

# Prevalence and Factors Associated with Patient-Requested Corrections to the Medical Record through Use of a Patient Portal: Findings from a National Survey

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## Abstract

**Background** Providing patients with medical records access is one strategy that health systems can utilize to reduce medical errors. However, how often patients request corrections to their records on a national scale is unknown.

**Objectives** We aimed to develop population-level estimates of patients who request corrections to their medical records using national-level data. We also identified patient-level correlates of requesting corrections.

**Methods** We used the 2017 and 2019 Health Information National Trends Survey and examined all patient portal adopters. We applied jackknife replicate weights to develop population-representative estimates of the prevalence of requesting medical record corrections. We conducted a multivariable logistic regression analysis to identify correlates of requesting corrections while controlling for demographic factors, health care utilization patterns, health status, technology/internet use patterns, and year.

**Results** Across 1,657 respondents, 125 (weighted estimate: 6.5%) reported requesting corrections to their medical records. In unadjusted models, greater odds of requesting corrections were observed among patients who reported their race/ethnicity as non-Hispanic black (odds ratio [OR]: 2.20, 95% confidence interval [CI]: 1.10–4.43), had frequent portal visits (OR: 3.92, 95% CI: 1.51–10.23), and had entered data into the portal (OR: 7.51, 95% CI: 4.08–13.81). In adjusted models, we found greater odds of requesting corrections among those who reported frequent portal visits (OR: 3.39, 95% CI: 1.24–9.33) and those who reported entering data into the portal (OR: 6.43, 95% CI: 3.20–12.94). No other significant differences were observed.

## Keywords

- ▶ documentation
- ▶ patient portal
- ▶ patient engagement

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**Conclusion** Prior to the Information Blocking Final Rule in April 2021, approximately 6.5% of patients requested corrections of errors in their medical records at the national level. Those who reported higher engagement with their health, as proxied by portal visit frequency and entering data into the portal, were more likely to request corrections.

## Background and Significance

In the United States, federal initiatives, such as Promoting Interoperability Programs (formerly Meaningful Use), the 21st Century Cures Act, and Healthy People 2020,<sup>1–3</sup> have played critical roles in improving patients' access to their medical records. At the same time, health care systems launched the OpenNotes movement to encourage patients to engage with their records, including reviewing clinical notes. Currently, over 10 million U.S. patients can access their records from these combined efforts.<sup>4</sup> Researchers have noted numerous examples of patients benefiting from engaging with their records, such as improved patient–clinician communication and adherence to treatment plans.<sup>5–10</sup> One notable opportunity that has arisen from this monumental change is the ability for patients to identify errors in their medical records that may have downstream clinical implications if left unaddressed.<sup>9</sup>

Previous studies have illuminated that errors can exist in various parts of the record, such as visit and progress notes,<sup>8,9,11–14</sup> medication lists,<sup>5,9,11,12,15–19</sup> problem lists,<sup>20,21</sup> and discharge summaries.<sup>11</sup> Types of errors uncovered have included wrong-patient errors,<sup>12</sup> wrong-site errors,<sup>12</sup> outdated information (e.g., active medications),<sup>5,17,18</sup> and discussion points that patients dispute had occurred during encounters.<sup>13,22</sup>

Studies have estimated that between 8 to 21% of patients have identified an error within their medical records.<sup>8,12,13</sup> To date, those studies have reported that less than 8% of all patients contact their clinicians' office to request corrections to errors they have found in their records.<sup>8,9,13</sup> However, it is unclear whether these estimates are generalizable on a national scale since much of the existing evidence is from studies conducted in single or multiple centers.<sup>8,12,13</sup> It is also not known whether certain factors (e.g., health literacy, frequency of patient portal use) affect which types of patient populations are more likely to request these corrections.

## Objectives

To address this knowledge gap, we use national-level data to assess (1) the prevalence of correction requests to medical record content in the patient portal and (2) the factors associated with requesting corrections among the U.S adult population.

## Methods

### Data Source

Our study drew data from the Health Information National Trends Survey (HINTS), a national survey that collects data

on health information technologies and health communications on an annual basis. These surveys are mailed or emailed home to potential participants to complete. Survey design, methodology, and administration are described elsewhere.<sup>23</sup> We used the 2017 and 2019 iterations of the survey as variables of interest were available for these iterations. The response rates for 2017 and 2019 were 32.4 and 30.3%, respectively. The University of Florida Institutional Review Board reviewed the protocol and approved the study as exempt.

