, a large amount (53%) of variance in spiritual well-being was explained by caregivers' greater preparedness for HF and dementia home care ($p < .01$) and by

communications about caregivers' practical care concerns ($p < .05$). These caregivers age, number of years of caregiving, and patients physical and emotional status did not statistically contribute to caregiver spiritual well-being.

CONCLUSION

In the rural Appalachian population, spiritual well-being is essential to home caregiving. Our findings suggest the need for nurse-led interventions specific to HF and dementia home care to enhance caregivers' spiritual well-being and better prepare them to communicate on managing home care problems. To support caregivers' spiritual well-being, holding supportive caregiver discussion groups, setting up telephone contacts with their spiritual advocates, and establishing visiting neighbors' programs were found effective in the literature.

AUTHOR AFFILIATIONS

1. West Virginia University School of Public Health,
2. West Virginia University School of Nursing



CONFERENCE ABSTRACT*Volume 10 Issue 2****Treatment and Management of Bertolotti's Syndrome: a Congenital Anomaly Leading to Chronic Pain Frequently Overlooked by Physicians*****Nicholas Nester¹; Brianna Ritz¹; Shoji Ishigami, MD, PhD¹****BACKGROUND**

Several patients presented to the clinic with years of low back pain (LBP) and mobility limitations without definitive etiology. Further imaging via plain radiograph of the lumbosacral spine and pelvis revealed either lumbarization of S1 or sacralization of L5 vertebrae, consistent with the presence of lumbosacral transitional vertebrae, leading to a diagnosis of Bertolotti's Syndrome.

METHODS

Each was treated conservatively with little to no improvement in their pain. The patients underwent fluoroscopy-guided interventional procedures, including therapeutic steroid injection or radiofrequency ablation (RFA). Each patient reported >50% pain relief postoperatively and at outpatient follow-up months to years later.

DISCUSSION

Although considered a developmental anomaly, Bertolotti's Syndrome commonly presents as chronic LBP with limited mobility in adulthood. This can be attributed to degenerative changes of the lumbosacral vertebrae from chronic compression, shearing, and torsional forces compounded by the spine's asymmetric structural weight-bearing column created by the congenital lumbosacral pseudo-articulation. The late onset of diagnosis could be attributed to screening bias by clinical providers who are not familiar with the functional impact of Bertolotti's Syndrome, leading to missed diagnosis and, often, given psychiatric diagnoses due to

disproportionate worsening pain in the presence of otherwise young, healthy individuals.

CONCLUSION

This case series highlights an often overlooked and underdiagnosed etiology of chronic LBP. Physicians who treat LBP must be aware of Bertolotti's Syndrome and its implications for treatment modalities, as it can be refractory to conservative treatment. Additionally, RFA and steroid injection therapy should both be considered before more invasive surgical correction, as the example cases demonstrate that patients had significant improvement in their quality of life and functioning after these interventions.

AUTHOR AFFILIATIONS

1. West Virginia University School of Medicine



CONFERENCE ABSTRACT

Volume 10 Issue 2

Age, Sex, Location, and Vaccination Status Predict Positive COVID-19 Test

Madison Robinson¹; Evonne Richards, M. Ed, MPH¹

BACKGROUND

The COVID-19 pandemic quickly spread worldwide, negatively impacting millions of people's physical, emotional, and financial well-being. Although West Virginia was the last US state to report a positive COVID-19 case, vaccination efforts were well-coordinated. However, by December 2021, only 64% of WV eligible received a vaccine.

OBJECTIVE

Although initial reports showed that older adults living in long-term care and racial and ethnic minorities were especially likely to have complications, little is known about how other factors, including vaccination, impacted positivity rates.

METHODS

Using data from the 2022 Behavioral Risk Factor Surveillance System (BRFSS) from the CDC, we examined predictors of testing positive for COVID-19 using demographics, vaccine receipt, and WV residence.

RESULTS

Among the 394,368 adults asked about COVID-19, the mean age was 57.6 years (range 18 to 80+), and 45.3% were male. Most (87.3%) lived in urban areas; 3% were West Virginians ($n = 3557$). Most (73%) were White, non-Hispanic. The mean number of COVID-19 vaccines was 1.78, with 95% having

at least one vaccine. Approximately 31.5 reported having had COVID-19. We used a hierarchical logistic regression to examine predictors of testing positive for COVID-19. In the first step, age, sex, and rurality predicted a positive COVID-19 test ($X^2(3) = 4157$, $p < .001$). In the second step, we added the number of vaccines (step $X^2(DF = 272.4)$, $p < .001$). Lastly, we tested whether the COVID-19 rates were higher in West Virginia (step $X^2(DF = 1) = 12.7$, $p < .001$). Adults who were younger, female, had fewer vaccines, and lived in West Virginia were more likely to have tested positive for COVID-19.

