

UC Irvine

UC Irvine Previously Published Works

Title

Patient-initiated electronic health record amendment requests.

Permalink

<https://escholarship.org/uc/item/9d51w058>

Journal

Journal of the American Medical Informatics Association, 21(6)

Authors

Hanauer, David

Preib, Rebecca

Choi, Sung

et al.

Publication Date

2014

DOI

10.1136/amiajnl-2013-002574

Peer reviewed

Patient-initiated electronic health record amendment requests

David A Hanauer,^{1,2} Rebecca Preib,³ Kai Zheng,^{2,4} Sung W Choi¹

► Additional material is published online only. To view please visit the journal online (<http://dx.doi.org/10.1136/amiajnl-2013-002574>).

¹Department of Pediatrics, University of Michigan Medical School, Ann Arbor, Michigan, USA

²School of Information, University of Michigan, Ann Arbor, Michigan, USA

³College of Literature, Science, and the Arts, University of Michigan, Ann Arbor, Michigan, USA

⁴Department of Health Management and Policy, School of Public Health, University of Michigan, Ann Arbor, Michigan, USA

Correspondence to

Dr David A Hanauer, Department of Pediatrics, University of Michigan Medical School, 5312 CC, SPC 5940, 1500 E Medical Center Dr, Ann Arbor, MI 48109-5940, USA; hanauer@med.umich.edu

Received 18 January 2014

Revised 29 April 2014

Accepted 12 May 2014

Published Online First

26 May 2014

ABSTRACT

Background and objective Providing patients access to their medical records offers many potential benefits including identification and correction of errors. The process by which patients ask for changes to be made to their records is called an 'amendment request'. Little is known about the nature of such amendment requests and whether they result in modifications to the chart.

Methods We conducted a qualitative content analysis of all patient-initiated amendment requests that our institution received over a 7-year period. Recurring themes were identified along three analytic dimensions: (1) clinical/documentation area, (2) patient motivation for making the request, and (3) outcome of the request.

Results The dataset consisted of 818 distinct requests submitted by 181 patients. The majority of these requests (n=636, 77.8%) were made to rectify incorrect information and 49.7% of all requests were ultimately approved. In 6.6% of the requests, patients wanted valid information removed from their record, 27.8% of which were approved. Among all of the patients requesting a copy of their chart, only a very small percentage (approximately 0.2%) submitted an amendment request.

Conclusions The low number of amendment requests may be due to inadequate awareness by patients about how to make changes to their records. To make this approach effective, it will be important to inform patients of their right to view and amend records and about the process for doing so. Increasing patient access to medical records could encourage patient participation in improving the accuracy of medical records; however, caution should be used.

INTRODUCTION

The concept of increasing information transparency by providing patients direct access to their medical records has existed for decades.^{1–2} With improved data accessibility because of the widespread adoption of electronic health records (EHRs), there has been a renewed interest in making medical records readily available to patients through patient portals as well as through initiatives such as the OpenNotes Project.^{3–6} Ensuring such access has been strengthened through the 1996 Health Insurance Portability and Accountability Act (HIPAA)⁷ in addition to more recent Health IT Meaningful Use requirements.⁸ However, despite laws guaranteeing patients access to their medical records, questions remain on how easy the access should be and what portion of a patient's record should be made available.⁹

Permitting patients to view their medical records can be beneficial for a variety of reasons, including greater empowerment—more engagement in and

understanding of their own care^{10–12}—as well as fewer errors when patients identify mistakes that can be subsequently corrected.^{13–16} This patient-driven approach to improving record accuracy has been recognized as an important method for improving quality of care,¹⁷ and surveys have shown that patients are interested in reviewing their records to detect and correct errors if they are provided with such opportunities.^{18–22}

The process for patients to ask for modifications to be made to their records is often initiated through the submission of an 'amendment request'.²³ Hospitals and clinics typically have 60 days to respond to the request and make changes if the request is deemed clinically justifiable, or it may be otherwise denied with a written explanation provided to the patient.²⁴

As patient portals become an increasingly popular mechanism for providing patients convenient access to their records, it is possible that there will be an influx of amendment requests which could strain already busy clinicians, especially if many requests are clinically unjustifiable. On the other hand, if many of the requests are indeed valid, it could highlight the value of providing patients increased access to their records to ensure greater information accuracy. In this paper, we report the results of an empirical study designed to gain a better understanding of patient-initiated amendment requests by quantifying the frequency, type, and reason for such requests as well as how they are ultimately handled.

METHODS

Empirical setting

The University of Michigan Health System (UMHS) is a large, tertiary care, academic health center that operates three hospitals and over 120 outpatient clinics in southeastern Michigan. It provides patient care services in nearly 2 million clinic visits and 45 000 hospital admissions annually. In 1998, UMHS deployed a homegrown EHR which was recently replaced in August 2012 by a commercial system (Epic, Epic Systems Corporation, Verona, Wisconsin, USA). The new system provides two options for patients to access their records: (1) a patient portal (Epic MyChart) that allows patients to view upcoming appointments, communicate with providers via secure messages, review billing and insurance information, and access a customized view of the patient's health record including lab test results, active health issues, current medications and the option to request renewals, allergies, immunization records, and a history section including past medical, surgical, social, and family histories; and (2) an after-visit summary



CrossMark

To cite: Hanauer DA, Preib R, Zheng K, et al. *J Am Med Inform Assoc* 2014;**21**:992–1000.

(AVS) handed over to the patient after a clinic visit, also called a clinical summary, which contains a computer-generated high-level synthesis of ‘relevant and actionable information’²⁵ such as medications, diagnoses, and future appointments. It is important to note that neither the portal nor the AVS provide patients access to narrative clinical documentation.

Process for release of information

Patients who wish to obtain a copy of their medical records must make an explicit request, in writing, to the UMHS Department of Health Information Management (DHIM) using a release of information (ROI) form (a sample form is provided in online supplementary appendix 1).²⁶ The ROI form can be also obtained from the UMHS website (‘For Patients’/‘Medical Records’), in any of the UMHS clinics, or by visiting the DHIM offices in person. DHIM is committed to providing copies of patient medical records within 30 days of the receipt of an ROI request.

