Comments on Research Design of the AHRQ Health IT Community Tracking Study 2009

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DEPARTMENT OF HEALTH AND HUMAN SERVICES
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Comment Request

I am a healthcare information system researcher who focuses on the social and organizational impact of clinical systems so I work primarily with qualitative methods. My work in e-prescribing dates back to 2006. I have three contributions to the e-prescribing literature (see below) and several related manuscripts in progress.

- King NE, "An Initial Exploration of Stakeholder Benefit Dependencies in Ambulatory E-Prescribing", 15th Americas Conference on Information Systems, 2009. Available by membership at http://aisel.aisnet.org/amcis2009/509
- King NE, "Overcoming Ambulatory E-prescribing Adoption Challenges: Governments Shaping Innovation On Behalf Of Individual Stakeholders", Report (unpublished manuscript), IBM Center for the Business of Government. Available at http://ssrn.com/abstract=1334653
- King NE, Christie T, Alami K, "Process Implications of E-Prescribing Information Integration Models: United States Versus a Middle East Approach", E-service Journal, Vol 5, No. 3, Summer 2007, pp. 15-37. Available at http://muse.jhu.edu/journals/eservice_journal/v005/5.3king.html

My other healthcare articles covering medication management, indoor positioning systems, and medical imaging informatics can be found on my website http://sites.google.com/site/king2know/. My comments on the proposed Health IT Community Tracking Study 2009 are based on this previous work and a limited number of interviews on some aspects of the proposed survey.

The survey fills a missing gap in the literature and provides more of an end-to-end medication management perspective that should prove fruitful. The limitations of the research approach are noted by the researchers on which I have no disagreement. My comments are directed at taking advantage of this opportunity to ask more insightful questions that dig into the socio-organizational context of e-prescribing adopters.

In general, the protocols should be looked over again to make sure they are targeted properly. Many of the questions appear to have been cut/paste and some additional tailoring would be helpful. I also suggest the protocols be pilot tested. The protocol(s) in places seems better suited to an on-line survey due to length of explanations. Some of the questions are quite long and less suited to a phone

interview. Perhaps some of the questions can be included with the cover letter. You may wish to consider prioritizing your questions because at least for your shorter interviews (30 minutes with physician) you are likely to run out of time. Some of the questions may be more amenable to a written (web-based) questionnaire that would enrich your data.

The following comments listed by protocol are not meant to be exhaustive. Some are quite specific and applicable to more than one protocol while others suggest areas of investigation that do not appear to be covered in the survey.

SPECIFIC COMMENTS

PROTOCOL 1 Practice (office) manager

Suggest clarifying "we are interviewing practices with e-prescribing that send prescriptions *directly from their e-prescribing system to pharmacies electronically, instead of by fax*." Many e-prescribing systems send electronic fax from the e-prescribing system to the pharmacy. The IT Administrator/Office Manager may not be aware of how the system is configured. All they may know is that no manual fax are sent. I had such an experience two months ago with a large healthcare organization using the EMR of a large vendor.

The protocol is quite long and will take several minutes to read. Would it not be better to send them this introductory information in advance? Then the protocol could ask if the information had been read and understood. This would allow the interviewee to have the necessary study information in hand for future reference and follow-up. The ability to follow-up, especially in the early interviews, is key to successful qualitative research.

One should also consider having some of the early questions having written responses – then you follow-up with a phone interview. This allows for pre-screening. Many of your early questions are just screening and demographic questions. There isn't much value-added by spending valuable interview time having them look up information that might already be on the website (e.g., Q.AEX.A….).

One concern I have with the research design (in general) is that you may get an incomplete response and you don't have a mechanism to replace an insufficient response from one site with another (or at least not stated in protocol).

You may need to explain "stand-alone".

Q.AEX.B.03.c might be better phrased "what percentage of …" The respondent might get defensive to say no because only 90% are using it (90% is not all).

Q.AEX.B.04. perhaps better to ask "when was the e-prescribing system last updated" (but explain what you mean – just software update or system replacement) and "when do you plan to update the system next". You can then determine the interval on your own.

Q.AEX.C.01. is a good question. Per earlier comments, I think it should be the starting point – all the previous questions could be answered in writing in advance.

