HHS Public Access

Author manuscript

Inform Health Soc Care. Author manuscript; available in PMC 2020 January 01.

Published in final edited form as:

Inform Health Soc Care. 2019 January ; 44(1): 105–113. doi:10.1080/17538157.2018.1437041.

Electronic Patient Agenda Forms: Comparing Agreement Between the Reason for Specialty Consultation Reported by Referring Providers and Patients

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Abstract

Objective—Little is known about the agreement between referring providers' reason for specialty evaluation and patients' understanding of why they are referred for consultation. Here, we compared the reason for consult (RFC) documented by referring providers during usual care vs. the perceived RFC independently reported by patients through an e-portal just prior to the specialist visit.

Methods—We performed an observational study among patients referred for gastrointestinal (GI) evaluation. Patients referred to the specialty clinic submitted their self-reported RFC using an online patient agenda form prior to their visit. Therefore, each participant had a referring provider- and patient-documented RFC. Blinded physicians reviewed the RFCs in random order using *a priori* coding criteria. We then compared whether the provider and patient RFC pairs were concordant (i.e., ≥1 clinical topic[s] in the RFCs matched).

Results—Sixty patients completed the e-portal prior to their visit, leading to 60 provider-patient RFC pairs. The RFC pairs were concordant in only 52% of cases.

Conclusions—There is poor agreement between referring providers' reason for GI referral and patients' understanding of why they are visiting the clinic. Future research examining whether

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Declaration of Interest: Drs. Chey and Spiegel are principals in My Total Health. Dr. Almario has a stock option grant in My Total Health. The remaining authors do not have any relevant conflicts of interest to disclose.

electronic patient agenda forms impact diagnostic and management precision, patient satisfaction, and healthcare utilization is warranted.

Keywords

electronic patient agenda form; patient-provider communication; patient-provider portal; specialty care referral

Background

The handoff from primary care provider (PCP) to specialist has potential to be a weak link in the chain of patient care. When providers are separated in space and time, rely on imperfect systems of communication, and face barriers to care coordination, it becomes difficult to maintain fidelity of the patient report itself; there is a risk of miscommunicating the central story underlying diagnosis and management.(1) In particular, the referring clinician must accurately transfer the reason for consult (RFC) to the specialist, which is optimally based on the patient's unique report.

While there is a robust literature detailing communication breakdowns between PCPs and specialists and how to improve upon the referral process,(1-15) fewer studies have focused on the patient perspective of this vital transition. Just as there are miscommunications between PCPs and specialists,(1, 7-15) so too can there be communication breakdowns between referring providers and patients.

Using a large gastrointestinal (GI) specialty referral clinic as a model, we recorded the RFC documented by the referring clinician, and evaluated it alongside the self-perceived RFC reported by patients through an online patient agenda form just prior to the referral visit. We then compared agreement between referring provider-patient RFC pairs and evaluated the prevalence and predictors of concordance.

Methods

Study Overview and Patient-Provider e-Portal

This study was part of a larger clinical trial, supported by the National Institutes of Health (NIH), comparing use of Patient Reported Outcome Measurement Information System (PROMIS®) questionnaires – as delivered through an online e-portal –versus usual care.(16) Patients in the intervention arm were mailed a letter one week prior to their appointment inviting them to access the e-portal (see Supplementary Figure 1 for sample screenshots). Upon logging in, patients answered the following question regarding their self-perceived RFC (limited to 250 characters):

> What is the main thing you want to get out of your visit with your physician? Be as specific as you can. Please write a brief answer in the space below.

Afterwards, patients reported which GI symptoms they recently experienced, including abdominal pain, incontinence, bloating/gas, constipation, diarrhea, dysphagia, heartburn/reflux, and nausea/vomiting.(17) The e-portal then guided patients through the corresponding GI PROMIS scales and questions drawn from a library of over 300 symptom

attributes measuring the timing, severity, frequency, location, quality, bother, and character of their symptoms. Once completed, the e-portal generated a report (Figure 1) that included the patient's RFC. In this study, we examined the concordance between the referring providers' and patients' reason for specialty referral.

Study Design, Setting, and Patients

We evaluated patients presenting for GI consultation at the West Los Angeles Veterans Affairs (WLAVA) Medical Center, and this study was approved by the WLAVA Institutional Review Board (PCC#2013-111563). WLAVA clinicians refer their patients for specialty evaluation by placing consult orders in the electronic health record (EHR) called Computerized Patient Record System (CPRS). Within the consult order set, providers are required to specify a reason for specialty referral, which is then viewable by the consulting specialist.