ROI requests typically consist of three types: (1) for the patient herself/himself or on behalf of another family member, (2) for legal/subpoena purposes, and (3) for continuity of care purposes which involves sending documents directly to another healthcare provider or institution. In general, only ROI requests of the first two types provide a means for patients to see their records which, in turn, become the primary sources for amendment requests.

For ROI requests, a tiered page charge scale exists (1–20 pages: \$1.16 per page; 21–50 pages: \$0.58 per page; >50 pages: \$0.23 per page), in addition to a processing fee of approximately \$23 per request; the latter can be often waived if the patient is making the request for herself/himself or on behalf of a minor. Because the volume of medical records can be very large, several ‘packages’ of records are recommended to help patients avoid unnecessary copying costs. For example, patients may request ‘Key Clinical Written Documentation’ for the past 24 months (includes, as applicable, history and physical, discharge summary, operative reports, consults, outpatient visit notes, test reports, and emergency room clinician notes), or they may request clinical documents generated during a specific time period or related to a specific incident, injury, or illness.

Besides making a formal ROI request, patients have access to certain clinical data through the patient portal or the AVS. Under certain circumstances they may also have access to outpatient letters generated by specialists. Such letters are prepared for the referring physician to summarize the clinical encounter, but patients are sometimes provided with a copy as well. Finally, patients may also be given a discharge summary at the end of an inpatient hospital stay.

Figure 1 depicts the timeline of several significant events (eg, change of DHIM’s data tracking policy and the Epic

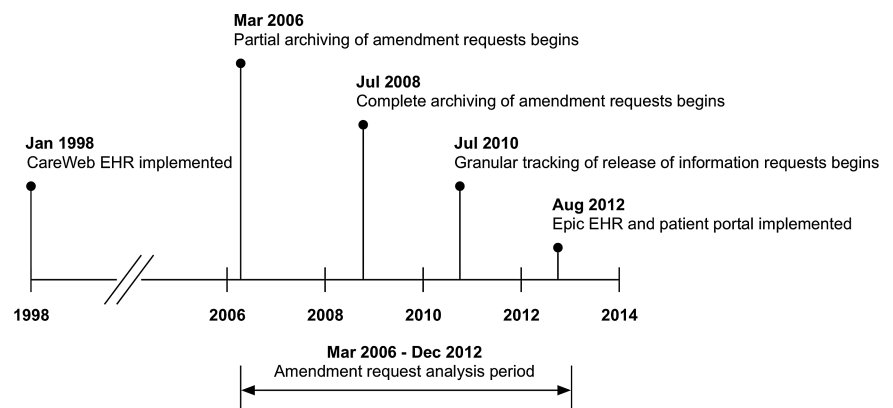
implementation) which took place at our health system and influenced our study analyses. Between July 2010 and December 2012, DHIM received a total of 43 345 chart requests submitted by patients through an ROI, excluding continuity of care requests to which patients did not have direct access (figure 2A). ROI requests prior to July 2010 did not distinguish between family vs legal requests and continuity of care requests. Because the amendment requests we analyzed dated back to 2006, we imputed the missing values of the number of ROI requests received prior to July 2010 using the average number of ROI requests received during the period when data were available, that is, July 2010 to December 2012. The imputed data are shown in figure 2A as light gray bars with dashed borders.

Process for making an amendment request

To initiate a chart amendment request, the patient must contact DHIM by phone, by mail/fax, or in person to obtain an amendment request form (a sample form is provided in online supplementary appendix 2). Based on the information received, DHIM determines which document(s) are in dispute and then contacts the clinician(s) in charge to discuss the patient request. Once a decision is reached, a response letter will be mailed to the patient to inform her or him about the result and, if the request is denied, a description of reasons for denial (a sample letter is provided in online supplementary appendix 3). The reasons for denial are provided by the clinician(s) responsible for the documents, who can write specific comments or choose one of the following standard reasons from a response form: (1) ‘The entry and the information contained within is accurate and complete’; (2) ‘The information is not part of your designated record set’; (3) ‘The health information in question was not created by this organization’; or (4) ‘The entry is not available for inspection under federal law’. Patients have the right to appeal the denial, which will then be reviewed by the Director of Privacy at UMHS. The Director may contact the clinician(s) again to resolve the dispute. Regardless of the eventual decision, the chart amendment request and clinician responses will become part of the official, permanent medical record. DHIM generally completes an amendment request investigation within 60 days of receiving the request. Requests for demographics changes outside the context of a clinical note are not handled through the amendment request process, and are instead redirected to the registration department.

In March 2006, DHIM began archiving some of the amendment requests for record keeping and long-term tracking purposes. In July 2008, this practice was expanded to all requests received, and was managed more systematically using an electronic database.

Figure 1 A timeline of significant events at our health system that influenced the study analyses.



