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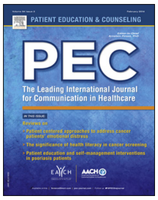

Communication study

A method to determine the impact of patient-centered care interventions in primary care

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ABSTRACT

Objective: The implementation of patient-centered care (PCC) innovations continues to be poorly understood. We used the implementation effectiveness framework to pilot a method for measuring the impact of a PCC innovation in primary care practices.

Methods: We analyzed data from a prior study that assessed the implementation of an electronic geriatric quality-of-life (QOL) module in 3 primary care practices in central North Carolina in 2011–2012. Patients responded to the items and the subsequent patient–provider encounter was coded using the Roter Interaction Analysis System (RIAS) system. We developed an implementation effectiveness measure specific to the QOL module (i.e., frequency of usage during the encounter) using RIAS and then tested if there were differences with RIAS codes using analysis of variance.

Results: A total of 60 patient–provider encounters examined differences in the uptake of the QOL module (i.e., implementation-effectiveness measure) with the frequency of RIAS codes during the encounter (i.e., patient-centeredness measure). There was a significant association between the effectiveness measure and patient-centered RIAS codes.

Conclusion: The concept of implementation effectiveness provided a useful framework determine the impact of a PCC innovation.

Practice implications: A method that captures real-time interactions between patients and care staff over time can meaningfully evaluate PCC innovations.

1. Introduction

The Institute of Medicine (IOM) has identified patient centeredness as a core attribute of high quality care, on equal footing with safety, effectiveness, and equity [1]. As a result, interventions for improving patient-centered care (PCC) at the organizational level continue to be developed, such as the Patient Centered Medical Home (PCMH), which has been envisioned as the predominant health care delivery model in the United States [2–4]. Health care organizations often quickly adopt these and other complex ways of improving PCC but subsequently find that sustained change is challenging, time consuming, and costly [5]. For example, although a Cochrane review concluded that PCC interventions are efficacious in improving care [6], findings of the National Demonstration Project showed that adoption of PCMH components resulted in only modest impact in areas such as chronic care outcomes, cost, and patient centeredness [7]. These mixed results may reflect variation in methodologies that examined how effectively respective PCC interventions were implemented.

The recently established Patient Centered Outcomes Research Institute (PCORI) has identified implementation as a key barrier to the widespread adoption of potentially effective PCC interventions [8]. PCORI will seek to develop and apply optimal methods that promote the sustained adoption of best PCC practices in health care settings [9]. Yet implementation continues to be poorly understood and not well integrated into PCC research. Within clinical settings, implementation refers to initiatives that are intentionally designed to get the best practices, innovations, and/or associated products into routine and sustained use by providers and systems

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of care through designated adoption or organizational change interventions [10,11].

Patient-centered care (PCC) was introduced by Balint and colleagues over 40 years ago to bring attention to the patient perspective in health care encounters [12]. Since that time there have been methodological advances in measuring PCC, most notably the patient-centered clinical method developed by Levenstein and Stewart [13,14] and the Picker/Commonwealth framework [15]. A systematic review of over 3000 articles identified two well-validated PCC instruments [16]. The first measure, the patient perception of patient-centeredness, was derived from empirical studies of the doctor–patient relationship and is based on the Stewart model [13,14]. The Consultation Care Measure is the second measure and is also based on empirical studies of the doctor–patient relationship, Stewart's [13] model, and patient interviews [17]. More recently, the Consumer Assessment of Healthcare Providers and Systems (CAHPS) program added to the pool of PCC instruments by developing an expanded version of the Clinician & Group 12-Month Survey that incorporates a Patient-Centered Medical Home Item Set [18].

The National Demonstration Project (NDP) has also gauged patient centeredness by constructing a practice-level measure of the patient's assessment of PCMH [19]. Finally, in a study of 21 primary care practices that achieved Level III recognition as medical homes by the National Committee for Quality Assurance, investigators utilized consumer choice satisfaction ratings (e.g., satisfaction with clinic, satisfaction with how well listened to) as the primary outcome measure of patient-centeredness [20]. Although these have been noteworthy contributions to the development of methods to determine PCC outcomes, the growing body of research in this area has not produced a clear framework that guides robust measures of how well PCC interventions are adopted and implemented, and the subsequent impact on organizational processes.

