

Collaboration Between Community Pharmacists and Family Physicians: Lessons Learned from the Seniors Medication Assessment Research Trial

Michelle Howard, Kristina Trim, Christel Woodward, Lisa Dolovich, Connie Sellors, Janusz Kaczorowski, and John Sellors

Objectives: To learn about the experiences of specially trained expanded role pharmacists (ERPs) and family physicians in a program in which they worked together to optimize drug therapy for elderly patients (aged 65 and older) and to identify shortcomings of the program, obstacles to its implementation, and strategies to overcome these obstacles. **Design:** Qualitative opinion analysis. **Participants:** Six family physicians and six community-based ERPs who had participated in a randomized controlled trial (Seniors Medication Assessment Research Trial [SMART]). **Intervention:** In-depth interviews. **Main Outcome Measures:** Themes that emerged from the interviews regarding the strengths and weaknesses of and ways to improve the program. **Results:** ERPs and physicians differed in their perceptions of appropriate roles for ERPs. ERPs saw the program as an opportunity to take on new professional roles. Physicians appreciated the information they received from ERPs about their patients' adherence and use of nonprescription medications, but they did not want ERPs to directly counsel their patients. Some physicians questioned the value of the program for some patients, since the inclusion criteria for patients were broad and not all patients meeting the criteria needed intense interventions by ERPs. Both ERPs and physicians identified the need to refine the referral process and to work out professional role relationships and ongoing collaboration more fully. If the program were to be implemented as a routine service, physicians were concerned about the demands on their staff and office space and the need for an external compensation mechanism. **Conclusion:** Issues to be addressed for future programs include clarification of the roles of pharmacist and physician when the professionals work together, targeting of appropriate patients for the program, identification of a more efficient way to deliver recommendations, and development of an appropriate compensation mechanism.

Keywords: Pharmacists, family physicians, elderly patients, drugs, health services research, collaboration.

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Drug-related morbidity is costly to society. Drug-related problems (DRPs) have been associated with between 6% and 28% of

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Michelle Howard, MSc, is research coordinator, Department of Family Medicine; Kristina Trim, MA, is research assistant; Christel Woodward, PhD, is associate professor, Department of Clinical Epidemiology and Biostatistics, Centre for Health Economics and Policy Analysis; Lisa Dolovich, PharmD, is assistant professor, Department of Family Medicine, McMaster University, and scientist, Centre for Evaluation of Medicines, St. Joseph's Healthcare, Hamilton, Ontario, Canada. Connie Sellors, BScPhm, is project coordinator, Department of Family Medicine, Centre for Evaluation of Medicines, St. Joseph's Healthcare. Janusz Kaczorowski, PhD, is associate professor, Departments of Family Medicine and Clinical Epidemiology and Biostatistics; John Sellors, MD, is clinical professor, Department of Family Medicine, McMaster University.

Correspondence: Michelle Howard, MSc, Department of Family Medicine, McMaster University, HSC 2V10, Hamilton, Ontario, Canada L8N 3Z5. Fax: 905-521-5594. E-mail: mhoward@mcmaster.ca.

hospital admissions in studies in the United States,^{1–7} and the annual costs associated with preventable drug-related morbidity have been estimated to be \$177.4 billion in the United States⁸ and \$10.9 billion in Canada.⁹ DRPs occur more frequently in patients taking increasing numbers of medications and in older patients,^{10,11} and so they are of particular concern in the elderly population.

Yet, DRPs—and their difficult consequences—are often preventable. Primary care is the setting in which most prescribing occurs and is, therefore, the logical place to attempt an intervention to optimize medication use in seniors.^{12–16} Studies in hospital and clinic settings have shown that pharmacists (usually with PharmDs or other advanced training) can improve prescribing and patient outcomes^{17–26} and decrease hospital and prescribing costs.^{17,27,28}

Collaborative care provided by pharmacists, who provide services in the community, and primary care physicians, whose patients regularly interact with community pharmacists, has the potential to improve medication use. With health care systems fac-

ing increasing pressure to reduce costs while maintaining or even improving the quality of care, collaborative care offers a means for meeting these demands.²⁹

We conducted a randomized controlled trial, the Seniors Medication Assessment Research Trial (SMART), that involved community-based expanded role pharmacists (ERPs) in the care of elderly patients taking multiple medications. The SMART project was one of several studies in Canada conducted to evaluate the integration of pharmacists into the health care team.^{12,14,30}

In this article, we report the results of qualitative analyses of interviews with pharmacist–physician pairs that participated in the SMART project. The results of the randomized controlled trial have been previously reported.³¹

Objectives

The SMART project intervention introduced a new role for ERPs and a new level of collaboration between physicians and ERPs. The objective of the qualitative study reported here was to learn about the experiences of specially trained ERPs and family physicians in a program in which they worked together to optimize drug therapy for elderly patients (age 65 and older) and to identify shortcomings of the program, obstacles to its implementation, and strategies to overcome these obstacles.