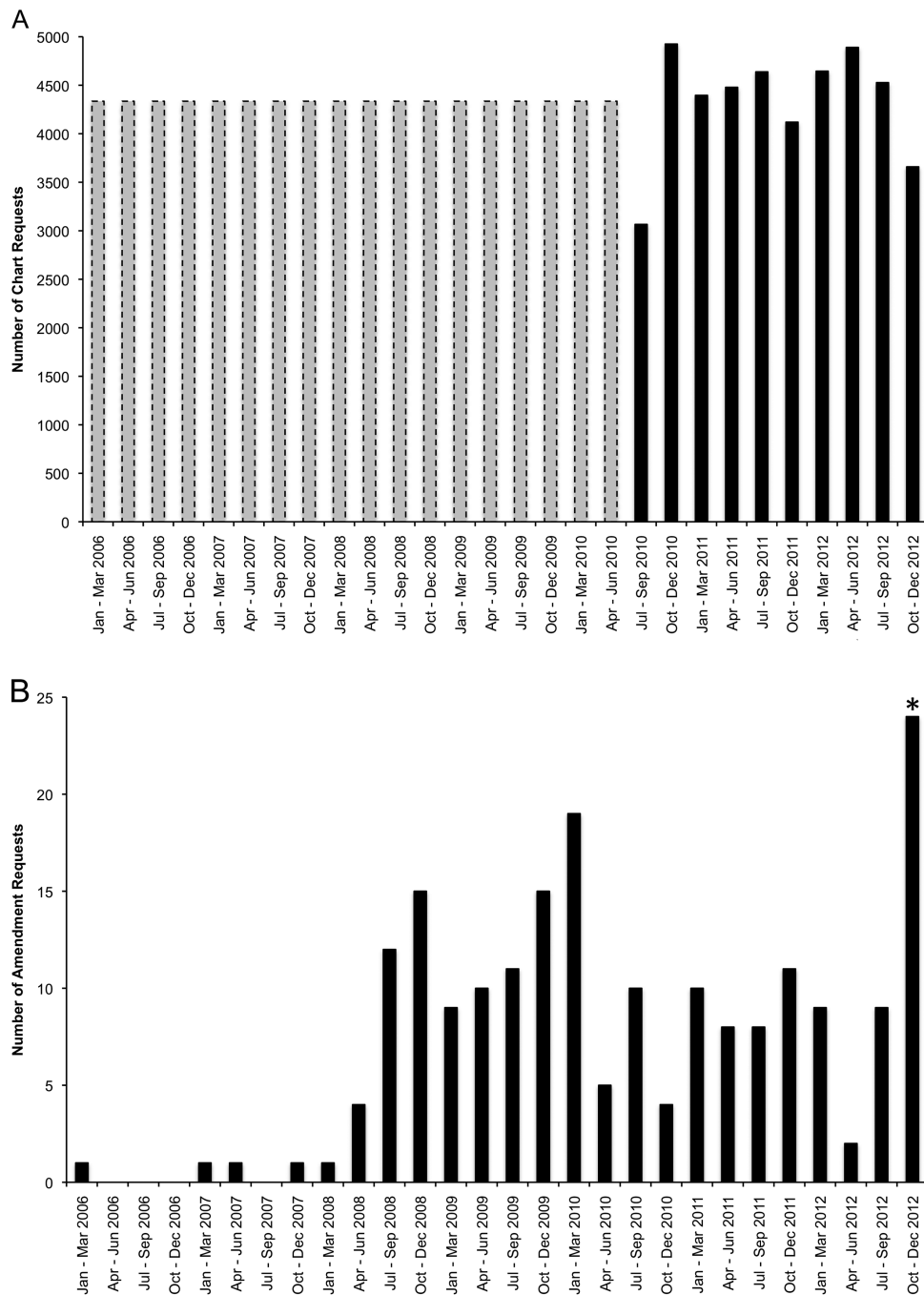


Figure 2 (A) Number of charts requested per quarter by patients/families or for legal/subpoena reasons. Data prior to July 2010 are imputed as earlier logs did not distinguish chart requests made for direct clinician-to-clinician transfer from those made by patients/families or for legal/subpoena reasons. (B) Number of amendment requests per quarter. The column marked with an asterisk (*) shows an increase in request volume that coincided with the introduction of the patient portal and after-visit summary (AVS) around that time. Note that not all processed requests were archived until July 2008.

These DHIM archives formed the basis for the analysis reported in this paper. Between March 2006 and December 2012, DHIM received a total of 205 amendment requests, approximately 0.2% of the chart access requests received during the same time period, and about 0.02% of the approximately 1.1 million distinct patients seen over the same time period.

Data analysis

We conducted a qualitative content analysis of all amendments received at UMHS from March 2006 through December 2012.

The first round of coding separated out distinct sub-requests contained in a single amendment request form that required the initiation of separate DHIM review and handling processes. For example, within the same amendment request, the patient might ask for changes to an incorrect diagnosis as well as to a wrong medication listed in the discharge summary. These were analyzed in this study as two separate requests.

Then, we qualitatively analyzed the content of each of the amendment requests by following the grounded theory approach^{27 28} wherein salient, recurring themes were iteratively

identified through multiple rounds of constant comparison processes. In cases where the nature of the request was not clear, we also reviewed the contested documentation in the EHR to determine how the request should be properly interpreted. The coding team consisted primarily of authors RP, DH, and SC. Complex or ambiguous cases were further reviewed by the staff from DHIM who also provided us triangulating feedback to the validity of the research findings and the insights drawn.²⁹ Differences in coding and case interpretation were resolved through consensus development research meetings.

Table 1 exhibits several representative examples of approved and denied requests, along with the related clinical documentation and the clinicians' responses. Using the same grounded theory approach, we also qualitatively analyzed the clinicians' comments from denied requests. These comments formed part of the response letters sent back to patients (see online supplementary appendix 2).

The research protocol of this study was reviewed and approved by the University of Michigan Medical School Institutional Review Board. Statistical analyses were performed

using R V2.15.3. Differences in racial proportions were compared using the test of proportions, and differences in mean ages were compared using an unpaired t test.

RESULTS

Summary statistics

The 205 amendment request forms included in our analysis were submitted by, or on behalf of, 181 distinct patients. Eleven patients submitted more than one amendment request form. The distribution of the volume of the amendment requests over time is shown in figure 2B. An increase in the volume of requests received can be observed in the last quarterly period of the study, which coincided with the implementation of the new EHR system at UMHS that included the patient portal and AVS documentation functionalities.

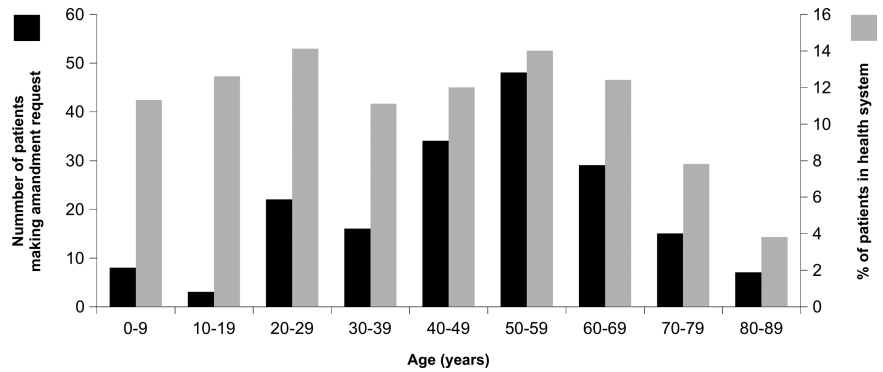
Among the requestors there were 123 (68.0%) women. This proportion was higher than that of the overall patient population seen in our health system (55.0% women, $p < 0.001$). The race/ethnicity of those who submitted an amendment request compared to the overall population in the health system,