### Analytic Variables

We restricted the sample to all respondents who reported recent patient portal use (How many times did you access your online medical record in the last 12 months?). Our dependent variable was how respondents answered the question “In the past 12 months, have you used your online medical record to request correction of inaccurate information?” We included several independent variables that have been documented to influence patient portal use and patients' use of medical information, such as demographic factors (sex, race/ethnicity, age, marital status, income level, education level, caregiver status, understanding medical records),<sup>24–34</sup> health care utilization patterns (has regular source of care, number of health care visits in the last year),<sup>24,27</sup> health status (number of chronic conditions),<sup>24,26–28,35–37</sup> and technology/internet use patterns (home internet use, health information-seeking, adds health information into portal, has access to medical notes in the portal, portal visit frequency in the last year).<sup>29,32,38</sup> Furthermore, we also included a dichotomous variable that represents whether respondents reported having access to medical notes in their patient portal. To assess for differences in time, we also controlled for the year effect.

### Analytic Approach

We descriptively reported the sample characteristics and the results of Pearson's chi-square tests. We utilized jackknife replicate weights to provide population-representative estimates of the prevalence of patients who had reported errors in their medical records to their clinicians' office. We also conducted a multivariable logistic regression model to identify factors associated with requesting corrections to records on the patient portal. A hierarchical modeling approach was chosen with different sets of covariates to explore how different sets of variables were associated with one another. We reported the adjusted odds ratios (OR) and 95% confidence interval (CI) for each variable in the model. We treated missing data with complete case analysis (i.e., excluded observations with missing data for variables of interest)

and tested for multicollinearity among predictors. We defined significance as  $p < 0.05$ . All statistical models were completed through Stata SE 16.0 (College Station, Texas, United States; StataCorp, LLC).

## Results

► **Fig. 1** shows the effect on the sample size from applying our criteria as described earlier. ► **Table 1** and ► **Supplementary Appendix 1** (available in the online version) detail characteristics of respondents who met inclusion criteria. Overall, our sample consisted of 1,657 respondents. Across the sample, 125 (weighted estimate: 6.5%) self-reported that they had filed correction requests in response to errors in their medical records in the patient portal. Most respondents were female (55.6%), non-Hispanic white (69.2%), aged 50 to 64 years (31.2%), married (61.7%), and had an annual household income of over \$75,000 (53.5%). They also reported understanding of their medical records (91.2%), a regular source of care (e.g., primary care clinician) (81.3%),

daily internet use (64.0%), and health information-seeking behaviors (79.5%).

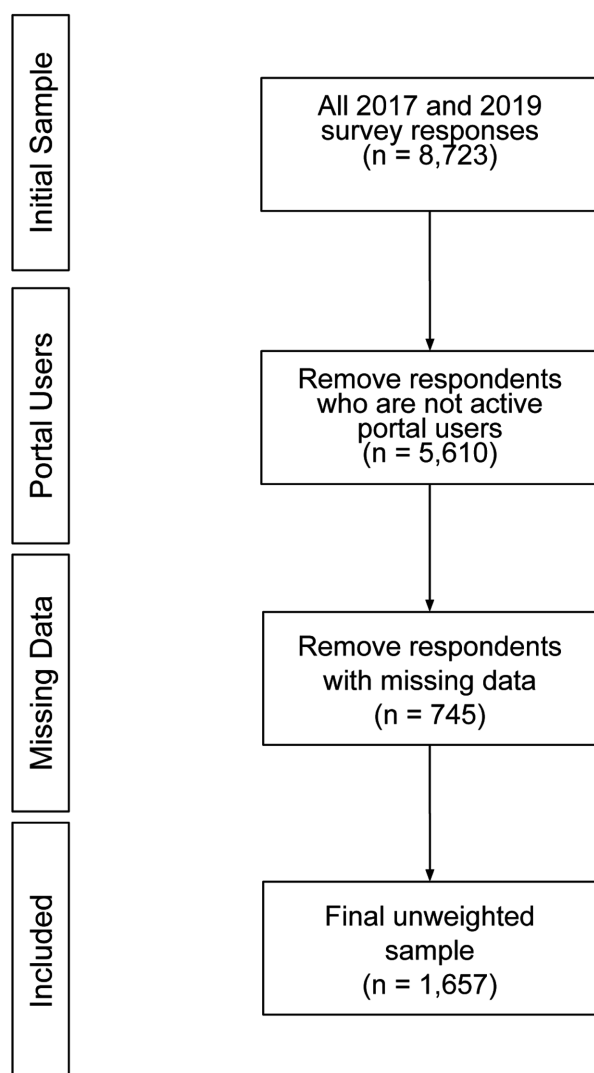
Our unadjusted results suggest that greater odds of requesting corrections were observed among patients who reported their race/ethnicity as non-Hispanic black (OR = 2.20, 95% CI: 1.10–4.43) compared with non-Hispanic white, had frequent portal visits (OR = 3.92, 95% CI: 1.51–10.23), and had entered data into the portal (OR = 7.51, 95% CI: 4.08–13.81).