Methods

Randomized Trial Design

The intervention was evaluated using a cluster randomized controlled trial design that has been described elsewhere.³² Briefly, 48 family physicians whose practices were located within approximately 100 km of McMaster University in Hamilton, Ontario, Canada, and 889 (approximately 20 per practice) of their patients aged 65 and older and taking 5 or more medications daily (according to their medical chart) participated. Twenty-four physicians caring for a total of 431 patients were randomly assigned to the intervention, or pharmacist consultation, group, and 24 physicians caring for 458 patients were assigned to the control group. The study design was approved by the Hamilton Health Sciences Research Ethics Committee.

ERP Intervention

ERPs in the trial were preceptors in a university-accredited externship program (the Structured Practical Experience Program [SPEP], at the University of Toronto) who had received additional training beyond their undergraduate degree. SPEP provides pharmacists with the skills and knowledge to enable them to assume increased responsibilities for working with patients and physicians to achieve definite outcomes designed to improve patients' quality of life.

As part of the trial, ERPs attended a 1-day training workshop that included an instructional video showing a pharmacist interview with a simulated patient and a face-to-face consultation with a family physician. The training workshop provided instruction on working in a new environment, reviewing a medical chart, the protocol for the program, and communication strategies for collaborating with family physicians. There was no specific training in geriatrics and no formal evaluation of workshop participants.

Seniors randomized to the intervention group had a structured medication assessment with an ERP, usually in the physician's office. ERPs had reviewed patients' medical charts before this meeting. During each meeting with a senior, the ERP used an established interview process to identify, solve, and prevent DRPs.^{33,34} This process was based on the pharmaceutical care philosophy described by Hepler and Strand.³³ After completing each patient assessment, ERPs wrote patient-specific consultation letters to the physicians, listing the seniors' medications and making recommendations to optimize drug therapy. ERPs then met with patients' physicians to discuss the written recommendations for each senior, but they did not review their recommendations with the seniors.

Using a semistructured interview guide, ERPs monitored each senior by telephone 1 and 3 months after they had met with the patient's physician. ERPs met with physicians 3 months after the initial meeting to discuss each senior's progress and, if required, to provide any further information needed to fully implement the original recommendations.

Physicians received \$50 (U.S.\$35) per patient for participating in the study, and members of their office staff were reimbursed for time spent recruiting patients and assisting with data collection. ERPs were paid approximately \$200 (U.S.\$140) per patient for their consultations. At the end of 5 months, physicians had implemented or attempted to implement 72.3% (790 of 1,093) of the ERPs' recommendations.

Selection of Interviewee Sample

A specific sampling strategy was used to identify 6 ERP–physician pairs for a total of 12 interviewees. Selection criteria were based on physicians' satisfaction with the quality and usefulness of the intervention, as determined by a questionnaire completed by participating physicians for each of his or her participating seniors, and on mailed patient satisfaction questionnaires completed by the participating seniors. Physician–ERP pairs were rank ordered in terms of the pair's functioning, and two pairs were selected from the top of the ranking (higher functioning), two from the middle, and two from the bottom (lower functioning). This sampling strategy was used to capture the spectrum of views of participants.

Interview Methods

Face-to-face, open-ended interviews were conducted within 4 weeks of the study's completion. The interviewer was not blinded as to why the particular pairs were chosen. The interview technique

was based on the field research concepts described by Strauss and Corbin.³⁵ The interviewer had previous experience with qualitative research interviewing. Participants were assured that they would not be identified in the presentation of results.

Although an interview guide was developed, it was not used as a script or questionnaire; rather, it was used to focus the interview. Questions were asked about interviewees' perceptions of the program, which aspects of the program worked well and which did not, the advantages and disadvantages for patients and physicians, the obstacles to implementing the program on a wider scale, and how the program might be improved. The interviewer probed to explore threads in the conversations that appeared related to those questions. Themes emerging from the completed interviews were introduced to subsequent participants for their comment. Interviews were audiotaped, transcribed, and cleaned.

