Pharmacist integration into the medical home: Qualitative analysis

Melinda Kozminski, Rachelle Busby, Melissa Somma McGivney, Patricia M. Klatt, Stephanie R. Hackett, and Joel H. Merenstein

Abstract

Objective: To determine the acceptance and attitudes of family medicine physicians, clinical and nonclinical office staff, pharmacists, and patients during pharmacist integration into a medical home.

Design: Qualitative study.

Setting: Pittsburgh, PA, area from August 2009 to June 2010.

Participants: Physicians, staff, pharmacists, and patients at four single-specialty family medicine office practices functioning as medical homes.

Main outcome measures: Attitudes, acceptance, barriers, and problems identified by participants.

Results: A total of 84 interviews were conducted: 21 interviews with family medicine physicians, 26 with patient care staff, 9 with nonclinical staff, 13 with patients, 6 with pharmacists, and 8 with office managers. Five main themes emerged from each group regarding the integration of a pharmacist, including positive overall feeling: clinical, educational, and time-saving benefits to the various groups; challenges understanding the role of the pharmacist; improved workflow and integration resulting from pharmacist flexibility and motivation; and suggestions to increase the pharmacists’ time in each office. Pharmacists felt that they were accepted within 6 months of the integration process and that time management was a challenge.

Conclusion: Participants felt that inclusion of a pharmacist into their practice improves the quality of patient care, provides a valuable resource for all providers and staff, and empowers patients. The initial concerns of the clinical and nonclinical staff disappeared within the first months of pharmacist integration. These results provide guidance to clinicians and insight into strategies for building a pharmacist-integrated medical home team.

Keywords: Patient-centered medical home, patient care, primary care, pharmacists, outpatient setting, collaborative care.


Received October 31, 2010, and in revised form January 19, 2011. Accepted for publication February 16, 2011.

Melinda Kozminski, PharmD, was a PGY-1 community pharmacy resident, School of Pharmacy, University of Pittsburgh, Pittsburgh, PA, at the time this study was conducted; she is currently Clinical Pharmacist, Gateway Health Plan, Pittsburgh, PA. Rachelle Busby, PharmD, BCPS, was a PGY-2 family medicine pharmacy resident, UPMC St. Margaret, Pittsburgh, PA, at the time this study was conducted; she is currently Clinical Pharmacist Specialist, University of Chicago Medical Center. Melissa Somma McGivney, PharmD, FCCP, is Associate Professor of Pharmacy & Therapeutics, School of Pharmacy, University of Pittsburgh, Pittsburgh, PA. Patricia M. Klatt, PharmD, BCPS, is project manager, quality improvement, UPMC Health Plan, Pittsburgh, PA. Joel H. Merenstein, MD, is clinical professor, Department of Family Medicine, School of Medicine, University of Pittsburgh, Pittsburgh, PA, and Emeritus Director Faculty Development Fellowship, UPMC St. Margaret, Pittsburgh, PA.

Correspondence: Melissa Somma McGivney, PharmD, FCCP, School of Pharmacy, University of Pittsburgh, 721 Salk Hall, 3501 Terrace St., Pittsburgh, PA 15261. Fax: 412-624-8175. E-mail: somma@pitt.edu

Disclosure: The authors declare no conflicts of interest or financial interests in any product or service mentioned in this article, including grants, employment, gifts, stock holdings, or honoraria.

Acknowledgments: To UPMC Health Plan, UPMC St. Margaret, and the University of Pittsburgh School of Pharmacy for their support and vision. To Jan Pringle, PhD (University of Pittsburgh School of Pharmacy), for guidance with qualitative analysis. Brent Nelms, PharmD (graduate, University of Pittsburgh School of Pharmacy), for observations of pharmacist activities; and Michael Yonas, DrPH (University of Pittsburgh School of Medicine, Department of Family Medicine), and William L. Miller, MD, MA (Leigh Valley Health Network, Department of Family Medicine), for consultation on the qualitative methodology and thoughtful review of the manuscript. Also to the physicians, pharmacists, and staff of the practices for their time and willingness to participate.

Funding: Partially funded by the Pennsylvania Pharmacists Association Education Foundation.

