

Interprofessional Collaborative Practice: Management of Chronic Disease and Mental Health Issues in Primary Care

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Abstract

This case study describes the process of implementing and evaluating an interprofessional collaborative practice (IPCP) program for primary care and behavioral health integration focused on chronic disease management. The result was a strong IPCP program in a nurse-led federally qualified health center serving medically underserved populations. The IPCP program at the Larry Combest Community Health and Wellness Center at the Texas Tech University Health Sciences Center spanned >10 years of planning, development, and implementation, supported by demonstration, grants, and cooperative grants from the Health Resources and Services Administration. The program launched 3 projects: a patient navigation program, an IPCP program for chronic disease management, and a program for primary care and behavioral health integration. We established 3 evaluation domains to track the outcomes of the program: TeamSTEPS education outcomes (Team Strategies and Tools to Enhance Performance and Patient Safety), process/service measures, and patient clinical and behavioral measures. TeamSTEPS outcomes were evaluated before and after training on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). Mean (SD) scores increased significantly in team structure (4.2 [0.9] vs 4.7 [0.5]; $P < .001$), situation monitoring (4.2 [0.8] vs 4.6 [0.5]; $P = .002$), and communication (4.1 [0.8] vs 4.5 [0.5]; $P = .001$). From 2014 to 2020, the rate of depression screening and follow-up improved from 16% to 91%, and the hypertension control rate improved from 50% to 62%. Lessons learned include recognizing partner contributions and the worth of each team member. Our program evolved with the help of networks, champions, and collaborative partners. Program outcomes show the positive impact of a team-based IPCP model on health outcomes among medically underserved populations.

Keywords

interprofessional collaborative practice, chronic disease management, behavioral health integration

Chronic disease is a global problem faced by developed and emerging societies, with varying degrees of difficulty and severity. Health care systems are experiencing challenges that increasingly tax their capacities at levels not seen before. In 2022, six in 10 adults in the United States had ≥ 1 chronic disease, and 4 in 10 adults had ≥ 2 chronic diseases.¹

Worldwide, noncommunicable diseases lead in the causes of mortality and are responsible for killing 41 million people each year, equivalent to 71% all deaths globally.² In the United States, from 2015 to 2050, the total cost of chronic disease is predicted to reach \$94.9 trillion.² The challenge of managing chronic diseases is that by their very nature, they are long-standing and require ongoing and indefinite care. Key to care delivery is the ability to provide continuity, coordination, and comprehensiveness, which are the hallmarks of primary health care.³ The effort that is required to integrate those 3 hallmarks is a challenging one, given all the demands and requirements of delivering primary health care.

Most models of chronic disease management emphasize the importance of proactive rather than reactive approaches at all levels.⁴ Health policy influences these approaches, with countries that have strong primary care systems having lower costs with better health outcomes for chronic disease care.³ This assumption is embodied in the Chronic Care Model developed by Wagner et al,⁵ which identifies 6 fundamental areas in forming a system that encourages high-quality chronic disease management: self-management support, delivery system design, decision support, clinical information

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systems, organization of health care, and community.⁶ It requires the whole system and community to bring to bear the intended outcomes of the change. The primary health care center in this case study implemented the fundamental components of the Chronic Care Model in its chronic disease management programs.

One way that primary care quality can be improved is by promoting and facilitating the interprofessional collaborative practice (IPCP) model⁷ in primary care. The IPCP model is an enhanced team-based approach to providing care to patients and populations that involves the participation of an interprofessional health care group. This idea permeates the local perspective and transcends national and international boundaries. For delivering quality patient care, improving the health of populations, reducing the cost of health care, and enhancing the health care workforce environment, IPCP has become a standard of practice.⁸