Data Analysis

Data were entered using Lotus Approach 97 (Release 9, Lotus Development Corp., Cambridge, Mass.). Data collection, coding, analysis, and theme generation were done concurrently in this study.

Two investigators (KT and CS) identified themes as the data were collected and afterward, as they again read through all of the transcripts to check their work. Data from initial interviews were analyzed to observe emerging patterns and themes, and tentative findings were introduced into subsequent interviews to probe and refine developing themes. The interviewer noted in the interviews that an issue had been raised by a previous respondent and asked for comments. At the end of interviewing, two additional investigators (CW and MH) then read the transcripts, reviewed the description of the themes identified by the first two investigators, and reorganized some of the themes (e.g., identifying areas in which themes seemed to overlap or blend). After rereading the transcripts, the original data analysts reviewed the revised themes to see whether they reflected their understanding of the data. All data analysts agreed that the final themes that had emerged were concisely presented and reflected the content of the interviews.

Results

Sample Description

Interviews usually lasted between 10 and 15 minutes for physicians and 45 minutes for ERPs. This substantial difference was due, in part, to the limited time allotted by physicians for the interview. ERPs, in contrast, were eager to discuss their experiences with the program for longer periods. The response rate for both the patient and physician satisfaction questionnaires was 95%. Of the six physicians, two were women, and the mean year of graduation from medical school was 1978 (± 12.6 years). Four of the six pharmacists were women, and the mean year of graduation from pharmacy school was 1982 (± 6.4 years). Three of the six pairs had

already known each other in a professional context before their involvement in SMART, but they had not interacted with one another to the extent required by the project protocol.

Major Themes Identified in Interviews

Table 1 shows the themes identified in the interviews. These themes are described in detail below.

Physicians and Pharmacists Viewed the ERP Role Differently

Physicians saw ERPs in the same light as other health care professionals, such as dietitians or nurse practitioners, who increase physicians' ability to provide good service to their patients. Thus, while physicians valued the ERP service, they also recognized that whether it (or some variant of it) might be implemented more widely would depend on "how high you want to set the bar" in

Table 1. Themes in the Interviews of Pharmacists and Physicians

Physicians and pharmacists viewed the expanded role pharmacist (ERP) role differently. Physicians did not want pharmacists directly advising patients on medications other than over-the-counter (OTC) products and expressed concern that pharmacists must respect physicians' relationship with patients. Physicians saw quality control, help with OTC and herbal products, detection of potential interactions, and help with adherence as appropriate pharmacist roles. Pharmacists saw advancing the profession, being more equal partners, and advising physicians on the best medication regimens as major aspects of their role.

Impact of the intervention was perceived as modest but helpful. Patients were very accepting of ERPs. Physicians reported some new learning that could be generalized to other patients; some potential and actual medication interactions were spotted, particularly between OTC and prescribed medications; and some patient adherence problems were identified. Many times, physicians were already making good decisions; sometimes, ERPs recommended strategies that had already been tried and had failed. Few ERP recommendations were seen by either professional as having a major impact on health outcomes.

Pharmacists need to practice their skills and acquire additional training. Pharmacists found the ERP role challenging initially and acknowledged that to perform ERP roles effectively, they needed more opportunities to practice some skills and acquire new ones.

Development of trusting relationships is important to effective collaboration between physicians and ERPs. Working together over an extended period builds trust. With time, less contact is required for physicians and ERPs to work together effectively.

The way the ERP role is implemented needs to be rethought to increase effectiveness and reduce cost. Better targeting of patients is needed; for example, physicians could refer patients with management difficulties, not necessarily only elderly patients, and written consults could be discussed by telephone only when needed, to make more efficient use of physicians' and ERPs' time.

Compensation mechanisms must be developed if ERPs are to work with family physicians. Physicians and ERPs were unclear about suggestions for compensation. Pharmacists felt adequately compensated. Physicians in fee-for-service could not pay a pharmacist to work in their practice. If funded by the government, pharmacists could be paid on a fee-for-service basis for a block of time per week.

terms of service excellence. These physicians expected the ERPs to tell them, rather than patients, about suspected problems, and they viewed this direct communication as an important component of professional behavior. They were generally reluctant to support pharmacists giving patients direct advice about prescription drugs, including information about possible adverse effects or complications. Physicians wished to remain the primary caregiver for medications and wanted all recommendations regarding prescription medications to be directed to them for review before being implemented. Some expressed concern that pharmacies (and, by implication, pharmacists) focus more on the potential harms rather than the likely benefits of taking a medication, and, thereby, create adherence problems. However, physicians did not see a problem with ERPs advising patients about over-the-counter (OTC) products.