In order to advance PCC, health care leaders and innovators need appropriate methods for gauging the impact of the complex interventions that they develop and implement [8,21]. Since care interventions are embedded within organizational settings such as medical practices, meaningful approaches need to take into account how adoption and implementation are realized in real world clinical settings [22]. Overcoming this obstacle first requires an approach that can gauge the effectiveness with which PCC interventions are implemented at the organizational level [21], thus allowing researchers and health care leaders to assess whether an efficacious PCC intervention was implemented successfully.

Implementation effectiveness is an organization-level construct that refers to the aggregated consistency, quality, and appropriateness of use of a specific innovation by intended users within an organization [23–25]. Without a method for assessing implementation effectiveness, it will be difficult, if not impossible, to evaluate current implementation strategies or develop tailored evidence-based implementation strategies for organizations adopting PCC interventions. To address this need, we piloted a method for measuring the level of implementation effectiveness and the impact of PCC interventions in primary care. Specifically, we aimed to determine whether using the method was feasible and whether the results generated were consistent with a framework that predicts implementation effectiveness to be positively associated with the impact of an intervention.

2. Methods

2.1. Study design

We analyzed data from a prior feasibility study, described elsewhere, that assessed the implementation of a geriatric quality-of-life (QOL) module within three primary care practices in central North Carolina that had existing electronic health record systems [26]. The module included seven health-related quality of life items related to physical health, emotional health, physical functioning and limitations in activities of daily living/instrumental activities of daily living, and level of social support. The QOL software was designed so that items would be prompted to appear within the electronic health record (EHR) during the intake portion of the medical encounter (i.e., when vital signs and chief complaints were recorded by clinical staff).

The parent study used a case study design and data were collected in 2011–2012 via brief questionnaires and semi-structured interviews with providers, nursing/administrative staff, and patients nested within practices. We found that QOL modules must provide benefits, such as information that is specific enough to be useful and/or acted upon, that are substantial and prominent in order for physicians to decide that they are worthwhile and sustainable for implementation.

2.2. Setting and participants

The setting and participants involved three primary care practices in central North Carolina that had operational electronic health record systems which could incorporate the QOL module. Two practices were small (i.e., fewer than four providers), independently owned family practices located in small towns, and the other was a general internal medicine practice that was part of a large academic health center. A research assistant (RA), with office nursing experience, was placed in the waiting room of the practice on designated data collection days to identify potentially eligible patients, invite participation, and seek informed consent. Since the parent study was a feasibility study, a goal 60 patient subjects, with approximately 20 from each practice site was targeted, and no re-enrollment was permitted. Patients who met the following criteria were eligible for the study: (1) age 50 years of age or older; (2) self-reported diagnosis of heart disease, lung disease, stroke, or cancer, and; (3) capable of speaking and reading English language. Specific exclusion criteria for the study included: (1) severe memory loss or impaired orientation; and (2) acutely ill appearing. Participating patients received a $10 gift card. The study was approved by the Institutional Review Board of the University of North Carolina at Chapel Hill.

2.3. Data collection and analyses

After informed consent was obtained, patients responded to the QOL items during the routine intake collection, recording of vital signs and chief complaint, which were entered into the electronic health record. The subsequent patient–provider encounter was recorded using a digital audio recorder. We coded the patient–provider audiotapes using the Roter Interaction Analysis System (RIAS), a widely recognized method of coding doctor–patient interactions [27,28]. There are four main components to RIAS: (1) the coding approach is tailored to exchanges specific to the medical encounter and all patient and physician dialogue is coded into categories that may be applied to each speaker, although some categories may be more common to a particular speaker; (2) categories are tailored to directly reflect the content and context of the routine dialogue between patients and doctors during medical exchanges; (3) identification and classification of verbal events are coded directly from videotapes or audiotapes and not transcripts; (4) since coding is done directly from video or audiotapes, rather than transcripts, assessment of the tonal qualities of interaction is possible [27,29].

There are multiple RIAS categories that can be used and general RIAS categories include socio-emotional exchange (e.g., empathy