Table 1 Excerpts from 10 amendment requests, including both approved and denied requests

Excerpt from medical record in question	Patient change request	Clinician response to request
<i>Approved requests</i>		
"Past medical history includes Graves disease with prior ablation and dyslipidemia."	"I never had ablation and dyslipidemia. Please remove this."	–
"... female with a history of asthma, fibrocystic breast cancer ..."	"States in history of present illness that I have fibrocystic breast cancer—it should say disease instead of cancer."	–
"She has two grown children."	"I do not have two grown children as stated in Dr. report. My son is 14 as on [date removed]. My daughter is 17 years of age."	–
"The patient presented to the outside hospital on [date removed] after sustaining a fall from standing height and hitting the back of his head while intoxicated."	"The use of the words 'intoxicated', 'substance abuse', and 'drunk' in my son's medical records are the result of an erroneous opinion by a doctor at an outside hospital"	–
"She was doing very well with her elbow...She fell onto an outstretched arm."	"She was doing well with her elbow and arm. She fell onto an outstretched full body."	–
<i>Denied requests</i>		
"We had put her participation in the Multidisciplinary Senior Restoration Program on hold because her social life is absolutely chaotic."	"Omit 'her social life is absolutely chaotic'"	"I do not accept these multiple changes because some do not reflect my judgment, others provide information or corrections that I did not/do not consider critically different in my medical decision making. I have no problem with these opinions of hers being recorded for the record as long as they are not attributed to me."
"Patient demanded narcotics"	"I use tobacco and occasionally drink, no drug use."	"This patient continues to request changes in her documentation from over 2 years ago. She was advised earlier that no changes will be made to her records. Please relate this to her when/if she calls again"
"Asthma and COPD with reactive airway symptoms, recent diagnosis of sleep apnea, chronic back pain, history of morbid obesity, past history of narcotic seeking behavior with a previous positive cocaine and opiate tox screen at recent admission in January."	"Contact cocaine through a open sores on hand and do not use illegal drug of any type—please remove or acknowledge I do not use illegal drugs."	"Please let [patient] know that we are simply documenting that he had a positive urine test. We have also documented that he denies using drugs. We are not saying he used drugs, simply that he has been exposed to drugs."
"Initially he was seen in the medicine ER, who transferred him to Psych ER, because the pt was delusional. Prior to this episode the patient had no psych history but currently is stating that people are out to get him."	"HPI: the appearance of delusion was to protect innocence within a circle of criminal activity that I would not report until later, or not at all."	"The record accurately reflects our assessment at the time. The facts are not disputed. The patient had a physiological condition that could have produced acute psychosis. If he now claims to have been 'faking', that does not change our assessment then."
"[Michigan Automated Prescriber System] showed the appearance of multi-sourcing for opioids, including Percocet, hydrocodone, and Fiorinal with codeine during August. When asked about this, she denied that that was a possibility."	"I have never run out of any medication early."	"I am happy to paste in her comments but point out there is nothing in my note not told to me by her or already in the medical record."

Note that approved requests were generally not accompanied by any clinician comments. Denied requests were most often accompanied by clinician responses of reasons for denial, or one of the four standard responses that clinicians could check off on a form (listed in the Methods section).

Figure 3 Age distribution of the 181 patients for whom an amendment request was made. For comparison, the overall age distribution of patients in our health system is also shown.



respectively, was: Caucasian, n=151 (83.4% vs 78.2%; p=0.11); Black or African American, n=18 (9.9% vs 8.7%; p=0.65); Asian, n=2 (1.1% vs 5.0%; p=0.03); other/unknown, n=10 (5.5% vs 8.0%; p=0.27). The age distribution of the patients for whom requests were made, as well as the overall age distribution of patients in our health system, is shown in figure 3. The mean age at the time of the request was 49 years (range 6 months to 84 years), 10 years older than the mean age of our overall patient population (40 years, p<0.001). Only 11 patients for whom requests were made were under age 18.

The 205 amendment request forms analyzed in this study contained 818 distinct requests (ie, the same form might request multiple documents to be changed). Table 2 lists the most frequent types of documents for which the amendment requests were made. Outpatient clinic notes were the most common document type related to change requests (n=308, 37.7%), followed by inpatient discharge summaries (n=84, 10.3%) and emergency department notes (n=83, 10.1%).

Table 2 Top 20 document types for which amendment requests were made

Document type	n (%)
Letter/note—outpatient	308 (37.7)
Discharge summary	84 (10.3)
Emergency department note	83 (10.1)
Consult—outpatient	68 (8.3)
Psychiatry note	24 (2.9)
Progress note	23 (2.8)
Psychiatry outpatient evaluation	20 (2.4)
Admission history and physical	19 (2.3)
Consult—inpatient, new patient	19 (2.3)
Emergency department—psychiatry	17 (2.1)
Health maintenance exam	16 (2.0)
Speech and language pathology note, outpatient	15 (1.8)
Operative report	9 (1.1)
Phone note	8 (1.0)
House officer II NOTE	7 (0.9)
Endoscopy report	5 (0.6)
Social work	4 (0.5)
Emergency department—consult note	3 (0.4)
Nutrition note	3 (0.4)
Preoperative history and physical	2 (0.2)

The top 20 document types reported in this table represent 737 of a total of 818 requests received, and therefore only add to 90.1%.

Qualitative content analysis

The qualitative content analysis revealed three salient properties (referred to as ‘analytic dimensions’ in this paper) associated with each amendment request, namely: (1) clinical/documentation area, (2) patient motivation for making the request, and (3) outcome of the request. Under each analytical dimension, we further classified the data at more granular levels pertinent to the goal of this study: to better understand the nature of patient-initiated chart amendment requests and the potential usefulness of making charts more easily accessible to patients. The results are presented in table 3 along with frequency counts within each sub-category.

