Electronic prescriptions and disruptions to the jurisdiction of community pharmacists

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ABSTRACT

The practice of community pharmacists is being challenged by the appearance of electronic prescription (e-Rx) technology. This article examines the disruptions caused by e-Rx technology to the jurisdiction of community pharmacists based on a model developed from work by Abbott (1988). The main disruptions to professional activities were investigated by qualitative methods in a series of interviews with pharmacists and physicians separated in two groups: practitioners who tested a typical e-Rx technology and stakeholders involved in the implementation of this large-scale e-Rx project in Quebec, Canada. The findings suggest that the technology may disrupt the jurisdiction of community pharmacists, mainly by changing the distribution of information among physicians and community pharmacists. More specifically, the technology represents both a threat to community pharmacists – by supporting the dominant position held by physicians if it gives them access to information held exclusively by pharmacists – and an opportunity – by redistributing information to the pharmacists’ benefit, allowing them to improve the quality of their inferences about medication. However, it would appear that the opportunities offered by the technology generate concerns and tensions, both between physicians and pharmacists and between the pharmacists themselves. This phenomenon may well work against the implementation and use of available tools.

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Introduction

Electronic prescription (e-Rx) technologies promise to improve the quality of drug utilization, particularly in outpatient settings, where patients use many drugs for long periods of time (Eslami, Abu-Hanna, & de Keizer, 2007). The term “e-Rx technologies” covers a range of functions, but it basically refers to the use of a computer-based tool to prescribe medication and electronically transfer the prescription to pharmacists (Wang et al., 2005). The technology makes it possible to combine the act of prescribing with the exception of some European countries such as Sweden, the Netherlands and the United Kingdom. For example, in the USA in 2009, only 12%–18% of all prescriptions written were sent electronically (Surescript, 2010).

In order to better understand the link between the introduction of an information technology (IT) and its use in practice settings, it is important to examine not only the technical challenges raised during implementation but also all the disruptions generated by the technology. The technology’s potential to disturb work and users’ roles exceeds deterministic forecasts, particularly in health, where professionals are constantly negotiating in order to stabilize the barriers between their respective jurisdictions. The sociological literature underscores how negotiating professional roles and respective territories represent a major challenge (Strauss, Schatzman, Ehrlich, Bucher, & Sabshin, 1963). The research in health has mainly examined physicians, due to their traditionally dominant status (Freidson, 1970; Nancarrow & Borthwick, 2005).
This status may be tested or threatened through the efforts of other health workers (Charles-Jones, Latimer, & May, 2003; Hartley, 2002) such as nurses (Salhani & Coutier, 2009) and pharmacists (Weiss & Sutton, 2009) as they seek to expand their respective jurisdictions. Some researchers have examined how IT can disturb work and the jurisdiction of physicians (Berg, 1998; Heath, Luff, & Svensson, 2003; McLoughlin & Webster, 1998), but very few studies have shed light on other professional groups. In medical informatics, some studies have examined the influence of IT on collaboration and coordination between physicians and other professionals, mainly in hospital settings (Aarts, Ash, & Berg, 2007; Ash et al., 2007; Beuscart-Zephir et al., 2005). Few investigators have examined ambulatory care, where organizational boundaries are more vague and the contacts between professionals are less intense. In ambulatory settings, studies on e-Rx have mainly dealt with physicians’ perceptions of the technology, with the goal of achieving better implementations and more widespread use (Crosson et al., 2008; Hellstrom et al., 2009; Wang et al., 2009; Weingart et al., 2009). Overall, few researchers have investigated the effects of e-Rx on the work of community pharmacists (Astrand, Montellius, Petersson, & Ekedahl, 2009; Warholak & Rupp, 2009). Our study seeks to develop a better understanding of how an e-Rx technology disrupts the jurisdiction of community pharmacists by examining disruptions to the work of the physicians and pharmacists who are likely to use it. This issue is quite important, since community pharmacists try to consolidate their legitimacy as specialists in the use of medication by claiming new rights, such as the right to prescribe medication and adjust dosages in a treatment already underway (Emmerton, Marriott, Bessell, Nissen, & Dean, 2005; McKnight & Thomason, 2009). This study examines this unstable environment and attempts to identify the role that e-Rx may play in the transformations currently underway in community pharmacy.