Community pharmacists who volunteered for the ERP role saw themselves as pioneers in their profession, breaking new ground. One interviewee said, “You see it as an opportunity, and a way to promote the profession, but from [the physician’s] standpoint, it’s probably more time-consuming.”

ERPs tended to define “professional behavior” as being treated by the physician as an equal professionally. ERPs had had limited experience working directly with physicians to provide consultation and were both excited by and initially anxious about this aspect of the new role. They were concerned that they would stumble and, thus, set back the aspirations of their profession.

ERPs reported that their role had both satisfying and difficult aspects. A satisfying yet challenging part was that they were able to review a patient’s medication profile along with the other relevant information, which differs from the usual situation faced by community pharmacists. Talking with a patient after gaining a holistic picture of his or her problems was more rewarding than the usual interchanges they had with patients in the community pharmacy, where pharmacists’ understanding of patients’ medication-related issues is limited by a lack of information about clinical history. However, another aspect—reporting their suggestions only to the physician and not the patient—was sometimes viewed as too confining, leading the ERPs to make poor suggestions since they were unable to discuss the recommendations with the patient and learn, for example, that the proposed change had already been attempted unsuccessfully by the physician. In contrast, this “confining” aspect was seen by the physicians as the sine qua non of professional behavior, especially if any criticism of the physician’s performance might be implied in a comment made to a patient. A pharmacist described the dilemma this way: “Sometimes I like to bounce what I’m thinking off the patient because, of course, you have to get their perspective. . . Why waste your time writing up a recommendation to the doctor and then the patient doesn’t want to do it anyway? So, sometimes it’s helpful just to talk to the patient first.”

ERPs were more positive than physicians about the potential patient benefits of pharmacists’ consulting services. They were also aware that physicians were less likely to see ERPs as the only

way to solve problems with patients’ drug regimens. Yet, ERPs were very eager to see their role further developed, refined, and more widely adopted.

Impact of the Intervention Was Perceived as Modest but Helpful

Physicians reported that their patients generally enjoyed their interactions with the ERPs. Physicians felt the ERPs reinforced the medication information that they themselves had provided to patients. They felt the pharmacists’ presentation was less hurried, and they suggested that most patients appreciated the extra time with a health care professional. “I think the patients would be a lot better informed,” said one physician. “They’d have more time to understand what was going on and why they’re taking what they’re taking.”

Physicians also reported learning new information from their consultations with ERPs that they often could generalize to the management of other patients. “I do think they have knowledge that I don’t have,” said one physician. “So I think that it would improve the service I give patients.” Examples included the availability of a pill splitter and information about the optimal timing of delivery of a drug. ERPs pointed out some potential and actual adverse drug–drug interactions, particularly between prescribed medications and OTC products patients were taking. In many instances, physicians were unaware of and surprised to hear that their patients were taking various OTC and herbal products. Physicians had limited knowledge of the effects of herbal products and their possible interactions with the medications they prescribed. One physician said, “Somebody was taking an OTC antacid that interfered with one of the drugs.” Another said, “[Patients] are on an OTC medication, and they don’t even mention that. The pharmacist went into long detail about that and things I’d never heard of. I’d say, ‘Now what does this do?’ and he would come back to me and say, ‘These are all of the studies done on this kind of thing.’ And that I found very helpful.” In addition, some physicians thought patients might save money because ERPs helped them reduce their reliance on some OTC medications.

Physicians reported that ERPs were helpful in detecting problems with patient adherence that they had not noticed or had only suspected. They saw the ERP service as providing an opportunity to focus on medication use during a visit, whereas usually they focused on the problem the patient presented with. One physician gave copies of the ERP’s recommendation letters to his patients to help them remember the main points of the consultation.

Although ERPs gave helpful advice in some instances, for many other patients, ERPs and physicians agreed that the physicians’ decisions were mostly good. “I’m not sure I’ve seen any major reactions prevented; it’s more fine-tuning,” said one physician.

Both physicians and ERPs noted that patients presented only infrequently with problems that required the specialized skills of a pharmacist; neither professional expected the ERP intervention to have a major impact, and the physicians believed that most of their patients over age 65 who were taking five or more medications

were doing so appropriately. However, both professionals felt that other, younger patients who had multiple chronic problems could benefit from consultation with ERPs. Several ERPs commented that, for the most part, the recommendations they made (aside from suggesting calcium supplements to postmenopausal women) were likely to have a marginal impact on patients' health. Rarely was a recommendation expected to have a major impact on the patient's quality of life or control of illness or pain. Further, implementation was often slow, as physicians had to wait until the patient's next visit and sometimes physicians chose not to implement a recommendation at all.

