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An operations-partnered evaluation of care redesign for high-risk patients in the Veterans Health Administration (VHA): Study protocol for the PACT Intensive Management (PIM) randomized quality improvement evaluation

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ABSTRACT

Background: Patient-centered medical homes have made great strides providing comprehensive care for patients with chronic conditions, but may not provide sufficient support for patients at highest risk for acute care use. To address this, the Veterans Health Administration (VHA) initiated a five-site demonstration project to evaluate the effectiveness of augmenting the VA's Patient Aligned Care Team (PACT) medical home with PACT Intensive Management (PIM) teams for Veterans at highest risk for hospitalization.

Methods/design: Researchers partnered with VHA leadership to design a mixed-methods prospective multi-site evaluation that met leadership's desire for a rigorous evaluation conducted as quality improvement rather than research. We conducted a randomized QI evaluation and assigned high-risk patients to participate in PIM and compared them with high-risk Veterans receiving usual care through PACT. The summative evaluation examines whether PIM: 1) decreases VHA emergency department and hospital use; 2) increases satisfaction with VHA care; 3) decreases provider burnout; and 4) generates positive returns on investment. The formative evaluation aims to support improved care for high-risk patients at demonstration sites and to inform future initiatives for high-risk patients. The evaluation was reviewed by representatives from the VHA Office of Research and Development and the Office of Research Oversight and met criteria for quality improvement.

Discussion: VHA aims to function as a learning organization by rapidly implementing and rigorously testing QI innovations prior to final program or policy development. We observed challenges and opportunities in designing an evaluation consistent with QI standards and operations priorities, while also maintaining scientific rigor.

Abbreviations: AUDIT-C, Alcohol Use Disorders Identification Test; CAHPS, Consumer Assessment of Healthcare Providers and Systems; CAN, Care Assessment Need; ED, Emergency Department; EMR, electronic medical record; FY, fiscal year; GRACE, Geriatric Resources for Assessment and Care for Elders program; IRB, Institutional Review Board; MCA, Managerial Cost Accounting.; NP, nurse practitioner; PACT, Patient Aligned Care Team; PCP, primary care provider; PDSA, Plan-Do-Study-Act; PHQ-2, Patient Health Questionnaire-2; PIM, PACT Intensive Management; PROMIS, Patient Reported Outcomes Measurement Information System; Q1, Quarter 1; Q2, Quarter 2; Q3, Quarter 3; Q4, Quarter 4; QII, Quality Improvement Innovation; RFP, Request for Proposal; RN, registered nurse; SW, social worker; VHA, Veterans Health Administration; VSSC, VHA Support Service Center

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1. Background

A fraction of Veterans (5%) account for almost half (47%) of Veterans Health Administration (VHA) costs, a phenomenon driven mainly by hospital admissions [1] and comparable to patterns observed in the general U.S. population [2]. New models of primary care, such as the patient-centered medical home, are associated with improved patient satisfaction and lower acute care utilization [3–5], and incorporate additional team resources to enhance care coordination [6]. Early evaluations suggest, however, that medical homes may not be able to adequately address the needs of the patients at highest risk while meeting the ongoing demands of large primary care patient panels [7–11]. As a result, many health care systems have developed "hot-spotter" approaches that focus on improving quality for high-risk/high-cost patients as a potential strategy for achieving costs savings [12]. Similarly, VHA leaders identified the need to "enhance coordination of care and the use of [patient-centered medical homes] for Veterans with the most complex care needs" [13] in VHA's national strategic plan. To address this challenge, VHA Office of Primary Care Services requested proposals from VHA facilities in 2013 to participate in a national demonstration to augment existing Patient Aligned Care Team (PACT), VA patient-centered medical homes, with PACT-Intensive Management (PIM) teams to improve the care for Veterans who were at highest risk for hospitalization.

This paper describes VHA's approach as a learning healthcare system to developing and evaluating the PIM innovations. Learning healthcare organizations [14,15] aim to link continuous development of new scientific knowledge with clinic-level evidence on the process and outcomes of care. Implementation of the learning organization paradigm requires a partnership between researchers and operations leaders at multiple levels of the organization. One approach to promoting these linkages is through developing and testing structured quality improvement innovations (QIIs) in a limited number of sites, often termed demonstration sites, prior to promoting large-scale policy or practice changes [16,17]. In this demonstration, evaluators worked with operations partners to develop a rigorous evaluation design that met VHA goals, was feasible, and met ethical guidelines for a quality improvement study.

