Private Health Plans Perspectives: Electronic Personal Health Records and Electronic Prescribing

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**Background:** Patients, payers, public health researchers, medical economists, and policymakers have all called for aggressive deployment of information technologies to support the management of health records and prescriptions. In response, payers of all types have been making investments in electronic systems.

**Objectives:** To understand, analyze, and quantify current private payer involvement in electronic personal health records and electronic prescribing development and implementation.

**Methods:** A web-based survey involving 62 private commercial payer respondents representing more than 80 million covered lives and 16 national plans.

**Results:** Responses showed relatively high rates of implementation of electronic personal health records among respondents (20 currently and 9 in the next 24 months), but a unanimity of agreement of disappointing plan members’ utilization of these systems. Implementation rates of electronic prescribing systems are even higher. More than half of the respondents reported utilization rates below 10%.

**Conclusion:** The disappointing results with the implementations of electronic systems are most likely the result of variables exogenous to the technologies themselves. The low utilization of electronic prescribing is most likely related to the general lack of penetration of information technology into the work flow of most prescriber offices.

**Electronic Personal Health Records**

e-PHRs allow patients to capture, view, store, and share information about their healthcare. In addition, e-PHRs are “more than just static repositories for patient data; they combine data, knowledge, and software tools, which help patients to become active participants in their own care.” In December 2006, the Markle Foundation issued a press release with the results of a survey showing that consumers perceive e-PHRs as...
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important tools in decreasing medical errors and costly repeat procedures that result in increased quality of patient care.4 The survey also showed that 8 of 10 Americans are concerned about their health data being used in inappropriate ways without their permission. Ultimately, survey results suggested that while Americans are enthusiastic about e-PHRs, security concerns must be addressed for such technologies to be adopted by consumers.5 These findings from the Markle Foundation set the stage for the current study.

Services related to e-PHRs are continuing to emerge in the market. The primary reason is the growing healthcare consumer demand for connectivity, information access, and electronic communications that are currently standard offerings in many other sectors of the economy.1 In addition, patient financial exposure to an increasing share of medical costs is expanding.6 As a result, these increased costs to the patient are driving the demand for access to information about the comparative cost and quality of care.1

A call by both presidential candidates to decrease the overall cost of healthcare to Americans by adopting technologies to realize savings was a key issue in the 2008 presidential elections. Further, the launch by health plans of online PHR systems, and their promotion of these plans for member retention and as marketing tools, has motivated commercial payers to begin to invest and innovate in this area. Finally, the launch by Google Health and Microsoft Health Vault of competing personal health information systems that allow consumers to manage their own health data, independent of the systems available from their health plans, have brought additional demand from consumers to have access to e-PHR technologies and services.

**Electronic Prescribing**

e-Prescribing involves technologies that allow prescribers to electronically send prescriptions directly to a pharmacy. The Centers for Medicare & Medicaid Services defines e-Prescribing as, “the transmission, using electronic media, of prescription or prescription-related information between a prescriber, dispenser, pharmacy benefit manager, or health plan, either directly or through an intermediary, including an e-Prescribing network. e-Prescribing includes, but is not limited to, 2-way transmissions between the point of care and the dispenser.”1 This definition has provided guidance to payers as they continue to develop, adopt, and implement e-Prescribing technologies for prescribers.

To learn more about how private payers are participating in the development and implementation of e-PHRs and e-Prescribing technologies, Lash Group, a firm focused on patient access issues, commissioned Xcenda, a healthcare consulting firm, to conduct a web-based survey with members of Managed Care Network (MCN) in October 2008. MCN is composed of more than 100 key medical and pharmacy directors from national and regional managed care organizations across the United States. More than 100 MCN members were invited via an e-mail to participate in the survey created by the authors of this article. The response rate was approximately 62%. Data from the online survey were analyzed by consultants at Xcenda. These data form the basis for this article.

**Participant Demographics**

A total of 62 (of more than 100) private payers representing more than 80 million covered lives and 16 national plans responded to the survey. Although respondents could select more than 1 response to characterize their health plan, the plans with the highest representation were:

- Commercial (33)
- Medicare Advantage (23)
- Managed Medicaid (16).

The remaining participants described themselves as integrated healthcare (13); Medicare prescription drug plan (13); pharmacy benefit manager (5); and traditional Medicaid (4).