Several physicians and some ERPs noted that sometimes the pharmacist made recommendations for changes that had been tried previously and found ineffective for that particular patient. Pharmacists, too, found this situation frustrating, noting that if they had been able to pose questions to patients about possible interventions, they would have known that the medication had been found ineffective. "Many of the decisions I make about a patient's management have already been made a long time ago, especially with those patients who are complex, so the pharmacist's intervention and observations are sometimes irrelevant," noted one physician. Both groups recognized that the detailed understanding of an individual that comes with long experience with managing the patient was important to making good decisions.

Pharmacists Need to Practice Their Skills and Acquire Additional Training

Pharmacists found the ERP role challenging initially and acknowledged that they needed more opportunities to practice some skills and to acquire other skills. All ERPs described a steep learning curve in the expanded role, and they saw themselves as becoming more knowledgeable and efficient (e.g., in chart review, interviews, consult notes) over time. None believed that they could not acquire the skills needed for the ERP role or that the skills required were inappropriate for pharmacists.

ERPs who had not worked previously in a hospital setting were less familiar with reading patient charts. Finding the relevant material in the chart quickly was a challenge at first. Physicians' handwriting was often difficult to read. They found preparing consult notes tedious. Yet, with time, they found that they identified a fairly small set of common problems. Once they had worked through a prescribing issue or problem for one patient, they could handle that problem more efficiently when they encountered it subsequently. They suggested that access to a backup consultant might reduce the time they spent on rare and/or complex medication problems.

ERPs were sometimes unclear about which of several problems confronting the patient was the most crucial or important to solve first. They had had no experience in patient assessment and felt that understanding the relative importance of problems was key to understanding physicians' prescribing decisions. For example, because they were unfamiliar with the meaning of the extent of deviation from normal for some laboratory tests, they could not always assess the seriousness of a patient's condition. They had to

learn how to assess indicators such as glucose and cholesterol levels in order to prioritize issues of concern for patients and physicians when preparing consult notes.

Development of Trusting Relationships Is Important to Effective Collaboration Between Physicians and ERPs

Both physicians and ERPs suggested that the repeated contact fostered by the SMART intervention was effective in building strong working relationships between pharmacists and physicians. All participants saw the need for good rapport. Some who had known each other professionally recounted that having such prior acquaintance was positive and helpful to their collaboration. Others thought less contact between ERPs and physicians would be needed over time as their working relationship became more comfortable.

The Way the ERP Role is Implemented Needs to Be Rethought to Increase Effectiveness and Reduce Cost

Both physicians and ERPs commented that changes in how ERPs interface with physicians' practices are needed to maximize the effectiveness of ERPs. Physicians questioned whether the service was providing enough of a benefit to justify its cost. Four kinds of costs were mentioned: staff time, office space for the ERP to meet with patients, and the costs of both physicians' and ERPs' time. Some physicians thought that using a computerized system to examine their prescribing behavior would be just as or more valuable than the ERP consults, cost less, and cover more patients. These physicians saw prescribing problems as including only adverse reactions and drug-drug interactions and not OTC use, regimen simplification, looking at whether other medications were required but not prescribed, or identifying adherence issues. Other physicians, as well as ERPs, thought tailoring this intervention to patients whom the physician identified as problematic would reduce costs and increase the impact ERP consults have on patient outcomes.

Suggestions made by physicians about how the ERP program should be enhanced or changed included using ERPs to do "academic detailing," such as helping a physician make informed choices about whether or not a new medication would provide more benefit to a particular patient.

Some physicians noted that the medications used by at least some, if not most, of their complex patients were prescribed by a specialist and saw this as a potential obstacle to effective program implementation.

Compensation Mechanisms Must Be Developed If ERPs Are to Work With Family Physicians

Physicians were concerned about whether their practice could sustain a pharmacist consultation service without adversely affecting their incomes unless the costs were borne fully by a third party. Most physicians saw the problem of funding ERPs as similar to that of funding any other health care professional to work with

their patients. According to one physician, under the fee-for-service system used by the vast majority of Ontario family physicians, “we cannot delegate very much...that is one of the realities of life. And the more we can delegate, I know I have to pay for it.”

