IHI Medication Optimization RFA Response
Vanderbilt Health
Contact: Erin Neal, PharmD

Executive Summary

Background
Vanderbilt Office of Population Health management strategy proactively identifies and addresses the health needs of our patient populations. Improving the health of our region requires coordination and collaboration patients, the primarily care physicians across our network, and community organizations. The Vanderbilt Health Affiliated Network (VHAN) is a collaborative alliance of physicians, health systems, and employers driving a new level of clinical innovation and teamwork to enhance patient care, contain costs and improve the health of communities in Tennessee and surrounding states. The network includes more than 5,000 clinicians, 60 hospitals, 12 health systems and hundreds of physician practices and clinics who work together to strengthen communities and improve the quality of life across the Southeast through better health. VHAN manages 300,000 lives, contracted under at-risk arrangements with commercial, Medicare Advantage, and Medicare Shared Savings Programs.

Current Programs and Plans for Growth
The VHAN Clinical Team has successfully developed and implemented several medication optimization programs over the last year, including services focused on medically-complex patients, polypharmacy, statin therapy, and medication adherence. We recognize there is opportunity to optimize these programs and services, as well as, expand our scope to include new populations.

Team members
The selected participants represent a multidisciplinary team who have demonstrated success developing our medication optimization programs to date. Each participant has a unique and complementary skill set that has contributed to our overall success.

Benefits of Learning and Action Network
Participating in the IHI Shared Learning and Action Network is a tremendous opportunity to learn from other organizations doing similar work. We believe we have made significant progress in the last year, and have reached a stage where we are ready to test different approaches as we scale and expand our services. Our team has acquired “on-the-job” quality improvement experience, and we would all benefit from more formal training to be more effective change leaders.

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Vanderbilt Health: Vanderbilt University Medical Center (VUMC) Office of Population Health, and the Vanderbilt Health Affiliated Network (VHAN)

Vanderbilt University Medical Center Office of Population Health

Vanderbilt University Medical Center (VUMC) is one of the nation's longest serving and most prestigious academic medical centers. Through its historic bond with Vanderbilt University, VUMC cultivates distinguished research and educational programs to advance a clinical enterprise that provides compassionate and personalized care and support for millions of patients and family members each year. World-leading academic departments and comprehensive centers of excellence pursue scientific discoveries and transformational educational and clinical advances across the entire spectrum of health and disease.

Tennessee and its surrounding states have some of the highest rates of chronic diseases in the country, creating an opportunity for ongoing assessment and an increased positive impact on outcomes. To better improve the health of our state and region, we need an enhanced approach that includes a focused effort on lifestyle choices, socio-economic/cultural factors, and creating community partnerships with others who can support our patients' health. Ultimately, 90% of our health is the result of factors outside of the healthcare we receive.

Vanderbilt Office of Population Health management strategy proactively identifies and addresses the health needs of our patient populations. We have developed several strategies, including efforts in pay-for-performance and bundles, chronic disease management programs, preventative health screenings and actively participating in The Vanderbilt Health Affiliated Network (VHAN) and several accountable care organizations. Improving the health of our region requires coordination and collaboration patients, the primarily care physicians across our network, and community organizations.

Vanderbilt Health Affiliated Network

The Vanderbilt Health Affiliated Network is a collaborative alliance of physicians, health systems, and employers driving a new level of clinical innovation and teamwork to enhance patient care, contain costs and improve the health of communities in Tennessee and surrounding states. The network includes more than 5,000 clinicians, 60 hospitals, 12 health systems and hundreds of physician practices and clinics who work together to strengthen communities and improve the quality of life across the Southeast through better health. VHAN manages 300,000 lives, contracted under at-risk arrangements with commercial, Medicare Advantage, and Medicare Shared Savings Programs. VHAN brings together like-minded organizations to design and deliver population health management approaches at scale.

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VHAN/Population Health Pharmacy Programs

Overview

VHAN pharmacy services are designed to identify opportunities for medication optimization through a patient-centered approach while supporting the network primary care providers and specialists. The population we have focused on to date includes the employees, spouses and dependents of our partner self-insured health systems. The goal of these programs is to improve our defined quality metrics, improve the patient experience, and to bend the total cost curve by decreasing utilization of inappropriate ED and Inpatient services. This commercial population is relatively healthy and has allowed us to develop, test, and refine pharmacy services prior to serving Medicare patients.

Background

The VHAN Pharmacy Program began in 2016 with one pharmacist responsible for working with payers, providers, care coordinators and patients (approximately 60,000 commercial covered lives). The primary function of this program was to provide comprehensive medication reviews for patients referred through the complex care nursing program. There were several challenges with this initial approach including a low referral rate to the pharmacist (about 1-2 patients per week), poor follow up due to competing priorities of the pharmacist, and a documentation system that did not capture patient interactions in a structured form making tracking engagement and results very difficult. Since 2016, we have expanded by adding staff, developing a more customized patient identification and documentation system, and increasing the scope of services.

