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Implementing community health worker-patient pairings at the time of hospital discharge: A randomized control trial

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ABSTRACT

Background: In 2011, there were approximately 3.3 million adult 30-day all-cause hospital readmissions in the US generating $41.3 billion in hospital costs. Community health worker (CHW) care delivery is one of very few interventions demonstrated to reduce health care utilization among populations with chronic disease. While there are a number of studies demonstrating improved disease-specific outcomes with CHW interventions, studies examining the effect of CHW care delivery on 30-day readmission rates are rare.

Methods: This study is a randomized control trial designed to determine if linking hospitalized patients with chronic disease to community health workers (CHWs) can decrease 30-day readmissions. Participants were randomly assigned to receive the 30-day CHW intervention or usual care (no CHW). All study participants completed surveys at baseline and the end of the study 30 days post-discharge. The primary outcome was 30-day readmission and secondary outcomes included emergency department visits, missed appointments, and patient satisfaction.

Results: We plan to enroll 1200 hospitalized patients during a 24-month intervals. As of December 2017, 350 patients have been consented and randomly assigned to either the intervention or control arm. A number of challenges have been encountered in implementing a CHW initiative at the time of hospital discharge.

Conclusion: This trial tests the effectiveness of CHW care delivery at the time of hospital discharge in reducing 30-day readmission rates and improving outcomes among patients with chronic disease. We describe and discuss challenges in launching this CHW intervention and strategies utilized to overcome these obstacles.

Clinical Trials.gov registration submitted 3/14/2017: Protocol ID# 2017A050810 and Clinical Trials.gov ID# NCT03085264 Community Health Worker Care Transitions Study (C-CAT).

1. Introduction

In 2011, there were approximately 3.3 million adult 30-day all-cause hospital readmissions in the United States [1]. These readmissions generated $41.3 billion in hospital costs and u$^{p\ to}$ $8.26 billion (15–20%) of these costs were potentially preventable [2]. Causes of these high rates of readmission are multi-factorial; several studies have demonstrated the relationships among hospital readmissions, complex chronic disease management and social determinants of health (SDH), including lack of education, socioeconomic status and lack of social support [3–14].

Community health worker (CHW) care delivery is one of few interventions demonstrated to reduce health care utilization among populations with chronic disease [15]. Initially studied by HRSA back in the early 2000s, community health workers are unlicensed health care workers who may work for pay or as volunteers to provide support or assistance in the community [16]. While no licensure for CHW roles currently exists, a number of states have taken the lead in developing robust training and certification programs [17]. Despite noted reduction in some healthcare outcomes by as much as 18–65% with the use of CHW interventions [18,19], studies examining whether CHW models can improve specific Centers for Medicare and Medicaid Services (CMS) outcomes that are tied to reimbursement (i.e. 30-day readmission rates) are rare. As a result, CHW programming remains siloed and outside of what is considered mainstream care delivery.

This study fills a gap in current knowledge of CHW interventions because it is one of the first randomized control trials to examine the effect of CHW care delivery within a high-risk Medicare/Medicaid-

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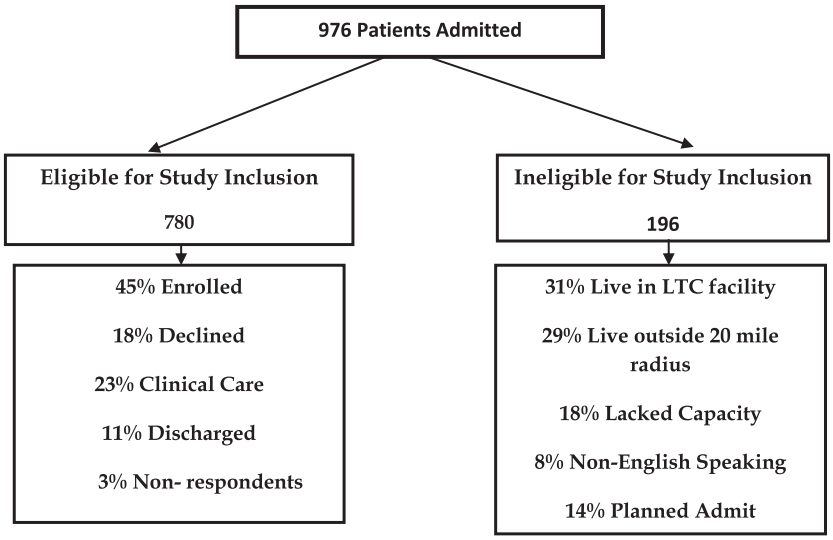

