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Key ingredients for implementing intensive outpatient programs within patient-centered medical homes: A literature review and qualitative analysis

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ABSTRACT

Background: Intensive outpatient programs aim to transform care while conserving resources for high-need, high-cost patients, but little is known about factors that influence their implementation within patient-centered medical homes (PCMHs).

Methods: In this mixed-methods study, we reviewed the literature to identify factors affecting intensive outpatient program implementation, then used semi-structured interviews to determine how these factors influenced the implementation of an intensive outpatient program within the Veterans Affairs' (VA) PCMH. Interviewees included facility leadership and clinical staff who were involved in a pilot Intensive Management Patient Aligned Care Team (ImPACT) intervention for high-need, high-cost VA PCMH patents. We classified implementation factors in the literature review and qualitative analysis using the Consolidated Framework for Implementation Research (CFIR).

Results: The literature review ($n=9$ studies) and analyses of interviews ($n=15$) revealed key implementation factors in three CFIR domains. First, the *Inner Setting* (i.e., the organizational and PCMH environment), mostly enabled implementation through a culture of innovation, good networks and communication, and positive tension for change. Second, *Characteristics of Individuals*, including creativity, flexibility, and interpersonal skills, allowed program staff to augment existing PCMH services. Finally, certain *Intervention Characteristics* (e.g., adaptability) enabled implementation, while others (e.g., complexity) generated implementation barriers.

Conclusions: Resources and structural features common to PCMHs can facilitate implementation of intensive outpatient programs, but program success is also dependent on staff creativity and flexibility, and intervention adaptations to meet patient and organizational needs.

Implications: Established PCMHs likely provide resources and environments that permit accelerated implementation of intensive outpatient programs.

Level of evidence: V.

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1. Introduction

Health care systems continuously struggle to improve patient care while wisely deploying limited resources. Some approach this challenge through intensive outpatient programs designed specifically for the minority of high-need, high-cost patients who account for disproportionate costs.[1,2] These innovative programs, which provide patients with frequent contact, self-management support, and social services, can improve patient outcomes, although findings regarding utilization and cost benefits are mixed.[3–8]

Intensive outpatient programs are of special interest within patient-centered medical homes (PCMHs), which often focus on patients with chronic illnesses. PCMHs provide patients with personalized primary care intended to treat the "whole person," coordinating care across specialties with a focus on safety, quality improvement, and open access.[9] Some studies suggest that PCMHs

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decrease Medicare costs, total acute care costs, and emergency room visits.[10] Other studies find no associations between PCMHs and costs/service use,[11] or suggest that PCMHs are poorly suited for small practices.[12] However, even when overall PCMH effects are minimal, analyses focusing on patients with chronic illness suggest that there may be decreases in costs/service use among higher-risk patients.[13,14,10] Therefore, augmenting PCMHs with targeted interventions for high-need, high-cost patients may improve their value.

Despite the shared focus on chronic illness and potential for synergy, little research describes implementing intensive outpatient programs within PCMHs. In this paper, we review literature describing the implementation of intensive outpatient programs to identify implementation factors relevant in PCMH settings. We augment this review with a qualitative implementation evaluation of a program designed to augment the well-established PCMH in the Veteran Affairs Health Care System (VA).[2,15,16]

2. Materials and methods

2.1. Literature review

Our literature review is based on an evidence synthesis conducted by VA's Evidence-Based Synthesis Program Coordinating Center[15] to inform VA's intensive outpatient program development. The synthesis used the MeSH terms: "comorbidity"; "frail elderly"; "patient care management" "patient care team", "home care services", "hospitalizations"; and "patient readmission," and was later supplemented with additional peer-reviewed and gray literature to guide design of the ImPACT intervention.[2]

For the present study, two authors reviewed the ten articles previously identified as providing implementation information[2] to: (1) describe factors affecting the implementation of intensive outpatient programs and (2) identify factors that may be important within PCMHs. Of ten articles reviewed,[3,17–25] all but one[25] provided information on implementation factors; therefore, nine articles were included. We categorized implementation factors using the Consolidated Framework for Implementation Research (CFIR; 26). CFIR delineates five domains (*Intervention Characteristics, Outer Setting, Inner Setting, Characteristics of Individuals* involved in implementation, and the *Process* of implementation) that influence the implementation of complex interventions.