**Figure 1** represents the geographic coverage of the plan participants.

Nearly 94% (58) of the respondents indicated that they were members of the health plan’s P&T Committee. Additional job functions included pharmacy

**KEY POINTS**

- Investing in e-Prescribing and e-PHR systems is costly but has the potential to improve the delivery of care and reduce healthcare costs.
- This survey of 62 commercial payers representing >80 million covered lives investigated payers’ current and potential level of implementation of these electronic systems in their respective plans.
- Responses showed relatively high rates of implementation of health information technology: 20 payers have already implemented such systems and 9 payers will be doing so in the next 24 months.
- However, this survey also reveals a unanimously low level of plan members’ utilization of these systems. More than half of the respondents reported utilization rates below 10%.
operations (38); medical management (16); policy development (3); provider relations (2); and other, including pharmaceutical managed care consultants and formulary management (3).

Results

Respondents were asked to think about any type of e-tool currently in use by their health plan members. The survey question was worded as follows: “Think for a moment about any type of ‘e-tool’ currently in use by your health plan members. Please estimate the percentage of current members who use any type of health plan ‘e-tool’ that might be available to them.” In this context, “e-tool” was defined as any health plan educational tool that is available in electronic form to the members of the plan. They were then asked to estimate the percentage of current members who use any type of health plan e-tool that might be available to them. Of the 62 respondents, 32 estimated that between 1% and 25% of their current members used some type of health plan e-tool that was available to them, while 13 participants estimated that between 26% and 50% of participants use some type of e-tools. Eleven participants estimated that between 51% and 100% of their members used e-tools, while 6 plans estimated that there was no use of any e-tools by their members.

The survey reflected that 59 payers (95%) felt that the overall effect of a member’s use of e-PHRs would be positive for both the member and for the health plan. In addition, 46 payers agreed or strongly agreed that e-PHRs can be effective in managing plan members’ medical treatment and overall health status. Forty-eight of the payers in the survey felt that e-PHRs provided improvements in 2 key areas: (1) the overall quality of the member’s medical care, and (2) the ability to communicate with providers. In addition, 26 payers also felt that improvements in the overall health status of the member could be realized.

Payers also perceived risks associated with health plan implementation of e-PHRs. Table 1 sets forth a summary of these potential risks. Specifically, 30 payers were concerned with liability for privacy and security breaches. Other areas of concern included the potential for increased risk of liability if network providers fail to access or use the information in a member’s e-PHR, increased risk of liability for missing information that adversely affects a member’s medical care, and increased conflict with network providers because of the release of the information to their patients.

Currently, 20 of the respondent’s plans offer some form of e-PHR access to their members. Of the remaining 42 plans, 9 indicated that they planned to do so within the next 24 months. The major factors that are motivating payer decision-making in providing e-PHR tools to members include benefits related to quality of
care and preventive health.

For the 20 payers that do offer e-PHRs, the cost of implementing e-PHR access was not a major factor. These payers also answered a question related to whether their health plan implemented an e-PHR as a part of its marketing and member retention strategy, 10 payers agreed; however, adoption rates were relatively low, with 2 payers indicating that 31% or more of their current members access their e-PHR at least once every 60 days. As may be expected, all 20 payers who provided e-PHR access were disappointed by the low amount of member use of the e-PHR system.

The total group of 62 respondents divided into 2 cohorts. The first cohort, consisting of 46 payers, included plans that support or promote e-Prescribing directly or indirectly. The second cohort, consisting of 16 payers, included plans that do not currently support or promote e-Prescribing. Taken collectively, these results indicate that payer adoption of e-Prescribing is further along than e-PHRs.

Many of the plans that had more than 300,000 covered lives have already funded and implemented e-Prescribing systems. The major reasons for implementing e-Prescribing included improved formulary compliance and reduced medication errors. These improvements translate into a high return on investment for payers that implement e-Prescribing platforms. Of plans in the first cohort with e-Prescribing platforms, 37 primarily used the system to direct providers to preferred drugs within the therapeutic class. In addition, 29 plans with e-Prescribing platforms use the system to check for potential drug contraindications.

Of the 16 plans in the second cohort that currently do not offer e-Prescribing, 6 payers plan to do so in the next 24 months. Within this cohort, 8 payers rated the most important reason for implementing e-Prescribing as reduced medication errors, followed by improved formulary compliance (3 payers) and increased therapeutic and/or generic substitution rates (3 payers). Direction of a greater percentage of total prescriptions to preferred fulfillment channels (e.g., mail-order, network pharmacies) was rated as being most important for 2 payers in this subset. Figure 2 compares the importance ratings for e-Prescribing of the 2 cohorts.