Patients aged ≥18 years who were referred for evaluation at the WLAVA GI clinic between October 2014 and June 2015 were eligible. Patients presenting for an initial consult or who had not been seen in the GI clinic within 8 months were invited to complete the e-portal one week prior to their visit. Participants were required to read and write English and possess basic computing skills. Individuals who reported an RFC through the online agenda form and who had a corresponding RFC from the referring provider in CPRS were included.

Outcomes

The primary outcome was concordance between the referring provider-patient RFC pair, as determined by blinded physician reviewers using *a priori* coding criteria. We considered RFC pairs as concordant if at least 1 clinical topic(s) mentioned in both the provider and patient RFCs matched.

After completion of the clinic visit, research staff abstracted the referring provider and patient RFCs from the most recent CPRS consult order and e-portal, respectively. Two blinded physician reviewers without knowledge of the study aims or source of the RFCs independently reviewed all RFCs in random order. To ensure that reviewers could not ascertain the source of the RFC, we removed personal pronouns (e.g., I, me, etc.) in the patients' RFCs and replaced with the third-person point of view, as needed.

We instructed reviewers to read each RFC and to “mark all of the areas of concern noted in the reason for consult” using *a priori* coding criteria (Supplementary Table 1). The coding criteria used by reviewers to evaluate RFCs included the eight GI symptoms from the NIH GI PROMIS framework (17) and a comprehensive list of common reasons for GI consultation.(18) We evaluated inter-rater reliability between reviewers for each individual RFC topic using kappa statistics (Supplementary Table 2). In cases of rater disagreement, a third, blinded physician reviewer made the final determination.

Statistical and Subgroup Analyses

Statistical analyses were performed using Stata 13.1 (StataCorp LP, College Station, TX). A two-tailed p-value <.05 was considered significant and we used the chi-squared test to compare categorical variables between groups.

At the WLAVA, referrals to the GI clinic can be ordered by PCPs as well as other specialists (e.g., surgeons, cardiologists, neurologists, etc.). Because there may have been differential concordance between RFC pairs for referrals initiated by PCPs versus non-PCPs, we performed a subgroup analysis that only included patients who were referred to the GI clinic by a PCP. Moreover, as the underlying issue that prompted the specialty referral might have changed during the lag time between placement of the consult order and the visit, we performed another subgroup analysis that only included patients who were evaluated in the GI clinic within 45 days of the consult request. Finally, given the persistent "digital divide," (19) younger individuals may have provided more comprehensive descriptions of their RFC through the electronic agenda form when compared to their older counterparts. Thus, we also conducted a subgroup analysis focused only on those ≥65 years of age.

Results

Patients

Overall, 346 patients were invited to complete the online agenda form prior to their specialty clinic visit, and 81 (23%) accessed it and entered their perceived RFC. Sixty of the 81 (74%) patients had a corresponding GI consult order from the referring provider in the EHR. Therefore, our study included 60 referring provider-patient RFCs pairs (see Table 1 for examples). Table 2 presents the demographics of the study population and the characteristics of the referring providers. The large majority of GI consultation requests were initiated by PCPs (78%).

Concordance between Referring Provider and Patient RFCs

Table 3 shows the concordance for each individual clinical topic in the RFC pairs. The highest agreement was seen for dysphagia, constitutional symptoms, abdominal pain, and anemia evaluation.

We noted that the referring provider-patient RFC pairs were concordant (i.e., at least 1 clinical topic[s] in the RFCs matched) in only 52% (31/60) of cases. There were no significant associations between concordance and patient age and race/ethnicity, referring provider level of training and specialty, and time between consult order placement and the GI visit (all p>.05). The only exception was gender, as women (100%, 4/4) were more likely to have concordant RFC pairs vs. men (48%, 27/56) (p=.045).

Subgroup Analyses

Patients Referred to Specialty Clinic by a PCP—In subgroup analysis focused only on patients referred to the specialty clinic by PCPs (n=47), the results were largely unchanged when compared to the primary analyses. There was concordance between the PCP and patient RFCs in 55% (26/47) of cases. Moreover, we did not find any significant

associations between concordance and patient demographics, PCP level of training, and time between consult order placement and the GI visit (all p>.05).

Patients Seen in Specialty Clinic Within 45 Days of Referral—When focused on patients seen in the specialty clinic within 45 days of the referral consult order (n=34), there was agreement between the referring provider and patient RFCs in 56% (19/34) of cases. No significant associations were seen between concordance and patient demographics, and referring provider level of training and specialty (all p>.05).