The pharmacy team expanded by adding one residency trained ambulatory care pharmacist in the summer of 2017 and a pharmacy technician coordinator in the fall of 2017. We have also developed a population health rotation for pharmacy students and residents and have had a least one student monthly on rotation since August of 2017 helping expand resources for patient outreach and engagement. A data analyst specifically dedicated to pharmacy services was added to the team in early 2018. We are uniquely positioned to identify patients using medical and pharmacy claims available through our payer partnerships. The analyst has provided the ability to supplement the nurse-driven care coordination program with proactive pharmacy driven outreach. We are also better able to track engagement and results generated by the pharmacy team.

The last notable improvement that we have made over the last year is the development of a documentation and reporting system. The system complements the pharmacy team's workflow and captures detailed information about the patient specific drug therapy problems and interventions. This system serves as our longitudinal patient record and is integrated with the nurse care coordination program. The data captured with in this system is used to generate our Pharmacy Engagement Report developed by our analyst in March 2018 (Appendix A).

Current Programs Overview

Complex Care and Polypharmacy Programs

The VHAN care coordination team includes nurses, pharmacists, pharmacy technicians, licensed clinical social workers, and support staff. This multidisciplinary care team manages patients with multiple chronic conditions and special medical needs. The team uses payer claims data and predictive analytics to identify high risk and those with concerning utilization patterns. Patients with 10 or more medications, adherence concerns, or any other medication-related barrier are referred to the pharmacy team after engaging with the care coordinator. Network clinicians can also directly refer patients the pharmacy team.

The VHAN Polypharmacy Program is a pharmacy-led service to ensure the appropriate use of medications across the spectrum of care for patients at highest risk for medication errors and drug related problems. Using medical and pharmacy claims data, patients are eligible if they have 1) eight or more chronic medications, 2) 3 or more prescribers 3) one or more potentially preventable emergency department or inpatient visit (per NYU classification) for a chronic condition (for example, poorly controlled diabetes or adverse effects related to hypertension management). Patients on high risk medications (e.g. insulin, opioids, anticoagulants, benzodiazepines, etc.) are also a main focus.

Once the patient has been identified as needing pharmacy support, the pharmacy technician speaks to the patient to obtain a full medication history and to conduct an adherence assessment[1]. After completion, the pharmacy technician schedules the patient with the pharmacist. The pharmacist conducts a comprehensive medication review with the patient, evaluating each individual medication for appropriateness, safety, efficacy, affordability, and barriers to adherence. Each patient interaction follows the standard approach to comprehensive medication management (CMM)[2],[3]. A completed medication record and a summary of the care plan is subsequently shared with the patient. The pharmacy team follows up regularly with the patient and as needed for monitoring, changes, or any other patient needs. The pharmacist updates the primary care provider on the patient's progress as appropriate and works with the patient's prescriber to coordinate changes to therapy.

[1] Kripalani S, Risser J, Gatti ME, Jacobson TA. Development and evaluation of the adherence to refills and medications scale (ARMS) among low-literacy patients with chronic disease. Value in Health 2019;12(1):118-123.
[2] Cipolle R, Strand L, Morley P. Pharmaceutical Care Practice: The Patient Centered Approach to Medication Management. 3rd ed. New York: McGraw-Hill Medical; 2012.
[3] McInnis, T. Capps, K. Get the medications right: a nationwide snapshot of expert practices—Comprehensive medication management in ambulatory/community pharmacy. Health2 Resources, May 2016.

Connected Care Diabetes

Connected Care Diabetes is a program providing support to patients with uncontrolled diabetes, while also supporting primary care providers on the selection of medications. The clinical team includes the VHAN clinical pharmacist and a nurse care coordinator, both Certified Diabetes Educators. Patients are enrolled via identification from population management tools as well as by referral (for example, persistent hemoglobin A1c > 9% identified from clinic panels, recent emergency department visit for diabetes, or directly from providers and other VHAN programs.) The team works with the patient to improve adherence to medications and lifestyle measures. The pharmacist provides a comprehensive medication review to identify and resolve and drug therapy problems. The team also works with the prescriber to advance medications based on an algorithm developed to focus on efficacy and appropriateness for a given patient.

The clinical team engages patients in their diabetes care by preparing the patient for the next visit with their doctor, supporting the patient with medication initiation, and facilitating dose titrations with close communication with the primary care team and/or any involved specialists. The care team works collaboratively to provide ongoing patient support and education on medications and the importance of diabetes control. In the initial treatment group, 96% (27/29) of patients enrolled long enough to have a 3-month follow-up hemoglobin A1c had already improved, and 88% of these had an improvement in hemoglobin A1c by 1% or greater.