We found (model 5), after controlling for other factors, those reporting 10 or more portal visits in the last year compared with none (OR = 3.39, 95% CI: 1.24–9.33) and those who reported adding health information into their portal showed greater odds of requesting corrections to their medical records via the patient portal (OR = 6.43, 95% CI: 3.20–12.94). In this adjusted model, comparable odds of requesting corrections were observed in patients who reported their race/ethnicity as non-Hispanic black (OR = 1.81, 95% CI: 0.80–4.12) compared with non-Hispanic whites. No differences were observed across other demographic factors, health care utilization patterns, health status, and time (► **Table 2**). In this model, the pseudo R-squared value was 0.1279. Further model specifications are shown in ► **Supplementary Appendix 2** (available in the online version).

## Discussion

We assessed the prevalence and the patient-level factors associated with requesting corrections to the medical record through the patient portal using a national survey. Overall, we found that approximately 7% of patients requested corrections to perceived errors nationally. In adjusted analyses, patients who frequently used the patient portal and those who reported adding health information into their portal account were more likely to request corrections to their records.

Our findings are consistent with smaller scale studies that have estimated approximately 7% of patients requested corrections to their medical records.<sup>8,9,13</sup> However, it is unclear if these rates are too high or low, especially as reporting an error in the medical record rests on the assumption that the patient understands what is being communicated in the medical record. Indeed, prior U.S. and European studies have identified medical terminology as one impediment to patients' understanding of their records.<sup>13,39–45</sup> Patients with lower education may also be less likely to be engaged in shared medical decision-making with their clinician,<sup>46</sup> which may suggest a lower likelihood of reporting errors. However, in our study, we did not find education level to be a predictor of requesting corrections to medical records. Although the relatively low rates may suggest health systems may not be experiencing as high of a level of correction requests as speculated,<sup>8</sup> it is important to note that these findings come from data using time periods prior to the Information Blocking Final Rule that went into effect on April 2021 as part of the 21st Century Cures Act.<sup>2</sup> This policy change is expected to further increase the number of patients who will be able to access their own