The patient-centered medical home (PCMH) is a progressive model of care that has been proposed to enhance primary care in the United States. Although the medical home concept dates back to the 1970s, PCMH recently has gained the attention of policy makers and health professionals. PCMH has been defined as an approach to providing comprehensive primary care in a health care setting that facilitates collaboration and partnerships between clinicians and patients. Key elements of the medical home model include patient-centered/team approach, elimination of barriers, advanced information systems, focus on quality and safety, and whole-person orientation. Interest in the medical home has been increasing steadily given the growing complexity of providing patient care in outpatient primary care practices; the number of avoidable health care expenditures, including increasing adverse drug events; and recent potential opportunities offered by the Affordable Care Act (ACA; PL 111-148) to create best practices and financial incentives for the growth of medical homes. The medical home as a model of care has been shown to improve patient care outcomes in integrated care organizations.2,4,14

Incorporating pharmacists into primary care as a part of the medical home model has been proposed as a method to improve the quality and safety of patient care, assist with coordination and integration of patient care across the continuum of care, and more fully reach the goal of a whole-person orientation to care.5 Specifically, the provision of comprehensive medication management has been cited as a vital role of pharmacists in the primary care medical home.6 Smith et al.7 noted that pharmacists working with patients and other clinicians can improve patient outcomes and help ensure cost-effective medication-related care; however, pharmacists often are underused in this capacity. Further, Bates8 suggests that pharmacists should work with primary care practices to better evaluate how pharmacists can best contribute to the medical home.

The fact that patient care is improved when pharmacists are part of the patient care team is supported by ample evidence,9-14 but this practice is not commonly available in primary care office practices in the United States.15 In Canada, ongoing efforts to incorporate pharmacists into primary care physician office practices have been successful at improving patient-specific outcomes.16,17 Many barriers have been cited as to why pharmacists are not more readily integrated into primary care practices, including complicating or slowing the workflow, potential for overlap of the pharmacist’s role with that of the physician or other clinicians in the office, and patient acceptance.7,18 In the current study, we focus on understanding a particular aspect of the medical home concept: how the team model of care functions with pharmacists providing coordinated, integrated care in family medicine practices and the acceptance of all key players. Specifically, to provide a behind-the-scenes look, we investigated the thoughts, feelings, and attitudes of physicians, office staff, patients, and pharmacists involved during the initial 6 months of pharmacist integration into family medicine office practices committed to the principles of the medical home. To the authors’ knowledge, a comprehensive, qualitative, U.S.-based study analyzing the thoughts and feelings of physicians, pharmacists, staff, and patients from the same practices has not been published.

Objective
We sought to determine the attitudes, thoughts, and feelings of family medicine physicians, staff, pharmacists, and patients during the first 6 months of pharmacist integration into physician practices functioning as medical homes.

Methods
Background of the SCRIPT project
In 2009, UPMC St. Margaret, UPMC Health Plan, and the University of Pittsburgh School of Pharmacy partnered to better understand the impact of pharmacists providing patient care as integral members of the patient care team in family medicine practices dedicated to the principles of the medical home model. The result of this partnership was the SCRIPT (Successful Collaborative Relationships to Improve Patient care) project. This initiative includes two research projects evaluating its impact: a quantitative analysis designed to determine the overall clinical and economic impact of pharmacist provision of care and a quali-
tative study designed to understand the initial thoughts, feelings, and perceptions of clinicians and patients involved in medical home practices. The qualitative research results are presented in the current report.

Beginning in August 2009, with salary support from the UPMC Health Plan, two community pharmacists with direct patient care experience were placed into four suburban family medicine practices in the Pittsburgh, PA, area. The pharmacists provided comprehensive medication therapy management (MTM), medication reconciliation upon discharge for individual patients, and other tasks relevant to medication-related needs of patients and the practices.19,20 Table 1 provides more detail of the pharmacists’ patient care role in the practices. To be included in the SCRIPT project, practice sites needed to be associated with UPMC St. Margaret, include a representative mix of UPMC Health Plan members, and be willing to include a pharmacist in their practice starting in August 2009. The official study period began in October 2009 to allow for a brief transition. Four sites met the criteria and were selected for the SCRIPT project. The practices consisted of unique teams of physicians, medical assistants, nurses, nurse practitioners, and office managers, with slight variation of the mix among them. Each clinician in these practices has an average of 30 patient visits per day. A detailed description of these four practices appears in Table 2. In addition, all of these practices transitioned to an electronic medical record (EMR) soon after the pharmacists started or in the recent past.