Both cohorts were asked what effect an e-Prescribing system would have on the reimbursement status of drugs currently covered under the medical benefit (Table 2). Of the 46 payers with e-Prescribing systems, 31 felt that the system allows them to narrow coverage for drugs within a class. For example, this may occur because of the opportunity to more closely monitor utilization of these types of drugs. Similarly, of the 16 payers without an e-Prescribing system, 13 felt that an e-Prescribing system would allow them to narrow coverage for drugs. Conversely, when both cohorts were asked if an e-Prescribing system might expand coverage for more drugs within a class because of the automation of prior authorization and greater opportunities with exceptions documentation, the percentages were smaller. In the first cohort, 6 payers thought that coverage might expand, and in the second cohort only 3 payers thought that an e-Prescribing system would allow for an expansion of coverage.

In addition, the cohort without e-Prescribing was asked what effect an e-Prescribing system might have on the utilization of specialty drugs covered under the pharmacy benefit. For this question, respondents were permitted to check all answers that applied to their plan. Of the 16 payers in this cohort, 14 believed that the system would be used to direct providers to the preferred drugs within the therapeutic class; 12 suggested that the e-Prescribing system would be used to automate prior authorization and other administrative processes; 11 thought the system would be used to check for potential contraindications for these and other drugs that the patient is taking; and 9 said that the system would be used to channel fulfillment to preferred distributors.

The 46 payers with e-Prescribing were asked about
the impact of the system from a technologic, economic, and provider relations standpoint (Table 3). Results of the respective ratings of the technologic impact of implementing and/or promoting an e-Prescribing system to their organization were bimodal; 22 payers (48%) reported a significant impact and 16 payers (35%) reported a minor impact. Similarly, the implementation of the technology was viewed as largely positive to their organizations, with 19 payers reporting positive or very positive effects. Finally, payers reported that the effect of the technology implementation to their organization was as anticipated, with the same 19 payers reporting expected effects or just as expected effects, and only a few unexpected. Economic impacts were minor and as expected. Only 6 payers indicated an unexpected or minor influence. The impact on the health plan provider relations varied, with plans reporting major and minor influences; however, the impact was positive and in line with plan expectations.

Although most respondents were neutral about goal achievement for their e-Prescribing initiative, 32 indicated that implementation or promotion of an e-Prescribing system had helped their health plan achieve its pharmacy management goals.

Although the survey responses from both cohorts indicated that e-Prescribing is viewed as a valued resource by 46 (74%) of the payers, the frequency of prescriber use of a plan’s e-Prescribing capabilities was relatively low. More than 50% of respondents indicated that less than 10% of prescribers accessed the e-Prescribing system at least once every 60 days. Data reflected an overall disappointment by payers relative to the low prescriber use of e-Prescribing in their plans.

Discussion

Payers responding to our survey indicated that the greatest perceived benefit of e-PHR was improvements in the quality of members’ medical care. In addition, they recognized the benefit for members to be able to communicate with their providers and participate in the management of their overall health status. Quality of care and preventive health benefits were the major factors in payers’ decisions to provide e-PHR to members. Cost was not a major factor in the decision-making process; however, utilization of these tools remains low.

The findings related to low member utilization are consistent with the Markle Foundation’s survey that was conducted in 2006. That survey highlighted the concern of Americans about the possible inappropriate use of their health information. Based on the data from our survey, one explanation for the low utilization is a continued concern by members about the privacy of their health records. Despite optimism that e-PHR could give physicians access to a more complete picture of the patient’s health, it is not clear what type of e-PHR will be accepted by the public as a standard. Although some forms of e-PHR are populated by the patient, others integrate with claims data from the health plan. In either case, many argue that it is necessary for the government to set standards for privacy and data standards before the public will have sufficient trust in using e-PHR as a tool.

