BARRIERS TO ELECTRONIC PRESCRIBING:

NEBRASKA PHARMACISTS' PERSPECTIVE

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EXECUTIVE SUMMARY

Electronic prescribing (e-prescribing) and its accompanying clinical decision support capabilities have been promoted as means for reducing medication error and improving efficiency and there has been a coordinated effort to increase the utilization of e-prescribing and other healthcare information technologies the United States. The objectives of this study were to identify the barriers to adoption of e-prescribing among all non-participating Nebraska pharmacies and to describe how the lack of pharmacy participation impacts the ability of physicians to meet meaningful use criteria. We used open ended questions and structured questionnaire to capture participants' responses.

Of the 23 participants, 10 (43%) reported planning to implement e-prescribing sometime in the future due to transaction fees and maintenance costs as well as demand from customers and prescribers to implement e-prescribing. Nine participants (39%) reported no intention to e-prescribe in the future citing startup costs for implementing e-prescribing, transaction fees and maintenance costs, happiness with the current system, and the lack of understanding about e-prescribing's benefits and how to implement e-prescribing.

The barriers to e-prescribing identified by both late adopters and those not willing to accept e-prescriptions were similar and were mainly initial costs and transaction fees associated with each new prescription. For some rural pharmacies, not participating in e-prescribing may be a rational business decision. To increase participation, waiving or reimbursing the transaction fees, based on demographic or financial characteristics of the pharmacy, may be warranted.

INTRODUCTION

Since the mid-1990s a great deal of emphasis has been placed on the need to reduce medication

errors. Electronic prescribing (e-prescribing) and its accompanying clinical decision support (CDS)

capabilities have been promoted as means for reducing medication error and improving efficiency.[1-4] In an attempt to realize the potential improvements in care and reductions in costs, there has been

a coordinated effort to increase the utilization of e-prescribing and other healthcare information

technologies in the United States.[5] The Office for the National Coordinator of Health Information

Technology (ONC) in the U.S. Department of Health and Human Services has been charged with

leading national efforts to use the most advanced healthcare information technology and exchange

of health information.[5-6]

The electronic transmission of prescriptions to pharmacies is an important criterion for physicians

to achieve meaningful use and qualify for the associated financial incentives.[6] Physicians,

particularly those practicing in a rural setting with a limited number of local pharmacies, will have

difficulty achieving meaningful use if those pharmacies do not accept e-prescriptions. For this

reason, the states are required by the ONC to track the percentage of pharmacies that currently

accept e-prescriptions and to establish a quarterly goal for increasing pharmacy participation.[7] To

accomplish these goals, states need an accurate list of retail pharmacies from which a numerator

and denominator can be established. Further, they need to understand the barriers to adoption of e-

prescribing in order to improve participation through education, incentives, or policy change.

In November 2011, 93% of community pharmacies nationwide were enabled to accept e-

prescription versus 89% of pharmacies in Nebraska.[Surescripts Data] In rural Nebraska counties,

the participation is even lower at 85%.[Surescripts Data] While the vast majority of pharmacies are now accepting electronic prescriptions, the barriers to adoption by the remaining pharmacies have not been systematically evaluated. The objectives of this study were to identify the barriers to adoption of e-prescribing among all non-participating Nebraska pharmacies and to describe how the lack of pharmacy participation impacts the ability of physicians to meet meaningful use criteria. A better understanding of the barriers and the impact on meaningful use may allow the policymakers to address these concerns though policy change or education.

METHODS

A list of 456 Nebraska pharmacies was obtained from the National Council for Prescription Drug Programs (NCPDP). Fifteen of those pharmacies were classified as either government or medical device manufacturers, leaving 441 retail community pharmacies according to the NCPDP classification. In addition, a list of 48 pharmacies that do not accept e-prescriptions was obtained from Surescripts (11%). Expert review (D.G.K) eliminated 11 pharmacies (23%) that were identified as duplicates and non-community serving, leaving 37 pharmacies available for structured telephone interviews (77%) (Figure1).

The study was approved by the Office of Regulatory Affairs of the University of Nebraska Medical Center. Participants were initially contacted through mailed invitation letters, then called over the telephone and invited to participate one week after mailing. Interviews were conducted over a two-week period in March of 2012. A total of 37 pharmacies were contacted over the phone. Of these, five were closed (14%), one was pending closure (3%), one was a non-community pharmacy (3%), and seven declined to participate (19%) leaving a sample of 23 pharmacies and participation rate of 77% (23 out of 30 eligible pharmacies).