Statin Outreach Service (SOS)

The Statin Outreach Service (SOS) is a pharmacist-driven intervention with a goal of achieving appropriate prescribing and adherence to statin medications for patients at high risk for cardiovascular complications. Patients at high risk for cardiovascular disease who should take a statin but aren't are identified using pharmacy and medical claims data. A clinical pharmacist reviews the medical record and meets with the patients to develop a detailed history of statin use and other medications with potential interactions. The pharmacist works with the patient to develop a patient centered plan and communicates recommendations to the primary care provider to initiate a statin medication at appropriate dose intensity. The pharmacist or pharmacy technician follows up with the patient on a scheduled basis to address questions, side effects, and adherence.

The statin algorithm, developed by our VHAN clinical pharmacist, is a structured tool for pharmacist assessment of myalgias and recommends trying statins sequentially in the intolerant patient until all options are exhausted. The SOS has been successfully implemented in two very different practice environments within our network. In our initial treatment group, > 50% of patients who returned calls to the team were successfully started on a statin and an additional 35% planned to discuss statin use with their primary care doctor.

Medication Adherence Programs
Patients recognized as potentially nonadherent to their medications based on refill and claims data are identified and prioritized for outreach by pharmacy students on rotation. Patients taking statins, RAAS inhibitors, and/or oral diabetes medications with a PDC (proportion of days covered) of less than 80% are candidates for the program. The pharmacy students call patients to discuss the medication and the management of the disease state in great detail. The pharmacy student focuses on ensuring safety and efficacy of the prescribed agent, while concomitantly identifying any adherence barriers (e.g. side effects, cost, perceived lack of benefit, etc.). The provider is then faxed or electronically sent a summary of the discussion for further follow up as needed.

Program Results
Since March 2018, the pharmacy team has worked with 181 patients across our programs, conducted 81 number of comprehensive medication reviews, and identified 406 drug therapy problems. The most common drug therapy problems identified include "needs additional therapy" and "non-adherence to a medication". Patient feedback for pharmacy services has been extremely positive. Seventy-eight percent of survey respondents said that the pharmacist helped improve the understanding of their medications, and 84% would recommend the service to a friend. One patient commented that this service is "Vital to your health! Especially when you have a specialist outside of one setting and this pharmacist can help get everyone on the same page."

Future Growth and Development

We seek to use the operational and communication frameworks developed with these programs to continue to build additional capabilities and clinical services. Our network is experiencing tremendous growth in terms of the number of patients and contracts that we are managing. Our patient population will become more complex as we begin managing Medicare patients both through our ACO and Managed Medicare contracts. We need to expand existing programs developed for our commercial populations and develop new programs to meet the needs of these more complex patients.

We plan to scale our programs across a several of our network physician practices and four ACOs across the state of TN. We need to determine the best practice model to engage patients and care teams across the network to optimize medication use. In our current model we have had challenges communicating and engaging with both patients and providers, and we would like to test some new methods of outreach. We have primarily functioned from a central model to date, and would like to explore a hybrid model for pharmacists to engage face-to-face with patients and the care team in the practice.

We also plan to incorporate telehealth tools into our programs to enhance patient engagement and ease data collection. For example, we are considering remote patient monitoring with

automated blood pressure cuffs to reduce errors and reliance on patients to send in readings and to make it easier for care coordinators and practices to collect home blood pressure data. There are opportunities to include the care team in monitoring and adjusting blood pressure medications to reach target blood pressure.

Lastly, with the central tenets of population health and quality improvement in mind, we need to connect our process measures with outcome measures. We would like to determine and measure our impact to the overall health and utilization of our population. Answering these types of questions will allow us the ability to expand and grow to better serve our patients.

What do we hope to accomplish as a participant in this learning and action network?

The IHI Shared Learning and Action Network supports Vanderbilt Health's mission to educate, innovate and deliver exceptional care for patients through continuous process improvement and adoption of new approaches. Participating in this network offers a tremendous opportunity to learn from other organizations doing similar work. IHI's focus on medication optimization closely aligns with VHAN Clinical Pharmacy Services - focusing on the appropriate use of medications in a safe, effective, and accessible way. While we have iteratively improved our patient care process over the past few years, we have reached a stage where we are ready to test different approaches as we scale and expand our services.

The support offered through this collaborative promises to address our goals of thoughtful growth, more streamlined communication, and efficient and appropriate outcomes measurement. Our team has acquired "on-the-job" quality improvement experience, and we would all benefit from more formal training to be more effective change leaders.