The majority of the requests were due to incorrect information (n=636, 77.8%), and about half of all requests were ultimately approved by clinicians (n=406, 49.6%). The largest clinical/documentation area under which a request was made was in the medical/surgical category, for which nearly half (48.0%, n=393) of all requests were made. Table 4 shows the medical services under which the contested documentation was created for requests in the medical/surgical category. Nearly one-third (n=129, 32.8%) of these 393 requests were related to documents created by clinicians in general internal medicine (n=67) or gastroenterology (n=62); the latter is a specialty division of internal medicine. In this category, surgical specialties collectively contributed to 51 (13.0%) of the documents that patients requested to modify.

Figure 4 reports the approval rates broken down by each sub-category under the first two analytical dimensions. As shown in the figure, those requests made because of missing information were most often approved (58.6% approved), followed by incorrect information (49.7% approved). Fewer requests for removal of valid information were approved (27.8%). Further, most of the requests for modifying ‘family’ related information were approved. In contrast, out of the 14 requests for removing valid information regarding drug-seeking behavior, 13 were denied (92.9%). Thirty-six requests were initiated due to information that patients viewed through the portal or AVS. Among them 20 were for missing information and 16 were for incorrect information. All but one of these requests was approved by clinicians.

Among the denied requests, the majority of responses provided by clinicians were selected from one of the four standard reasons from the response form (as described in the Methods section). There were 51 clinician responses that included personalized detail as to why they decided to decline the amendment requests. These responses were grouped into nine distinct reasons for denial, listed in table 5. Additional excerpts from responses related to clinicians denying an amendment request can also be found in table 1.

Table 3 Summary of analysis results

Analytic dimension	Category/theme	Description	Summarized examples	n (%)
Clinical/documentation area	Medical/surgical	Related to a medical or surgical condition	<ul style="list-style-type: none"> ▶ Chart stated the patient had 'low back pain'. The patient wanted to clarify that it was in the L5-S1 region. ▶ Chart stated there was no mucous or blood in patient's stool, but the patient reports that there was mucous and blood. 	393 (48.0)
	Social	Related to a patient's social environment	<ul style="list-style-type: none"> ▶ Chart stated patient lived with former husband, boyfriend, and children. Patient clarified she only lives with legally separated husband and no one else. ▶ Chart stated patient left school due to problems concentrating and lost interest in work. Patient reports having finished school and never mentioning anything about losing interest in work. 	100 (12.2)
	Miscellaneous	Related to issues that could not be categorized elsewhere	<ul style="list-style-type: none"> ▶ Patient wanted to clarify that the wrong doctor was listed as the one who ordered the lab tests. ▶ Chart stated that the patient came with his x-rays. Patient reports that he did not bring any x-rays with him. 	90 (11.0)
	Psychiatric	Related to a psychiatric condition	<ul style="list-style-type: none"> ▶ Chart stated patient had bipolar disorder, which patient denied. ▶ Chart stated 'denies current suicidal/homicidal ideation'. Patient wanted homicidal ideation removed: "I never and would never even think to harm another person!" 	70 (8.6)
	In-clinic behavior	Related to how the patient was reported to have behaved during the clinical encounter	<ul style="list-style-type: none"> ▶ Chart stated that patient was argumentative in the clinic. Patient denied this. ▶ Chart stated that blood draw was not done because patient refused. Patient stated in amendment: "No one asked me to do a blood draw. I would have gladly complied with a request to do so." 	70 (8.6)
	Drug/alcohol use	Related to drugs (including alcohol) or drug-seeking behavior	<ul style="list-style-type: none"> ▶ Physician documented opioid-seeking behavior based on a patient-specific statewide pharmacy report of controlled substances. The patient denied seeking opioids from multiple pharmacies. ▶ Chart stated patient had intermittent drug use, including occasional cocaine. Patient reports only using cocaine in college, decades earlier, and no drug use since that time. 	52 (6.4)
	Family	Related to information about other family members	<ul style="list-style-type: none"> ▶ Patient did not want information about father's AIDS in the chart. ▶ Chart stated that patient's mother died of breast cancer at age 76. Patient clarified that mother died of brain cancer at age 73. 	43 (5.3)
	Total			
Patient motivation for making the request	Incorrect information	Information as stated in the record was not correct	<ul style="list-style-type: none"> ▶ The note said the patient denied fatigue, whereas the patient reported feeling tired all the time. ▶ Chart stated no weight loss. Patient reported going from 300 to 240 pounds while not dieting. 	636 (77.8)
	Missing information	Important detail was missing from the record	<ul style="list-style-type: none"> ▶ The patient reported being told at a visit that he had ulcers in his mouth, but nothing about it was in the documentation. ▶ The patient reported that the chart failed to mention other forms of stool he had drawn for the clinician based on the Bristol Stool Scale. 	128 (15.6)
	Removal of valid information	Information in the record was correct, but the patient did not want it to be a part of the medical record	<ul style="list-style-type: none"> ▶ The patient did not want to be flagged in the chart as being a narcotic abuser ▶ The patient wanted a secondary diagnosis of depression removed from a specific note 	54 (6.6)
	Total			
Outcome of the request	Approved	The clinician approved the change	<ul style="list-style-type: none"> ▶ Asthma was added to the patient's past medical history ▶ Ablation and dyslipidemia was removed from the chart after the patient reported never having those 	406 (49.6)
	Denied	The clinician denied the change	<ul style="list-style-type: none"> ▶ Taken directly from a denied request: "The purpose of our admission document is to present the information as we receive it at the time of admission...I understand that the patient currently has a different view of events that occurred at that time, but that does not change what we saw (and documented) in the original note." ▶ From another denied request: "We assess homicide risk in every patient, thus that word is in every patient note. This patient does have continuing diagnosis of severe depression with psychotic features, thus I cannot change it." 	391 (47.8)
	Other/unknown	The final outcome was not clear in the amendment request documentation, or a discussion with the patient cleared potential confusion	<ul style="list-style-type: none"> ▶ In some cases, the document in the medical record to which the patient was referring could not be found. ▶ In another case the clinician originally declined to make a change but eventually decided to change it so that the patient would stop e-mailing the clinician about making the change 	21 (2.6)
	Total			