ERPs were satisfied with the compensation they received. They thought that their time could be purchased either with block funding or using a fee-for-service model, but they also realized that physicians were unlikely to pay for this service if it reduced their income.

No Differences in Themes Were Found Between the ERP–Physician Pairs

All data analysts agreed that there were no notable differences in the themes brought out in conversation with the highest, middle, and lowest ranking pairs.

Discussion

Our results provide several important lessons that may inform the development of a consultation program focused on pharmacist–physician collaboration in primary care.

Physicians and ERPs diverged in their perceptions of appropriate roles for ERPs, primarily with regard to direct patient counseling. Physicians were generally uncomfortable with ERPs performing this role, whereas ERPs often felt that they had sufficient skills and knowledge of the patient from the medical chart to discharge this responsibility. Other reasons for physicians’ reluctance related to professional boundaries and the accountability of physicians for their patients’ prescribed medication use.

Physicians appeared unsure as to what to expect in terms of pharmacists’ skills and roles. Often, their expectations for services were below those of ERPs. This difference was echoed in a recent survey of physicians in the United States that showed that future expectations of pharmacists for adjusting drug therapy and monitoring patients’ responses were low.³⁶ Similar results were found in the United Kingdom, where pharmacist interviewees expressed a desire to expand their professional role beyond dispensing medications, and general practitioners (GPs) expressed some hesitation with pharmacists taking on roles such as screening.³⁷ The GPs in the United Kingdom also expressed concern about pharmacists undermining physicians’ relationships with patients by contradicting a GP’s prescribing decision. Still, it is possible that physicians who have continuing relationships with pharmacists would become increasingly receptive to the latter directly advising patients on some medication-related matters.

The SMART intervention was developed with input from family physicians to ensure feasibility for and acceptability to this group. As a result of this input, ERPs were instructed not to make recommendations directly to patients; however, ERPs felt this approach was inconsistent with their training.

The SMART inclusion criteria were broad, and patients

taking five or more medications were randomly selected rather than referred by physicians on the basis of their need for a pharmacist consultation service. A better alternative, perhaps, would involve identifying patients with complex medical problems and medication regimens who could benefit the most from pharmacist expertise.

Reference to the model of physician–pharmacist collaboration suggested by McDonough and Doucette³⁸ is helpful in framing our results. Our study design was based on the assumption that physicians would be fully accepting of the new role for pharmacists and willing to collaborate, that a sufficient need existed for the intervention, and that the model used was feasible for both professionals. However, our interviews suggested that the pharmacists and physicians in our sample were in the middle stages of developing a collaborative working relationship. We sensed that physicians were neither aware of nor entirely comfortable with some of the roles pharmacists took on in the SMART intervention. In addition, the context affected the collaboration: Pharmacists and physicians had not previously worked in close proximity, nor had they experienced this type of interaction, in which pharmacists accessed patients’ medical charts, conducted medication assessments, and made patient-specific recommendations. In many instances, it appeared that physicians and pharmacists were only beginning to communicate in a bidirectional manner. According to McDonough and Doucette,³⁸ additional strategies would be needed to further advance through the stages to reach a commitment to a collaborative working relationship.

The interview results and the relative ease of recruiting physicians to participate in SMART (participation rate was nearly 70%) suggest that physicians were supportive of the pharmacist intervention.³¹ However, the interviews suggest some explanations as to why the intervention did not produce significant benefits in terms of patient outcomes and health care utilization. In addition, other analyses of the data from SMART found that the majority of recommendations by the pharmacists would have been expected to result in only mild or moderate changes in patients’ health.³⁹

Limitations

Several limitations may affect the generalizability of our findings. Although we feel that additional interviews would not have yielded new information, the sample size was small, and the setting of participation in a randomized, controlled trial was artificial. The interviewer knew why the participants had been chosen; however, we did not find differences in themes between the higher and lower functioning ERP–physician pairs. The interviewer was also involved as a research coordinator in the randomized, controlled trial, and interviewees may have responded more favorably about the project than they would have to an interviewer external to the study.

Conclusion

This study provided important insights into a new model of professional collaboration between family physicians and community-based, specially trained pharmacists. Although the program was acceptable to both groups of professionals, disparities in role expectations for both ERPs and physicians need to be resolved. Suggestions to make the collaboration more feasible included better targeting of patients who could benefit from the program, such as those referred by their physician for specific medication issues or those with complex health problems, and a more efficient way to deliver recommendations to physicians. In addition, an appropriate compensation mechanism for physicians and pharmacists must be determined.

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