Contemporary Clinical Trials 52 (2017) 35–38

Contents lists available at ScienceDirect

Contemporary Clinical Trials

journal homepage: www.elsevier.com/locate/conclintrial

Evaluating community health centers' adoption of a new global capitation payment (eCHANGE) study protocol

H Angier, MPH [a,*], JP O'Malley, MPH [a], M Marino, PhD [a], KJ McConnell, PhD [a], E Cottrell, PhD [a,b], RL Jacob, ScM [b], S Likumahuwa-Ackman, MID, MPH [a], J Heintzman, MD, MPH [a], N Huguet, PhD [a], SR Bailey, PhD [a], JE DeVoe, MD, PhD [a,b]

[a] Oregon Health & Science University, United States
[b] OCHIN, Inc., United States

ARTICLE INFO

Article history:
Received 17 June 2016
Received in revised form 31 October 2016
Accepted 7 November 2016
Available online 9 November 2016

Keywords:
Medicaid
Payment methodology
Capitation
Patient-centered medical homes

ABSTRACT

Primary care patient-centered medical homes (PCMHs) are an effective healthcare delivery model. Evidence regarding the most effective payment models for increased coordination efforts is sparse. This protocol paper describes the evaluation of an Alternative Payment Methodology (APM) implemented in a subset of Oregon community health centers (CHCs), using a prospective matched observational design. The APM is a primary care payment reform intervention that changed Oregon's Medicaid payment for several CHCs from fee-for-service reimbursement to a per-member-per-month capitated payment. We will implement a difference-in-difference analytic approach to evaluate pre-post APM changes between intervention and control groups, including: 1) clinic-level outcomes, 2) patient-level clinical outcomes, and 3) patient-level econometric outcomes. Findings from the project will be of national significance, as there is a need for evidence regarding how novel payment methods might enhance PCMH capabilities and support their capacity to produce better quality and outcomes. If this capitated payment method is proven effective, study findings will inform dissemination of similar APMs nationwide.

1. Introduction

Primary care patient-centered medical homes (PCMHs) are effective healthcare delivery models that strengthen quality of clinical care, improve patient satisfaction, and reduce healthcare costs [1–3]. Increased healthcare coordination from PCMHs is associated with improvements in physician-patient communication, provision of guideline-based preventive services, and patient health [4–6]. However, evidence regarding the most effective payment models for increased coordination efforts is sparse, and there is no consensus about the best approach [7–10]. Existing fee-for-service (FFS) reimbursement schemes, such as the relative value units of the Centers for Medicare and Medicaid Services, provide little financial incentive for coordination activities because these models reward a high volume of physician face-to-face visits with increased reimbursement, rather than care quality, communication with other members of the healthcare team, or patient-centered modes of contact [11]. For example, under this system, services such as patient education delivered by a non-provider, care coordination, or quality improvement cannot be billed [12]. Alternative payment approaches could allow clinics to plan and deliver patient-centered care that best fulfills the needs of patients, rather than the needs of an antiquated billing system [12–15]. Further, there is evidence that alternative payment methods can reduce the provision of unnecessary healthcare services encouraged by FFS models. For example, when hospitals went from FFS to prospective and aggregated diagnosis-related groups, they reduced expenditures by 10.9%, with no change in length of stay or re-admission rates [16]. Previous research regarding alternative payment has been mixed: on one hand, it encouraged team-based care; on the other hand, it was associated with increased administrative burden and information technology needs [17,18]. Thus, there is a need for further investigation of the impact of alternative payment approaches and their outcomes.

This protocol paper describes the evaluation of an Alternative Payment Methodology (APM) intervention involving a subset of Oregon community health centers (CHCs) classified as Federally Qualified Health Centers (FQHCs) or Rural Health Centers (RHCs). In 2013, the

Abbreviations: APM, Alternative Payment Methodology; CCO, coordinated care organization; CHC, community health center; EHR, electronic health record; FFS, fee-for-service; FQHC, federally-qualified health center; GLMM, generalized linear mixed model; PBRN, practice-based research network; PCMH, primary care medical home; PMPM, per-member-per-month; OHA, Oregon Health Authority; RHC, rural health center.

* Corresponding author at: 3181 SW Sam Jackson Park Road, Portland, OR 97239, United States.
E-mail address: angierh@ohsu.edu (H. Angier).

http://dx.doi.org/10.1016/j.cct.2016.11.001
1551-7144/

Oregon Health Authority (OHA) partnered with the Oregon Primary Care Association to launch the APM demonstration project that changed Oregon's Medicaid payment for several CHCs from FFS reimbursement to a per-member-per-month (PMPM) capitated payment structure [19]. Using a prospective matched observational study, this evaluation intends to assess this 'natural experiment' and its impact on care delivered to patients.