Background

Since 2002, several major projects have been undertaken in Canada so that new IT can play a greater role in optimizing the safe and effective use of medications. In 2005, Quebec’s department of health and social services (QHSS) began a $600 million project to create an electronic health record for the entire population (7 million people). This record will be accessible to all health professionals over the Internet. It will have five types of data, including drugs, laboratories and radiological images, maintained in regional clinical data warehouses. The warehouses will be supplied with data held by health organizations and/or health professionals. The QHSS team began by giving priority to the construction of a warehouse for data on drugs, in order to quickly develop effective use of medications. In 2005, Quebec created an e-Rx warehouse, and electronic transfer of prescriptions. Participating physicians had access to a database containing all available information on their patients’ actual use of medication. As physicians wrote prescriptions, expert software applications suggested drugs and/or doses and instructions, and checked the patient’s record to identify potential problems. In addition, the physician was obliged to enter the therapeutic indication for each prescribed medication so that drug–disease interactions could be checked. Then two copies of the prescription were printed (one for the patient and one for the doctor’s file), and the prescription was sent electronically to the warehouse where the data was secured. When the patient arrived at their pharmacy, the participating pharmacist could download the prescription into their local system using a code printed on the paper copy. No electronically transmitted fax was possible with this system. A total of 45% of e-prescriptions were electronically retrieved by the participating pharmacies during the pilot project (25).

The analysis in this study is based on a model borrowed from the sociology of professions. This model, adapted from Abbott (Abbott, 1988), explains how professional jurisdictions can be changed through contact with a technological innovation. Abbott sees change in professions as a system in which occupational groups addressing the same problems compete as a way to negotiate the roles that each will play. He suggests that this competition occurs through constant interaction between individuals in practice settings, people performing different tasks whose legitimacy must be recognized more or less formally. Any disruption in the professionals’ approaches will challenge the limits of jurisdictional barriers through the opportunities it affords and how professionals seize upon these opportunities in their daily work, actions and claims.

Method

Given the exploratory nature of this study, a qualitative design was chosen. Participants were selected iteratively through purposive sampling performed in two phases: (1) users of e-Rx technologies (community pharmacists and GP), here called the practitioners; and (2) members of the pharmacy and medical professions who occupied strategic positions and were involved in the implementation of the provincial drug project (the stakeholders). These two groups of actors (practitioners and stakeholders) were selected in order to identify the disruptions provoked by arrival of the technology at the practice level (what it allows professionals to do) and at the level of discourse as well as the opportunities it generates in terms of the jurisdiction of community pharmacists.

The MOXXI project was chosen for the first phase on the basis that this technology represents a model of the provincial project. The pharmacists participating in the MOXXI project were contacted by telephone and asked to participate. The researchers contacted the physicians who were the most active users of the technology and who practiced at the same places as the pharmacists in the study. The data was collected through open, semi-directed interviews until data saturation, for a total of 21 interviews (14 with community pharmacists and 7 with GP) conducted from July until October 2006 (the last electronic prescription was sent in March 2006). The interviews lasted between 30 and 60 min. The interview guide consisted of open questions on three general topics: (a) the actual and ideal roles of community pharmacists, (b) participants’ experience and expectations with the MOXXI technology, and (c) relationships between community pharmacists and GP.

For the second phase, respondents were selected through purposive sampling based on their occupying strategic positions in
groups that exercise significant influence over the work of community pharmacists. The commercial actors in the sample (one officer from each of the five largest pharmacy chains in Quebec, representing 75% of Quebec’s pharmacies and representative of the pharmacy owners’ association) help define the work of community pharmacists by allocating resources and negotiating agreements with the government. In contrast, the academic actors (professors in institutional positions) develop the content of training for future pharmacists and help build their identity. The researchers also interviewed persons occupying strategic functions in professional medical associations in order to capture the reaction of the dominant profession. In all, 12 stakeholders were met for interviews lasting 40–90 min. The interview guide consisted of open questions on the following topics: (a) the actual and ideal roles of community pharmacists, (b) participants’ expectations on the development and use of information technology for medication management, and (c) perceptions of the provincial project. The study was approved by the Ethics Committee of the Université de Montréal.