**Fig. 1** Flow chart for respondent selection and exclusion criteria.

**Table 1** Sample characteristics

	Overall sample (n = 1,657) No. (weighted %)	Requested corrections to records (n = 125) No. (weighted column %)	Did not request corrections to records (n = 1,532) No. (weighted column %)	p-Value
<i>Demographics</i>				
<i>Sex</i>				
Male	663 (44.4%)	53 (48.6%)	610 (44.1%)	0.599
Female	994 (55.6%)	72 (51.4%)	922 (55.9%)	
<i>Race/ethnicity</i>				
Non-Hispanic white	1,182 (69.2%)	80 (53.2%)	1,102 (70.3%)	0.087
Non-Hispanic black	171 (8.4%)	19 (13.4%)	152 (8.1%)	
Other	304 (22.4%)	26 (33.3%)	278 (21.6%)	
<i>Age (in years)</i>				
18–34	240 (25.3%)	12 (15.6%)	228 (26.0%)	0.061
35–49	401 (30.2%)	38 (45.2%)	363 (29.2%)	
50–64	594 (31.2%)	49 (31.9%)	545 (31.2%)	
65+	422 (13.2%)	26 (7.4%)	396 (13.6%)	
<i>Marital status</i>				
Not married	614 (38.3%)	51 (32.1%)	563 (38.8%)	0.344
Married	1,043 (61.7%)	74 (67.9%)	969 (61.2%)	
<i>Income level</i>				
\$75,000+	921 (53.5%)	66 (49.7%)	855 (53.8%)	0.560
\$50,000–\$75,000	333 (19.1%)	19 (19.3%)	314 (19.1%)	
\$35,000–\$50,000	174 (11.9%)	13 (7.7%)	161 (12.2%)	
\$20,000–\$35,000	132 (7.0%)	14 (8.8%)	118 (6.9%)	
< \$20,000	97 (8.5%)	13 (14.5%)	84 (8.1%)	
<i>Education level</i>				
Postgraduate	507 (22.9%)	38 (17.8%)	469 (23.2%)	0.616
College graduate	577 (26.6%)	41 (23.2%)	536 (26.9%)	
Post high school	426 (36.8%)	35 (40.2%)	391 (36.6%)	
High school or less	147 (13.7%)	11 (18.8%)	136 (13.3%)	
<i>Caregiver status</i>				
No	1,334 (80.7%)	94 (65.4%)	1,240 (81.7%)	0.037
Yes	323 (19.3%)	31 (34.6%)	292 (18.3%)	
<i>Understands medical records</i>				
Well	1,516 (91.2%)	114 (82.9%)	1,402 (91.8%)	0.220
Not well	141 (8.8%)	11 (17.1%)	130 (8.2%)	
<i>Health care utilization</i>				
<i>Has regular source of care</i>				
Yes	1,392 (81.3%)	107 (84.3%)	1,285 (81.1%)	0.615
No	265 (18.7%)	18 (15.7%)	247 (18.9%)	
<i>Number of health care visits (in last year)</i>				
None to one	262 (16.1%)	15 (14.1%)	247 (16.2%)	0.694
Two	313 (21.5%)	24 (27.0%)	289 (21.2%)	
Three	257 (16.1%)	20 (15.6%)	237 (16.1%)	
Four	288 (14.4%)	20 (18.1%)	268 (14.1%)	
Five to nine	345 (20.8%)	27 (13.4%)	318 (21.3%)	
10 or more	192 (11.1%)	19 (11.8%)	173 (11.0%)	

(Continued)

**Table 1** (Continued)

	Overall sample (n = 1,657) No. (weighted %)	Requested corrections to records (n = 125) No. (weighted column %)	Did not request corrections to records (n = 1,532) No. (weighted column %)	p-Value
<i>Health status</i>				
Number of chronic conditions				
None	536 (37.0%)	36 (40.8%)	500 (36.7%)	0.484
One	543 (32.3%)	40 (24.5%)	503 (32.8%)	
Two	343 (20.4%)	27 (18.4%)	316 (20.5%)	
Three or more	235 (10.4%)	22 (16.3%)	213 (10.0%)	
<i>Internet/technology use</i>				
Home internet use				
Daily	1,091 (64.0%)	78 (62.0%)	1,013 (64.2%)	0.777
Not daily	566 (36.0%)	47 (38.0%)	519 (35.8%)	
Health information-seeking				
Yes	1,305 (79.5%)	53 (38.4%)	1,252 (82.4%)	0.229
No	352 (20.5%)	72 (61.6%)	280 (17.6%)	
Adds health information into portal				
No	1,567 (93.1%)	111 (88.9%)	1,456 (93.4%)	<0.001
Yes	90 (6.9%)	14 (11.1%)	76 (6.6%)	
Patient portal has access to medical notes				
Yes	831 (51.3%)	85 (67.7%)	746 (50.2%)	0.049
No/don't know	826 (48.7%)	40 (32.3%)	786 (49.8%)	
Portal visit frequency (in last year)				
One to two	743 (47.2%)	32 (34.4%)	711 (48.1%)	0.002
Three to five	511 (30.5%)	35 (26.1%)	476 (30.8%)	
Six to nine	208 (11.0%)	24 (11.3%)	184 (11.0%)	
10 or more	195 (11.2%)	34 (28.2%)	161 (10.0%)	
<i>Time</i>				
Year				
2017	746 (43.6%)	60 (41.0%)	686 (43.8%)	0.744
2019	911 (56.4%)	65 (59.0%)	846 (56.2%)	

## Note:

- Percentages may not total to 100% due to rounding.
- Due to small constituent cell sizes, "Other" consists of Hispanics, non-Hispanic Asians, and non-Hispanic other respondents.
- All percentages reported are weighted estimates (n = 64,044,900).

medical records. Consequently, it will become necessary to re-evaluate if the prevalence of patients requesting corrections to their medical records remains stable or increases during the post-policy period.