Q.AEX.C.01. If surrogates are not mentioned – it should be asked. While a surprise to the AHRQ pilot study (2006/7) research teams, the existence of surrogates is well known. Pharmacists rarely speak to the physician directly. Contact me if you want some questions to ask.

Q.AEX.C.A. series and especially Q.AEX.C.A.03. You need a fallback question to elicit a response. They may not have these in mind so have trigger questions available. For example: For your typical physician, if the third party patient medication history is available (e.g., no technical issues), what would the physician need to know to trust it? Does the practice make it a priority to update the medical history or rely upon the 3rd party information. Does making this 3rd party information available to the practice make it more liable for prescribing mistakes?

Q.AEX.C.B.02. "facilitating" or inhibiting? Earlier studies show that the specific formulary information is limited.

Q.AEX.C.B.03. Again – what are the issues? Patient demands brand? Physician doesn't know much about the alternative drugs? Physician has a preferred drug for that situation? I suggest going through the literature and having a checklist of questions like this on your protocol to aid your respondent.

Q.AEX.C.C.01.a is missing.

Q.AEX.C.C. presumes the physician will use generic information. The literature suggests that most physicians prescribe brand.

Perhaps Q.AEX.C.C.01.d should be "knowing your physicians, would they access generic medication information or prefer to just name the brand (and let the pharmacy choose the appropriate generic)?

Q.AEX.C.F.01.a missing

Q.AEX.C.F.01.b missing

Q.AEX.C.F. series of questions – wouldn't this be better in the technical detail questions asked earlier?

Q.AEX.C.F.01.g Who in the practice populates the patient's choice of pharmacy?

Q.AEX.C.F.01.h What options does your e-prescribing system offer in terms of choice of pharmacy? Different pharmacy for a particular drug? No pharmacy choice (patient decides later)? Contact me for additional questions.

Q.AEX.C.F.02.a. followup – does the practice want to know about whether the patient picked up the prescription? Doesn't this introduce liability issues for the practice?

Q.AEX.C.F.02.c. Again the issue of surrogates. Who really handles these messages? Is the system configured to allow surrogates? Contact me if you wish to discuss.

Q.AEX.C.F.03.b. good question.

Q.AEX.C.F.04. I don't understand the question.

Q.AEX.C.F.05. Suggest a check list to prompt the respondent.

Q.AEX.D.02.b. missing

Q.AEX.D. There is no question on preventing prescribing error – supposedly the primary reason for pushing a multi-billion e-prescribing initiative.

Q.AEX.L.01. "issues" should be replaced by "comments". They might have good things to say or at least topics that are not issues (in their mind).

I noticed you don't ask how many prescriptions are generated nor the mix (Medicare/Medical versus demographics). This seems to be an important variable if you are asking about practice efficiency.

I don't think you have enough time allotted for the questions asked.

PROTOCOL 2 Medical officer (or physician user)

The comments in Protocol 1 apply to the related questions in this protocol. Here are additional suggestions.

A contrast should be made between lead users and the reluctant users. Presumably the medical officer willing to talk to you is a lead user. You can't ask this directly.

Suggest Q.AEX.C.00. you need to get a sense of the knowledge of the respondent about the system. Based on your Protocol 1 response, you could list the features the office manager described and confirm these are the ones in use (or at least available).

Q.AEX.C.B.02. Suggest list of facilitating factors.

Q.AEX.C.D.01.a. Does the physician have to fill in the preferred pharmacy information of the patient? If not, who does it?

Q.AEX.C.D.01.a. How does the physician decide on which pharmacy to send the prescription? How long does this take?

You don't mention medication errors.

You don't mention what the physicians are going to do with all this information that might be available to them. Contact me if you wish to discuss.

What about the patients? What is their involvement in e-prescribing?

I don't think 45 minutes is enough so you will need to eliminate questions or lengthen the time.

PROTOCOL 3 Pharmacy

The 60 minutes allotted is dis-proportionate to the time allotted to the Office Manager (Protocol 1) and Physician (Protocol 2).

Q.AEX.F.03. There may be others like store clerks or interns. Shouldn't these employees be counted? The role of the technician should be elicited as it may vary from state to state (e.g., do they enter the prescription data).