The interviews were recorded, and complete verbatim transcripts were produced. Two interviewees from the stakeholder groups preferred not to have their interviews recorded but nevertheless agreed to participate. For each of these two interviews, a complete report was drafted immediately after the interview, and the notes taken during the interview were compiled. This data and the verbatim transcripts of the other interviews were analyzed using a grounded theory approach. First an inductive content analysis was performed using ATLAS.Ti software for coding. The codebook was developed following Patton (2002): codes were defined based on our topic guide and our initial reading of the interviews. Additional codes were added during the coding procedure as required. We checked the consistency of the codebook by following the instructions with several coding, in which the researcher validates code consistency by reading all the quotes associated with a specific code. Then the codes were merged into categories that appeared compatible with Abbott’s model. For analysis, Abbott suggests describing jurisdictions in terms of three modalities of action used by professionals: the diagnosis of a problem, the inferences made about this problem, and the treatment of the problem (see Table 1). These categories provide a model that can be used to analyze the disruptions created by an e-Rx technology on the modalities of action of community pharmacists and GP. Hence, comparative tables were created using Abbott’s model (see Table 1) and the complete interviews were analyzed again using these tables for a final validation of the classification.

Results
All three forms of action by professionals, physicians and pharmacists were disturbed by the functions of the new technology (Table 2). Our results suggest that these disruptions arose through two mechanisms: the distribution of information and the computerization of prescription entry and transfer.

Disruptions in the distribution of information
The principal disruption of e-Rx technology to the work of pharmacists and physicians was related to changes in the distribution of information, i.e. the professionals’ diagnosis and infer activities. More specifically, two types of information on drug management may be redistributed with the technology: information on the patient and information on the medication. In both cases, the physicians and the pharmacists stood to benefit.

Distribution of information to the benefit of the physician
The technology allows physicians to consult the patient’s complete pharmacological profile, including renewal dates. The physicians appreciated this new opportunity to learn about patients’ actual behavior in terms of their use of medication, taking into account the other physicians that the patient was seeing and the frequency of prescription renewals.

Quotation 1. Medical practitioner: Thanks to this technology, I’m calling the pharmacist less often. Because I know what the patient is actually taking. I know what other doctors are prescribing, it’s all there. (MP3)

Some physicians were even surprised to see, through this aspect of the technology, that pharmacists do not necessarily notify them of some problems, such as when a patient is not adhering to their regime or is consulting several physicians for the same disease.

Quotation 2. Medical practitioner: Just yesterday, I noticed a prescription that wasn’t filled, […] I called the pharmacist and the drugs haven’t been delivered for several months now, […] if the patient doesn’t have such-and-such a pill renewed, the pharmacist doesn’t give it to him. This happens a lot. (MP2)

Furthermore, the technology provides physicians with the support of a therapeutic advisor when they are making prescriptions. The advisor generates alerts and provides real-time access to medication knowledge bases. Most of the physicians interviewed believe that this redistribution of information on the patient and the medication improves the quality of their infer with respect to medication, simplifying medication management (Quotation 3 and 4) and reassuring them about their prescription decisions (Quotation 4), without turning to a pharmacist for support (Quotations 1 and 3).

Quotation 3. Medical practitioner: Having better access to the monograph means that we have more information when patients ask how to take a drug, such as whether it’s better to take it at breakfast or at dinner. These are the kinds of things that we don’t always know, but a pharmacist knows, […] With easier access to the monographs, it makes things easier. (MP1)

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Functions of the e-Rx Technology and the main modalities of action affected by the use of these functions.

