






CPPI Practice Forum

Development of a centralized, remote clinical pharmacy service to enhance primary care

Rachel J. FINKELSTEIN , Christopher P. PARKER , Barcey T. LEVY , Barry L. CARTER ,
Korey KENNELTY 

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Abstract

More than 50% of Americans possess at least one chronic condition and another 25% suffer from two or more, leaving primary care teams tasked to care for the chronic, acute, and preventive care needs of their large patient panels. Pharmacists can reduce the burden on busy providers by effectively managing chronic diseases as members of health care teams. Many private physician practices lack the resources to include pharmacists on their teams. A centralized, remote clinical pharmacy services model allows pharmacists to remotely manage chronic disease in patients in collaboration with primary care providers. The purpose of this report is to describe how a centralized, remote clinical pharmacy team was developed, trained, and effectively integrated into multiple, diverse primary care settings across the U.S.

Keywords

Telemedicine; Primary Health Care; Pharmacists; Physicians; Patient Care Team; Chronic Disease; Cardiovascular Diseases; Interprofessional Relations; Electronic Health Records; United States

INTRODUCTION

Over half of all adult Americans had at least one chronic condition, and one fourth had multiple chronic conditions in 2018.¹ Patients with multiple chronic conditions account for over 70% of health care spending in the United States. Multiple chronic conditions require complex and costly health care, and the cost of care increases with the number of chronic conditions.²

Primary care physicians (PCPs) often manage patients with multiple chronic conditions, but the time they can devote to these patients is constrained by patients with acute problems, administrative responsibilities, chart documentation, and large patient panels. These challenges lead to a lack of time to deliver chronic disease services.³ Yarnall *et al.* found that almost half (46%) of a PCP's day is spent on acute issues with their remaining time filled with managing chronic disease care (38%) and preventive services (16%). The authors estimated that the adequate provision of preventive care, chronic care and acute care to an average patient panel would require 21.7 hours a day.³ Furthermore, the shortage of PCPs is expected to worsen as the number of medical students pursuing a career in

primary care will not meet the needs of the health care system and will further reduce access to care.^{4,5} Therefore, PCPs need an effective, efficient, and affordable strategy to optimize chronic disease outcomes.

Primary Care and Clinical Pharmacists

Physician/pharmacist collaboration is a process through which pharmacists work directly with patients and physicians to optimize therapy. The Physician/Pharmacist Collaborative Model (PCCM) has been used successfully in primary care.⁶⁻⁹ Pharmacists are a recommended addition to a collaborative team and have demonstrated their ability to manage chronic diseases and improve quality outcomes such as blood pressure and hemoglobin A1C control.^{10,11}

Primary care clinics, especially small offices in more rural areas, may lack resources needed to hire a full-time pharmacist. One solution for primary care practices to access pharmacy services is to use a centralized, remote pharmacist-run clinical service.^{12,13} A primary benefit to the clinic is access to clinical pharmacy services without the cost of hiring a full-time pharmacist. In response to these needs, we designed a remote clinical pharmacy service, called the Cardiovascular Risk Service (CVRS), in the University of Iowa College of Pharmacy. The purpose of this report is to describe how our remote clinical pharmacy service was successfully integrated into diverse primary care clinics across the United States.

DEVELOPMENT OF THE CARDIOVASCULAR RISK SERVICE (CVRS)

Conceptualization

CVRS was modeled after Kaiser Permanente's Clinical Pharmacy Cardiac Risk Service (CPCRS), located in Aurora, Colorado. The CPCRS is managed by a centralized team of clinical pharmacy specialists who have extensive experience in cardiovascular disease.¹²⁻¹⁴ Under this model, patients with cardiovascular disease (CVD) are referred to the CPCRS where clinical pharmacists provide care using a telemedicine platform. To communicate effectively with

Rachel J. FINKELSTEIN. Department of Pharmacy Practice and Science, College of Pharmacy, University of Iowa. Iowa City (United States). rachel-finkelstein@uiowa.edu

Christopher P. PARKER. Department of Pharmacy Practice and Science, College of Pharmacy, University of Iowa. Iowa City (United States). christopher-parker@uiowa.edu

Barcey T. LEVY. Department of Family Medicine, Roy J. and Lucille A. Carver College of Medicine, Department of Epidemiology, College of Public Health, University of Iowa. Iowa City (United States). barcey-levy@uiowa.edu

Barry L. CARTER. Department of Pharmacy Practice and Science, College of Pharmacy, University of Iowa. Iowa City (United States). barry-carter@uiowa.edu

Korey KENNELTY. Department of Pharmacy Practice and Science, College of Pharmacy, University of Iowa. Iowa City (United States). korey-kennelty@uiowa.edu

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providers, the CPCRS pharmacists have access to the electronic health record (EHR) within their integrated health system. We expanded the Kaiser Permanente's model to work with primary care teams from different health systems. Our service needed to be flexible enough to work in both rural and urban settings, as well as with patients and PCPs from a wide variety of socioeconomic backgrounds.