Table 4 Clinical departments and divisions under which contested documentation was made for the 393 requests in the 'medical/surgical' category

Clinical department	Count	Clinical department	Count
Anesthesiology	16	Pediatrics	
Emergency medicine		Endocrinology	1
Adult	22	General	4
Pediatrics	3	Hematology and oncology	2
Family medicine	11	Psychiatry	20
Internal medicine		Radiology	4
Allergy	7	Speech and language pathology	9
Cardiology	3	Surgery	
Endocrinology	6	Gastrointestinal	1
Gastroenterology	62	General	6
General	67	Neurosurgery	11
Hematology and oncology	8	Ophthalmology	3
Nephrology	1	Oral and maxillofacial	1
Neurology	4	Orthopedic	13
Pulmonology	7	Otolaryngology	2
Rheumatology	18	Plastic	9
Nursing	1	Trauma burn	2
Obstetrics and gynecology	27	Urology	2
Physical medicine and rehabilitation	13	Vascular	1

Note that the 'medical/surgical' issue contested by the patient was not always directly related to the clinical domain of the department. For example, psychiatry notes listed here contained information related to non-psychiatric conditions that the patient contested (eg, sleep apnea).

DISCUSSION

We analyzed chart amendment requests submitted by patients asking for changes to be made to their medical records. We found half of the amendment requests were eventually approved, demonstrating that patients are able to detect

inaccuracies and omissions in their charts and are interested in having their charts corrected. However, the number of patients requesting amendments, relative to the number of patients who requested their charts, was fairly small. Further, the two most common document types for which amendment requests were made, outpatient letters/notes and discharge summaries, are sometimes given to patients as part of their care, and thus may have been already available to patients without them making an explicit chart request.

Prior studies have shown substantially higher rates of patients detecting errors in their medical records when provided with such opportunities.^{18 30-34} Nearly a quarter of the errors were deemed potentially important.³³ However, studies have also shown that patients may not always seek corrections when errors are found.^{18 30} One study, for example, found that only half of the patients made the effort to have errors in their medical charts corrected.¹⁸ The primary reason cited was a perception that the errors were minor, followed by a lack of knowledge about whom to contact to make corrections. Limited by our research design, we are unable to determine in this study the proportion of patients who might have found errors in their documentation but did not seek an amendment. The lack of easily accessible information about how to correct chart errors might also have contributed to the low amendment request rates observed at our institution: while the information about how to request one's records is available on the UMHS website, patients must proactively contact DHIM to learn about the process for submitting an amendment request, which is not described on the ROI form.

The rise in the volume of requests at the end of our study period after the portal and AVS became available suggests that increased patient access to their charts could result in an increased volume of amendment requests. Further, all but one of the 36 requests to change information that patients viewed through either the portal or AVS were eventually approved. This suggests that increasing direct patient access to their clinical data

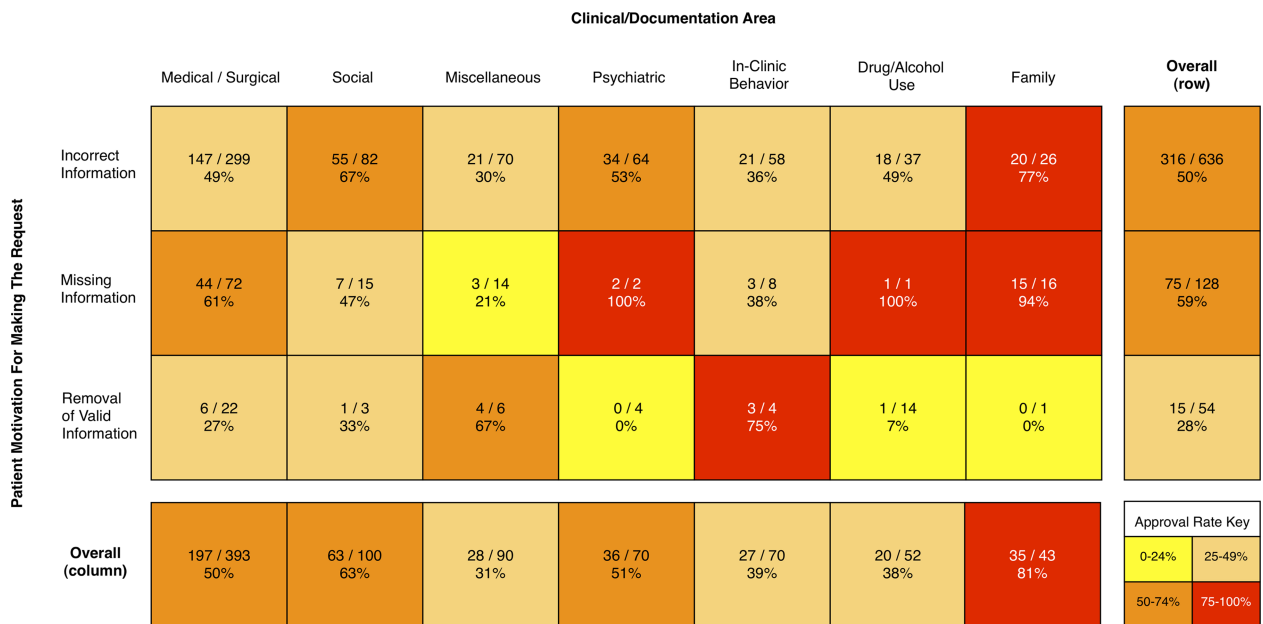


Figure 4 The approval rates for each of the sub-categories for *clinical/documentation area* (columns) broken down by the three categories for *patient motivation for making the request* (rows). The bottom row shows the overall number of approved requests for each *clinical/documentation area*, whereas the rightmost column shows the overall number of approved requests for each category of *patient motivation for making the request*. Each cell has been shaded to show the range of approval rates.