Before the pharmacists started in the practices, the SCRIPT team prepared both the pharmacists and the practices for the integration. First, the SCRIPT project coordinator from the UPMC Health Plan met individually with each of the office managers to inform them of the study. Next, the project coordinator and at least one member of the SCRIPT team met with each practice at physician and staff meetings to discuss the project. Questions and concerns regarding pharmacist integration were explored and possible solutions discussed. As a follow-up to these meetings, an experienced clinical pharmacist functioning as a mentor met with the pharmacists who would be joining these practices to discuss strategies for a smooth transition. The two SCRIPT pharmacists then were introduced to the four practices and spent time together in each practice during the first 2 weeks to learn how the other practiced and gain familiarity with the practices. The pharmacists continued to meet with their mentors on a weekly basis and engaged in ad hoc phone calls and discussions regarding issues, concerns, and challenges with the implementation process and challenging patient cases. The project coordinator also had open communication with the office managers and physicians periodically to identify opportunities for improvement with the project. These efforts allowed for continual feedback and real-time problem solving with the practices and pharmacists.

### Table 1. Details of pharmacists’ patient care role

<table>
<thead>
<tr>
<th>Provision of individualized patient comprehensive medication management identified by:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Physicians or office staff, patient self-referral, or pharmacist</td>
<td></td>
</tr>
</tbody>
</table>

**Telephone encounters (examples include):**
- Post–hospital discharge medication reconciliation
- Specific medication-related inquiries referred by physicians or staff
- Follow-up from previous pharmacist visits

**Resource for office staff (examples include):**
- Medication-related questions from patients and physicians
- Systems-based practice initiatives related to medications
- Implementation of UPMC Health Plan medication initiatives, including recommendations of formulary agents as clinically appropriate

### Table 2. Details of practices involved in SCRIPT project

<table>
<thead>
<tr>
<th>Practice</th>
<th>Practice 1</th>
<th>Practice 2</th>
<th>Practice 3</th>
<th>Practice 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. clinicians</td>
<td>4 physicians (3 FT, 1 PT), 1 FT CRNP</td>
<td>3 physicians (3 FT)</td>
<td>7 physicians (2 FT, 5 PT)</td>
<td>7 physicians (4 FT, 3 PT)</td>
</tr>
<tr>
<td>Age of clinicians (years), mean</td>
<td>41</td>
<td>45</td>
<td>40</td>
<td>48</td>
</tr>
<tr>
<td>No. patients per physician per day</td>
<td>32</td>
<td>27</td>
<td>≥30</td>
<td>≥30</td>
</tr>
<tr>
<td>Staff</td>
<td>1 FT practice manager/biller, 7 FT MA, 6 FT patient information coordinators</td>
<td>1 FT practice manager/biller, 4 FT MA, 3 FT patient information coordinators, 1 FT RN</td>
<td>1 FT practice manager, 7 FT MA, 5 FT office assistant, 1 FT LPN, 1 FT biller</td>
<td>1 FT practice manager, 5 FT MA, 7 FT patient information coordinators, 2 FT patient information coordinators, 1 FT RN, 1 PT LPN, 1 FT biller, 2 FT office coordinators, 1 FT prescription specialist, 1 FT medical records clerk, 1 PT medical records clerk, 1 FT phlebotomist</td>
</tr>
<tr>
<td>Approximate no. patients*</td>
<td>10,000</td>
<td>6,000</td>
<td>9,000</td>
<td>12,000</td>
</tr>
</tbody>
</table>

Abbreviations used: CRNP, certified registered nurse practitioner; FT, full time; LPN, licensed practical nurse; MA, medical assistant; PT, part time; RN, registered nurse; SCRIPT, Successful Collaborative Relationships to Improve Patient care.
Qualitative research design

To initiate the qualitative study, the SCRIPT project coordinator approached the medical directors and office managers of the practices to introduce the concept of the qualitative analysis. This included individual interviews, surveys, written logs, and observations focused on the initial thoughts, feelings, and perceptions of all parties involved after pharmacist integration. All practices were in agreement. The two lead qualitative study investigators then met with the office managers to schedule interview days at the four practices. The qualitative research analysis was approved by the University of Pittsburgh Institutional Review Board.