1.1. APM background

Traditionally, CHC care has been reimbursed from Medicaid on a FFS visit-based system, which established a prospective payment rate that clinics would receive per visit based on the full cost of providing care in CHCs. This system and its implementation are complex in each state. For example, in Oregon, most Medicaid recipients are assigned to one of several Coordinated Care Organization (CCOs), which are a type of accountable care organization responsible for care quality (with an emphasis on patient-centered medical homes) in a given population [20]. For CHCs designated as FQHCs or RHCs, the visit-based prospective payments include CCO payments that are supplemented by OHA 'wraparound' payments.

For CHCs participating in the APM project, the OHA changed the payment from a FFS visit-based, prospective payment to a PMPM capitated payment, which provides a monthly payment for each Medicaid patient attributed to their health center for that month. The monthly payment replaces the FFS visit-based payment for all services except dental, mental health, and obstetric care. Participating CHCs are required to show enhanced support services and to report on quality metrics to the OHA. An annual payment reconciliation ensures that each participating CHC is paid at least what they would have received under the previous payment scheme.

1.2. Study aims

This study uses a prospective matched observational design to quantitatively examine electronic health record (EHR) and Medicaid claims data (described below) at the clinic- and patient-level to assess pre-post differences between patients seen in CHCs participating in APM (intervention) compared to patients from non-APM CHCs (control). This study has the following specific aims:

Aim 1: Assess pre-post changes in utilization of CHC internal services (services that occur within the CHC) and quality of clinical care delivered to intervention patients, as compared with control patients.

Hypothesis 1a. Facilitation of non-traditional services (e.g., non-billable visits, phone encounters and group visits) will decrease the demand for traditional visit-based encounters; this change will increase more for intervention versus control patients.

Hypothesis 1b. Utilization of non-traditional services will increase more among intervention patients from pre- to post-APM, than in control patients, while visit-based encounter rates will not increase in intervention patients relative to those of control patients.

Hypothesis 1c. Intervention patients will achieve greater pre-post improvements in quality of care delivered internally (e.g., preventive care services), as compared to the rates of improvement in control patients.

Aim 2: Measure pre-post changes in utilization of external services (services that occur outside of the CHC) and overall costs to the Medicaid program among intervention patients receiving primary care, as compared to control patients.

Hypothesis 2a. Utilization of external services will decrease for intervention patients, but will remain the same or increase in control patients.

Hypothesis 2b. Total Medicaid expenditures will decrease for intervention patients, while expenditures for control patients will remain the same or increase.

2. Materials and methods

2.1. APM intervention time periods

The APM natural experiment was implemented in phases: phase one started on 3/1/2013; phase two start dates ranged from 7/1/2014–10/1/2014; and phase three started on 7/1/2015. The study will analyze data from 6/1/2011 through 5/30/2018 (the actual time frame analyzed will depend on the analysis). This end date gives us one year prior to study completion (5/31/2019) for analyses. EHR data are real-time; for analyses that use claims data, we will allow six months for data correction before final analyses are conducted. Study time intervals for phase one will be categorized as pre-intervention (2010 − 2012), implementation of intervention [time period to allow for changes (2013–2014)] and post-intervention (2015–2018). Time intervals will depend on the phase of implementation; time increments used in the analyses will depend on the outcome variables (described below).

2.2. Data sources

We will use EHR data from the OCHIN (not an acronym) practice-based research network (PBRN) [21,22]. All phase one and two, and the majority of phase three CHCs are part of the OCHIN PBRN. The EHR data is centrally hosted and managed at OCHIN; data are updated daily from the EHR, standardized across all OCHIN CHCs, and checked regularly for accuracy [21,22]. This large network with a rich EHR dataset will enable us to identify appropriate control clinics and patients.

We will also use Medicaid administrative claims data, which will provide information on healthcare services received and costs incurred by those with Medicaid coverage. Oregon's Medicaid recipients are assigned unique individual identification numbers, facilitating data linkages across multiple databases, including the OCHIN EHR data [23–25].

2.3. APM and non-APM clinics

From the OCHIN PBRN, a total of 27 APM clinics are included in phase one, two, or three of the demonstration project [see Table 1].

2.4. Statistical analyses

The analyses for this study are determined by the outcome type: 1) clinic-level outcomes, 2) patient-level clinical outcomes, and 3) patient-level econometric outcomes. All proposed analyses will implement a

Table 1
Number of APM and non-APM clinics from the OCHIN PBRN.

APM phase	# of clinics starting APM	Total # of APM clinics	# of non-APM clinics
One	8	8	31
Two	13	21	18
Three	6	27	12

Clinic inclusion criteria: EHR on or before 6/1/11; federally-qualified health center or rural health center; primary care.
Clinic exclusion criteria: school-based health center; mental health, dental, or obstetric only clinic.