In addition, there continues to be limited access to computers and the Internet by the patients that could benefit the most from an e-PHR, including Medicare-aged patients. Programs are under way to ameliorate this problem through the use of improved connectivity and accessibility, such as the use of cell phones for e-PHR and disease management, decisions regarding

Table 2
Effect of e-Prescribing on Reimbursement of Drugs under Medical Benefit

<table>
<thead>
<tr>
<th>Effects of e-Prescribing system</th>
<th>Cohort 1 (n = 46)</th>
<th>Cohort 2 (n = 16)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The system would allow us to narrow coverage for drugs within a class (eg, because of the ability to closely monitor drug utilization)</td>
<td>31</td>
<td>13</td>
</tr>
<tr>
<td>I do not know</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>The system would allow us to expand coverage for more drugs within a class (eg, because of automation of prior authorization and more opportunities for exceptions documentation)</td>
<td>6</td>
<td>3</td>
</tr>
</tbody>
</table>

Some of the most successful examples of implemented e-PHRs have occurred in group practices where patients have access to e-PHRs that mirror their physician’s electronic medical records.
Table 3  Technologic, Economic, and Provider Relations Impact Implementation of e-Prescribing

<table>
<thead>
<tr>
<th>1. Technologic Impact</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Description (n = 46)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a. On a scale of 1-5, with 5 representing a very major impact, how would you rate the technologic impact of implementing and/or promoting an e-Prescribing system on your organization?</td>
<td>22% (10)</td>
<td>13% (6)</td>
<td>17% (8)</td>
<td>39% (18)</td>
<td>9% (4)</td>
<td>Impact was bimodal: 48% reported significant impact, 35% reported minor influence; mean = 3.0</td>
</tr>
<tr>
<td>1b. On a scale of 1-5, with 5 representing a very positive impact, how would you rate the technologic impact of implementing and/or promoting an e-Prescribing system on your organization?</td>
<td>0% (0)</td>
<td>9% (4)</td>
<td>50% (23)</td>
<td>33% (15)</td>
<td>9% (4)</td>
<td>Impact mostly positive: 40% reported positive/very positive effects, few negatives; mean = 3.4</td>
</tr>
<tr>
<td>1c. On a scale of 1-5, with 5 representing the exact impact you expected, how would you rate the technologic impact of implementing and/or promoting an e-Prescribing system on your organization?</td>
<td>0% (0)</td>
<td>11% (5)</td>
<td>48% (22)</td>
<td>33% (15)</td>
<td>9% (4)</td>
<td>Impact was largely as anticipated: 40% reported expected/just as expected effects, a few unexpected; mean = 3.4</td>
</tr>
</tbody>
</table>

| 2. Economic Impact | |
|---------------------|---|---|---|---|---|---|
| 2a. On a scale of 1-5, with 5 representing a major impact, how would you rate the economic impact of implementing and/or promoting an e-Prescribing system on your organization? | 24% (11) | 17% (8) | 33% (15) | 20% (9) | 7% (3) | Economic impact on health plan largely mild or minor influence; mean = 2.7 |
| 2b. On a scale of 1-5, with 5 representing a very positive impact, would you rate the economic impact of implementing and/or promoting an e-Prescribing system to your organization? | 0% (0) | 15% (7) | 63% (29) | 22% (10) | 0% (0) | Economic impact on health plan close to neutral; mean = 3.1 |
| 2c. On a scale of 1-5, with 5 representing the exact impact you expected, how would you rate the economic impact of implementing and/or promoting an e-Prescribing system on your organization? | 0% (0) | 13% (6) | 52% (24) | 30% (14) | 4% (2) | Economic impact on health plan largely as expected, only 13% indicated unanticipated minor influence; mean = 3.3 |

| 3. Provider Relations Impact | |
|-----------------------------|---|---|---|---|---|---|
| 3a. On a scale of 1-5, with 5 representing a very major impact, how would you rate the impact of implementing and/or promoting an e-Prescribing system on provider relations for your organization? | 13% (6) | 17% (8) | 39% (18) | 26% (12) | 4% (2) | Impact on the health plan provider relations was varied with plans reporting both major and minor influence; mean = 2.9 |
| 3b. On a scale of 1-5, with 5 representing a very positive impact, how would you rate the impact of implementing and/or promoting an e-Prescribing system on provider relations for your organization? | 0% (0) | 9% (4) | 52% (24) | 35% (16) | 4% (2) | Impact on health plan provider relations mostly positive, few negative impacts; mean = 3.3 |
| 3c. On a scale of 1-5, with 5 representing the exact impact you expected, how would you rate the impact of implementing and/or promoting an e-Prescribing system on provider relations for your organization? | 0% (0) | 17% (8) | 41% (19) | 37% (17) | 4% (2) | Impact on health plan provider relations in line with plan expectations, only 17% reported somewhat unexpected effects; mean = 3.3 |

what elements should be part of an e-PHR, and how this can relate to improved compliance and utilization. Some of the most successful examples of implemented e-PHRs have occurred in group practices where patients have access to e-PHRs that mirror their physician’s electronic medical records. Payers had a greater adoption rate of e-Prescribing systems than e-PHRs. Respondents believed that the benefits of e-Prescribing include fewer medication errors, better control of possible contraindications,
Although incentives are one way of encouraging a specific behavior, assistance with education and integration with office workflows should be considered as additional means to help providers adopt e-Prescribing technologies.