The two lead qualitative study investigators (M.K. and R.B.) were pharmacists who conducted all interviews during the study period. These investigators were separate from the SCRIPT pharmacists in the practices. Pharmacist investigators were purposely chosen to conduct the interviews, in order to best understand the issues discussed and have the ability to probe further as appropriate. The lead investigators practiced interviewing before starting to help ensure consistency among interviews. A list of study questions and probing questions were identified before the interviews began.

Study participants included physicians, office staff, patients, and pharmacists at the offices participating in the SCRIPT project. Participants were made aware of the day on which the interviews would be occurring for each respective practice and asked to participate during a time that was convenient for them. Individual interviews were not prescheduled before the visits in an effort to improve recruitment and participation. Further, interviews had no prespecified duration and interviewers allowed participants to talk as long as they liked when responding. The majority of participants were able to share their thoughts and opinions within 5–10 minutes. Examples of some of the interview questions for physicians and office staff included “How is this working?”, “What challenges has this brought to your practice?”, and “What changes would you suggest?”

Patients who saw the SCRIPT pharmacist during their office visit were asked to complete a written survey. Examples of survey questions on a five-point Likert-type scale included “I am glad I met with the pharmacist today” and “I would tell a friend of family member to have a visit like this.” On days when the study investigators were on site, patients were asked to participate in a brief nonsensitive interview in place of the survey. Examples of patient interview questions included “Do you think it’s a good idea to have a pharmacist in your doctor’s office?” and “Do you think the pharmacist helped you today?”

All interviews were confidential and performed during a 3-month period from January 2010 through March 2010. Study investigators sought to interview as many physicians, office managers, staff, and patients as possible during the interview period. Most physicians and staff were interviewed only once, except for the physician champions, who were interviewed twice whenever possible. Physician champions were identified as those who showed interest and worked with the pharmacist. Investigators intentionally interviewed these physicians twice for the opportunity to gain a deeper understanding of the collaboration. In addition, the pharmacists were interviewed monthly, and all office managers were interviewed twice (Table 3). Pharmacists kept a personal log of any thoughts or feelings, with at least one entry per week (Table 3). The log was used to both prompt pharmacists during their interview and to clarify and document thoughts and feelings for the investigators. In addition to the interviews, 1 day was spent at each practice observing the specific activities of the pharmacists. Pharmacist activities and time to complete each activity were documented.

Each interview was conducted in a quiet/private space within the offices. No names were attached to the interviews; only the participant category (i.e., physician, clinical staff, pharmacist) was noted. Investigators kept a separate record of who was interviewed; therefore, individuals were not interviewed again unless necessary. The patient surveys were anonymous. Study investigators provided lunch for all clinicians, staff, and pharmacists on one of the interview days. No incentive was provided for patients to complete surveys; however, a $10 gift card to a local grocery store was given to patients who participated in interviews. Patients were made aware of the gift card before the interview.

Study investigators continued interviews with new participants until saturation was reached. Saturation was defined as the time when the interviews resulted in little new information and investigators were relatively confident that the information had reached redundancy. Creating triangulation through various methods gave investigators an opportunity to evaluate for discrepancies and to help provide a robust description of the study question. The patient survey was useful to increase our understanding of the patient perspective, knowing that we would not be able to interview the majority of patients who interacted with the SCRIPT pharmacists. Observations of the SCRIPT pharmacists’ daily activities and time spent completing various tasks was an important addition to verify and provide better context for various participant responses.