Administrative Leader and Key Participants

Administrative Leader

Cynthia Powell, MD
Medical Director, Population Health

Dr. Cynthia Powell oversees the clinical team for the Vanderbilt Health Affiliated Network, one of the nation's largest physician-led healthcare networks. Dr. Powell is responsible for developing and deploying value-based clinical programs and services across the network, and ensuring the organization has the teams, processes and technology in place to succeed in population health. Prior to joining Vanderbilt, Dr. Powell was senior vice president at Orlando Health and founding president of Orlando Health Physicians. In Orlando, Dr. Powell helped create a network of more than 700 physicians in more than 40 specialties. She led the executive team responsible for directing clinical integration efforts such as Orlando Health's Accountable Care Organization, which was nationally ranked for its quality outcomes. Dr. Powell was also responsible for the

Graduate Medical Education program and its 260 residents and fellows. Dr. Powell received both her undergraduate and medical degrees from the University of South Florida and completed her residency in internal medicine at Orlando Health. She is board certified in Internal Medicine, and in July 2014, her practice was designated as a Patient Centered Medical Home, one of only six such groups at the time in Central Florida.

Key Participants
The selected participants represent a multidisciplinary team who have successfully developed our medication optimization programs to date. Each participant has a unique skill set that has contributed to our overall success.

Erin Neal, PharmD, BCPS
Manager of Medication Management Services, Vanderbilt Health Affiliated Network and the Vanderbilt Department of Population Health

Dr. Neal received her BS in Biology from Sewanee: The University of the South, her PharmD from Auburn University, and will complete her Masters in Management of Healthcare (MMHC) from Vanderbilt University's Owen Graduate School of Management in September 2018. Erin completed a pharmacy practice residency at Vanderbilt University Hospital concentrating on acute care and general medicine and has since worked at Vanderbilt Health in the investigational drug service, the inpatient internal medicine service, and the care coordination and transition management teams. Erin's research interests include medication reconciliation, medication adherence, transitions of care, clinical decision support, and population health management. Erin has co-developed several innovative pharmacy programs using quality improvement methodology, most notably as part of two Center for Medicare and Medicaid Innovation Awards to develop an innovative chronic care model and to improve patient transitions from Vanderbilt University Hospital to partner skilled nursing facilities. Most recently, Erin has led the development and implementation of pharmacy services for the Vanderbilt Health Affiliated Network and the Department of Population Health.

Michelle Griffith, MD
Assistant Professor of Medicine; Medical Director, Telehealth Ambulatory Services; Vanderbilt Diabetes Telemedicine Program Leader

Dr. Griffith earned her BS in Biological Sciences at Carnegie Mellon University. She completed medical school at Vanderbilt University School of Medicine, and remained there for residency in internal medicine, followed by fellowship in diabetes and endocrinology. As a faculty member at the University of Pittsburgh Medical Center, she led diabetes telemedicine programs. She also served as Medical Director of the Center for Diabetes and Endocrinology, a large faculty practice with 5 office locations and interdisciplinary care teams for diabetes and thyroid conditions. She participated in several collaborative QI initiatives there, including development of a shared

decision making protocol for diabetes patients and a team-based vaccination initiative. At Vanderbilt University Medical Center, she now serves as a subject matter expert in diabetes for Vanderbilt Health Affiliated Network and has collaborated with the clinical programs team on the design and implementation of Connected Care Diabetes as well as the Statin Outreach Service, among other initiatives. She is also Medical Director for Telehealth Ambulatory Services and supports the development of telehealth initiatives for the medical center while continuing her own practice in diabetes and endocrinology.

Christopher Terry, PharmD, CDE
Population Health Clinical Pharmacist, Vanderbilt Health Affiliated Network (VHAN)

Dr. Terry attended Western Kentucky University for his undergraduate studies in Chemistry and later obtained his Doctor of Pharmacy from the University of Kentucky College of Pharmacy. He completed a pharmacy practice residency focused in ambulatory care with Mission Hospital/Mountain Area Health Education Center in Asheville, North Carolina. After residency, he moved to Washington, DC where he was responsible for creating and implementing clinical pharmacy services for Unity Health Care, a federally qualified health center devoted to serving underserved and underinsured patients. While with Unity Health Care, Chris was a member of the Quality Improvement Committee, developing protocols and algorithms for diabetes management, leading educational sessions for support staff about appropriate use of medications, and conducting PDSA cycles to better improve patient care delivered by the pharmacist in the clinic settings. Currently, at Vanderbilt Health Affiliated Network, Chris is focused on utilizing population health strategies to provide targeted and specific pharmacy interventions to better care for patients across the state of Tennessee and beyond.

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Appendix A: Pharmacy Program Engagement Report