Open ended questions were used to capture pharmacists' unprompted opinions. Participants were subsequently asked to select from a list of barriers to e-prescribe as read by the interviewer. These reasons included startup costs for implementing e-prescribing, lost productivity during initial implementation, transaction fees and maintenance costs, lack of demand or interest from customers and prescribers, insufficient prescription fill volume to gain efficiencies from e-prescribing, acceptable change to current workflow, access to network connectivity or expense, current system

is not working for the pharmacists or their customers, and lack of understanding about e-prescribing's benefits and how to implement it. Scripted responses in the 'intending to e-prescribe' and 'not intending to e-prescribe' groups were compared using Fisher's exact test.

Figure 1. Nebraska pharmacies that do not accept electronic prescribing – study participation flow chart
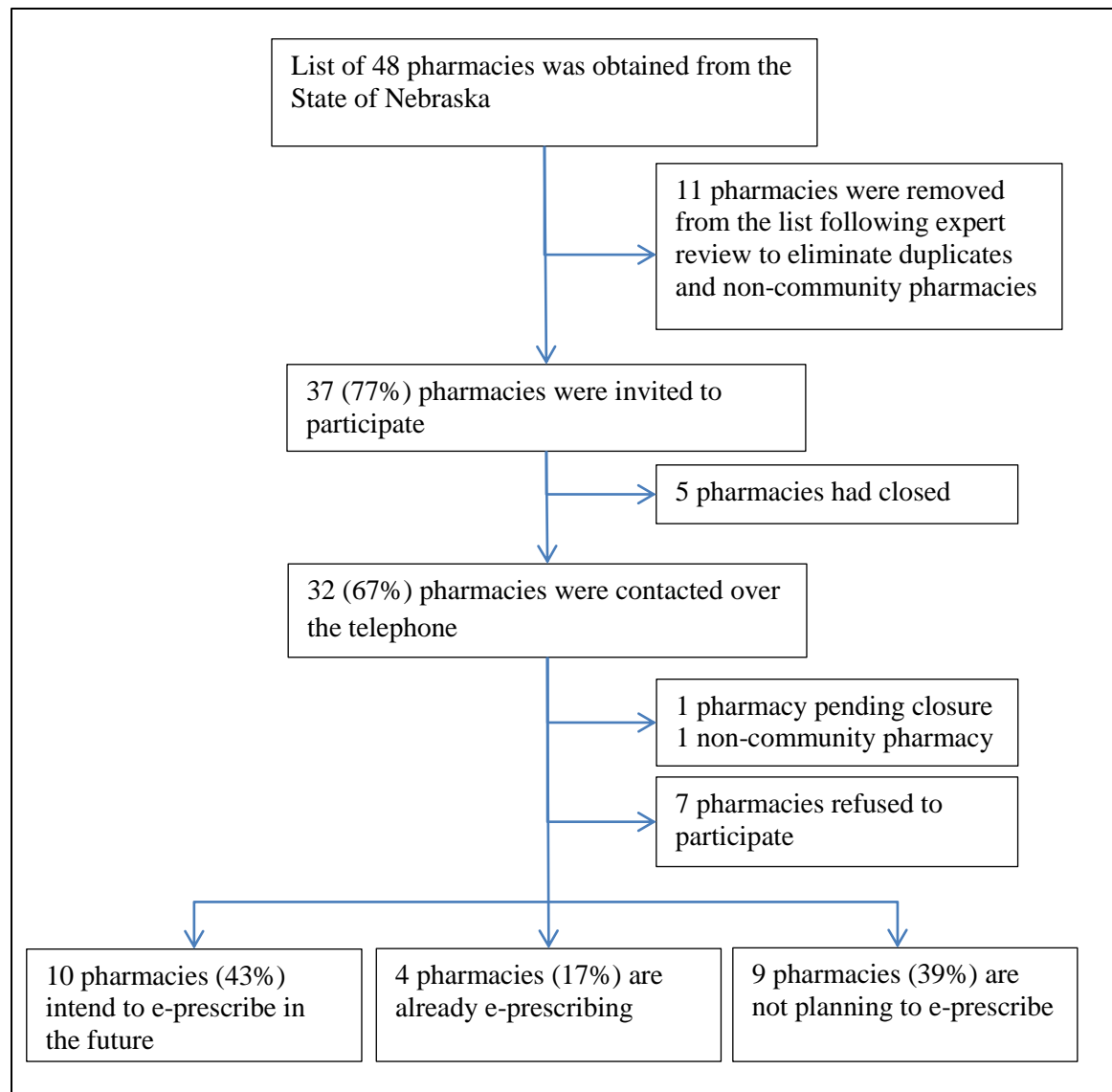
RESULTS