Table 3. Summary of methods used in SCRIPT project

<table>
<thead>
<tr>
<th>Role</th>
<th>Qualitative method(s)</th>
<th>Frequency during 3 months, until saturation*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family medicine practitioners</td>
<td>Interview</td>
<td>≥1</td>
</tr>
<tr>
<td>Clinical staff</td>
<td>Interview</td>
<td>≥1</td>
</tr>
<tr>
<td>Nonclinical staff</td>
<td>Interview</td>
<td>≥1</td>
</tr>
<tr>
<td>Patients</td>
<td>Interview, survey</td>
<td>Following visit with pharmacist</td>
</tr>
<tr>
<td>Pharmacist</td>
<td>Interview, log books, observation</td>
<td>Once monthly, once weekly, once</td>
</tr>
<tr>
<td>Office manager</td>
<td>Interview</td>
<td>1–2</td>
</tr>
<tr>
<td>SCRIPT project coordinator</td>
<td>Interview</td>
<td>≥1</td>
</tr>
</tbody>
</table>

Abbreviation used: SCRIPT, Successful Collaborative Relationships to Improve Patient Care.

*Saturation was defined as when the interviews resulted in little new information and investigators were relatively confident that the information had reached redundancy.21
Data collection and analysis

The dialogue from the interviews was audio taped and transcribed. Interview transcripts were read and coded independently by two investigators (M.K. and R.B.), then reviewed by the two investigators together to address consistency, gaps, or new interpretations. The investigators kept one list of codes with continual edits while reading the transcripts separately. Pieces of text were assigned a code that best described them. The physician investigator also read transcripts and coded them independently with the same code list, specifically looking for misinterpretations or missing codes. The coded pieces of text then were grouped by code to visualize the major themes. Next, the research team met to discuss the content of the coded interviews to collectively identify and agree on themes. Interview data were stored at UPMC St. Margaret, and no identifiers were kept with the data. Recordings were transcribed as the interviews were completed, thereby allowing the study investigators to read, code, and assess for saturation continuously. Survey data were summarized using descriptive statistics. Investigators reviewed results of the survey data, pharmacist logs, and tasks observed to identify any discrepant information. The pharmacist tasks then were summarized to provide context regarding what was occurring in the practices during the time of the interviews.

Several steps were taken to heighten the trustworthiness of our data for the reader, including repeated interviews with key participants, triangulation of methods, one-on-one time with participants during the interviews, and the variety of participant groups interviewed regarding the same topic. Interviewers asked participants repeatedly during the interviews whether they felt anything related to the pharmacist was a challenge or could be improved, in order to ensure contrasting information was not missed. Qualitative researchers who were neither part of the study group nor pharmacists were continually sought for suggestions during the design, study, and analysis phases. Co-investigators who were not directly involved in data collection reviewed the data multiple times during the interview period and analysis.22

Results

A total of 84 interviews were conducted from January 2010 to March 2010. Specifically, 21 family medicine physician (82.6% of physicians), 26 clinical staff, 9 nonclinical staff, 13 patient, 6 pharmacist (3 per pharmacist), and 8 office manager (2 per office manager) interviews were conducted. We also observed pharmacist–patient interactions 28 times in person and 34 times telephonically, as well as numerous pharmacist–physician/staff interactions during the 1-day observation periods at each site. We reviewed 16 surveys from patients and logs from each of the pharmacists. Survey respondents had a mean age of 54 years, and 50% were women and 31% men (19% did not respond to gender). Despite the small number of surveys completed, we were able to use the results from the surveys as a comparison with the interview responses. All survey respondents indicated satisfaction with pharmacist interactions and that they would recommend a similar service to a friend or family member. After the pharmacist interactions, 75% of survey respondents reported an increase in knowledge regarding their medications and more than 85% wanted to meet with the pharmacist again. This cross-method analysis yielded consistent findings reinforcing spoken perceptions and observed behaviors.

All interviewees were staff or patients at the four medical practices participating in the SCRIPT project. Our study focused on the team care culture being built at each of the practices with the addition of a pharmacist. The interviews uncovered some initial concerns that are illustrated via the following verbatim responses:

■ “How is this going to affect workflow?” (physician)
■ “Just one more thing to have to think about.” (physician)
■ “I was a little skeptical at first, thinking, ‘Is this a waste of time?’” (clinical staff)

These initial concerns dissipated shortly after pharmacist integration, as noted in themes 3 and 4 below. The process was well accepted and integrated into the team care environment of each practice. By the end of the interview process, some physicians and staff communicated apprehension of losing the pharmacists because they had become valuable to their practice, as illustrated by the following response:

■ “It is working so well that I am fearful. I am fearful for what might happen when the project ends, because having [the pharmacist] has been terrific.” (physician)

The qualitative analysis of the interviews revealed five dominant themes that are presented below. Surprisingly, the same themes were observed for all groups interviewed. The pharmacists’ perceptions and daily workflow are reported separately because pharmacists had a unique perspective of the project. Having the pharmacists’ logs to reference during the interviews also may have helped provide for richer transcripts.

