



Characteristics of outpatient clinical summaries in the United States



Christopher Salmon^a, Rachel O'Connor^b, Sereena Singh^a, Ravishankar Ramaswamy^d,
Joseph Kannry^a, Michael S. Wolf^b, Alex D. Federman^{c,*}

^a Icahn School of Medicine at Mount Sinai, New York, NY, United States

^b Division of General Internal Medicine, Feinberg School of Medicine, Northwestern University, Chicago, IL, United States

^c Division of General Internal Medicine, Icahn School of Medicine at Mount Sinai, New York, NY, United States

^d Brookdale Department of Geriatrics and Palliative Care, Icahn School of Medicine at Mount Sinai, New York, NY, United States

ARTICLE INFO

Article history:

Received 21 October 2015

Received in revised form 8 June 2016

Accepted 9 June 2016

Keywords:

After visit summary

Electronic health record

Patient centered

Health literacy

ABSTRACT

In the United States, federal regulations require that outpatient practices provide a clinical summary to ensure that patients understand what transpired during their appointment and what to do before the next visit. To determine whether clinical summaries are appropriately designed to achieve these objectives, we examined their content and formatting and their usability. We obtained a convenience sample of clinical summaries from 13 diverse practices across the U.S. and assessed their characteristics using validated measures. We also interviewed key informants at these practices to assess their views of the documents. The summaries were generated by seven different electronic health record platforms. They had small font sizes (median, 10 point) and high reading grade levels (median, 10). Suitability, measured with the Suitability Assessment of Materials was low (median score, 61%) and understandability and actionability, measured with the Patient Education Materials Assessment Test, were fair to moderate (65% and 78%, respectively). Content and order of content were inconsistent across the summaries. Among physicians, 46% found the summaries helpful for clarifying medications while 38% found them helpful for conveying follow-up information. Results suggest that clinical summaries in the U.S. may often be suboptimally designed for communicating important information with patients. A patient-centered approach to designing them is warranted.

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1. Introduction

State and federal regulations and non-governmental agencies in the United States, like the National Center for Quality Assurance (NCQA) and the Institute for Healthcare Improvement, are aggressively promoting the development, dissemination, adoption, and implementation of patient centered practices [7,18,23,22]. Effective patient-provider communication is a central component of patient-centered care [1,9] but communication between patients and providers about health and other issues is often poor [10,23,11,27,5,6,20,15,16] contributing to suboptimal self-management and health outcomes [12,21]. Researchers, clinicians and clinical administrators have often looked to information technology to help close the information and communication divide between patients and providers, with special focus on using elec-

tronic health records (EHR). The EHR provides a variety of outlets for clinician-patient information sharing, including e-mail exchange, access to personal health records through Internet (web)-based portals, and the provision of a clinical summary.

The clinical summary is a document that some clinical practices may provide to patients that lists various elements of their health-care and issues addressed during their visit, like health problems or medications. In recent years, use of the clinical summary has been encouraged in the U.S. through new regulations and incentives aimed to promote patient-centered care. The U.S. federal Medicare and Medicaid EHR Incentive Program, known as Meaningful Use, provides financial incentives to providers that demonstrate meaningful use of EHR in improving patient care and experience. In 2014, as one of 17 core objectives of stage 2 Meaningful Use, clinics and hospitals must provide patients with a clinical summary at each office visit to receive the financial incentives, and in the future, to avoid reimbursement penalties [4]. Additionally, providing patients with a clinical summary is a core requirement for level III certification for patient-centered medical home (PCMH) accreditation from the NCQA [18].

* Corresponding author at: Division of General Internal Medicine, Icahn School of Medicine at Mount Sinai, One Gustave L. Levy Place, Box 1087, New York, NY, United States.

E-mail address: alex.federman@mssm.edu (A.D. Federman).

The clinical summary has the potential to promote communication between patients and providers and support patients' understanding of their health and healthcare and retention of important health information. But like other modalities of information sharing, the success of the clinical summary rests with its design and integration with care. Prior research on visit summaries has shed only a small amount of light on this topic. Pavlik et al, found that patients prefer briefer summaries [19], while Tang and Newcomb reported that patients also desire more information than what they typically find on the summary, such as more health-focused education [28]. Although these studies touched on patient preference for content, they did not evaluate structure, formatting, and usability of visit summaries, nor did they provide any insight into how they are used in clinical practice.

The purpose of this mixed-methods study was to explore the characteristics of the clinical summary from a selection of clinical practices in the U.S. to determine whether this important clinical tool is adequately designed to meet its potential value.

