

Misperceptions of Patients vs Providers Regarding Medication-related Communication Issues

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The patient interview is the primary medium for conducting outpatient clinical care, and it is one of the ways by which patients are engaged in the process of care.¹ With approximately 62% of outpatient office visits resulting in the writing of at least 1 prescription (mean, 2.4 medications prescribed per medication-related office visit),² clinicians have important opportunities to educate and motivate patients to improve the use of the approximately 1.3 billion drugs prescribed annually² in the outpatient setting. Misunderstandings between clinicians and patients can occur and may lead to adverse outcomes. Adverse drug events have been estimated to occur in 27.4% of community-dwelling adults,³ and estimates are higher among Medicare enrollees visiting an outpatient physician practice.⁴

Misunderstandings are often associated with low levels of patient participation in the medical encounter.⁵ At the least, clinicians should inquire into patients' medication use, as this alone has been found to improve adherence.⁶⁻⁸ Electronic prescribing may have the potential to enhance and to interfere with clinician-patient communication. In addition to the hypothesized patient safety gains, e-prescribing can provide clinicians with information for patient education, accurate medication histories, and verification of whether patients pick up their medicines. The introduction of computer hardware into the examination room may be a barrier to effective communication, interfering with patient-provider eye contact and interpersonal connection. In a large national study of the effectiveness of standards for e-prescribing, we evaluated the extent to which e-prescribing altered the perceptions regarding frequency of medication-related communication among participating providers and a convenience sample of patients.

METHODS

Study Sample

The institutional review board of Brown University approved the study protocol. SureScripts, LLC, Alexandria, Va, identified the 6 states with the highest volumes of activity on their e-prescribing network at the time of the application for funding of the study (October 2005). These states (Florida, Massachusetts, New Jersey, Nevada, Rhode Island, and Tennessee) provided the starting point for recruit-

Objectives: To test the hypothesis that there is little concordance in perceptions of medication-related communication between patients and providers, with providers estimating greater frequency of such discussions than patients; and to determine whether discordance is less apparent among patients who received e-prescriptions.

Study Design: Data are from a convenience sample of 96 providers practicing in 6 states and 1100 of their patients. Twenty-nine practices used e-prescribing, and 3 practices were initiating e-prescribing.

Methods: Patients' and providers' perceptions regarding discussions with their providers or patients regarding medication costs, adherence, and potential adverse effects were collected by survey.

Results: Relative to patients, providers estimated more frequent discussions of medication issues with patients. Most patients (83%) reported that they would never tell their physician if they did not plan on picking up a prescription. Patients receiving electronic prescriptions were more likely than patients with paper prescriptions (54% vs 43%) to report that their provider always checks the accuracy of their medication list.

Conclusion: Although e-prescribing may not change the extent to which patients and physicians discuss medication issues, patients of e-prescribing providers more frequently report provider verification of medication lists.

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■ **Table 1.** Characteristics of Participating Patients*

Characteristic	Patients (n = 1100)
Age, y (n = 840)	
18-44	27
45-64	40
65-74	16
≥75	17
Female sex (n = 1002)	55
Spanish survey	2
Length of time as patient, y (n = 968)	
<1	18
1 to <5	29
≥5	53
Seen >1 physician in past y (n = 911)	73
No. of prescription medications taken in a mo (n = 986)	
0-1	19
2-3	30
4-6	32
≥7	19
No. of over-the-counter medications taken in a mo (n = 952)	
0	26
1	24
2-3	35
≥4	16
*Data are given as percentages.	

ing. Participants used e-prescribing software from 1 of 6 vendors participating in the larger study of e-prescribing standards. Software vendors recruited clinicians who were using their products or initiating use of their products and offered a \$500 incentive for full participation in the study. Practices enrolled in the study had a case mix of at least 25% Medicare-eligible patients. Although research staff requested that all practices (n = 88) participate in the patient survey, only 32 practices (29 practices using e-prescribing and 3 practices that were initiating e-prescribing) completed this component of the study.

Patient Perspectives

Survey packages included survey administration instructions, surveys in English and Spanish, clipboards and pens, a clearly labeled ballot-style box to collect completed surveys, survey flyers for posting in the waiting area, and a prepaid express mail envelope for return of completed surveys to the

research team. The survey protocol required that front-desk personnel alert patients about the voluntary anonymous survey at patient check-in during a 2-week period, although the extent to which staff adhered to this request is unknown. Survey respondents had the option of placing the survey in the ballot-style box located in the waiting room or mailing it directly to the research team.