Furthermore, some U.S. and European studies have reported higher rates of error perception (12–38%) among patients when reading their records.<sup>12,39,44,47,48</sup> The discrepancy between error perception and formally requesting corrections by the health system may be partly explained by patients who may be experiencing challenges with navigating processes for requesting corrections,<sup>11,44</sup> patients who may not perceive the error to be serious enough to warrant formal actions,<sup>44</sup> or patients who may be hesitant on potential adverse effects on their relationships with their clinician or staff.<sup>49</sup> Furthermore, some correction requests may not be

clinically or ethically appropriate to complete. For instance, one case report revealed an instance of a patient challenging a diagnosis of delusion made by her clinician and another instance of a patient requesting for removal of the correctly documented concerns he had about his eyesight for fear that the records may endanger his employment.<sup>50</sup> It is also unclear how many correction requests stem from patients' misunderstanding of clinically correct information. Taken together, it will be important to understand the reasons for why some patients may not be filing correction requests and how often health systems are receiving inappropriate correction requests. The findings to those questions may be helpful to health system leaders who are designing processes to manage and address incoming correction requests in a timely manner.

**Table 2** Adjusted odds ratios from multivariable logistic regression models assessing requests for correcting errors in medical records ( $n = 1,657$ )

	Model 1 OR (95% CI)	Model 2 OR (95% CI)	Model 3 OR (95% CI)	Model 4 OR (95% CI)	Model 5 OR (95% CI)
<i>Demographics</i>					
<i>Sex</i>					
Male	Ref	Ref	Ref	Ref	Ref
Female	0.87 (0.45–1.68)	0.87 (0.46–1.62)	0.87 (0.46–1.65)	0.96 (0.47–1.96)	0.96 (0.47–1.96)
<i>Race/ethnicity</i>					
Non-Hispanic white	Ref	Ref	Ref	Ref	Ref
Non-Hispanic black	2.28 (1.11–4.69)*	2.28 (1.08–4.85)*	2.21 (1.03–4.74)*	1.78 (0.79–4.00)	1.81 (0.80–4.12)
Other	1.87 (0.83–4.21)	1.91 (0.83–4.38)	1.86 (0.82–4.22)	1.68 (0.74–3.81)	1.73 (0.78–3.85)
<i>Age (in years)</i>					
18–34	Ref	Ref	Ref	Ref	Ref
35–49	2.18 (0.66–7.13)	2.02 (0.64–6.36)	1.91 (0.61–5.92)	1.79 (0.48–6.71)	1.75 (0.48–6.45)
50–64	1.63 (0.47–5.74)	1.46 (0.43–4.97)	1.35 (0.42–4.32)	1.72 (0.42–6.93)	1.76 (0.43–7.22)
65+	0.93 (0.27–3.22)	0.85 (0.25–2.83)	0.76 (0.22–2.61)	0.83 (0.19–3.52)	0.85 (0.19–3.75)
<i>Marital status</i>					
Not married	Ref	Ref	Ref	Ref	Ref
Married	1.23 (0.60–2.52)	1.27 (0.63–2.55)	1.26 (0.62–2.56)	1.17 (0.57–2.40)	1.14 (0.55–2.37)
<i>Income level</i>					
\$75,000+	Ref	Ref	Ref	Ref	Ref
\$50,000–\$75,000	0.86 (0.22–3.32)	0.85 (0.23–3.11)	0.85 (0.22–3.19)	0.70 (0.21–2.34)	0.70 (0.20–2.44)
\$35,000–\$50,000	0.72 (0.20–2.53)	0.71 (0.20–2.57)	0.70 (0.19–2.56)	0.59 (0.16–2.14)	0.58 (0.17–2.00)
\$20,000–\$35,000	1.25 (0.41–3.78)	1.34 (0.43–4.16)	1.25 (0.39–4.01)	1.80 (0.47–6.95)	1.75 (0.47–6.58)
< \$20,000	2.06 (0.46–9.24)	2.23 (0.51–9.84)	2.06 (0.54–7.95)	2.86 (0.84–9.70)	2.85 (0.84–9.63)
<i>Education level</i>					
Postgraduate	Ref	Ref	Ref	Ref	Ref
College graduate	1.26 (0.58–2.75)	1.25 (0.57–2.72)	1.23 (0.56–2.71)	1.56 (0.63–3.83)	1.50 (0.61–3.67)
Post high school	1.61 (0.79–3.27)	1.58 (0.75–3.35)	1.53 (0.72–3.24)	1.71 (0.67–4.36)	1.74 (0.70–4.32)
High school or less	1.56 (0.26–9.50)	1.54 (0.27–8.95)	1.51 (0.26–8.84)	1.51 (0.24–9.37)	1.52 (0.24–9.73)
<i>Caregiver status</i>					
No	Ref	Ref	Ref	Ref	Ref
Yes	1.98 (0.77–5.12)	1.90 (0.72–5.00)	1.91 (0.73–5.02)	1.32 (0.49–3.54)	1.34 (0.49–3.67)
<i>Understands medical records</i>					
Well	Ref	Ref	Ref	Ref	Ref
Not well	2.37 (0.35–16.24)	2.38 (0.32–17.50)	2.31 (0.32–16.51)	2.73 (0.35–21.51)	2.93 (0.37–23.29)
<i>Health care utilization</i>					
<i>Has regular source of care</i>					
Yes		Ref	Ref	Ref	Ref
No		0.68 (0.25–1.86)	0.70 (0.27–1.81)	0.74 (0.25–2.19)	0.78 (0.26–2.35)
<i>Number of health care visits (in last year)</i>					
None to one		Ref	Ref	Ref	Ref
Two		1.18 (0.31–4.50)	1.24 (0.32–4.83)	1.11 (0.26–4.67)	1.16 (0.28–4.87)
Three		1.00 (0.26–3.81)	1.04 (0.27–3.94)	0.99 (0.23–4.24)	1.05 (0.25–4.34)
Four		1.21 (0.40–3.67)	1.24 (0.41–3.75)	0.92 (0.26–3.24)	0.98 (0.29–3.26)
Five to nine		0.63 (0.22–1.83)	0.67 (0.24–1.86)	0.41 (0.12–1.37)	0.43 (0.13–1.41)
10 or more		1.06 (0.29–3.91)	1.06 (0.28–4.06)	0.60 (0.14–2.53)	0.64 (0.16–2.61)