Community health workers (CHWs) are health paraprofessionals who have been effective in influencing the populations they serve, locally, nationally, and internationally. The American Public Health Association defines a CHW as “a frontline public health worker who is a trusted member of and/or has an unusually close understanding of the community served.”⁹ CHWs serve as a link between health and social services and the community to facilitate access to services and improve the quality and cultural appropriateness of service delivery. A CHW also builds individual and community capacity by increasing health knowledge and self-sufficiency through a range of activities, such as outreach, community education, informal counseling, social support, and advocacy.⁹

Large-scale CHW programs have developed in communities in the last decade with varied levels of success due to a number of reasons, including lack of financial and political support and weak monitoring and evaluation systems.¹⁰ In the United States, CHWs have recently become more visible as members of primary health care delivery teams, enhancing the quality of community service.⁹

Purpose

The purpose of this case study was to describe the process of implementing and evaluating the Larry Combest Community Health and Wellness Center (LCCHWC) at the Texas Tech University Health Sciences Center IPCP for chronic disease and behavioral health integration so that other organizations can replicate our model. The IPCP model has been reported to be implemented in federally qualified health centers (FQHCs) for improving health care services and health outcomes including behavioral health.^{11,12} This case study adds to the literature by detailing how the LCCHWC IPCP program has been institutionalized, including being seamlessly incorporated within the behavioral health component in primary care, a process that continues to be a challenge in FQHCs.¹³ Furthermore, this case study provides evidence to

support the benefit of having a sustainable behavioral health integration program for medically underserved populations.

Methods

Transformation for Health Framework

Transformation for Health is a framework for practice that was conceptualized by a team of academicians, practitioners, and staff at the Texas Tech University Health Sciences Center School of Nursing and the LCCHWC. It provides a broad view of system or community change at various levels, and it can be used for focused interventions in initiating behavior change at the intrapersonal or interpersonal levels.¹⁴ Based on the works of Freire,¹⁵ Transformation for Health conceptualizes a transcendent process wherein people overcome oppressive conditions—whether created through human design or situational circumstances—that lead in different ways to the subjugation of the human spirit. The basic framework is founded on the idea that individuals or groups must obtain transformational power; it cannot be given to them.¹⁶ However, transformation can be facilitated within a rebalanced relationship wherein the power structure is relatively equal. This idea can be used in health care practice to help individuals, families, and communities to transcend conditions that promote health problems and concerns that are deleterious to well-being. The concept can also be useful in understanding and addressing health disparities among populations that have disproportionate impacts of social determinants of health. This framework is applied within the center by the IPCP in managing patients who present with challenges in their treatment plans, through discussions in the biweekly IPCP meeting, in an attempt to facilitate behavior change to attain treatment goals.

IPCP Site and Team

The LCCHWC is a nurse-led FQHC that is administered by the Texas Tech University Health Sciences Center School of Nursing. This case study describes the trajectory that the LCCHWC navigated in implementing the IPCP model in all 3 of its sites in West Texas. Because this case study describes a program development and evaluation project and used deidentified and aggregated data, the Texas Tech University Health Sciences Center Institutional Review Board determined that it was exempt from institutional review board review.

The precursors to the IPCP program were a 2-year patient navigator demonstration program implemented during 2008–2010, followed by a 1-year funded patient navigator program in 2011. The IPCP care team was originated through the initial 2 rounds of Health Resources and Services Administration–funded Nursing Education Practice Quality Retention programs. It was established for cardiovascular risk reduction in 2014 and behavioral health integration in