The survey scored an 8.2-grade level using the Fleisch-Kincaid method. In addition to age and sex, questions regarding the length of time the participant had been a patient of the provider, number of over-the-counter and prescription medications taken in a month, and whether more than 1 physician was seen in the past year were included. Patients (n = 1100) responded to questions about communication, including questions regarding safety-related medication issues (potential adverse effects, accurate listing of current medications, and difficulty understanding instructions for using medications), costs of medications (worry about medication costs and discussion of costs with clinicians), and adherence issues (importance of taking

medications discussed and communication if the prescription is not wanted or would not be purchased). For most questions, the response set included “never,” “sometimes,” “often,” and “most of the time.” The survey also included a question about whether the patient had ever received an e-prescription.

Provider Perspectives

As part of the protocol, 96 providers (78% physicians, 6% physician assistants, and 16% nurse practitioners) completed a survey to capture relevant information regarding perceptions of e-prescribing. Providers had the option of completing a Web-based survey, and 67% did so, with the remainder completing by fax or paper.

Analytic Strategy

Cross-tabulations of patients’ and providers’ perceptions for each medication-related variable were performed overall and were stratified by practice e-prescribing status and patient

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■ **Table 2.** Patients' and Providers' Perceptions of Medication-related Communication*

Perception	Patients' Perception (n = 1100)	Providers' Perception (n = 96)
Adherence Issues		
Discuss importance of medication use	(n = 1082)	(n = 93)
Never	11	0
Sometimes	33	42
Often	25	38
Most of the time	31	20
Communicate if did not want a drug	(n = 1065)	(n = 92)
Never	68	3
Sometimes	24	51
Often	4	41
Most of the time	4	4
Frequency of Cost Issues		
Discuss costs	(n = 1071)	(n = 93)
Never	47	5
Sometimes	35	42
Often	11	38
Most of the time	7	15
Communicate if did not plan to buy	(n = 1052)	(n = 92)
Never	83	9
Sometimes	10	64
Often	2	21
Most of the time	6	7
Safety Issues		
Discuss potential adverse effects of medications	(n = 1077)	(n = 93)
Never	15	0
Sometimes	38	17
Often	23	52
Most of the time	24	30
Verifies accuracy of current drug list	(n = 1038)	(n = 94)
Never	7	23
Sometimes	13	15
Often	30	26
Most of the time	50	36
*Data are given as percentages.		

e-prescribing experience. Absolute differences in percentages of more than 5% were deemed clinically meaningful.

RESULTS

On average, participating e-prescribing practices had 2 nurses, 1 nurse practitioner, and 3 physicians in the practice. All

participating providers had approximately 45% of patients who were Medicare enrollees. **Table 1** gives the characteristics of patients. Fifty-five percent were female. For the most part, participants were long-term (≥ 5 years) patients at the practices and reported having seen more than 1 physician in the past year.

Patients' and providers' perceptions regarding communication about medication use are given in **Table 2**.

■ CLINICAL ■

■ **Table 3.** Patients' and Providers' Perceptions of Medication-related Communication by e-Prescribing Experience*

Perception	Practices Actively Using e-Prescribing (n = 29)			Practices Initiating e-Prescribing (n = 3)	
	Patient Received e-Prescription (n = 462)	Patient Did Not Receive e-Prescription (n = 445)	Provider† (n = 93)	Patient (n = 193)	Provider† (n = 3)
Adherence Issues					
Discuss importance of medication use					
Never	9	14	0	7	0
Sometimes	32	36	42	30	33
Often	27	20	38	32	33
Most of the time	32	30	20	31	33
Communicate if did not want a drug					
Never	63	71	3	74	0
Sometimes	28	21	52	19	33
Often	4	4	40	3	67
Most of the time	4	4	5	4	0
Frequency of Cost Issues					
Discuss costs					
Never	45	50	6	43	0
Sometimes	33	36	41	38	67
Often	13	7	38	14	33
Most of the time	9	7	16	5	0
Communicate if did not plan to buy					
Never	79	84	9	86	0
Sometimes	11	10	64	7	67
Often	3	2	20	2	33
Most of the time	7	4	7	5	0
Safety Issues					
Discuss potential adverse effects of medications					
Never	12	17	0	15	0
Sometimes	41	40	18	30	0
Often	21	21	53	29	33
Most of the time	26	23	29	25	67
Verifies accuracy of current drug list					
Never	5	10	23	4	...
Sometimes	12	17	15	11	...
Often	29	30	26	34	...
Most of the time	54	43	36	51	...