Theme 1: Positive overall feeling about pharmacist integration

Physicians, clinical and nonclinical staff, and patients reported valuing the pharmacist, and they expressed positive feelings about having the pharmacist in the office. Below are some responses to the question, “What do you think about having a pharmacist in the office?”

■ “I think that medicine is a whole team approach, and the more team members there are, the better care the patient gets, so it’s very good to have [the pharmacist] here.” (physician)
■ “I think it helps quite a bit.” (clinical staff)
■ “I think it’s just the best thing that happened to this office.” (nonclinical staff)
■ “I think it’s a wonderful idea.” (patient)

Theme 2: Clinical, educational, and time-saving benefits to physicians, clinical and nonclinical staff, and patients

Physicians, as well as clinical and nonclinical staff, expressed that the pharmacists were able to fill in gaps in patient care. This largely was a result of pharmacists’ expertise in medication therapy and increased time spent with patients. Benefits that were frequently reported included using pharmacists for patient education and follow-up post–hospital discharge, ensuring ap-
propriate medication use, assisting with access to medications, dealing with formulary issues, improving medication adherence, conducting medication reviews, helping manage chronic conditions (e.g., diabetes), and acting as a resource to the physicians. Responses included the following:

■ "They are able to understand more of what the patients are doing with their medications and take the time that we don't often take as physicians, to do that I think is fantastic." (physician)

■ "I definitely feel like my care is enhanced tremendously with [the pharmacist]." (physician)

■ "Getting people who can't afford their medicines some alternatives, or giving the physicians alternatives on what they could order, has really helped a lot." (clinical staff)

Each group overlapped regarding perceived benefits but also expressed unique benefits tailored to their job roles. For instance, the main benefit from the clinical staff perspective was that the pharmacist provided a quick, reliable resource that they could use to answer patient questions. This provided clinical staff with more time to work on other tasks and was educational for them, as illustrated by the following response:

■ "We receive a lot of calls regarding advice on medicine. Patients are having a reaction or problem with the medication, and I can send those calls to [the pharmacist]. It works out nice for me because it frees up my time." (clinical staff)

The following response suggested that having a pharmacist present led to an increase in patient trust because the practice was providing better overall care:

■ "We have patients calling all the time now asking for the pharmacist, which is great because they have a backup and somebody they can trust." (office manager)

Patients reported being satisfied with pharmacist interactions and that they would recommend seeing a pharmacist to others. One theme observed was that patients appreciated that the pharmacist was available in the physician office rather than at a separate site. Knowing that the pharmacist and physician were working together increased patient trust. Patients appreciated the thorough explanation of their medications and the time and education provided by pharmacists. Some patients felt that this increased their motivation to take care of themselves and take their medications, as illustrated by the following responses:

■ "Maybe it gives me a little more push to taking [medications] regularly." (patient)

■ "It's a good idea. Because if you go to a pharmacy, the pharmacist generally doesn't have time for you, so it's easier here." (patient)

■ "[The pharmacist] actually explained to me what the pills do. Which I have never had before." (patient)

■ "I think it's great that [the pharmacist] is working right along with [the physician]." (patient)

Theme 3: Challenges understanding the role of pharmacists

Challenges that occurred during this process, especially at the beginning, included understanding the role of the pharmacist and knowing how to use them effectively. The practices wanted to use pharmacists in the most appropriate way. Because this has not been studied widely, each practice had to figure out the best way to use the pharmacist to meet its needs. Some physicians had previous experience working with pharmacists, which helped give them ideas of how to integrate pharmacists into practice. However, most staff were not familiar with the ways in which pharmacists could benefit patients. Some patients reported that the extra time in the office was a challenge. However, most patients felt that the extra time was worthwhile after they had seen the pharmacist and understood what the pharmacist could offer. Comments regarding challenges understanding the pharmacist’s role included the following:

■ "In the beginning, I wasn't quite sure what sort of things were appropriate to use the pharmacist for or when to involve them." (physician)

■ "Because the problem is no one really knows what specifically the pharmacist is going to do that's going to make a difference and impact the patients. They're here to figure that out. When they figure it out, then they can replicate it for other people, and say, 'These are the things that we do that benefit the patients and make it more structured.'" (physician)

■ "I had never heard about it before, and I thought, 'Why can't they just go to the store and ask the pharmacist at the store?' Because now some of the pharmacies now have little rooms where you can go into consult rooms and everything. But having [the pharmacist] here and seeing how [the pharmacist] works, it's just fantastic." (nonclinical staff)

■ "In general, does it make your visit here a little bit longer?" (interviewer). "Yes, but it's worth it to me I think." (patient)

Theme 4: Improved workflow and integration resulting from pharmacist flexibility and motivation

Initially, physicians and staff were concerned that integrating a pharmacist could disrupt the workflow. After time, almost all physicians and staff felt that the integration was smooth and caused minimal disruption. They identified that the pharmacists were extremely flexible, open, and motivated to go above and beyond for patients. These characteristics were thought to be a major factor in the success of the integration. Some physicians questioned whether pharmacists placed in other practices would be able to duplicate this integration if they did not possess these characteristics. Comments regarding pharmacist integration into the workflow included the following:

■ "It does not slow me down at all." (physician)

■ "[The pharmacist] is usually on top of our list. [The pharmacist] will look at patients and already know before we've seen them what their meds are and what recommendations to give. They function pretty autonomously." (physician)

■ "[The pharmacist] really rolls with things. This can be very chaotic; the office is very busy." (physician)

Theme 5: Suggestions to increase the pharmacist time in each office

Suggestions to improve the process were minimal because most participants were very satisfied with the pharmacists. Many physicians and staff expressed wanting the pharmacist to be present more often. This was the most frequent suggestion during interviews. As described earlier, each pharmacist spent 2.5 days in
Each practice to cover two practices. The staff thought that it was easiest to use pharmacists when they were in the office. However, by using the EMR, pharmacists were able to communicate easily with the practices while off site. Responses included the following:

- “Selfishly, I would like to have [the pharmacist] there full-time. Could we use [the pharmacist] more? Sure. Is it good the way it is? You bet.” (physician)
- “I think if [the pharmacist] was here more it would help.” (clinical staff)
- “I get a lot of questions, and medication is not something that I am fluent with. I usually get the pharmacist. It’s a quicker answer. And patients get better feedback from [the pharmacist] than they would from me. Or, actually having to take a message, it’s easier when [the pharmacist is] here on site. I can just have [the pharmacist] talk to patients at that time. It also helps the staff because we have questions that we can’t answer.” (nonclinical staff)

**Pharmacists**

The two SCRIPT pharmacists were interviewed while referencing their own daily log monthly during a 3-month period. The interview period started 3 months after the pharmacists had joined the practices. The pharmacists expressed feeling accepted by the staff fairly quickly. Six months into the project, they felt fully incorporated and valued as part of the health care team. They were able to be a resource to both the staff and patients. Responses from the pharmacists included the following:

- “I feel that I’ve been incorporated. Definitely there are still probably more ways that I could be used, but I think that will grow with time, but I do feel valued.”
- “One day I had gotten a comment from [a physician], who was talking to me about a patient and said, ‘I talk with you almost like you’re a physician, because I think of describing the patient to you in terms of me talking to another physician.’ So that was a nice compliment.”

The pharmacists also reported having more time for patient care compared with previous community pharmacy settings in which they had worked. In addition, they perceived that they could demonstrate value by showing that they could prioritize and manage their time efficiently. The following interview response illustrates these challenges:

- “Still time management, in the sense that oftentimes you go into your day with a plan of the patients I definitely want to see, here are the phone calls I definitely need to make, and then just thrown into that, the doctor comes in and says, ‘I need you to come over here right now and talk to this patient,’ and you were really planning on using that 15 minutes to call a patient before you had to go into a room to see a patient. So, it’s not a bad thing by any means, but I think it’s just finding ways to best manage your time.”