CONCLUSION

Additional public health research is needed to address why West Virginians were more hesitant or less likely to receive vaccines.

AUTHOR AFFILIATIONS

1. West Virginia University, AGE-ADAR Scholar,
2. West Virginia University Department of Psychology,



CONFERENCE ABSTRACT*Volume 10 Issue 2****Risk Factors for Positive Margin in Breast Conservative Surgery for Localized Breast Cancer*****Sumeet Salvi, OMS¹; Dr. Amir Kamran²; Jake Mann, OMS¹; Olivia Skiro, OMS¹; Zubaira Khan, OMS¹; Chris Welch, MS²****BACKGROUND**

This was a retrospective cohort study to examine factors associated with positive margins in breast cancer patients who have undergone breast-conserving surgery.

METHODS

The study was approved by the CAMC IRB. The hospital cancer registry from 2005 through 2022 was queried for females diagnosed with breast cancer who had surgery for localized disease. Data was processed in SAS 9.4 using students' t-test for categorical variables and chi-square or Fisher's exact for categorical variables with plans to use regression modeling when data collection is complete.

RESULTS

1478 female patients were considered for analysis. The average age was 63.8 ± 11.34 (range: 28 to 96). Hypertension was noted at 23%, diabetes mellitus at 12%, and CAD at 5%. There were 10.76% with positive margins with a mean tumor size of 16.5 ± 14 mm, 45% moderately differentiated, 84% invasive ductal carcinoma, 86% ER-positive, 78% PR positive, 88% her2neu negative, and 50% with Ki 67 > 15.5. Stage I cases comprised 78.7% of the study population; recurrence was noted in 3.65% of the patients. Those with positive margins were significantly ($p = .004$) younger 61.4 ± 12 than those with a negative margin 64.14 ± 11 . The positive margin group had a higher percentage in stage 2 (2A and 2B) 29.68% compared to 19.19% in the negative margin group ($p < .05$). Positive margin patients had a lower proportion in

the negative her2neu group (83.67% versus 88.42%; $p = .03$). Those with positive margins had 6.29% recurrence while those with negative margins had 3.34% recurrence ($p = .06$).

CONCLUSION

Positive margins have been associated with younger patients at a higher stage with a positive Her2 status. Additionally, those with positive margins are trending toward a higher recurrence rate.

AUTHOR AFFILIATIONS

1. West Virginia School of Osteopathic Medicine,
2. Charleston Area Medical Center



CONFERENCE ABSTRACT

Volume 10 Issue 2

Women's Perceptions of Prenatal Care Access in West Virginia, Including Economic Challenges, Life Stressors, and Transportation Obstacles

Racheal Alderman¹; Taylor Rice¹; Treah Haggerty, MD²; Jun Xiang¹

BACKGROUND

There is growing concern over general access to prenatal care. Specifically, rural areas like West Virginia have high numbers of maternity care deserts. Serious complications can occur from poor prenatal health, including increased mortality and morbidity of both the parent and child.

OBJECTIVES

The primary purpose of this study was to analyze women's perceptions of prenatal care access and identify barriers to receiving that care. This includes obstacles that would affect the willingness and ability to seek prenatal care, which can subsequently affect the health outcomes of a pregnancy.

METHODS

We conducted a qualitative analysis of 120 survey data. The sample population included patients aged 18-50 who were born with a uterus and ovaries. The IRB protocol number is 2205577815.

RESULTS

The primary outcome measure is perceived access to prenatal care. Secondary outcomes are grouped into direct barriers, life stressors, economic barriers, and transportation barriers, which will be analyzed to determine how they contribute to the primary outcome.

CONCLUSION

Data analysis is in progress and will continue to be studied for potential barriers to prenatal care access faced by women in rural areas of West Virginia before conclusions are drawn. This information is essential to promote quality prenatal care and increase provider access through policy change.