Patients ≥65 Years of Age—In subgroup analysis among those ≥65 years of age (n=29), provider-patient RFCs were concordant 45% (13/29) of the time. No signficant associations were noted between concordance and patient gender and race/ethnicity, referring provider level of training and specialty, and time between consult order placement and the GI visit (all p>.05).

Discussion

In this study, we assessed the RFC documented by clinicians referring patients to a specialty clinic, and then compared the referring providers' rationale alongside the self-perceived RFC reported by patients through an online agenda form at the time of consultation. Blinded physician reviewers judged the provider-patient RFC pairs to be completely discordant in nearly half of cases – a marked level of disagreement. Even in subgroup analyses focused only on referrals initiated by PCPs, patients seen within 45 days of the consult order, and patients ≥65 years of age, the findings were largely unchanged.

Although the current study only focused on one type of information exchanged between referring providers and specialists, the RFC is a crucial piece of information that initiates diagnostic and management decisions in the specialty clinic. It is well established that communication breakdowns occur between PCPs and consulting physicians.(1, 7-15) For example, Gandhi and colleagues found that 28% and 50% of surveyed PCPs were dissatisfied with the content and timeliness, respectively, of the information they received from specialists.(1) Conversely, 43% of specialists were dissatisfied with the information they received from PCPs.(1) Our study suggests that on top of these existing communication breakdowns among clinicians, there are apparent miscommunications between referring providers and patients during the referral process.

The lack of agreement between providers' and patients' RFCs is likely multifactorial. From the provider side, some may not comprehensively solicit the patient's agenda and concerns during the clinic visit.(20, 21) Marvel and colleagues found that providers commonly redirect patients before permitting them the opportunity to complete their statement of concerns; only 28% of clinicians solicited the patient's complete agenda.(20) By redirecting patients early in the encounter, providers may also miss the opportunity to elicit issues that are emotionally laden and perhaps most “important” to patients. Some patients may only discuss these issues once a trusting relationship with the provider has been established or if the provider mentions the topic.(20, 22) It is also possible that some providers only document the issue they believe most “clinically relevant” in the referral order while not

fully documenting the other concerns reported by the patient. However, as suggested by this study, the issue deemed most relevant by the provider may not necessarily correspond to the patient's most pressing issue. Lastly, some providers may not adequately relay and explain the need for specialty evaluation to their patients. In all instances, these failures to effectively exchange information among providers and patients can lead to fragmented care, duplicative testing, delayed diagnoses, and decreased patient satisfaction.(2-7)

As healthcare today prioritizes delivering individualized, precise care,(23, 24) it is essential that the patient report is accurately recorded and used to guide diagnosis and management. The concurrent rapid adoption of EHRs offers promising opportunities to achieve this goal. The patient-provider e-portal used in our study, which functions as an electronic scribe, is one example of how technology can allow patients to inform their PCPs and other healthcare providers of their needs, preferences, and values. Middleton and colleagues found that a paper-based agenda form completed by patients prior to the visit increases patient satisfaction (25); it is possible that this finding may extend to electronic-based agenda forms, but that should be formally tested.

Our study has limitations. First, this is a single site study of a largely male, U.S. Veteran population. Our findings may apply only to Veterans Affairs (VA) centers and may not be generalizable to other healthcare settings. It is unclear, though, how the VA might be systematically different in failing to align referring provider and patient perception of the RFC when compared to other health systems. Second, our study may be limited by selection bias, as only 23% of invited individuals completed the online agenda form prior to their visit. A likely contributing factor was the fact that the electronic form was “untethered” and not integrated into the EHR. We attempted to overcome this by approaching non-completers during clinic, yet most remained uninterested in completing the form on a clinic computer while waiting for the doctor. Nonetheless, the low uptake likely did not affect our results, as it is unlikely that concordance between provider-patient RFC pairs differs between online survey completers and non-completers. Third, the time between placement of the consult referral order and the specialty clinic visit was relatively long in this study (median 41 days). It is possible there would have been greater RFC concordance had patients been evaluated soon after the consultation request. Fourth, our study may have been limited by our use of only two blinded physician reviewers for determining the clinical areas of concern mentioned in the RFCs. However, the outcome was objective and determined by the reviewers using *a priori* coding criteria. The inter-rater agreement for the large majority of individual clinical topics was also over 90% and the kappa scores mostly ranged from moderate to near perfect.(26) Lastly, our study did not examine the impact of the RFC discordance on outcomes. Prior reports found that patients with unaddressed concerns and unmet needs are less satisfied with their care (27-32) and less likely to achieve symptom improvement.(31, 32) Determining whether discordant provider-patient RFCs leads to poorer outcomes is an area worthy of further investigation.