As with e-PHR utilization, payers were similarly disappointed that the frequency of prescriber use of their plan’s e-Prescribing capabilities was relatively low. It is foreseeable that as plans begin to manage drugs covered within the pharmacy and medical benefits with greater scrutiny, prescribers will adopt this technology at a greater rate. Currently, low adoption of e-Prescribing by prescribers may be explained by the significant financial burden of investing in the necessary hardware and software to integrate e-Prescribing with their existing practice management systems. Examples of additional costs to prescribers include training costs, maintenance fees, and upgrade costs. Another barrier involves prescriptions for controlled substances, which may not be transmitted electronically. As a result of these barriers, adoption rates currently appear to be low among survey respondents.

Both the government and private insurers have put a plan in place to create incentives for e-Prescribing adoption and use. Under the Medicare Improvements for Patients and Providers Act of 2008, “Medicare will provide incentive payments to eligible physicians who meet an annual threshold of e-Prescribing and patient volume.” Private insurers are giving away e-Prescribing software to encourage provider uptake and use. Although incentives are one way of encouraging a specific behavior, assistance with education and integration with office workflows should be considered as additional means to help providers adopt e-Prescribing technologies. Ultimately, as technology becomes more affordable, and the ability to integrate existing systems becomes easier, it is foreseeable that workflows will change, the adoption rates will increase, and prescriber utilization of e-Prescribing systems will likely improve.

Conclusion
There is no doubt that healthcare consumer demand is growing for connectivity, information access, and electronic communications. Similarly, payers are looking for ways to improve formulary compliance and reduce medication errors. e-PHR is an example of a technology that plans are developing to help patients make decisions about their healthcare based on cost and quality measures. Similarly, e-Prescribing technologies are being developed by payers to help physicians send prescriptions electronically to pharmacies. The intent of these technologies is positive for patients, physicians, and payers, but hurdles related to data security remain. It will be important for payers to provide confidence to plan members that their data will not be shared inappropriately. Similarly, the cost to providers of implementing new systems will need to be managed carefully to encourage adoption and routine utilization of the technology.

References
The use of health information technology (HIT) is definitely being embraced by health plans. In this article, we learn that a significant number of health plans have made major investments in electronic personal health records (e-PHRs) and electronic (e-Prescribing). Plans recognize that this costly investment has the potential to improve the delivery of healthcare and are willing to underwrite the cost of these systems as an investment in the future.

e-PHRs have the potential to allow members to view and share their records with multiple providers, allowing members to interact more effectively and more accurately with providers. Yet, from the survey in this article we learn that the utilization of these systems by plan members remains relatively low, at less than 10%. Although the reasons for this low utilization may vary from lack of connectivity for some population segments to lack of interest by others, privacy is still a major concern for the public. Patients are concerned about who can access their records, and for what purposes. However, privacy concern is not the sole reason for slow adoption of these records. In the past, medical record keeping has been viewed as a process external to the patient; the doctor or hospital has been responsible for managing these records. Until patients understand the value of having access to medical information, and until that value is demonstrated to them by improved encounters with the system, patients are unlikely to take an active interest in e-PHRs.

The survey also shows that despite almost universal availability of e-Prescribing in major health plans, providers have been slow to adopt this technology. Like the patients they serve, doctors have not yet learned how to incorporate this technology into their practice routines effectively. They, too, will need to better understand the benefits of this technology, and how it can improve care by reducing errors and minimizing drug-drug interactions before adopting e-Prescribing into their daily routine.

The intent is clearly to move the healthcare system toward increased use of HIT, and the benefits are obvious. What is not yet clear is how to get providers and patients to adopt these systems. Plans will need to actively promote the benefits and outcomes of using HIT to their members and providers to ultimately reap the benefits of this technology. Like all new things, change often comes slowly; sometimes the pace of that change is frustrating to its leaders. But we have crossed the bridge to the electronic era in medicine, and we now will need to continue to find innovative ways to increase adoption of these systems. Although we are not quite there yet, continued investment in HIT, coupled with reassurance about its benefits, will allow us to continue to move forward.

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