AUTHOR AFFILIATIONS

1. West Virginia University School of Medicine
2. West Virginia University School of Medicine, Department of Family Medicine



CONFERENCE ABSTRACT*Volume 10 Issue 2****Health Risk Factor Trends Across Four Years Among West Virginia Children***

**Leanne Watson¹; Kaitlyn Shaffer, MPA¹; Christa L. Lilly, PhD²; Emily Murphy, PhD¹;
Lee Pyles, MD, MS³; Kristin McCartney⁴; Emi Tsuda, PhD¹; James D. Wyant, PhD¹;
Eloise M. Elliott, PhD¹**

BACKGROUND

The mission of the West Virginia (WV) CARDIAC Project is to provide sustainable, comprehensive risk factor identification, education, awareness, and advocacy to engage and empower West Virginia children, families, and communities to embrace a culture of wellness. The WV CARDIAC Project has a 3-pronged approach: surveillance, intervention, and research. Surveillance includes screening public school children for health risk factors in selected counties at the elementary level. Intervention supports schools and communities through policy, environmental, and system approaches. Research is multi-disciplinary and encompasses a variety of research designs, methods, and analyses. The WV CARDIAC Project has been ongoing since 1998 and is currently supported by the Supplemental Nutrition Assistance Program Education (SNAP-Ed) from the USDA Food and Nutrition Service. Before 2018, the Project was funded by the WV Legislature.

OBJECTIVE

This study will present results obtained while funded by SNAP-Ed and describe the intervention efforts promoted by the WV CARDIAC Project, such as Active Academics®, WV Healthy Kids, and the WV Family Nutrition Program offered through WVU Extension.

METHODS

The data from the WV CARDIAC Project's cardiovascular risk factor screenings from 2018-2023 were used for this study. Kindergarten (n= 14,520), 2nd grade (n= 14,285), and 5th grade (n= 14,605)

students participated in school-based screenings in academic school years 2018-2019 (Year 1), 2019-2020 (Year 2), 2021-2022 (Year 3), and 2022-2023 (Year 4). No data was collected during 1 academic school year (2020-2021) due to the COVID-19 pandemic. The screening data includes body mass index (BMI), acanthosis nigricans (AN), and blood pressure (Years 1-3: 5th grade only, Year 4: Kindergarten, 2nd, and 5th grade in select counties). Children's height and weight measurements were used to calculate their BMI percentile and weight status (under and normal weight: < 85th percentile; overweight: 85th-94th percentile; and obese: ≥ 95th percentile; CDC, 2023). The neck or axilla was screened to identify the presence of AN. Resting blood pressure (BP) was collected, and the results were adjusted for height, age, and gender. A child was indicated as at-risk if the systolic and/or diastolic pressures were above the 95th percentile.

RESULTS

Descriptive statistics showed that the percentage of overweight and obese children from Year 1 to Year 4 were relatively consistent across the 4 years for all Kindergarten (36.5%, 31.4%, 35.8%, and 32.1% [M=34%]), 2nd (43%, 37.8%, 43%, and 39.9% [M=40.9%]), and 5th grades (50.7%, 46.9%, 51.3%, and 50.1% [M=49A]) positive increasing trend in the percentage of overweight and obese children as they mature is demonstrated by these results. The results of the AN screening from Year 1 to Year 4 also indicate a positive trend in the percentage of children identified as at risk as they mature (Kindergarten 2.6%, 3.8%, 4.3%, and 3.2% [M= 3.5]; 2nd grade 6.3%, 5.2%, 6.4%, and 5.6% [M= 5.9], 5th grade 8.9%, 7.5%, 9.1%, and 8% [M= 8.4]). Those 5th-grade students



identified as at-risk regarding blood pressure were also consistent across Years 1-4, with Year 4 having higher results than previous years (28.1%, 25.6%, 26.3%, and 33.7% [M=28.4%]). 18.3% of Kindergarten and 23.5% of 2nd grade students were at risk.

CONCLUSION

WV CARDIAC Project data since 2018 shows little change in BMI, AN, or BP across elementary school-aged children in WV. The data is consistent with WV CARDIAC Project data from previous years that show obesity trends are not improving, but they are also not increasing. The WV CARDIAC Project addresses this trend directly through interventional strategies and partnerships geared towards student health behavior changes, such as Active Academics®, WV Healthy Kids, and the WV Family Nutrition Program.

AUTHOR AFFILIATIONS

1. West Virginia University, College of Applied Human Sciences
2. West Virginia University School of Public Health, Department of Epidemiology and Biostatistics
3. West Virginia University School of Medicine, Department of Pediatrics
4. West Virginia University Extension Service, WV Family Nutrition Program