3. Setting for the qualitative implementation evaluation

3.1. Patient Aligned Care Team (PACT)

PACT, VA's PCMH, launched in 2010. PACT has been implemented at 152 VA medical centers and ~800 clinics, making it one of the nation's largest PCMH systems. PACT provides each VA primary care patient with a "medical home" consisting of a physician, a nurse, a medical assistant, and administrative staff.[16]

3.2. Intensive Management Patient Aligned Care Team (ImPACT)

In 2012, health services researchers, facility leadership, and clinicians partnered to develop and evaluate ImPACT, a single site novel intensive outpatient program for high-need, high-cost patients. ImPACT began enrolling patients in February 2013 and has been described previously.[2]

High-need, high-cost patients. Patients were eligible (and randomly selected) for ImPACT services if: (1) their one-year risk for hospitalization was in the top 5% (based on an established VA risk score[27]) or if their total VA care costs was in the top 5% during fiscal year 2012, (2) they were not enrolled in another VA intensive program such as home-based primary care, and (3) they were outpatients for at least half of a 9-month eligibility period.

ImPACT intervention: The ImPACT team consists of a nurse practitioner; physician; recreation therapist; and clinical social worker; all collocated within PACT. Key elements of the program include comprehensive intake assessments, care coordination (e.g., ImPACT clinicians co-attend visits with specialists), and patient-centered goal setting. Patients have 24-h telephone access to ImPACT clinicians. The team has weekly huddles and an electronic tracking system that alerts them when a patient is hospitalized or seen in the emergency department, facilitating coordination with inpatient services, discharge planning, and rapid follow-up after health status changes.

3.3. Qualitative methods

We used purposeful sampling[28] to identify individuals who were actively involved in the development/implementation of ImPACT and its integration with PACT. From November-December 2013, one researcher conducted 15 qualitative interviews with all ImPACT clinicians, members of facility leadership (three physicians), and eight other clinicians who interacted with ImPACT (a hospitalist and three primary care physicians, one nurse practitioner, and three nurses from PACT). Participants were provided with a $10 VA canteen voucher.

3.4. Interview methodology

After obtaining informed consent, interviews were conducted using a semi-structured guide based on the literature review and CFIR, with different questions for ImPACT clinicians, facility leadership, and other clinicians. Interviews with ImPACT clinicians lasted ~1 h, interviews with facility leadership/other clinicians lasted 15–30 min.

3.5. Coding

All interviews were digitally recorded and transcribed verbatim. Two authors used deductive coding to complete provisional coding[28] of transcripts using the five CFIR domains and Atlas.ti version 7, coding all instances of any domain and consulting a third author in the event of disagreement. Next, all three authors reviewed coded quotes separately and together to sort them into 33 CFIR subdomains. An inductive clustering procedure[28] in which transcripts were sorted into other possible themes (e.g., staff dynamics) confirmed that CFIR domains provided the best data categorization. All methods were approved by a university Institutional Review Board.

4. Results

4.1. Literature review

Table 1 describes characteristics of intensive outpatient programs discussed in review articles,[3,17–24] including program size, setting, and recruitment strategy. While none of the articles described implementation within PCMHs, half of the models were implemented in integrated care settings and two papers described programs implemented in settings similar to PCMHs (e.g., chronic care models).[18,19]

Table 2 presents implementation factors reported by reviewed articles, which predominantly relate to three CFIR domains. First, the *Inner Setting*, which refers to environmental implementation