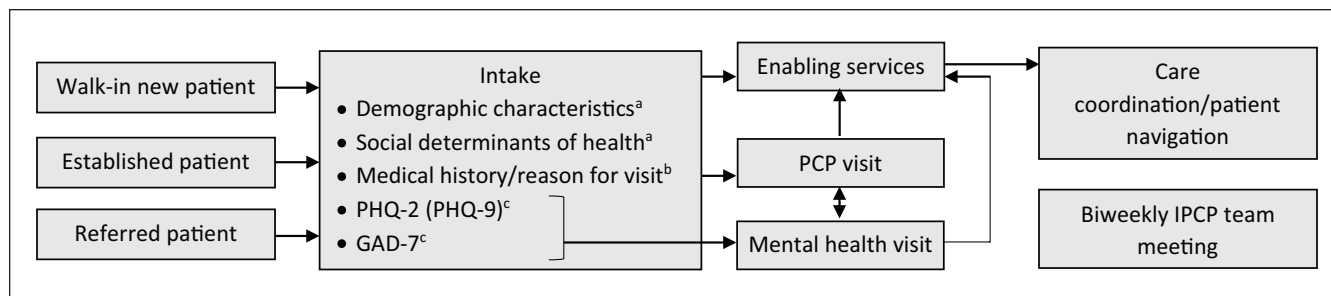


Figure 1. Patient workflow for clinic visits with the IPCP team, Larry Combest Community Health and Wellness Center, West Texas, 2019. GAD-7 is a self-reported questionnaire for screening and severity that measures generalized anxiety disorder with 7 items.¹⁶ PHQ-9 is a self-reported diagnostic tool to screen patients in a primary care setting for the presence and severity of depression.¹⁵ Abbreviations: GAD-7, General Anxiety Disorder–7; IPCP, interprofessional collaborative practice; PCP, primary care provider; PHQ-2, Patient Health Questionnaire–2; PHQ-9, Patient Health Questionnaire–9.

^a Patients with difficulty accessing care (eg, no transportation, no health insurance) will be referred to community health workers for enabling services, which include scheduling free transportation, providing prescription assistance, applying for Medicaid/Medicare/other financial support, providing chronic disease management education, and coordinating care.

^b Patients with chronic diseases will be referred to the PCP for regular follow-up visits.

^c Patients with potential depression or anxiety based on screening scores will be referred to either psychologists or clinical social workers for follow-up diagnosis and treatment.

2019 based on the Transformation for Health model.¹⁵ We have found that this model fits seamlessly in the behavioral health integration program, in which individual behavior is a critical element in construction of management plans and treatment goals tailored to and by patients. The IPCP care team consists of nurse practitioners, nurses, behavioral health professionals, dietitians, CHWs, and pharmacy residents.

Process of Care With the IPCP Team

A major focus in the planning for implementation was foundational training for staff in the TeamSTEPPS model (Team Strategies and Tools to Enhance Performance and Patient Safety) for IPCP.¹⁷ TeamSTEPPS is an evidence-based program aimed at optimizing performance among teams of health care professionals, enabling them to respond quickly and effectively to whatever situations arise.¹⁷ The nurse practitioners, nurses, behavioral health professionals, dietitians, and pharmacy residents work with patients in the clinical setting, while the CHWs work with patients via in-home visits or during clinic appointments. Brief daily “huddles” (ad hoc meetings) are conducted with the staff to discuss the day’s priorities, and short debriefing meetings are held at the end of the day, as needed (Figure 1).

In brief, patients are required to complete the intake process by filling out 2 screening forms at every visit: the Patient Health Questionnaire–9 and General Anxiety Disorder–7.^{18,19} Any member of the IPCP team may refer patients to the IPCP program, which includes patients with chronic diseases, behavioral health issues, social determinants of health issues, and nutritional needs. Participating patients have the opportunity to work with health professionals to address their health needs and issues. Enabling services are provided by CHWs during follow-up with the patients, through telephone

encounters, by in-person visits, and via text/email communications (Table). Patients with challenges in their treatment plan or changes in their conditions are discussed in the biweekly IPCP meeting. Recommendations and solutions can be determined by the whole IPCP team to improve the patient’s health outcomes.