<table>
<thead>
<tr>
<th>Functions</th>
<th>Modalities of action</th>
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<tbody>
<tr>
<td>Computerization of prescription entry</td>
<td>Treatment</td>
</tr>
<tr>
<td>Network for communication between users</td>
<td>Diagnosis and inference</td>
</tr>
<tr>
<td>Connection for sharing clinical information on patients, such as complete pharmacological profiles and laboratory results</td>
<td>Diagnosis and inference</td>
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<tr>
<td>Medication knowledge bases</td>
<td>Diagnosis and inference</td>
</tr>
<tr>
<td>Databases that include key information on medication, advice to give the patient, etc.</td>
<td>Diagnosis and inference</td>
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<tr>
<td>Therapeutic advisor</td>
<td>Diagnosis and inference</td>
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<tr>
<td>Suggestions on medication and posology</td>
<td>Diagnosis and inference</td>
</tr>
<tr>
<td>Automatic verification of alerts when prescribing a drug (allergies, interactions, inappropriate dose, etc.)</td>
<td>Diagnosis and inference</td>
</tr>
<tr>
<td>Electronic prescription transfers</td>
<td>Treatment</td>
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Quotation 4. Medical practitioner: I think that [the technology] makes our work as prescribers a bit easier. Since I'm prescribing a new drug to someone who is polymedicated, I have the information [an alert in the patient’s record] right away if there's any problem. This is reassuring. (MP6)

For their part, the pharmacists appreciated the fact that physicians had access to this new information. They identified several benefits, such as higher-quality prescriptions, and this benefits patients and the practice of pharmacists.

Quotation 5. Practicing pharmacist: It'll help me analyze a prescription, since I know that the expert software has already checked it. I'll be more efficient when analyzing a prescription. (PP3)

Quotation 6. Practicing pharmacist: The physician can quickly find interactions. [...] It slows us up a bit when we have to call the physician when there are interactions on a prescription. (PP6)

Quotation 7. Practicing pharmacist: Most of the technology's benefits are in error reduction. For example, say the physician wants to repeat exactly the same prescriptions [for a patient]. He may appreciate having access to the complete pharmacological records. I see an advantage, because some physicians make a lot of mistakes. (PP5)

However, the pharmacists expressed some reticence about this distribution of information to the physicians' benefit. For instance, several practicing pharmacists minimized the usefulness of the therapeutic advisor, since they believe that these tools are not sufficiently sensitive or robust to provide only clinically relevant alerts, and that managing these alerts requires specific medication-related expertise.

Quotation 8. Practicing pharmacist: The software reports a lot of interactions. I believe that it's still our job to identify those that have a truly significant clinical impact. (PP3)

Moreover, few of the practicing pharmacists and some of the stakeholders questioned the merits of the redistribution of information, especially at a time when physicians are in short supply in primary care.

Quotation 9. Practicing pharmacist: With this technology, a general practitioner should see all the drugs prescribed by other physicians. But will he take the time to analyze it all? [...] They don't have the time, and it isn't worth their while, so they won't do it. (PP13)

Quotation 10. Pharmacy stakeholder (commercial): What the physicians like to have is access to the renewal profile in order to validate compliance. But honestly, if you look at our health network and the problems we face due to the shortage of physicians, if we give them more work, where will that lead? [...] It seems to me that this is a time when we should be promoting a multidisciplinary approach, and pharmacists have a lot to offer. (CS8)

Overall, the pharmacists had mixed reactions to redistributing information to the benefit of physicians.

Distribution of information to the benefit of community pharmacists

The technology also represents an opportunity to redistribute information to the benefit of pharmacists. However, this seems to create more tensions, both between physicians and pharmacists and among the pharmacists themselves. The sharing of the therapeutic indication for each prescribed medication is clearly a source of tension between physicians and pharmacists. In the pilot project, the physicians had to enter the therapeutic indication with every prescription, and this information was transmitted to the pharmacists. Most of the physicians interviewed had reservations about this function, since they consider this information to be of no use to community pharmacists. They feel that it opens the door to pharmacists becoming overly involved in decisions. Furthermore, the physicians feel that pharmacists do not have sufficient information on the patient (they have neither conducted a clinical interview nor performed a physical examination) and do not have the training required to make appropriate use of the therapeutic indication.

Quotation 11. Medical stakeholder: I don't think that pharmacists can dispense a prescription based on the diagnosis. [...] I hope that it won't go that far, because it could turn out badly in many situations. Take something simple like an ear ache. If the physician indicates a moderate otitis for a 20-kg 5-year-old, is that enough information to choose an antibiotic? No. There's a lot that's missing, [like] how long it's been since he's taken antibiotics, whether he reacted well in the past to this or that antibiotic, and whether he go to daycare. (MS1)

In contrast, all the pharmacists (practicing and stakeholders) appreciated having access to the therapeutic indication.