Fig. 1. Enrollment strategy.

insured population on 30-day readmissions, a specific outcome targeted by CMS as a part of a national initiative called the Hospital Readmission Reduction Program (HRRP). Furthermore, this study is unique in that it is focused on pairing CHWs with patients at the time of hospital discharge which is less commonly studied. Results of this trial may help inform new strategies to improve care transitions and prevent costly hospital readmissions. Specifically, this study will add value to conversations focused on whether CHW care delivery should be covered by insurers as a part of a therapeutic intervention for patients with chronic disease. The goal of this randomized control trial is to determine if CHW care delivery at the time of hospital discharge improves clinical and qualitative outcomes. Our hypothesis is that participants randomly assigned to the 30-day CHW intervention will have lower rates of post-discharge 30-day readmissions, fewer missed appointments, fewer emergency department visits, as well as higher rates of satisfaction and engagement than those receiving usual care. The study design and methods of this trial as well as lessons learned in implementing CHW care delivery in an academic medical center at the time of discharge are described here.

2. Methods

2.1. Study design

This is a single site randomized control trial targeting English-speaking patients (age 18–109 years) with chronic disease that are at increased risk for readmission. Patients admitted to designated study floors were approached for enrollment during admission after eligibility criteria were established. After participants were consented, they were randomized to the intervention or control arms per preloaded block randomizing protocols. Three hundred fifty adults were randomized to either the intervention arm (usual care along with CHW care; 175 patients) or the control arm (usual care alone; 175 patients) from May 2017–December 2017. All participants completed an enrollment questionnaire and a post- study questionnaire. All primary care providers (PCPs) of enrolled participants completed a post- study questionnaire. All intervention patients received a combination of telephone calls/text messages, home visits, visits while in rehabilitation, accompaniment to medical appointments or medically-related excursions and any needed community services/programming or assistance that could be arranged by their CHW. For participants in the intervention arm, the CHW approach to participant interactions included a framework of motivational interviewing, goal-setting, behavioral change and psychosocial support.

2.2. Study site and participants

The Massachusetts General Hospital (MGH) Department of Medicine cares for over 10,000 inpatients each year many of whom present with diagnoses identified by CMS as most commonly associated with 30-day hospital readmissions. These include congestive heart failure, serious infections and pneumonia. The majority of these types of admissions are housed on each of MGH's 11 medical units. Six internal medicine units were included as study units for this trial. Each unit had similar percentages of 30-day readmissions with no differences in the diagnoses or ages of hospitalized patients. All inpatients were cared for by an attending physician along with an internal medicine resident team.

To be eligible for the study, patients had to have been age 18 years of age or older and admitted to one of the six inpatient medicine units at the MGH. The following inclusion criteria were applied. Patients had to: 1) be identified as high risk for readmission with 2 or more non-elective hospitalizations in 3-month interval prior to current hospitalization or at least 3 non-elective hospitalizations in the 12-month interval prior to current hospitalization 2) be enrolled in an MGH in-network insurance risk contract 3) live within a 20 mile radius of MGH (55 Fruit Street, Boston, MA 02114), 4) have a working home/mobile telephone number 5) be English speaking 6) have the ability to consent to study participation 7) have an unmet need for outpatient support identified during multidisciplinary case management rounds (e.g. assistance with medication management, appointment scheduling, transportation, social support, etc) and 8) have a primary care provider. Patients were not eligible if they: 1) were homeless at the time of admission 2) had cognitive impairment and were unable to complete the survey or required caregiver prompting for questionnaire completion or 3) had a history of known lack of capacity to consent (due to guardianship or invoked health care proxy) (See Fig. 1 for enrollment details). Due to the nature of the intervention, neither the patients nor CHW staff were blinded to participant arm assignments. No remuneration was given to patients. Ethics approval was obtained February 16, 2017 prior to initiating the trial from the institutional review board at the Partners Human Research Committee. Informed consent was obtained from all participants.

2.3. Screening and recruitment

Patients considered for enrollment were identified at