The IPCP coordinator is tasked with working with all members of the team and is in charge of collecting data, preparing and facilitating the IPCP meetings, and ensuring that the team is communicating outside scheduled meetings. Another responsibility of the coordinator is to obtain buy-in/ownership from health care providers because the program relies largely on a referral-driven process. It is important to identify all key players early. When a team discusses a patient, a complete description is provided, including the issues that the patient may be facing, thus leading to a better goal for the team. The team process is fluid; although the core team is officially formed, other health care providers may be recruited or may wish to participate at any given time. When all the key team members are identified, a team champion should then guide the team to determine the importance of each member, understand and embrace the team concept, and begin the journey toward working as a team. Each team member is valuable and brings benefit to the patient.

Based on evidence from various studies of CHW interventions, a focus has evolved on CHW programs providing increased access to health care and overall improvement to health care outcomes among populations vulnerable to health disparities.²⁰ In their role on the IPCP team, CHWs provide direct patient services that include education, support, and resource assistance for overall health improvement in chronic disease management. Part of the CHWs’ training in the LCCHWC is understanding and applying the Transformation for Health model.

Table. Enabling services provided through the interprofessional collaborative practice team, Larry Combest Community Health and Wellness Center, West Texas, 2019

Enabling services ^a	Enabling service provided by CHW	Enabling service provided by others
Case management	One CHW provides case management services in clinic only. Four CHWs provide patient navigation services in clinic, via home visits, by telephone, or through in-person encounters.	Clinical social worker
Referrals	CHWs discuss cases at the interprofessional collaborative practice meeting if they notice any health concerns and care needs. Patients with needs may be referred to other health care providers.	Patient service specialist
Translation/interpretation	CHWs provide translation services (ie, during accompaniment to scheduled appointments).	Patient service specialists, any bilingual staff member, translation service
Transportation	CHWs facilitate scheduling of clinic driver, issuance of bus passes, and scheduling of taxi services covered by clinic or managed care provider.	One driver on staff, bus passes and taxi services facilitated by various staff members
Eligibility assistance	Two CHWs are certified ACA navigators. Six CHWs are site navigators for the community partner program, allowing them to assist with programs such as Medicaid, CHIP, SNAP, TANF, Low-Income Subsidy, and Texas Women's Health.	Not applicable
Health education	Four CHWs facilitate a smoking cessation group, and 3 CHWs facilitate a diabetes education group.	Certified diabetes educator, registered dietitian
Health literacy	Six CHWs provide one-on-one education in clinic, via home visits, by telephone, or through in-person encounters.	Certified diabetes educator, registered dietitian, nursing
Outreach	Seven CHWs provide a variety of outreach services.	Not applicable
Environmental health risk reduction	Not applicable	Clinical social worker

Abbreviations: ACA, Patient Protection and Affordable Care Act; CHIP, Children's Health Insurance Program; CHW, community health worker; SNAP, Supplemental Nutrition Assistance program; TANF, Temporary Assistance for Needy Families.

^a As defined per the Health Resources and Services Administration.

Evaluation

As an FQHC, the LCCHWC is required to submit annual Uniform Data System reports.²¹ The care outcomes are tracked by using "run charts" (ie, medical records used to analyze quality improvement) on the rates of depression screening and follow-up, hypertension control, and diabetes control. The enabling services are tracked in a database and the types of encounters are reported annually. We evaluated the TeamSTEPPS training outcomes before and after training by using a 5-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = neither disagree nor agree, 4 = agree, and 5 = strongly agree), TeamSTEPPS Teamwork Attitudes Questionnaire (30 items),²² and TeamSTEPPS Teamwork Perceptions Questionnaire (35 items).²³ We generated 5 construct scores (team structure, leadership, situation monitoring, mutual support, and communication) for

the attitudes toward and perceptions of teamwork by using the means of the responses to the items within each construct (6 items per construct for the Teamwork Attitudes Questionnaire and 7 items per construct for the Teamwork Perceptions Questionnaire). Scores ranged from 1 to 5, with higher scores indicating more favorable attitudes toward or perceptions of teamwork across constructs. We used paired *t* tests to evaluate differences in scores before and after training, with *P* < .05 considered significant. We used SPSS version 27 (IBM Corp) for analysis.

