Elizabeth Balyakina, DO, MS, MPH is a family medicine and osteopathic manipulative medicine physician at University Medicine Associates. UMA is a group of primary care providers at University Health that provide primary care for patients in the San Antonio area and for Bexar County families who do not have health insurance. She is also an adjunct faculty member of the HSC Texas College of Osteopathic Medicine for third-year medical students completing their OMM rotations in San Antonio and an adjunct assistant professor for the UT Health San Antonio Long School of Medicine's Department of Family and Community Medicine. She completed her residency in family medicine and osteopathic neuromusculoskeletal manipulative medicine through the Medical City Fort Worth Combined Family and ONMM residency program and a graduate certificate in academic medicine from HSC.

Prior to pursuing a career in medicine, Dr. Balyakina worked as a program coordinator for the Texas Prevention Institute's Primary Care Research Center for a grant focused on cancer prevention in rural Texas and as a program manager for the Center for Community Health on the Texas Department of State Health Services Strategic Plan for Obesity Prevention in Texas Implementation and Evaluation Plan. She was also the program coordinator for NorTex at this time and has come full circle this year as the NorTex physician lead for University Medicine Associates Southeast Clinic.

Most recently, Dr. Balyakina completed a project on the development of ONMM residency curriculum guidelines to meet Accreditation Counsel for Graduate Medical Education milestones available through the American Academy of Osteopathy and the Journal of Osteopathic Medicine. Her goal is to provide holistic and evidence-based patient care while incorporating osteopathic principles and practice. She is also a member of the AAO Post-Graduate Training Committee, and she enjoys going on mission trips and doing yoga in her spare time.

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23_004_FM_RD

An Interdisciplinary Approach to Improving Medication Safety Among Older Adults

Medication errors are a significant risk for harm and even death, especially among elderly patients. More than a third of community-dwelling adults take five or more prescription medications. Factors associated with medication errors in the outpatient setting are complex and cannot be solved with a single solution or simple strategy. Making a difference requires an interdisciplinary approach with an array of clinical and other partners.

The goal of the Partnership in Resilience for Medication Safety (PROMIS) Learning Lab project is to reduce medication-related harms among older adults in the primary care outpatient setting. We hope to redesign primary care professionals' interactions with patients and family members while including input from patients and their caregivers, health care providers and community pharmacists to develop new protocols or tools for family medicine clinics. The PROMIS Learning Lab includes an interdisciplinary team and employs methods from fields such as primary care, human factors and industrial engineering, pharmacy and clinical research. The PROMIS Learning Lab is a four-year project funded by the Agency Health Care Research and Quality that includes The University of Texas at Arlington as the lead organization with NorTex and The University of North Texas Health Science Center at Fort Worth, John Peter Smith Health System and Johns Hopkins University as partners. Five NorTex clinics contributed to the project, including two serving as testing grounds for interventions.

The first two years of the PROMIS Learning Lab project included seeking input from our stakeholders. We conducted semi-structured interviews and focus groups with health care providers who work in family medicine clinics (physicians, advanced practice providers, nurses and medical assistants), community pharmacists, elderly patients and their caregivers. We want to emphasize the prominent role patients and their caregivers play in medication management, especially at home. Patients and their caregivers reported that they are responsible for taking medications as prescribed to ensure they do not miss doses, securing or locking up their medications so that others are not at risk of harm, learning about their medications so they know what to expect and how to take them appropriately, and striving to be healthier to reduce the need for or number of medications. Patients use a variety of tools to accomplish these, such as using pill boxes, including a caregiver and setting alarms. We look forward to incorporating these findings in clinical settings.

For more information about the PROMIS Learning Lab, please contact Noah Hendrix at Noah.Hendrix@uta.edu. Principal Investigator is Yan Xiao, PhD.

NORTEX RESEARCH PROJECTS

FEATURED
CURRENT
NORTEX PROJECT

Identifying risks to medication safety in elderly patients during the COVID-19 pandemic from a provider perspective

Amidst the COVID-19 pandemic, primary health care providers transitioned rapidly to telehealth, showcasing this care delivery modality as an alternative to traditional face-to-face patient visits. This was particularly beneficial for patients who experience physical or financial barriers to health care access. Virtual appointments were safer and more convenient for high-risk individuals, such as elderly patients; however, the impacts on their care due to this shift are unclear.

Primary care providers, — especially family medicine providers — are often responsible for medication management and health care maintenance for this population, and pill burden and polypharmacy continue to exacerbate the risk to medication safety. A 2019 study before the onset of COVID-19 found that, on average, 85% of elderly patients acknowledged that they frequently make mistakes with their medication.

This raises the question: How do primary care providers feel the integration of telehealth during the pandemic affected medication errors and patient safety? Medication errors are any preventable event that may cause or lead to inappropriate medication use or patient harm. As one of the most frequent causes of preventable adverse events, medication errors thus pose a severe risk to patient safety, especially for elderly patients with multiple prescriptions.

By understanding the capacity of virtual patient visits to manage and identify medication errors from a provider perspective, telemedicine can be used more confidently as a safe and comprehensive visit modality. Furthermore, recognizing which problems with medication management occur more frequently may shed light on areas for improvement in health care delivery and lead to future research.

Harish Thoppe, a second-year Master of Medical Sciences student at HSC, is examining which medication problems are most frequently reported by family medicine physicians via in-person or virtual visits.

FEATURED
COMPLETED
NORTEX PROJECT

Bodyweight changes during COVID-19 for patients diagnosed with depression: a retrospective cohort study

Background: The objective of this study was to examine whether a diagnosis of depression is associated with changes in BMI during the COVID-19 pandemic for adults (aged $\geq$ 18 years).