In summary, we found marked disagreement between referring providers' reason for specialty referral and patients' understanding of why they are visiting the specialty clinic. The apparent miscommunication between providers and patients during the referral process observed in this study may amplify communication breakdowns already known to occur

between referring clinicians and specialists.(1, 7-15) Future research should evaluate whether electronic patient agenda forms impact diagnostic and management precision, patient satisfaction, and healthcare utilization.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgments

This work was presented as a Poster of Distinction at Digestive Disease Week, San Diego, CA, May 21-24, 2016.

Financial Support: This study was supported by an NIH/NIAMS research grant (U01 AR057936-05). Dr. Almario was supported by a Career Development Award from the American College of Gastroenterology. The Cedars-Sinai Center for Outcomes Research and Education (CS-CORE) is supported by The Marc and Sheri Rapaport Fund for Digital Health Sciences & Precision Health.

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Mr. Smith's goal for this visit is: "Fix my stomach pain."

HPI: Mr. Smith is a 32-year-old male who reports no relevant GI conditions and now presents with abdominal pain. The pain first started 3 months ago, and typically lasts for 30 minutes at a time. Over the past week, the pain occurred once a day. He describes the pain as "cramping" and "squeezing", says it is located in the right upper abdomen, and reports the pain has been "somewhat severe" and "quite a bit bothersome" in the past week. It does not radiate. It is associated with eating food. It typically occurs around 30 minutes to an hour after starting to eat. It usually comes on gradually. It is not associated with bowel movements. The pain is somewhat relieved by avoiding certain foods. The pain does not awaken him from sleep. He does not report early satiety. He does not report diabetes, gallstones, GERD, pancreatitis, or peptic ulcer. He does not take aspirin or NSAIDs.

The patient does not report dysphagia, bowel incontinence, heartburn, bloating, diarrhea, constipation, nausea, or vomiting. He does not report blood in his bowel movements, black stools, vomiting blood, unintended weight loss, diminished appetite, or fevers. He has no history of abdominal surgeries. There is no family history of gastrointestinal cancers.