(Continued)

**Table 2** (Continued)

	Model 1 OR (95% CI)	Model 2 OR (95% CI)	Model 3 OR (95% CI)	Model 4 OR (95% CI)	Model 5 OR (95% CI)
<i>Health status</i>					
Number of chronic conditions					
None			Ref	Ref	Ref
One			0.79 (0.30–2.09)	0.58 (0.18–1.89)	0.56 (0.17–1.88)
Two			0.98 (0.38–2.56)	0.71 (0.22–2.26)	0.68 (0.20–2.31)
Three or more			1.37 (0.44–4.28)	0.77 (0.25–2.43)	0.75 (0.23–2.44)
<i>Internet/technology use</i>					
Home internet use					
Daily				Ref	Ref
Not daily				1.24 (0.57–2.70)	1.23 (0.56–2.72)
Health information-seeking					
Yes				Ref	Ref
No				1.57 (0.54–4.58)	1.60 (0.57–4.49)
Adds health information into portal					
No				Ref	Ref
Yes				6.20 (3.06–12.55)***	6.43 (3.20–12.94)***
Patient portal has access to medical notes					
Yes				Ref	Ref
No/don't know				0.52 (0.21–1.25)	0.52 (0.21–1.28)
Portal visit frequency (in last year)					
One to two				Ref	Ref
Three to five				1.15 (0.41–3.22)	1.20 (0.41–3.53)
Six to nine				1.44 (0.43–4.81)	1.50 (0.42–5.41)
10 or more				3.19 (1.29–7.87)*	3.39 (1.24–9.33)*
<i>Time</i>					
Year					
2017					Ref
2019					0.73 (0.33–1.61)

Abbreviations: CI, confidence interval; OR, odds ratio; Ref, referent.

Note:

- \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ .
- All estimates are weighted ( $n = 64,044,900$ ).

Finally, our study suggests that patients who are more engaged with their health, as proxied by patient portal visit frequency and providing patient-reported data in the portal, were more likely to request corrections of their medical records. These findings were consistent with prior studies that assessed for factors associated with requesting changes to their records.<sup>5,12</sup> Consequently, health care organizations' efforts to increase patient portal adoption may also yield additional benefits of reducing potential downstream medical errors that stem from incorrect documentation. However, additional study is needed to assess the value of patient-reported errors, including the effects on patient safety and health care quality. Further improvements in interoperability among health information technology systems may also help curb the extent of patient-reported data needed to develop the complete medical record for a given patient.