Of the 23 participants, 11 were pharmacists (48%), 10 owner/pharmacists (43%), and 2 pharmacy managers (9%). A total of 10 pharmacies (43%) reported planning to implement e-prescribing sometime in the future. Of these, 4 (40%) reported their intent to e-prescribe in the next 6 months. The unprompted reasons for implementing were costs (n=4), demand on behalf of the physicians (n=2), impending deadline (n=1), still receiving prescriptions over the phone (n=1), concern over usage of multiple pharmacies by one person (n=1), desire to keep up to date (n=1), concern over errors with sending and receiving (n=1), satisfaction with current practice of using fax (n=1), and lack of time to implement (n=1). Of those who intended to implement e-prescribing, transaction fees and maintenance costs was the most common barrier followed by lack of demand or interest from customers and prescribers to implement e-prescribing (Table 1).

Table 1. Barriers to e-prescribing as reported by pharmacists, Nebraska, 2012.

Scripted barriers to e-prescribe[*]	Intend to e-prescribe N=10	Do not intend to e-prescribe N=9	P-value[**]
Startup costs for implementing e-prescribing	4 (40%)	7 (78%)	0.170
Lost productivity during initial implementation	2 (20%)	4 (44%)	0.350
Transaction fees and maintenance costs	7 (70%)	7 (78%)	0.999
(Lack of) demand or interest from customers and prescribers	6 (60%)	3 (33%)	0.370
(In)sufficient prescription fill volume to gain efficiencies from e-prescribing	3 (30%)	3 (33%)	0.999
(Acceptable) change to current workflow	0	4 (44%)	**0.033**
Access to network connectivity or expense	3 (30%)	4 (44%)	0.650
Current system is (not) working for the pharmacists or their customers	1 (10%)	7 (78%)	**0.006**
(Lack of) understanding about e-prescribing's benefits and how to implement it	2 (20%)	5 (56%)	0.170

*Differences in script for those who intend and do not intend to implement e-prescribing are shown in brackets.
** Groups were compared using Fisher's exact test, significant differences are indicated in bold.

Nine pharmacists (39%) reported no intention to e-prescribe in the future. The unprompted reasons to not implement e-prescribing were cost of e-prescribing to be absorbed by the pharmacy (n=7), low profit margin (n=3), learning curve of using e-prescribing (n=3), concern with prescription errors (n=2), poor perception of e-prescribing (n=1), and concern over decrease in direct communication between physicians and pharmacists (n=1). The main scripted reasons for not implementing e-prescribing were startup costs for implementing e-prescribing, transaction fees and maintenance costs, happiness with the current system, and the lack of understanding about e-prescribing's benefits and how to implement e-prescribing.

These barriers were similar in the 'intend to e-prescribe' and 'do not intend to e-prescribe' groups with the exception of change to current workflow associated with e-prescribing implementation (0% vs. 44%, p-value 0.033) and satisfaction with the existing system (10% vs. 78%, p-value 0.006) (Table 1).

Although not statistically significant, pharmacies that expressed their intention to begin receiving e-prescriptions were more likely to have a competitor pharmacy in town (50% vs. 22% p=0.35) and were more likely to have one or more local physicians already sending e-prescriptions (70% vs. 44% p=0.37) than the pharmacies who do not intend to accept e-prescriptions (Table 2). Also, 50% of the pharmacies that intend to e-prescribe had a participating pharmacy within 10 miles, compared to 22% of pharmacies that do not intend to e-prescribe (p-value 0.35).

Table 2. Pharmacy access by e-prescribing participation, Nebraska, 2012.

Access indicator	Intend to e-prescribe N=10	Do not intend to e-prescribe N=9	P-value[*]
Number of other participating pharmacies in town, N (%)			0.35
0	5 (50%)	7 (78%)	
≥ 1	5 (50%)	2 (22%)	
Number of local e-prescribers, N (%)			0.37
0	3 (30%)	5 (56%)	
≥ 1	7 (70%)	4 (44%)	
Location of the to the nearest participating pharmacy, N (%)			0.35
< 10 miles	5 (50%)	2 (22%)	
≥ 10 miles	5 (50%)	7 (78%)	

* Groups were compared using Fisher's exact test.