*Data are given as percentages. As indicated in Table 2, the total numbers of responses regarding perceptions vary because of missing data.
†Response set for providers was Never, Sometimes, Most of the Time, Always.

Relative to providers, a greater proportion of patients reported never having discussions with providers about medication use. Further, a large discrepancy existed in perceptions of how often patients tell physicians if they do not

want prescriptions written. Most patients reported that they never tell their physicians, whereas providers believed that patients would tell them if they did not want a medication. Patients more often responded that they never have

discussions about medication costs with their physicians and that they never tell their physicians if they are not planning on filling their medications, yet providers believed that such discussions often occurred with their patients. Patients' and providers' perceptions diverged on safety issues as well, with patients reporting that physicians never or sometimes discussed the potential adverse effects of medications, while providers believed that they often or most of the time had discussions about adverse effects. More so than providers, patients thought that their physicians made sure they had accurate and current drug lists at the time of visit.

Stratification by practice type (e-prescribing vs initiating e-prescribing) (Table 3) revealed that patients' perceptions of adherence-related variables and frequency of prescription cost discussions were similar regardless of practice type or receipt of an e-prescription. Relative to patients at e-prescribing practices who had received an e-prescription, patients at initiating practices more often reported that they never told their physician if they did not want a drug. Relative to patients at e-prescribing practices who had not received an e-prescription, a larger percentage of patients who said that they had received an e-prescription replied that their providers always made sure they had a current and accurate drug list on file.

DISCUSSION

Findings from our study confirm the mismatch in patients' and providers' perceptions regarding communication about medication issues in ambulatory settings and demonstrate that implementation of e-prescribing may provide needed information at the point of prescribing but in and of itself may not be a panacea. Establishing and maintaining a strong provider-patient partnership is key to reducing medication errors⁹ and to improving appropriate medication use.¹⁰ Although computer use associated with electronic medical records reportedly leads to more information exchange, education, and counseling,¹¹ the extent to which the hypothesized potential of e-prescribing is offering opportunities for earlier and enhanced clinician-patient communication about medication use has not been evaluated, to our knowledge.

Eighty-three percent of patients in our study reported that they would never tell their physician if they did not intend to fill a prescription, and physicians seemed oblivious to the extent to which this lack of communication exists. Only 1 in 5 physicians understands how much patients pay for their prescriptions.¹² Lack of communication between providers and

Take-away Points

Electronic prescribing has the potential to affect the content and structure of communication between patients and providers in the clinical setting, but our data suggest that providers may need training to assist them in incorporating e-prescribing into their practice.

- Eighty-three percent of patients in our study reported that they would never tell their physician if they did not intend to fill a prescription, and physicians seemed oblivious to the extent to which this lack of communication exists.
- Electronic prescribing can provide clinicians with information for patient education, accurate medication histories, and verification of whether patients pick up their medicines.

patients likely results in missed opportunities to identify resources to help patients at risk for underutilizing medications.¹³ Without e-prescribing, clinicians lack easily accessible information about insurance coverage. Our data suggest that providers may need additional training to assist them in incorporating this information into their practice.

Only 1 in 4 patients reported that physicians always discuss the potential adverse effects of medications, and this did not vary with e-prescribing experience. Clinicians underestimate their patients' desire for information about their treatments¹⁴ and may be reluctant to give information about possible medication adverse effects.¹⁵ Electronic prescribing did not seem to increase the frequency of such communication.

Because of study limitations, the data presented herein should be interpreted with caution. The providers in this study may not be representative of all providers practicing in ambulatory settings, as the practices included in this study are considered "early adopters" of e-prescribing. Patient responses may be overly positive because a convenience sample in the office setting was used.

CONCLUSIONS

Findings from our study suggest that e-prescribing may formalize procedures regarding accuracy verification of medication lists. However, more physicians in private practice need to consider how to change their clinical routine to best use e-prescribing, without sacrificing patient communication.

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