Table 5 Categories and examples of personalized clinician responses for amendment requests that were denied

Reasons for denial	Example of clinician responses	n (%)
Information was correct; additional detail was not provided	<ul style="list-style-type: none"> ▶ "No reason to amend a past clinical evaluation" ▶ "The reason for my referral must be reflected in my documentation and thus cannot be amended." 	22 (43.1)
Information was correct; clinician provided additional clarifications	<ul style="list-style-type: none"> ▶ "Withdrawal is not a requirement for being considered to have heavy alcohol use or EtOH abuse." ▶ "A review of the record shows that cocaine was detected in the blood on laboratory tests upon admission. This finding confirms the above diagnosis as accurate and valid. Therefore, I am unable to make the requested change to the record. Please keep in mind that this diagnosis does not necessarily imply abuse of the substance." 	8 (15.7)
Documentation being contested was based on prior records (including outside records)	<ul style="list-style-type: none"> ▶ "The sentence is copied in its entirety from the admission MD note of [date removed]." ▶ "My evaluation is limited to documentation in the medical record as I have no first hand knowledge of the patient's condition." 	7 (13.7)
Patient misunderstood or misinterpreted documentation	<ul style="list-style-type: none"> ▶ "I am confused. When I read her report and I read mine, they say the same thing in a different order. No reason to change the note from what I can see." ▶ "I don't understand the request. The note seems fairly clear to me. I wrote the note on [date removed] and stated that a blood culture was pending. How could one conclude that it was positive?" 	3 (5.9)
Clinician is no longer there; unable to verify claims	<ul style="list-style-type: none"> ▶ "This was a Minor Emergency Care Area patient, seen only by the physician assistant, who no longer works in emergency department—I never saw nor took history from this patient and am unable to amend this record." 	2 (3.9)
Concern that removing information could affect clinical decision making	<ul style="list-style-type: none"> ▶ "Your request...is denied because removing the information from your laboratory test could create a false interpretation. The information at issue may be important to the interpretation of the urine drug screen." 	1 (2.0)
Clinician declined to add inferences that could not be substantiated by what was available in the record	<ul style="list-style-type: none"> ▶ "There is no way to establish a cause for your chronic rectal pain from findings made during your brief stay in the observation unit." 	1 (2.0)
Clinician unable to remember encounter	<ul style="list-style-type: none"> ▶ "No recollection of this case from 5 years ago." 	1 (2.0)
Other	<ul style="list-style-type: none"> ▶ "Information not relevant to patient and delivered on that date." ▶ "See physician's response to amendment request of two pages in length and EHR summary." 	6 (11.8)

HER, electronic health record.

could lead to a concordant increase in error reduction and thus better quality of medical records.

Not surprisingly, the requests in the 'removal of valid information' category were least likely to be approved. This highlights the issue that some information clinicians documented in medical records may be less acceptable to patients. For example, a study in which patients with psychiatric issues were given their records noted that some patients did not want their diagnoses recorded on file and some even asked that any mention of 'mental health' be removed from the title of the notes.³⁵ In our study, there were only four requests to remove information related to psychiatry, all of which were denied. Physicians have expressed concerns that patients might be offended by what is written in the charts,^{3 11 36 37} although studies show patients have generally expressed fewer concerns.¹¹

While there are many potential benefits associated with providing patient access to their medical charts, clinicians may be concerned about the extra work it might incur such as the increased volume of chart amendment requests they might receive. This is especially true when a large number of such requests may be deemed unjustified and subsequently declined (as shown in this study, about half of the requests were denied). In our analysis of the 51 personalized responses by clinicians to patients for denied requests, most (43.1%) provided little additional feedback to patients about the reason for denial. However, we did find that in about 16% of these responses, clinicians used the feedback form as an opportunity to explain to the patient the rationale for the wording in the documentation or additional context about the clinical situation. Future work should seek to determine how receptive patients are to these gestures.

Our study has limitations. The work was conducted at a single institution, and the data were originally collected for operational tracking purposes rather than prospectively for research. Because copies of the requests received prior to 2008 were not systematically archived, this study would have underestimated the number of requests before that time. Also, no records exist for unofficial amendment requests that may have taken place directly between clinicians and patients. We also did not determine the clinical significance or urgency of the requested changes, nor did we have any way to determine whether the clinicians who received the requests perceived the changes proposed by patients as useful and important.

This initial analysis of patient-initiated chart amendment requests still leaves many questions unanswered. For example, is there a difference in the rate of error detection among documents that are given to patients as part of their care (eg, referral letters and clinical/discharge summaries) versus those which patients actively seek through a written ROI request? Additionally, what are the motivating factors that drive some patients to initiate a chart amendment request, and how do patients react to requests that are denied? Additional future work is necessary to address these questions.

In conclusion, this exploratory study supports the view that increased patient access to their own medical records can lead to better detection and correction of potential errors. To make this participatory approach more effective, it will be important to inform patients of their right to view and amend records and about the process for doing so. These will likely be important steps towards improving the accuracy and comprehensiveness of medical records through engaging patients, the ultimate owners of the data.

Acknowledgements We would like to thank the University of Michigan Undergraduate Research Opportunity Program for their support. We also thank the staff of the University of Michigan Health System Department of Health Information Management for their assistance with this study. This study was supported in part by the National Center for Advancing Translational Sciences under Award Number UL1TR000433. The content is solely the responsibility of the authors and does not necessarily represent the official views of funders.

Contributors DAH contributed to the conception and design of the study, acquisition, analysis and interpretation of the data, and drafting the manuscript. RP contributed to the design of the study, acquisition, analysis and interpretation of the data, and drafting the manuscript. KZ contributed to the conception and design of the study, analysis and interpretation of the data, and drafting the manuscript. SWC contributed to the analysis and interpretation of the data, and drafting the manuscript. All authors approved the final version to be published and agree to be accountable for all aspects of the work.

Funding This project was supported in part by the University of Michigan Undergraduate Research Opportunity Program.

Competing interests None.

Ethics approval The research protocol of this study was reviewed and approved by the University of Michigan Medical School Institutional Review Board.

Provenance and peer review Not commissioned; externally peer reviewed.

Data sharing statement We are able to share our compiled results but cannot share the original documentation we reviewed because it is considered protected health information.