Q.AEX.F.04.a How many are Medicare/Medical patients? How many are other third party? How many are cash? The mix is important because of inference to demographics (e.g., low % medicare/medical means doctors don't have those kinds of patients either). Physician behavior has been shown to be different depending upon who they treat.

Q.AEX.G.02. As in protocol 1, ask when last updated/upgraded – when do you plan to update/upgrade.

Q.AEX.G.02.a. A question about the e-prescribing features in the installed version.

Q.AEX.G.02.c . If it doesn't have e-prescribing, what will it take (cost, resources) to upgrade. This is a pressing question ignored by most e-prescribing researchers. Also, does the vendor have it available? I've talked to some of the smaller vendors (albeit two years ago) and were hesitant to invest in software development when their pharmacies weren't interested.

Q.AEX.H.01. Make sure you can distinguish between EDI connected systems and just receiving the e-script. Two months ago at a supermarket pharmacy chain an e-script just shows up on a second window and has to be typed in.

Q.AEX.H.02.a. But you do want to know about computer-generated fax as well. This gives you an inference about the physicians they work with.

Q.AEX.H.05. An important question. Most do (upwards of 80+ %) in majority of states. So rephrase "does the pharmacy typically make a generic substitution or consult the prescribing physician about the possibility of a substitution?" into multiple questions. What % generic substitution without consulting the prescribing physician? (probably will need to ask if their state allows it if a low percentage). I suggest you use the relevant studies to phrase consistent with existing literature. In my opinion, one of most overlooked variables in studies advocating cost benefit of e-prescribing. Contact me if you wish to discuss.

You don't ask about surrogates. One question to be asked: How do you know whether the prescribing physician or their designate is the one responding? Contact me if you wish to discuss.

You don't ask anything about DDI/DAI yet pharmacists have been doing these checks electronically (albeit adjudication system) for many many years now. Contact me if you wish to discuss.

You don't mention medication errors.

You don't ask about medication history. Contact me if you wish to discuss.

You don't ask about the transaction fee paid by the pharmacy. Why would a pharmacy want to pay upwards of $1 per transmission (depending on vendor and size of chain) for the privilege of receiving an e-script and then having to retype into their system (as some do now)? Or worse – the patient doesn't show up or shows up down the street.

PROTOCOL 4 Pharmacy Association Representative

Make sure you check the Surescripts data for each of the 12 regions. The usage is highly variable by state.

The questions are similar to protocol 3 but you are interviewing the representative – so aren't you looking for the views of the association in general? Not just one site? This is confusing.

Q.AEX.I.01.b. Does it matter what site for mail order? Don't mail order pharmacies operate across state lines?

Q.AEX.I.01.c. I would ask prior to this if surveys had been done on their members.

Q.AEX.H. are these questions directed at the pharmacy of the state representative or of the association in general?

I think there is too much time allocated.

I would ask the state representative if they would be willing to administer a survey to their members. This would give your study some quantitative data to work with. There are 50,000+ pharmacies so just interviewing a few isn't going to be that helpful. Better yet, set up a web-based survey and just have the association pass on the information encouraging their members to participate.

PROTOCOL 5 – Pharmacy IT Vendor

Q.AEX.K.05. Need to be specific of which certification. Surescripts certifies various services. Half the vendors are uncertified for the important modules like DDI alerts and medication history.

Q.AEX.I.01.f. What is your transaction fee schedule charged to the pharmacy? How much does Surescripts charge you? You may not get a response on the latter. Make sure you sample a range of vendors on this question – also account for market share. We (you, me, the nation) need a weighted

average transaction (transmission) fee. I'm guessing it is around 50-75 cents on average for independent pharmacies and lower for major chains (25 cents has been mentioned in the literature) who don't have to pay a software vendor fee.

Suggest Q.AEX.K.08. Why do you think Surescripts charges you tens of cents to simply transmit an e-script but the PBMs charge cents to adjudicate a prescription?

Q.AEX.H.01. this is actually important so "briefly" may not be best. I'd ask for user manuals, process maps, UML diagrams – whatever you can get to see what options are really available. Will help you address usability if this comes up from physicians (which presumably it will). Just asking for features doesn't tell you much.

Q.AEX.H.03.b. You are assuming that the vendor can monitor all its customers and aggregate the data?

Q.AEX.L.02. doesn't make sense as most vendors sell across communities.