DISCUSSION

A total of 18 of the 48 pharmacies (38%) listed as not accepting e-prescriptions were either not community pharmacies or were closed. Once those pharmacies were removed from the numerator and denominator, the percent participation in e-prescribing increased from 89.1% (393 participants out of 441 pharmacies) to 92.9% (393 participants out of 423 pharmacies). This 3.8% difference is important to note as states report their quarterly e-prescribing participation goals to the ONC.

The primary unsolicited barrier to accepting e-prescriptions was the transaction fee associated with each new prescription. While physicians are eligible to receive bonuses for sending e-prescriptions, pharmacies must pay for the service through transaction fees. Because most reimbursement for prescriptions and consumer co-payments are fixed by third party insurers, pharmacies cannot recover the additional fees. Some evaluations of the impact of electronic prescribing estimate that increases in pharmacy efficiency would offset this additional expense. The workflow efficiencies actually gained by small independent pharmacies with low prescription volume have not been well described. Anecdotal evidence provided to our evaluation team included reductions in efficiency related to frequent calls to the prescriber to clarify prescriptions. These instances will likely persist until prescribing and pharmacy software matures and users become more familiar with the process. While improved efficiency may lead to tangible benefits in busy pharmacies, it is unclear how a small reduction in prescription processing time will allow a low volume rural pharmacy to increase sales or decrease labor expenses.

The similar barriers to e-prescribing identified by both late adopters and those not willing to accept e-prescriptions demonstrate that the concerns are widespread. Our findings also suggest that local

competition and physician demand are likely important drivers for pharmacies to begin accepting e-prescriptions, regardless of financial or other concerns. Pharmacies who expressed a willingness to begin accepting e-prescriptions were more likely to have a local e-prescriber (70% vs. 44%) and/or have a local competitor pharmacy already accepting e-prescriptions (50% vs. 22%) compared to pharmacies who do not plan to accept e-prescriptions. At the time of this study, prescriptions sent electronically by a physician but received at the pharmacy via facsimile machine satisfied the requirements for meaningful use for physicians without incurring a transaction fee to the pharmacy. This policy likely blunts pressure that could be placed on non-participating pharmacies by physicians – especially for those pharmacies with local competitors.

We must recognize that for some rural pharmacies, the issue of non-participation is not a reflection of a recalcitrant pharmacist; rather it may be a rational business decision. The financial impact of the transaction fees on profitability in small pharmacies is unknown. The addition of a transaction fee, combined with already low prescription volume and diminishing prescription reimbursement, will reduce profitability and could lead to the closure of some rural pharmacies in areas where access to healthcare providers is already limited. Waiving or reimbursing the transaction fees based on demographic or financial characteristics of the pharmacy is one potential option to improve participation.

Similarly, allowing small independent pharmacies to use the same fee negotiated by large chain pharmacies could significantly lower the additional expense and increase participation. In the interim, allowing the prescriber to continue to receive "credit" for e-prescribing to non-participating pharmacies via fax would allow some of the benefits of e-prescribing to be realized, such as

reducing errors associated with illegible prescriptions and using the physician's clinical decision support system to reduce prescribing errors, without the pharmacy incurring the additional fees.

The Federal and State governments must also decide the value of pushing states toward 100% participation. How much time and money should be spent tracking and encouraging the few remaining pharmacies to accept e-prescriptions? One of the primary reasons to pursue 100% participation is so that every prescriber has the opportunity to meet meaningful use. If a community with a non-participating pharmacy also has at least one additional pharmacy that accepts e-prescriptions, a physician can simply choose to send electronic prescriptions to a competitor. Our study indicates that while 7 of the 9 pharmacies who do not plan on accepting e-prescriptions are the sole pharmacy in the community, 5 of those 7 pharmacies do not have a local prescriber actively sending e-prescriptions.

While dissatisfaction with transaction fees is likely a universal barrier, our other findings may not be generalizable to more urban states. The majority of pharmacies in our census were independent and located in rural settings where the numbers of prescribers and competitor pharmacies were low. The drivers for adoption and barriers to implementation may be different for pharmacies in urban settings and other states.

CONCLUSIONS

The barriers to e-prescribing identified by both late adopters and those not willing to accept e-prescriptions were similar and were mainly initial costs and transaction fees associated with each new prescription. Local competition and physician demand, however, were important determinants for pharmacies to begin accepting e-prescriptions. For some rural pharmacies, not participating in e-prescribing may be a rational business decision. To increase participation, waiving or reimbursing the transaction fees, based on demographic or financial characteristics of the pharmacy, may be warranted.

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