Quotation 12. Practicing pharmacist: It helps us avoid errors of judgment, errors in file analysis, when we have the actual indication. A better patient approach, because we know what we're dealing with. And a better analysis of the file when we know that a medication is being taken for such-and-such a problem. [...] Having the same data for a general analysis of the file, it's simpler and more complete. But it isn't stepping on the toes of physicians. (PP14)

Quotation 13. Pharmacy stakeholder (academic): There are medications with relatively limited therapeutic indications, and it's easy to associate the product with the person's illness. On the other hand, there are some medications, like prednisone or certain beta blockers and antidepressants from the first generation, have many indications, and I think it's important to have an idea of the therapeutic indication behind the product. Clearly, as long as the prescriber agrees to indicate it in the file, but we're a way from that. (AS4)

According to the pharmacists interviewed, this information allows them to develop their inference, which could make their contributions to both patients and prescribers more relevant. However, pharmacists understand that physicians are reticent about sharing therapeutic indication.
Quotation 14. Pharmacy stakeholder (academic): There seems to be problems associated with giving pharmacists access to certain data. Not technical problems, but ‘political’ problems.

Quotation 15. Pharmacy stakeholder (commercial): We’re ready to get on board [with the government’s project] as long as we can have the therapeutic indication. (CS6)

Quotation 16. Medical stakeholder: Physicians also have to do their part. Because pharmacists have asked for, for example, to have the diagnosis mentioned in the prescription. And on that, physicians have a certain... concern. Concern to adding this kind of information. Because they find prescribing takes more time if they have to indicate the diagnosis. And they ask if it’s really relevant. (MS2)

These results show the importance of therapeutic indication – what physicians call the diagnosis – in the exercise of medication-related inference, and underscore the tension between physicians and pharmacists regarding control of this key piece of information. At the time of the study, the provincial project was moving toward granting pharmacists access to the complete pharmacological profile and laboratory data. Surprisingly, most pharmacists interviewed seemed reticent about this information sharing, which generated more concerns than satisfaction, except for the academic stakeholders, who were unanimous about the relevance of having access to a complete file. First, many practicing pharmacists expressed the concern that they are not qualified to make appropriate use of this new information (Quotation 17). Second, pharmacists were concerned about their legal liability in how this information will be managed. Will their responsibility include an obligation to act when faced with an incongruous lab result?

Quotation 17. Practicing pharmacist: In the province’s project, we have access to the same data as the physicians. We have access to x-rays and lab reports. [...] That’s good, except that we aren’t ready for it! We are not well trained... we received the training at university, but it’s information we haven’t used in years. [...] I really dread it, because it represents a big change in how we work and our legal liability. What do we do when we see an abnormal lab result? Does it engage my liability? Should I think that the physician will see the result? Do I say anything to the patient about it before he sees the physician? These are details, but this will lead to complicated situations. (PP8)

Quotation 18. Pharmacy stakeholder (commercial): All pharmacists want the therapeutic indication. It can always help, even if it’s not used in pharmacists’ cases. (AS2)

Third, several pharmacists were afraid that it will take more time to complete a prescription: if a pharmacist must consult laboratory data for each prescription, the process of executing prescriptions may slow down significantly, depending on how the technology performs. Since remuneration is currently based on the number of prescriptions pharmacists fill, they fear a drop in revenue, as well as the ire of clients who will be obliged to wait longer to be served. Fourth, even if most of the pharmacists understand the benefits of having access to the complete pharmacological profile, the commercial stakeholders pointed out that the competition problem in community pharmacy is a barrier to this kind of sharing.

Quotation 19. Pharmacy stakeholder (commercial): Technologically speaking, we would like files to be shared [between our pharmacies], but it is privileged business information. You need to understand that a community pharmacy is privately held, and the information in a patient file has strategic value. Yes, it belongs to the patient, but the pharmacist... the owner is not necessarily interested in sharing it with another owner. (CSR)

In the past, some pharmacy chains have tried to make pharmacological profiles available to all the member pharmacists in their group, but the pharmacy owners were so strongly opposed that the initiative was never implemented.

In summary, our results suggest that the opportunities presented by the technology to expand the quantity and improve the quality of information available to community pharmacists generate concern and tension that may slow down the implementation and use of the available tools.