You don't ask about features in the vendor systems recommended in the literature (for manual prescribing) to reduce medication error (e.g., diagnosis). Contact me if you wish to discuss.

You don't ask about integration to the adjudication side of their systems.

I think you need a tech-savvy interviewer here.

PROTOCOL 6 E-prescribing vendor

Ask for screen captures, user manuals and demo versions.

You need to ask about ability to override features … what is mandatory – what is optional and can be bypassed or hidden, etc.

Look for any hidden agendas. For example, one vendor has automatically programmed a prescription to be sent to a mail-order pharmacy at the renewal time of the prescription for first usage.

Ask about usage experience of their customers. What features are used – not used. Do they know why?

You didn't ask about Surescripts and RxHub certification.

How does the system know which is cheapest among multiple generics? Prices vary by region and type of pharmacy.

I would ask permission for site visit (to help your related AHRQ study on features)

I would ask if the normal competitiveness among vendors would be put on hold for national good such as collaborating on and adopting an alert system that actually works.

PROTOCOL 7 – E-prescribing Connectivity and Content Vendor Representatives

Suggest a pointed question: Why do you charge tens of cents to simply transmit an e-script but the PBMs charge cents (around ten cents) to adjudicate a prescription?

Again ask for documentation they might provide to an IT vendor to really understand how they pass data.

Q.AEX.C.A.04. Can you share the data on how many transactions are attempted that data is incomplete when sent back to the physician?

Q.AEX.C.B.03. Can you share the data on how many transactions are attempted that data is incomplete when sent back to the physician?

Has the difference in formulary standards been resolved?

Why are e-scripts pushed from prescriber to the pharmacy? What are the implications of doing so?

PROTOCOL 8 Other E-prescribing Experts

I presume these would be implementation consultants who would have knowledge of multiple systems. It might be fair to ask them (in perfect world) what set of features borrowed from each vendor would satisfy what kind of user (realizing users are different).

PROTOCOL 9 Policy Makers

I would interview policy makers once you have some feedback from other stakeholders. There are likely issues raised by respondents that should be addressed at the state/national level. My report prepared for the IBM Center for Business of Government http://ssrn.com/abstract=1334653 raises some of these policy level issues such as incentive strategies. It is two years old so the specifics might have changed but raise broader issues than those covered by comments to this proposed research. I suggest the report be read as I also point out the diversity of stakeholders which is something that needs to be addressed at some point.

COVER LETTERS

As suggested earlier, since you are already sending a cover letter, ask them your demographic and system questions. You may get a response on those but not willing to be interviewed.

Also clarify “instead of by fax” as it is ambiguous whether electronic fax sent from an e-prescribing system counts.

Also reconsider the time allotted for your questions – again I would do a pilot before sending out all the letters.

GENERAL THOUGHTS

When it comes to adopting new systems, we need to understand what is being done with the existing systems (e.g., manual prescribing with electronic adjudication). We need to ask the question from the stakeholders investing in a new system: "What's in it for me?" I raise some of these questions in the previous section (Specific Comments). For example, why would a pharmacist pay upwards of $1 for receiving an e-script that has to be retyped anyway due to system incompatibility?

I move on to a system-oriented suggestion. The survey doesn't address the broader issue of the allocation of benefits among e-prescribing stakeholders which is why I suggest a 9th protocol to interview policy makers. E-prescribing systems are really just one element of a broader medication management system. Fundamentally, most benefits of a fully implemented e-prescribing system, greater use of generics and reduced medication errors, accrues to the payers. To encourage adoption, the imbalance must be addressed and the system made usable. One such example is the ability of Drug-to-Drug Interaction (DDI) alert modules to detect a high payoff interaction. It seems little progress has been made over the years as the recent Weingart et al (2009) study shows. Does it make sense for the prescribing physician to deal with 331 alerts so that one adverse drug event (ADE) can be prevented? Perhaps so. Then why not pool our efforts and develop a single effective DDI module to be used by all e-prescribing (and pharmacy) systems? But perhaps it would be better for the "system" that pharmacists, with greater knowledge of DDI, be given more patient information (e.g., diagnosis not currently included on a prescription) and increase their ability to prevent ADE. These are the types of questions that I have been thinking about and hope the AHRQ Health IT Community Tracking Study 2009 will raise.

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