2. Methods

2.1. Subjects and settings

We reviewed clinical summaries identified through convenience sampling of primary care practices throughout the U.S. that use an EHR. Practices were identified two ways: contacts known to the members of the study team, and by identification of practices through the NCQA website, which lists accredited PCMH practices. Professional contacts of the senior investigators (ADF, MSW) were selected to achieve geographic variation (national). The NCQA Recognition Directory was queried by one investigator (CS) to obtain a convenience sampling of certified PCMH practices, also with a focus on geographic variation. The NCQA directory provides the names of thousands of PCMH-certified practices in the U.S.

We contacted medical clinic directors or administrators of the selected clinical practices by email to schedule a brief telephone interview. If there was no reply to email outreach, we called the clinical practice and asked to speak with the medical director. In all cases of telephone outreach, we were asked to leave a message or send an email to a specific person. We sent up to 3 emails and made up to 2 phone calls to non-respondents.

At the completion of each interview, we requested copies of actual clinical summaries generated during clinical visits and stripped of all personal health information and clinician identifiers. We requested copies of clinical summaries for low, medium, and high complexity patients as determined by the clinic's representative. This study was determined to be exempt from full review by the Icahn School of Medicine at Mount Sinai Institutional Review Board.

2.1.1. Interviews

Brief interviews were conducted with medical directors of each practice or their representatives to assess characteristics of the practice, the EHR, and their clinical summary. The interviewers used a structured interview guide that included multiple choice as well as open-ended questions to determine how the clinical summary is integrated into clinical practice and to obtain respondents' ratings of the helpfulness of the clinical summary for communicating essential information to patients, specifically, for clarifying the medication regimen, providing illness self-management instructions, providing follow-up or return visit information, and information about referrals. Helpfulness was rated on a 5-point Likert type scale ranging from Very Unhelpful to Very Helpful.

2.1.2. Evaluation of clinical summary

All practices provided examples of the clinical summary generated by their EHR. Though we requested clinical summaries of varying complexity, we often received samples that were fairly homogeneous in terms of the number of medications, diagnoses, and patient instructions. For this reason, we analyzed the longest clinical summary if multiple summaries were provided to us. The clinical summaries were evaluated using three types of assessment: 1) reading grade level, 2) suitability, and 3) understandability and actionability. Additionally, we reviewed each clinical summary for content, order of content, font size and page length. All assessments, except for reading grade level, were performed independently by two investigators (CS, SS). Differences were reconciled by consensus.

Reading grade level was determined with two common measures readily available online: the Flesch-Kincaid Reading Ease measure and the Simple Measure of Gobbledygook (SMOG). The Flesch-Kincaid assessment rates English text on a 100-point scale. Higher scores indicate easier reading ability [14]. The SMOG identifies the grade level required for complete text comprehension. It consists of counting the words of 3 syllables or more in three 10 sentence samples, calculating the count's square root and adding 3 to obtain the grade level [17].

Suitability was measured using the Suitability Assessment of Materials (SAM) [8]. The SAM consists of 21 questions that address 6 domains of suitability: content (e.g., "behavior information to help solve their problem"); literacy demand (e.g., "common, explicit words are used"); graphics (e.g., "simple, adult-appropriate, line drawings/sketches are used"); layout and typography (e.g., "type size is at least 12-point, no ALL CAPS for long headers or running text"); learning stimulation and motivation (e.g., "complex topics are subdivided into small parts so that readers may experience small successes in understanding or problem solving"); and cultural appropriateness (e.g., "images and examples present the culture in positive ways"). Each item is rated as superior (2 points), adequate (1 point), or not suitable (0 points), with a maximum possible score of 28. The score is divided by the total possible score to obtain a percentage: 0–39% is considered not suitable, 40–69% is considered adequate, and 70–100% is considered superior.

We also evaluated the materials using the Patient Education Materials Assessment Tool (PEMAT) [24,25]. The PEMAT consists of 26 criteria for understandability and actionability of printed materials. Understandability pertains to the extent to which the material makes its purpose completely evident. Examples of understandability measures include use of common everyday language and use of informative headers. Actionability pertains to how patients with differing levels of health literacy can identify what actions to take based on the material, for example, whether the material organizes actions into explicit and manageable steps and provides tangible tools like a menu or calendar. Each criterion for understandability and actionability was scored as present or not by two independent reviewers and scores were reconciled by consensus. We summed values of each assessment to provide a simple characteristic profile of the clinical summary.

3. Results

3.1. The clinical practices

We obtained data from 13 clinical practices in 11 states (Table 1). Eleven of the 13 practices were affiliated with an academic medical center and were identified from known contacts. The remaining two practices were the only respondents from among 25 practices selected from the NCQA website. Practice size varied widely, with the number of physicians in each practice ranging from 2 to 162,

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