We tested the CVRS model in two large, federally funded clinical trials: the Improved Cardiovascular Risk Reduction to Enhance Rural Primary Care (ICARE) and the Medication Focused Outpatient Care for Underutilization of Secondary Prevention (MEDFOCUS) studies.^{15,16} These studies evaluated whether a centralized, pharmacist-managed CVRS could be successfully integrated into rural private primary care offices (ICARE) and academic-based primary care offices throughout the U.S. (MEDFOCUS) and could improve the management of CVD and associated performance measures. Briefly, CVRS pharmacists worked with patients and their PCPs via a telemedicine platform to manage hypertension, diabetes, hyperlipidemia, and other CVD conditions for a period of 12 months. Medication, laboratory, and preventive health recommendations were made to the PCP.

Introduction into clinics

To help build relationships with clinic providers and staff, pharmacists and investigators traveled to each clinic for an introductory meeting. During the meeting, CVRS pharmacists provided an educational lunch describing the services provided by CVRS. For clinics located a greater distance from the study team, further than a 4-hour drive, the CVRS pharmacists met providers and staff via a video call. Topics covered during these meetings included 1) expectations of the staff and study pharmacists, 2) roles and responsibilities, 3) how to communicate patient information and recommendations, 4) possible recommendations made by the pharmacists, and 5) possible access to the EHR. A primary agenda item covered at this introductory visit was determining which quality metrics were a priority for the clinic. The goal was to identify quality metrics the clinics were not achieving so that the CVRS pharmacists could target them as part of the clinical service. Examples include A1c<8%, systolic blood pressure<140, diastolic blood pressure<90, and statin usage.

Working with patients

Use of a "warm handoff" from PCPs to the CVRS pharmacists increased patient engagement. This handoff is the introduction of CVRS pharmacists by the clinic staff or PCP. Either the clinic staff or PCP would explain to patients the CVRS model and inform them a member of CVRS would be contacting them by phone. When a CVRS team member contacted patients, they introduced themselves as an extension of the patient's clinic provider team. The handoff extends the patient trust and rapport established with the clinic to the CVRS pharmacist.

Pharmacists were randomly assigned patients from each intervention clinic. The patient panel for each pharmacist varied throughout the study period as rolling recruitment was completed over several months. The two primary

research pharmacists managed the majority of the 704 patients in both studies.

Pharmacists increased the patient's accessibility to their health care team by offering additional communication via phone calls, text messaging, email, and EHR messaging. Frequency of communication between CVRS pharmacists and patients was tailored to the individual needs of each patient and occasionally occurred outside normal clinic hours.

During virtual patient visits, pharmacists obtained self-monitoring data, used motivational interviewing, assessed medication adherence, and provided medication, lifestyle, and disease state education.

Working with providers

Communication between pharmacists and PCPs was primarily completed through direct EHR messaging. EHR was both efficient, secure, and aligned with clinic workflow processes. The most frequent barrier encountered to using the EHR was convincing the clinics to grant remote access to the CVRS pharmacists because they were not employees of the health system. If remote EHR access was not an option, communications between the CVRS pharmacists and PCPs were done by fax. Sending faxes was not ideal due to transmission delays, canceled faxes, and lack of appropriate recommendation documentation in EHR. Phone communications were infrequent and primarily used to address acute and urgent patient needs. Although PCPs were responsible for the final medication or lab orders, some clinics allowed pharmacists to place pending orders for the PCP to cosign, thus saving time and decreasing communication errors.

Occasionally, the pharmacists also collaborated with other health care providers such as endocrinologists, cardiologists, dietitians, and health coaches. CVRS pharmacists would communicate with the specialists or ancillary providers to ensure care delivery was not fragmented between the pharmacists and the other health care providers and there was not duplication of treatment. For example, if a patient was being followed by a health coach for diabetes, the pharmacist would focus on medication-related topics, and the health coach would focus on lifestyle and motivation to change.

