A Nurse Practitioner-Led Interprofessional Chronic Disease Management Model Utilizing Pharmacy Telehealth

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Background: Chronic disease affects six out of every ten Americans and is the leading cause of morbidity, mortality, and healthcare cost (Centers for Disease Control and Prevention, 2018). Of uninsured adults, those living with a chronic disease are more likely to be unaware of the diagnosis and have poor control of the chronic disease (Kaiser Family Foundation, 2018). The lack of awareness and disease control by uninsured patients increases the risk of poor health outcomes and healthcare costs. The implementation of the Affordable Care Act in 2014 has improved access to healthcare insurance coverage; however, approximately 10% of the American population remains uninsured and in need of quality, evidence-based healthcare (United States Census Bureau, 2018).

Partners in Healthcare (PIH) is a Doctor of Nursing Practice nurse practitioner (NP) managed interprofessional (IP) free clinic that provides primary care and chronic disease management to uninsured patients. PIH was established as a collaboration between a non-profit community service organization that serves more than 4,500 families in poverty each year and a College of Nursing to address the health concerns of uninsured clients served by the community organization. Prior to initiation of PIH, the community organization’s uninsured clients had no source of primary healthcare, were not receiving basic preventive services, and clients with chronic diseases were utilizing the emergency department for management of their diseases. PIH utilizes a collaborative IP model of care led by NPs in collaboration with pharmacists, physicians, a social worker, and IP health professional students to provide primary care and chronic disease management. Of the patients served at PIH, 75% are diagnosed with a chronic disease and have received limited to no primary care prior to PIH due to no or inconsistent healthcare insurance. Due to the high prevalence of chronic disease in the clinic population, clinical pharmacists were integrated into the IP healthcare team via telehealth to provide direct patient care, provide pharmacotherapy education to the healthcare team, and serve as a preceptor to pharmacy and other IP healthcare students. The goal of this integration was to provide evidence-based care to patients diagnosed with chronic disease to improve patient outcomes, enhance providers’ satisfaction and knowledge, implement teleprecepting, and increase students’ satisfaction with the IP clinical rotation and comfort with the use of telehealth.

Method: Nurse practitioners along with faculty colleagues in the Colleges of Medicine and Pharmacy collaborated to integrate clinical pharmacy focused on chronic disease
management in the PIH clinic. The primary use for pharmacy telehealth services included: 1) assist the provider with complex chronic disease medication management 2) provide education to providers to enhance knowledge and prescribing practices regarding chronic disease 3) utilize health coaching with patients regarding chronic disease management and medication and treatment plan adherence and to 4) precept pharmacy and IP healthcare students to increase knowledge of pharmacological management of chronic disease.

The interprofessional care team led by NPs, includes pharmacists, family medicine residents, registered nurses, social workers, and interprofessional students (BSN, Doctor of Nursing Practice (DNP), Physician Assistant (PA), MD, PharmD). The NP facilitates pre-clinic huddles to coordinate patient care and establish student and provider roles. Via telehealth monitors, the pharmacist joins the care team to provide tele-consultation, patient care, and student precepting. Throughout the clinic day, the clinical pharmacist remains active in the care team providing provider and student consultation and education. The pharmacist also provides direct patient care as the telehealth monitor is on a mobile cart that can be easily moved into the patient exam room. To enhance the IP healthcare team communication, all providers, including the pharmacist and students, were trained on the key principles of TeamSTEPPS® (Agency for Healthcare Research and Quality, 2018). Multiple TeamSTEPPS® strategies were used during the clinical day to include briefs, huddles and debriefs.

**Results:** Since integrating the clinical pharmacist via telehealth in 2015, PIH has provided care to over 885 patients. PIH has documented improvements in blood pressure and diabetes control. Emergency department visits for PIH patients are lower than state and national data for the uninsured. Over 35 pharmacy students have participated in an IP clinical rotation providing direct patient care. A total of 110 IP healthcare care students have participated in the clinical rotation and gained experience with telehealth and clinical pharmacists embedded in primary care. Student evaluations reflect strongly positive feedback regarding the experience with pharmacy telehealth. Students comment on the increased skills with telehealth, increased knowledge of chronic disease pharmacology and satisfaction with IP healthcare team collaboration. Providers also express satisfaction with pharmacy telehealth engagement due to increased knowledge, improvement in self-efficacy, and collaboration with student precepting. From an academic perspective, integrating pharmacy telehealth provides a practice site for the clinical pharmacist and for educating pharmacy students. IP healthcare team collaborations and student rotations are also enhanced. The pharmacy telehealth collaboration also supports scholarship development through grants and quality improvement initiatives.

**Conclusions:** Integration of a pharmacist in the NP led IP healthcare team to assist with chronic disease management has been successful in enhancing the IP team collaboration and satisfaction, quality of care provided to patients and engagement of IP healthcare students in evidence-based practice and telehealth. The model also proved the feasibility of teleprecepting IP student clinical rotations. Pharmacists are key members of the IP healthcare team in the management of chronic disease (Jorgenson, Dalton, Farrell, Tsuyuki, & Dolovich, 2013). Pharmacists have the training and knowledge to assist with evidence-based management, to increase patient adherence to a treatment plan, to reduce adverse events, and to reduce inertia in treatment.
Consistent with other findings in the literature, integration of the pharmacist and the use of telehealth proves to be an effective strategy in chronic disease management of uninsured patients (Bouchonville, Hager, Kirk, Qualis, & Arora, 2018; Maxwell, McFarland, Baker, & Cassidy, 2016; Taylor et al., 2018). Given the success of this project, the IP chronic disease management model utilizing pharmacy telehealth has been successfully integrated in other primary care clinical sites.

**Title:**
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**Keywords:**
Disease management strategies, Interprofessional collaboration and Telehealth

**References:**

**Abstract Summary:**
The purpose of the presentation is to describe a Doctor of Nursing Practice led chronic disease management model integrating an interprofessional care team and pharmacy telehealth in a free clinic.

**Content Outline:**

**Background**
- 1. Chronic Disease Burden in Uninsured Patients
- 2. Partners in Healthcare (PIH) DNP-Led Free Clinic
  - History of clinic
  - Structure of clinic workflow and IP team
  - Chronic disease focus

**Methods**
- 1. Integration of pharmacy telehealth
  - Chronic disease management focus
    - Provider education
    - Direct patient care
    - Student education (teleprecepting)
  - Pharmacy telehealth workflow
    - TeamSTEPPS®
    - Brief, Huddle, Debrief

**Results**
- 1. Outcomes
  - Patient
  - Student
  - Provider

**Conclusion**
- 1. Effective model of clinical pharmacy integration in free clinic

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