The objectives of this protocol report are to describe: 1) the development and final designs of the formative (developmental) and summative (effectiveness) evaluations of the PIM innovations for high-risk patients; and 2) the evaluation goals that shaped evaluation analyses.

2. Methods and design

2.1. History of partnership project development

2.1.1. Evidence review

As an initial step for assessing how VHA Primary Care could improve care for high-risk patients, the VHA invited 25 VHA and non-VHA key stakeholders and researchers (including paper authors LR, SA, DA, GS, SK) to consider the evidence for the best models to manage high-risk, high-cost patients based on a literature review of intensive primary care models [18]. Participants discussed whether: 1) there were gaps in existing VHA programs with respect to high-risk Veterans; 2) there were proven models from outside VHA to address these gaps; and 3) the VHA should develop any new models focused on its highest utilizers. Panelists concluded that even well-functioning patient-centered medical homes were challenged to meet all the needs of the highest risk patients. Some models held promise for improving care for this population and reducing hospital admissions, emergency department (ED) visits, and costs [19,20]; however, the overall evidence supporting intensive management programs for high-risk or high-utilizer patients was mixed [21,22]. Few studies could be confidently generalized to VHA, which already has multiple programs to extend social support to Veterans and to assist home-bound, geriatric or mental health patients [18]. Most non-VHA research focused on care settings that did not include approaches that are a routine aspect of VHA primary care, such as patient-centered medical homes [23], non face-to-face encounters (i.e., secure messaging and telephone care) [3,24], and electronic medical records that combine inpatient and ambulatory care records. All VHA patients are assigned to a primary care team within the patient-centered medical home.

2.1.2. Demonstration site recruitment

Not having detected a compelling single model for addressing high-risk patient needs, the VHA Office of Primary Care Services concluded that population care approaches required additional testing in the VHA setting prior to promulgating a system-wide approach through policy directives. In August 2013, the Office of Primary Care Services issued a Request for Proposal (RFP), calling for demonstration sites to implement QIIs for intensive management of high-risk primary care patients to participate in a national demonstration to build on existing patient-centered medical homes (called Patient Aligned Care Teams, or PACT) to improve the care for Veterans who were at highest risk for hospitalization. The RFP specified the target high-risk population based on a VHA predictive risk index, the Care Assessment Need (CAN) Score [25], and desired outcomes (i.e., primary care provider satisfaction, improved patient experiences of care, and reductions in hospitalization and ED use).

2.1.3. Demonstration site selection

Five sites were selected in a competitive process by reviewers and funders from the VHA Office of Primary Care Services in November 2013 from among the 39 sites that responded to the RFP. Funders looked for: 1) geographically diverse teams, spanning both rural and urban settings; 2) teams that included a mental health provider given the prevalence of mental health comorbidities in this patient population [1]; and 3) services that would increase Veteran access to healthcare, including home visits and telehealth.

2.1.4. Demonstration Site Settings and Proposed QIIs

Selected QIIs spanned a variety of high-risk patient care approaches, such as a patient-centered medical home for high-risk Veterans, collaborative care model for high-risk patients, and care transitions program. Table 1 summarizes site geographic locations and proposed QII interventions. All selected teams proposed intensive interdisciplinary care planning, comprehensive patient assessment and evaluation, care coordination, disease management, patient self-management support, tailored goal setting based on patient needs and preferences, and additional care management services. All proposed QIIs used population management models (Fig. 1) and determined their own approaches to stratifying patients and determining eligibility for and intensity of services. The types of services offered by each team depended on program staff, local resources, and facility and program priorities. Each site also developed its own criteria for when to discontinue services for patients. Ultimately, however, not all proposed features could be incorporated into their final innovation designs, given the stipulations of operations funders for an integrated five site evaluation.

Funders envisioned a planning phase, followed by a brief period of pilot testing and Plan-Do-Study-Act (PDSA) cycles [27] for each site, during which an evaluation design would be finalized. The five