Computerization of prescription entry and transfer

The e-Rx technology disturbs physicians’ and pharmacists’ execution activities by introducing a computer in activities that had previously been carried out manually: prescription entry and transfer. Overall, physicians believe that it is mainly the pharmacist who is going to benefit from the computerization of their prescription, given standardized prescriptions and electronic transfers. Many physicians hope that this will lead to fewer calls from pharmacists for clarifications, which is a major irritant in their practice.

Quotation 20. Medical practitioner: E-prescribing makes the pharmacist’s work easier. There’s less time lost, because I’ve entered their prescriptions for them. (MP3)

Quotation 21. Medical practitioner: I think there are fewer mistakes in our prescriptions. And more clarity: pharmacists don’t have torack their brains to figure out what we’ve written. Otherwise, they need to call you, and that’s a real drag. (MP6)

The pharmacists, both stakeholders and practitioners, agreed on this point: the e-Rx technology, if it is powerful and well used, will make prescriptions easier to read and will reduce avoidable calls to physicians, whether the prescription is sent electronically or printed in the physician’s office.

Quotation 22. Practicing pharmacist: It means less time lost figuring out illegible prescriptions. (PP4)

Quotation 23. Pharmacy stakeholder (commercial): If the prescription is electronic, it’s legible, so it eliminates a lot of mistakes, as well as time spent calling physicians to know what they’ve written. (CSS)

Quotation 24. Pharmacy stakeholder (academic): E-prescribing makes pharmacists’ work easier, reducing the mistakes transcribing or reading prescriptions. Anything that can reduce the technical burden and minimize the risk of errors will give...
pharmacists more time to concentrate on those aspects of their work that really need their expertise. (AST)

On the other hand, some pharmacists had reservations about electronic prescription transfers. They felt that the time gained through electronic prescription transfer is minimal, particularly when the prescription contains few medications.

Quotation 25. Practicing pharmacist: If there are several medications on the prescription, electronic transfer saves time. But if there’s only one medication, it doesn’t change anything. Starting at 2-3 medications, a lot of time is saved. (PP1)

This is because the physician does not have all the information needed for distribution (the format of the medication served, the brand name actually served, etc.). So the pharmacist must review all the fields inserted in the system to ensure that the information is appropriate.

Quotation 26. Practicing pharmacist: With 20 years of experience, when I re-enter the prescription in the computer, the risk of error is minimal. And entry is fast. I don’t see electronic transfer as much of a help. Anyway, I have to change the possibilities. They’re never right, they’re never written correctly. So there is no real benefit. (PP12)

Overall, the computerization of prescription entry should facilitate the dispensing process for pharmacists, since the prescription information is clear and legible. According to some of the pharmacists interviewed, this could widen the scope of their activities by freeing up time currently spent managing problems on prescriptions (Quotation 24). On the other hand, the pharmacists felt that the effects of computerizing the transfer of prescriptions were less clear and would depend on how physicians will use the technology.