EHR access

The CVRS team was granted remote access to 10 different EHRs. Several clinics located at larger academic health centers required CVRS members be appointed as adjunct faculty to obtain access, and other health centers required the pharmacists to be contracted as without-compensation employees. Partner clinics required the CVRS pharmacists to complete institution-specific certification training prior to gaining EHR access such as personal health information (PHI) use agreements, Health Insurance Portability and Accountability Act (HIPAA) training to protect sensitive patient information, compliance training, Medicare Advantage and Part D fraud abuse training, data privacy training, cultural diversity and limited English proficiency training, and sensitivity training. Some clinics allowed read-only access while others granted read-write access. Benefits of read-write access included 1) accurate and timely recommendations made by the pharmacists, 2) documentation directly into the EHR instead of sending



emails or faxes to the clinic to be scanned in manually, 3) identification and resolution of medication discrepancies, 4) documentation of cancer screenings and vaccinations, and 5) the potential for greater achievement of quality metrics which often rely on appropriate documentation in the EHR.

For clinics where remote EHR access was not granted, pharmacists relied on baseline and 6-month data abstracted by the clinic. Pharmacists were provided with relevant laboratory values such as A1C, serum creatinine, lipids, microalbumin, and electrolytes as well as recent vitals and medication lists. Pharmacists also relied on patient-reported health information. There are several disadvantages of restricted EHR access. First, recommendations are made without full clinical knowledge, such as out-of-date lab results or knowledge of previous medication trials. Second, recommendations made via phone or fax may be delayed, lost, or not properly documented in the EHR.

In the ICARE study, adherence to guidelines was more than twice as much in patients for whom the pharmacist had access to the EHR compared with those who had recommendations made through phone or fax.¹⁵

Recommendations

Recommendations made by CVRS pharmacists were individualized to the patient and were guideline-based. Each recommendation was made after thorough EHR review (when available), patient workup, and patient interview. Pharmacists worked to optimize medication therapy, identify gaps in therapy, and increase adherence to current clinical guidelines. The frequency of recommendations varied depending on the needs of the patient. For example, frequent adjustments in insulin or blood pressure medications may require monthly or bimonthly recommendations, whereas a recommendation to intensify statin therapy would be a one-time recommendation. In the ICARE study, 88.8% of the 331 recommendations were accepted and another 6% were accepted with a modified plan.¹⁵

DISCUSSION/CONCLUSION

The CVRS was implemented in 6 rural Iowa clinics and 9 urban academic medical centers across the U.S. during 2 studies over a 4-year period.^{15,16} There was continued interest from several clinics' staff following the completion of these studies to maintain collaboration with the remote clinical pharmacy service through development of service contracts. The use of existing billing codes allows this model to be potentially economically sustainable. Although there is limited literature on the economic sustainability of pharmacist reimbursement either directly or indirectly, Martin *et al.* demonstrated chronic care management showed a positive return on investment for this

pharmacist-led service.¹⁷ This strategy helps to ensure continued access for patients and PCPs to clinical pharmacists, which otherwise might not be available. Under the service contracts, pharmacists are able to provide services covered by Medicare, Medicaid, and some private insurance plans including chronic care management, transitional care management, and tobacco cessation. The CVRS model should free up time for PCPs to focus on more complex or acute clinical activities outside of chronic disease management. This has been especially relevant in 2020 and 2021 as a result of the SARS-CoV-2 pandemic (COVID-19) when many PCPs have been pulled from their regular duties to assist with the demands of COVID-19 patients.

Implications for primary care

Integrating remote clinical pharmacy services into primary care through a telemedicine platform is an innovative approach of increasing access to pharmacists to assist in the management of chronic conditions for busy and overwhelmed PCPs in the primary care setting. Providing EHR access for clinical pharmacists is vital to the efficiency and effectiveness of patient care activities. Pharmacists need to have up-to-date clinical information, and it is helpful to have pharmacists document directly into the medical record. This may increase the accuracy of quality measure reporting and the achievement of quality measure goals.

The remote clinical pharmacy service model provides the opportunity to free up already-burdened PCPs to address other clinical activities while continuing to have the chronic conditions of their patient's addressed on an ongoing basis. Pharmacists, following current clinical guidelines, create individualized care plans and recommendations. Follow-up phone calls, emails, and text messaging continue to engage the patient in their care between clinic visits and can be accomplished outside of regular clinic hours. Patients are encouraged to choose the communication method that works best for them. This care delivery model is equally effective for patients and PCPs in rural and urban settings, as well as in private and large, academic clinics. CVRS team members are actively seeking to expand this model through future research endeavors.

CONFLICT OF INTEREST

None.

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