Our results come with some limitations. First, the strength of the HINTS survey design is that it collects nationally representative data on U.S. adults' use of technology across all settings. A limitation of this approach is that it does not capture detailed information on a patient's site of care. Additional setting-specific studies may be needed to better understand how patient correction of medical errors within the patient portal varies across care settings (e.g., primary care vs. specialty care). Second, this sample had an overrepresentation of relatively high-income, urban, and insured respondents, which may be explained by our study's focus on patient portal users.<sup>24,25,27,29,30</sup> Due to small cell counts, we were unable to control for English proficiency, insurance status, urbanicity, and level of trust in clinicians. Consequently, it is unclear if the results are generalizable to patient populations traditionally affected by the digital divide, such

as patients without insurance, low-income households, and rural patients. Furthermore, the number of patients who reported corrections may not be large enough for us to detect differences across studied characteristics. Third, our outcome variable assumes that respondents who saw errors in their medical records would request corrections to them. Indeed, researchers have reported that patients who perceive an error as relatively less serious may not report them.<sup>44</sup> Fourth, health care organizations may also be receiving requests to remove clinically correct information from the record.<sup>11,50</sup> Fifth, patients may also identify errors with paper copies of their medical records or request corrections in-person with the health care organization (as opposed to through the portal). Consequently, our results may underestimate the true rate of errors discovered in the medical record by the patient. Sixth, the use of survey data may have been affected by recall bias, especially on questions asking patients to recall the number of health care visits or patient portal visits made. Nonresponse bias may also affect findings. However, we anticipate this influence to be minimal as the survey weights that have been applied can address this nonresponse bias. Lastly, we were not able to determine the types of errors patients reported correcting (e.g., updating previously correct information vs. correcting information that is absolutely incorrect) due to survey wording.

## Conclusion

Overall, we found approximately 6.5% of patients requested corrections of errors in their medical records at the national level. Patient engagement with the patient portal was independently associated with requesting corrections. Additional research is needed to assess patients' experiences with addressing errors in their medical records, identify the types of errors discovered, and assess the impact of the 21st Century Cures Act on the prevalence of requesting corrections as well as the number of errors uncovered by patients in their medical records.

## Clinical Relevance Statement

This study confirms that, prior to the Information Blocking Final Rule going into effect, approximately 6.5% of patients requested corrections of errors in their medical records at the national level. Patients who were more engaged in their health care were more likely to identify errors and request their corrections. As federal policies mandate patients' access to their medical records and patient portal adoption increases, it will become important to study the types of errors uncovered for quality-improvement purposes as well as inform efforts to develop in-house processes for responding to patients' correction requests.

## Multiple Choice Questions

1. Who is more likely to contact their health system and request corrections to their medical records?

- a. Those who own more technology.
- b. Those who make frequent visits with their clinicians' office.
- c. Those who are more engaged with their health care.
- d. Those who have more chronic conditions.

**Correct Answer:** The correct answer is option c. Through national-level data, patients who were more engaged in their care were more likely to request corrections to their medical records. Technology ownership, health care utilization patterns, and number of chronic conditions did not appear to influence the likelihood of requesting corrections.

2. What recent federal policy mandates health systems provide patients unrestricted access to their medical records?
- a. 21st Century Cures Act.
  - b. Health Information Technology for Economic and Clinical Health Act.
  - c. Affordable Care Act.
  - d. Medicare Access and CHIP Reauthorization Act.

**Correct Answer:** The correct answer is option a. As of April 2021, the Information Blocking provision in the 21st Century Cures Act went into effect. Health care organizations mandatorily need to provide patients access to their medical records upon their request.

### Protection of Human and Animal Subjects

The University of Florida Institutional Review Board reviewed the protocol and approved the study as exempt.

### Author Contributions

This work represents the original research of the authors. This work has not been previously published. O.T.N. and K. T. conceptualized the study. O.T.N. drafted the manuscript. O.T.N. analyzed the data. All authors participated in the interpretation of data. Y.-R.H., A.A.T., K.H., and K.T. provided critical revisions to the manuscript. All authors approved the submission.

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### Conflict of Interest

None declared.

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