REFERENCES

- Golodetz A, Ruess J, Milhous RL. The right to know: giving the patient his medical record. *Arch Phys Med Rehabil* 1976;57:78–81.
- Shenkin BN, Warner DC. Sounding board. Giving the patient his medical record: a proposal to improve the system. *N Engl J Med* 1973;289:688–92.
- Delbanco T, Walker J, Bell SK, et al. Inviting patients to read their doctors' notes: a quasi-experimental study and a look ahead. *Ann Intern Med* 2012;157:461–70.
- Delbanco T, Walker J, Darer JD, et al. Open notes: doctors and patients signing on. *Ann Intern Med* 2010;153:121–5.
- Feldman HJ, Walker J, Li J, et al. OpenNotes: hospitalists' challenge and opportunity. *J Hosp Med* 2013;8:414–17.
- Leveille SG, Walker J, Ralston JD, et al. Evaluating the impact of patients' online access to doctors' visit notes: designing and executing the OpenNotes project. *BMC Med Inform Decis Mak* 2012;12:32.
- Annas GJ. HIPAA regulations—a new era of medical-record privacy? *N Engl J Med* 2003;348:1486–90.
- Centers for Medicare & Medicaid Services. Stage 2 Eligible Professional Meaningful Use Core Measures. Measure 7 of 17., 2012. Found at http://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/downloads/Stage2_EPCore_7_PatientElectronicAccess.pdf (accessed 17 October 2013).
- Halamka JD, Mandl KD, Tang PC. Early experiences with personal health records. *J Am Med Inform Assoc* 2008;15:1–7.
- Demiris G, Afrin LB, Speedie S, et al. Patient-centered applications: use of information technology to promote disease management and wellness. A white paper by the AMIA knowledge in motion working group. *J Am Med Inform Assoc* 2008;15:8–13.
- Earnest MA, Ross SE, Wittevrongel L, et al. Use of a patient-accessible electronic medical record in a practice for congestive heart failure: patient and physician experiences. *J Am Med Inform Assoc* 2004;11:410–17.
- Fisher B, Bhavnani V, Winfield M. How patients use access to their full health records: a qualitative study of patients in general practice. *J R Soc Med* 2009;102:539–44.
- Nazi KM. The personal health record paradox: health care professionals' perspectives and the information ecology of personal health record systems in organizational and clinical settings. *J Med Internet Res* 2013;15:e70.
- Parrott J, Strathdee G, Brown P. Patient access to psychiatric records: the patients' view. *J R Soc Med* 1988;81:520–2.
- Ross SE, Lin CT. The effects of promoting patient access to medical records: a review. *J Am Med Inform Assoc* 2003;10:129–38.
- Siteman E, Businger A, Gandhi T, et al. Clinicians recognize value of patient review of their electronic health record data. *AMIA Annu Symp Proc* 2006:1101.
- Institute of Medicine (U.S.). Committee on quality of health care in America. *Crossing the quality chasm: a new health system for the 21st century*. Washington DC: National Academy Press, 2001.
- Bhavnani V, Fisher B, Winfield M, et al. How patients use access to their electronic GP record—a quantitative study. *Fam Pract* 2011;28:188–94.
- Fowles JB, Kind AC, Craft C, et al. Patients' interest in reading their medical record: relation with clinical and sociodemographic characteristics and patients' approach to health care. *Arch Intern Med* 2004;164:793–800.
- Kerns JW, Krist AH, Longo DR, et al. How patients want to engage with their personal health record: a qualitative study. *BMJ Open* 2013;3.
- Meltsner M. A patient's view of OpenNotes. *Ann Intern Med* 2012;157:523–4.
- Ross SE, Todd J, Moore LA, et al. Expectations of patients and physicians regarding patient-accessible medical records. *J Med Internet Res* 2005;7:e13.
- Thieleman W. A patient-friendly approach to the record amendment process. *J AHIMA* 2002;73:44–7; quiz 49–50.
- Code of Federal Regulations—Title 45—Public Welfare, 2013. <http://www.gpo.gov/fdsys/pkg/CFR-2013-title45-vol1/xml/CFR-2013-title45-vol1-sec164-526.xml> (accessed 13 Jan 2014).
- Eligible Professional Meaningful Use Core Measures, Measure 13 of 14, 2013. http://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/downloads/13_Clinical_Summaries.pdf (accessed 7 Mar 2014).
- University of Michigan Health System Department of Health Information Management. Authorization to release copies of a medical record, 2013. <http://www.med.umich.edu/him/roi.pdf> (accessed 17 Oct 2013).
- Charmaz K. *Constructing grounded theory*. London; Thousand Oaks, CA: Sage Publications, 2006.
- Glaser BG, Strauss AL. *The discovery of grounded theory: strategies for qualitative research*. New York: Aldine de Gruyter, 1999.
- Flick U. *Managing quality in qualitative research*. Thousand Oaks, CA: Sage Publications, 2007.
- Baldry M, Cheal C, Fisher B, et al. Giving patients their own records in general practice: experience of patients and staff. *Br Med J (Clin Res Ed)* 1986;292:596–8.
- Hassol A, Walker JM, Kidder D, et al. Patient experiences and attitudes about access to a patient electronic health care record and linked web messaging. *J Am Med Inform Assoc* 2004;11:505–13.
- Jones R, McConville J, Mason D, et al. Attitudes towards, and utility of, an integrated medical-dental patient-held record in primary care. *Br J Gen Pract* 1999;49:368–73.
- Pyper C, Amery J, Watson M, et al. Patients' experiences when accessing their on-line electronic patient records in primary care. *Br J Gen Pract* 2004;54:38–43.
- Sheldon MG. Giving patients a copy of their computer medical record. *J R Coll Gen Pract* 1982;32:80–6.
- Essex B, Doig R, Renshaw J. Pilot study of records of shared care for people with mental illnesses. *BMJ* 1990;300:1442–6.
- van der Vaart R, Drossaert CH, Taal E, et al. Giving rheumatology patients online home access to their electronic medical record (EMR): advantages, drawbacks and preconditions according to care providers. *Rheumatol Int* 2013;33:2405–10.
- Zhou X, Ackerman MS, Zheng K. I just don't know why it's gone: Maintaining informal information use in inpatient care. *Proceedings of the ACM 2009 Conference on Human Factors in Computing Systems (CHI '09)*. 2009:2061–70.