Outcomes

We established 3 evaluation domains to track program outcomes: TeamSTEPPS and education outcomes, process/service measures, and patient clinical measures.

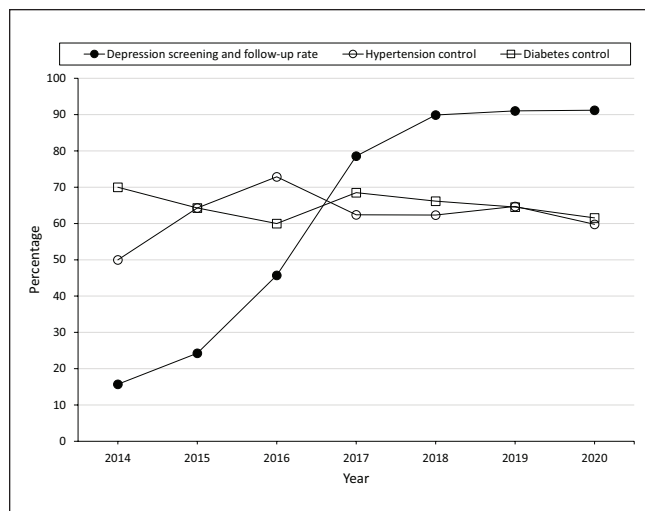


Figure 2. Depression screening and follow-up rates, hypertension control, and diabetes control, Larry Combest Community Health and Wellness Center, West Texas, 2014-2020. Data source: Uniform Data System.²¹

TeamSTEPPS Training Outcomes

Fifty-three health care providers and staff completed the initial TeamSTEPPS training: 4 (7.5%) CHWs, 19 (35.8%) nurses, 2 (3.8%) health care providers, 2 (3.8%) social workers, 4 (7.5%) pharmacists, 11 (20.8%) administrators, and 11 (20.8%) other staff/health specialists. The paired *t* tests showed that TeamSTEPPS training resulted in significantly increased mean (SD) scores from pretest to posttest on the TeamSTEPPS Teamwork Attitudes Questionnaire for team structure (4.2 [0.9] vs 4.7 [0.5]; $P < .001$), situation monitoring (4.2 [0.8] vs 4.6 [0.5]; $P = .002$), and communication (4.1 [0.8] vs 4.5 [0.5]; $P = .001$).

Other Health Care Workforce Training Measures

The LCCHWC has provided a CHW certification training program since January 2004. From January 2014 through December 2021, a total of 124 CHWs graduated from our state-certified CHW training program. The number of graduates gradually increased due to a local community-based organization's interest in the CHW certification for its employees and funding availability.

From July 2020 to February 2021, 152 unique nursing students completed 412 training sessions, which included TeamSTEPPS, Transformation for Health, suicide prevention, telehealth, and FQHC clinic rotations.

Process Measures

Data from 2014-2017, during which the initial IPCP program was established, show that CHWs assisted 310 patients through in-person visits, telephone communications, and

emails/text messages. A total of 1376 outpatient clinical visits were provided by nurse practitioners; 119 patient visits were conducted by a licensed clinical social worker; and 91 visits were conducted by a diabetes educator/registered dietitian. Pharmacy residents and 2 pharmacy faculty on the team ensured medication adherence among patients.

More than 10 000 enabling services were delivered through CHWs and other health professionals from 2015 to 2020. More than 70% of the services were delivered via telephone, including medication refills, care coordination, resource referrals, and health insurance assistance. Nearly 18% of services were delivered in person at the clinics, the patient's home, or other locations that the patient requested. In-person services include chronic disease management education, behavioral assessment, and medication knowledge education.