Discussion

The practice of community pharmacists is being challenged by the many transformations that have occurred over the last few decades, such as the development of technologies that simplify the manufacture and distribution of medication (industrialization of production, automation) and the commercialization of the field (Birenbaum, 1982; Holland & Nimm, 1999). However, the pharmacotherapeutic arsenal has become considerably more complex over the same period, creating new knowledge that must be mastered. Pharmacists have tried to gain control over this knowledge in order to become specialists in the use of medication, creating the concept of “clinical pharmacy” and pharmaceutical care (Hepler & Strand, 1990). The role of the clinical pharmacist has become one of supporting the physician in the management of pharmacotherapy by providing various pharmaceutical services: information on medication (dosage, indications), patient pharmacotherapeutic history, etc. (Holland & Nimm, 1999). Over time, clinical pharmacy has found its place in hospital settings at the patient’s bedside, where the physician and the pharmacist can communicate directly. On the other hand, the role of the community pharmacist, practicing in a storefront dispensary, has changed less (Christensen & Farris, 2006; Hughes et al., 2010). Today, community pharmacists generally exercise judgment by verifying prescriptions received from physicians. The inference activities of community pharmacists, given their limited knowledge of the patient, are therefore based on the inference activities of physicians (a judgment based on the judgment of physicians). According to Abbott’s model, this makes the legitimacy of their jurisdiction fragile. Pharmacists remain subordinate to prescribing physicians, since they have little control or exclusivity over the information needed to practice infer with respect to medication. Our results suggest that e-Rx technology may accentuate this imbalance by redistributing information in favor of physicians. Pharmacists therefore risk losing the little information over which they have exclusive domain. As a result, the pharmacists we interviewed expressed some reserves over the technology, and some have even used the information they have as currency for obtaining other information. In fact, a redistribution of information in favor of pharmacists is crucial if they are to enlarge and strengthen their area of jurisdiction. Community pharmacists can now be seen making such efforts around the world. Many pharmacists claim a right to new activities, such as adjusting dosages in response to therapeutic results and prescribing certain medications in different clinical situations (Emmerton et al., 2005; McKnight & Thomason, 2009). As reported by Edmunds and Calnan (2001), these claims are aimed at expanding pharmacists’ jurisdiction by redefining the respective occupational statuses of physicians and pharmacists and reduce the apparent subordination of pharmacists. These new acts are crucial in negotiations between physicians and pharmacists, given the importance of the act of prescribing in the definition of the occupational status of physicians vis-à-vis pharmacists (Weiss & Sutton, 2009). Yet in order for the legitimacy of these activities to be recognized (by the public, regulatory authorities and physicians), pharmacists need to demonstrate the relevance and utility of having them exercise such judgment, which is not possible if they do not gain access to clinical information on patients. Our results suggest that the e-Rx technology may play a role in this redistribution of information to the benefit of pharmacists, while underscoring the tensions generated by the possibilities e-Rx technology offers.

First, the physicians expressed reticence over pharmacists having access to this information. This is a classic reaction designed to protect jurisdictional territory from the encroachment of another professional (Adamik et al., 1986; Bryant, Coster, Gamble, & McCormick, 2009; Gilbert, 2001). Second, the circulation of clinical information generated concerns and even objections among the pharmacists themselves, which may well slow down initiatives to circulate more information. Interestingly, our results suggest that academic stakeholders are more open to the circulation of clinical information, while practitioners and commercial stakeholders, who are closer to the day-to-day work in pharmacy, expressed many concerns. Our results therefore serve as a reminder of the various concerns and objectives of community pharmacists that make it difficult to develop a professional project for this group. Holloway, Jowson, and Mason (1986) noted that hospital pharmacists are able to arrive at a collective orientation more easily than community pharmacists. This phenomenon appears to be related to the commercial imperative in community practice; while community pharmacists need to cooperate for the well-being of patients, they also compete, to attract clients. This dichotomy creates a paradox: the competition works against initiatives to encourage cooperation by disseminating information between competing pharmacies. As a result, while pharmacists’ views communicate a certain professional reality, their actions are influenced by the incentives inherent in their competitive relationship (Sleath & Campbell, 1998). At the same time, our results suggest that the computerization of prescription entry and transfer may simplify the work of community pharmacists. According to pharmacists, this represents a significant advantage that should allow them to become more
productive as long as the technology is of high quality and well used. This finding supports Fox’s theory (Fox, Ward, & O’Rourke, 2005), which suggests that the main benefit of e-Rx technology to community pharmacists is that medication distribution can be managed more efficiently. For example, receiving e-Rx throughout the day, as physicians write them in their offices, allows pharmacists to complete them throughout the day and limit patient waiting time (Macken, Fores, & Aar, 2005). We learned that the pharmacists we interviewed also spoke of problems raised by the computerization of prescription entry and transfer. Indeed, several studies have reported that the introduction of an electronic prescription system creates new errors or problems for pharmacists (Estellat et al., 2007; Murray et al., 1998). In the interpretation of prescriptions made possible by the technology revealed tensions between physicians and pharmacists, but also among the pharmacists themselves. This serves as a reminder of the broad scope of interests in the pharmacy community. In order for the e-Rx technology to be successfully integrated into primary care, due consideration must be given to the great variety of stakeholders, going beyond the potential range of action afforded by day-to-day use of the technology to develop a more comprehensive view of disruptions, in addition to those associated with the likely implementation of this technology.

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