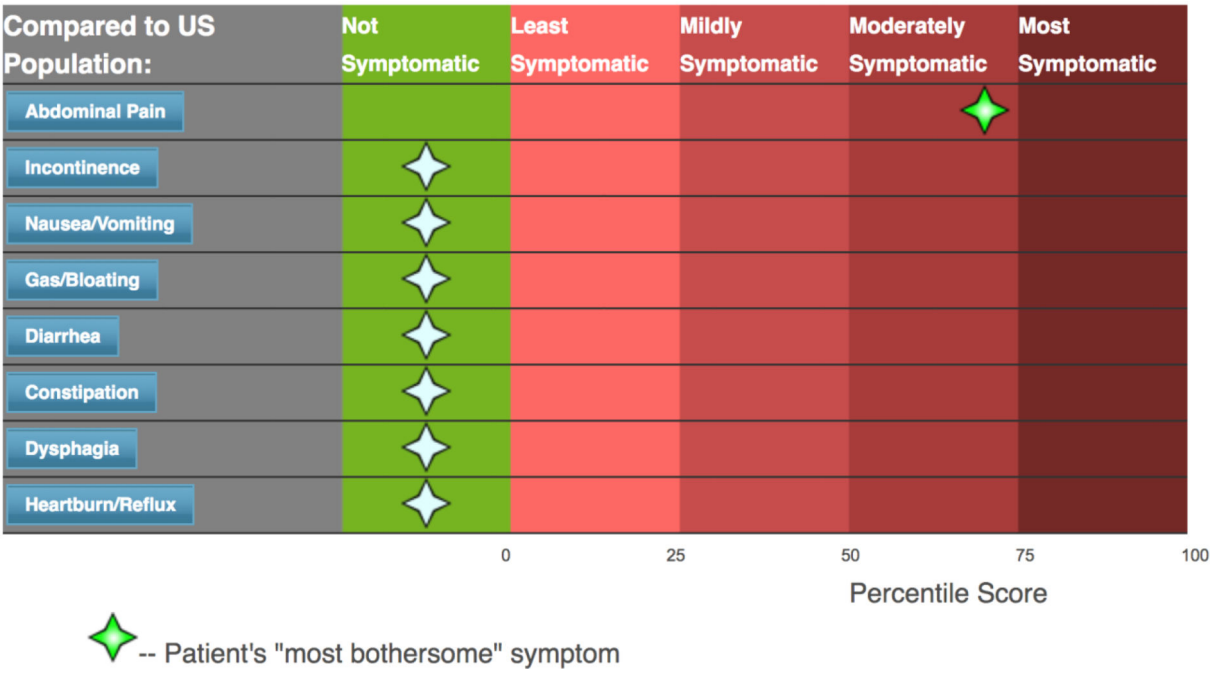

Figure 1.
Sample patient-provider e-portal report. Once on the e-portal, patients first enter their goal for the upcoming clinic visit and then complete GI PROMIS questionnaires. The results are converted into a report that includes the patient's RFC, GI HPI and PROMIS symptom “heat map.” The report is viewable on the e-portal for both the patient and healthcare provider prior to the clinic visit.

Table 1

Examples of concordant and discordant referring provider-patient RFC pairs.

Referring provider RFC	**Patient RFC***
Concordant referring provider-patient RFC pairs	
pt with sx of chocking, hoarseness, dysphagia over last year, considering esoph stricture or other. please eval/tx?EGD asap	I sometimes have difficulties in swallowing. It feels like I am choking in my esophagus just above my stomach.
Male with 1.5 weeks of left sided abdominal pain, no other constitutional sx's; no n/v/d. Abd CT revealed 1cm kidney stone, diverticulosis w/o infection, small ventral hernia, and infrarenal AAA 3.5cm- vascular consulted already. Submitted e-con earlier. Please eval.	diagnose sharp stabbing pain in the upper left quadrant of my abdomen.
Discordant referring provider-patient RFC pairs	
Patient requires GI evaluation and possible consideration of EUS	I woke up and was numb from my waist down. I had lost mobility and bowel and bladder control instantly. Neurosurgeons could not find any spinal condition that would cause my instantaneous condition. I need to find out the cause.
anemia, HCT 31 in May. was 40 in march. admits to 1 week of tarry stools 2 months ago. is on warfarin for mechanical aortic valve	I am not sure what this visit is about.
M with history of HCV who presents with new onset constipation × 6 months. Having rectal bleeding with BMs when they are particularly hard. BMs only once weekly.	Find out exactly what's wrong with me. Having acid reflux.

RFC, reason for consult.

* In the RFC set sent to physician reviewers, personal pronouns were removed from the patients' RFCs and were rewritten to the third-person point of view; this was done to ensure blinded review.

Table 2

Patient and referring provider characteristics.

Variable	Value (N=60)
Patient age (y):	
18 – 49y	16 (27%)
50 – 64y	15 (25%)
≥65y	29 (48%)
Male patient	56 (93%)
Patient race/ethnicity:	
African-American	14 (23%)
Asian	5 (8%)
Caucasian	28 (47%)
Latino	8 (13%)
Other/unknown	5 (8%)
Referring provider level of training:	
Attending physician	38 (63%)
Fellow or resident physician	13 (22%)
Nurse practitioner or physician assistant	9 (15%)
Referring provider specialty:	
Primary care	47 (78%)
Medicine specialty	9 (15%)
Surgery	4 (7%)
Time between placement of consult order and GI clinic visit:	
≤30 days	12 (20%)
31 to 60 days	31 (52%)
>60 days	17 (28%)

Data are presented as n (%).

Columns may not add up to 100% due to rounding.

Table 3

Concordance between referring provider- and patient-documented reason for consult.

Reason for consult	Only mentioned in referring provider RFC	Only mentioned in patient RFC	Mentioned in both referring provider and patient RFC	Concordance
Dysphagia	1	1	3	3/5 (60%)
Constitutional symptoms	1	0	1	1/2 (50%)
Abdominal pain	7	5	8	8/20 (40%)
Anemia evaluation	3	1	2	2/6 (33%)
Heartburn/reflux	8	5	6	6/19 (32%)
Constipation	6	3	3	3/12 (25%)
Nausea	4	5	3	3/12 (25%)
Diarrhea	6	5	3	3/14 (21%)
Blood in stool	7	1	2	2/10 (20%)
Bowel incontinence	1	3	1	1/5 (20%)
Liver disease	5	0	1	1/6 (17%)
GI cancer screening	10	3	2	2/15 (13%)
General GI evaluation	0	13	0	0/13 (0%)
Abnormal imaging	4	2	0	0/6 (0%)
Inflammatory bowel disease	5	0	0	0/5 (0%)
Bloating	1	3	0	0/4 (0%)
Rectal pain	3	0	0	0/3 (0%)

Data are presented as n or n (%).

GI, gastrointestinal; RFC, reason for consult.