In 2020, the IPCP team expanded the services that CHWs provide to include behavioral health integration. In this capacity, CHWs provide education, support, and resource assistance while participating in targeted education opportunities such as the Mental Health First Aid program, QPR (question, persuade, and refer) intervention, mindfulness, and various substance use programs to increase understanding of common behavioral health issues.

Clinic Service Outcomes Required by the Health Resources and Services Administration

From 2014 to 2020, our rate of depression screening and follow-up improved significantly from 15.7% to 91.2% ($P < .001$; Figure 2). The rates of diabetes and hypertension control have remained $>60\%$ since 2015.

With the increase in total visits at the clinics (from $>15\ 000$ in 2014 to $>29\ 000$ in 2019), the total number of full-time-equivalent health care professionals also increased: from 50 to 64 health care professionals from 2014 to 2019 and from 2.1 to 4.8 mental health providers from 2014 to 2020. The average number (SD) of mental health visits per full-time equivalent more than doubled, from 393 (65) in 2014 to 898 (256) in 2019 ($P = .002$).

Lesson Learned

The outcomes reflect the evolutionary characteristics of the interprofessional team from one funded project to the next. For example, changing from external referrals for mental health services prior to implementation of the behavioral health integration program to full in-house management of behavioral issues after implementation resulted in increased numbers of patient visits and primary and behavioral health care providers. The quality of care also increased with the ability to facilitate continuity of care through primary and behavioral care integration.

Because this was a case study, the results have limited generalizability. Much of the program's success was due to

the strength of the administrative support, the human infrastructure in place, and the continuity of financial support through long-term grant funding from external sources. This is not to say that the strategic goals, actions, and results cannot be replicated. However, it is an evolutionary process that takes place through a process created by the team. An important lesson learned was that strategic planning is important for achieving a vision of integrated primary care and behavioral health. Through incremental and developmental steps and progression in obtaining the funding and support needed for such a program, we were able to achieve our objectives. Another lesson learned is the importance of tracking and monitoring progress by using identified benchmarks and indicators, which allowed us to discern the impact of our programs and use the results to guide modifications.

As an FQHC and the program awardee of the Bureau of Primary Health Care of the Health Resources and Services Administration, we are mandated to participate in the Uniform Data System reporting structure. As such, we also have access to a substantial repository of the growing data systems that we use to benchmark and monitor our processes and outcomes. However, we realized that we did not have the resources to respond to the data needs required for the Uniform Data System; as such, we had to negotiate with administration from the School of Nursing to provide us with a partial full-time-equivalent information technology position. As our program moved through its processes, we realized that not all components would be successful. Some were salvageable (eg, mental health screening), in which case we adjusted and instituted measures to ensure positive outcomes. Some were definite failures, and we had to make difficult decisions as a team to cut our losses and move on. For example, when we tried to engage a collaborative rural health clinic partner in our behavioral health integration program, we offered to train clinic staff in TeamSTEPPS. However, our attempts to schedule the training were unsuccessful, and we concluded that the rural health clinic partner was not ready to engage in the collaboration. We also learned the importance of recognizing partner contributions and the worth of each team member. Our program did not develop in a vacuum; rather, we constantly nurtured our networks, champions, and collaborative partners from development through implementation and evaluation. Likewise, each team member makes contributions that cannot be ranked in terms of importance but, rather, according to the value that each adds to the whole.

The IPCP primary care and behavioral health integration program has now amassed a substantial database and continues to build this repository of behavioral, clinical, and educational outcomes for continued monitoring and research. Our dissemination activities related to this program and the programs that preceded it have been presented in national and international conferences, and articles relating to the application of our conceptual framework in our programs have been published.¹¹ As part of the sustainability plan for this project,

we will work to institutionalize the behavioral health integration program by permanently integrating it into the IPCP model of service delivery in all LCCHWC sites, and all health professionals and staff at LCCHWC will receive annual TeamSTEPPS booster training through an established online program.

Declaration of Conflicting Interests

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