Methods: A retrospective cohort study design used EHR data from a family medicine university clinic. Adults $\geq$ 18 years who visited the clinic within a six-month period prior to lockdown and at least once in the six-month post-lockdown period were included. Diagnosis of depression, BMI and potential confounding variables were obtained from EHR. Mann-Whitney U was used to compare median change in BMI between depressed and nondepressed patients. Simple linear regression was used to identify the relationship between diagnosis of depression and BMI change. Multiple linear regression was used to control for age, sex, race/ethnicity, medications and chronic conditions; and to predict age effects in BMI change while stratified by diagnosis of depression and no diagnosis of depression.

Results: Statistical analysis showed that there was a significant difference in BMI changes (p<0.001) between the group diagnosed with depression and the group with no depression. Similarly, a diagnosis of depression significantly predicted BMI changes (p<0.001). This significance was maintained even while including confounding variables in the model (p=0.009). Further statistical analysis showed that age between 31 and 50 significantly predicted BMI changes in those patients with no depression while controlling for confounding variables (p=0.027).

Conclusion: This study demonstrated that individuals with depression had significant changes in BMI during the COVID-19 pandemic and age predicted these changes in middle-aged adults (30-50 years old). The significance of this finding places an importance in identifying and following up with individuals with a depression diagnosis given the effects on their BMI in extended isolation periods. Future studies could investigate other variables that might impact BMI change to influence the directionality of this relationship. Providing insight into this relationship could enable providers to inform patients who might be at risk for these types of changes over extended periods of isolation and hopefully result in positive patient health outcomes.

Elias Arellano completed his MS degree in the HSC School of Biomedical Sciences in May 2022.

LIVE TOBACCO-FREE PROGRAM: AN INTEGRATED COMMUNITY HEALTH WORKER (CHW) TEAM APPROACH TO TOBACCO CESSATION USING THE TRANSTHEORETICAL MODEL

Overall, smoking rates have steadily declined nationwide for more than 40 years, but the uninsured American population remains one of the most disproportionately affected by tobacco use. Tarrant County Public Health began offering Live Tobacco Free, a tobacco cessation program, in 2013 with a focus on adult tobacco users who were Medicaid recipients, low income and/or uninsured. Recent research also suggests that if just 1% of current smokers in Texas quit, the state would save $153.6 million in Medicaid costs alone the following year. (CDC, 2021)

The Live Tobacco Free program is a free four-week program facilitated by a team of trained Community Health Workers (CHW). It uses the American Cancer Society's Freshstart evidence-based curriculum, which applies the Transtheoretical Model or Stages of Change Model with a focus on cessation readiness, confidence levels and influential factors on behavior. Since implementation, the TCPH program has reached 4,530 individuals, 77% of which reported to be Medicaid/low income and/or uninsured. Tarrant County Public Health used data provided from the Behavioral Risk Factor Surveillance Survey to initially identify target zip codes to conduct outreach and programs. Integrating the CHW model into identified communities resulted in collaborative partnerships with various community organizations, such as transitional living facilities, treatment centers, hospitals/clinics and faith-based organizations. These fostered relationships helped bring about acceptance, trust and support between CHWs and participants.

The program has demonstrated an average quit rate of more than 30%, which is above the national average of 28%.

Classes are held virtually and in person at host locations.

To register for a class or to get more information, contact us Smokefree@ tarrantcounty.com or call 1-844-X-Smoker (1-844-976-6537). You also may reach out to the Texas Quitline 1-877-YES-QUIT (937-7848) if you need urgent assistance.

NORTEX PUBLICATIONS 2021 - 2022

Tao M, Fulda KG. (2021) "Association of magnesium intake with liver fibrosis among adults in the United States." *Nutrients. 13 (142)*, **https://doi.org/10.3390/nu13010142**

Thompson E., Fulda KG, Grace J, Galvin AM, Spence EE. (2021) "The implementation of an interpersonal violence screening program in primary care settings: Lessons learned." *Health Promotion Practice.* **https://doi.org/10.1177/1524839921989273**

Lin V, Hamby T, Das S, Basha R, Fulda KG, Habiba N. (2021) "Prevalence of elevated liver enzymes and their association with type 2 diabetes risk factors in children." *Journal of Pediatric Endocrinology and Metabolism.* **https://doi.org/10.1515/jpem-2020-0512**

Fulda KG, Roper KL, Dotson CH, Cardarelli R. (2021) "Physical aggression and coronary artery calcification: A North Texas Healthy Heart Study." *International Journal of Behavioral Medicine.* **https://doi.org/10.1007/s12529-021-09989-7**

Liu J, Fulda KG, Tao M. (2021) "Association between acculturation and metabolic syndrome in Hispanic adults mediated by fruits intake." *Public Health Nutrition.* **https://doi:10.1017/S1368980021003530**

Shabu T, Espinoza A, Manning S, Cardarelli R, Fulda KG. (2022) "Patient research interest differences by gender and race/ethnicity: A North Texas Primary Care Practice-Based Research Network (NorTex) study." *Journal of the American Board of Family Medicine. 35(225-234)* **https://doi:10.3122/jabfm.2022.02.210340**

Young RA, Fulda KG, Espinoza A, Gurses AP, Hendrix ZN, Kenny T, Xiao Y. (2022) "Ambulatory medication errors in primary care: A systematic review of its measurements and outcomes." *Journal of the American Board of Family Medicine. 35:610-628.* **https://doi:10.3122/jabfm.2022.03.210334**

Spence E, Prabhakar P, Grace J, Fulda K, Thompson E, Ondersma S. (2022) "Development and implementation of tablet-based screening for interpersonal violence in primary care settings." *Health Care for Women International. Mar 2(1-7)* **https://doi.org/10.1080/07399332.2043861**