After only a few months, both pharmacists reached a point where they had to bring work home. In their opinion, one contributing factor was the documentation required for the research study. They were required to document in three different systems to capture outcomes for the SCRIPT project. This consumed approximately one-third of their time in the office. Another challenge described by the pharmacists was that it took longer to build trusting relationships with patients. They attributed this to seeing patients less frequently in the physician’s office compared to the community pharmacy, as described in the following comment:

- “I was talking to the other pharmacist about this, and both coming from a retail background, it’s a lot different in the fact that you have to get used to only seeing patients maybe once every 3 months in a physician’s office, whereas in a pharmacy you see them sometimes weekly.”

Both pharmacists were intentionally flexible regarding when and how they saw patients. At the beginning, they sought to become familiar with the workflow of the offices and the tendencies of providers, in order to cause the least amount of disruption. The following comments illustrated pharmacists’ thoughts and feelings regarding their integrations into the workflow:

- “I mean my number one thing is, I need to see the patients, but I don’t necessarily have to see them at a particular time. I can see them before the visit. I can see them after. As long as there is some time that I can see them, and then get back to the physician if there is a problem.”
- “The biggest challenge was just trying to kind of figure out the flow of things, because definitely we want to not interrupt the physicians. We want it to flow kind of seamlessly, so that was just trying to figure out the best time to go in. Is it before the physician or is it after the physician? And it’s not always the same, so you kind of just have to have a feel of what’s going on that day. And then communicating to the other staff.”

The physical presence of pharmacists in the office was critical to building relationships with physicians and staff, and it allowed physicians/staff to become familiar with the roles of pharmacists and refer patients to them. Some physicians were more apt to use the pharmacists right away, whereas others were slower. This meant that the pharmacists had to learn how to work with many different physicians in creative ways. One strategy was trying to learn what these physicians valued. For example, if physicians were initially reluctant to collaborate, the pharmacists could demonstrate value by showing that they could save time for physicians. As the physicians became more aware of pharmacists’ value, their willingness to collaborate increased.

- “Kind of seeing how physicians think, they give you one pa-
tient, and it's kind of like, 'Okay. Let's see what you're going to do with this patient.' And then, as you start to work collaboratively with them, then they tend to send more things your way.”

“Tend to do it, I feel like now, it's more that I kind of know my role in each office. And I feel like I've sort of worked with each of the physicians, and each of the staff members, and enough that they know what I'm capable of doing.”

The pharmacists thought being split between two offices worked well. Similar to physicians and clinical staff, they emphasized that having the EMR was very beneficial for communication purposes. Over time, the pharmacists were used via the EMR even when they were not in the office. The staff began to schedule follow-up patient appointments on days when the pharmacist would be there as well.

“I don't think I'd want to split my time between any more offices than two. I'm sure that I could be at either office every day and find stuff to do, but on the other hand, I think what we're hopefully figuring out here is that there are ways that you can go about it to probably split a pharmacist between two offices and still not lose anything on the effectiveness part of it.”

An investigator spent 1 day at each practice site observing the pharmacists’ daily tasks. Of note, the results from all four sites were very similar and consistent with the original job description, despite the fact that four different offices and two different pharmacists were involved. Figure 1 summarizes these results and describes how pharmacists spent their time. Pharmacists spent a limited amount of time with staff, but the interview results suggest that that time was beneficial. The results of the observation also showed that although the pharmacists were flexible, they still focused on medication issues and their unique role as pharmacists within these practices.

Discussion
At the onset of the study, we sought to tell the behind-the-scenes story of the process of integrating a pharmacist into physician practices functioning as medical homes. These results demonstrate the overwhelming acceptance and perceived benefit of pharmacist integration into family medicine office practices committed to the principles of the medical home, with only a few surmountable challenges. Through interviews of the groups that were in contact with the pharmacists, we were able to provide a circumspect description of the integration process that has not been reported previously. We found that integrating a pharmacist into a primary care medical home is feasible and can be accomplished with a smooth transition. After the physicians and staff became accustomed to having a pharmacist in the office, they saw the services as indispensable. Several aspects of the results were of particular interest, including the similarities and differences found from previous work, time to initial acceptance, usefulness of EMR communication, pharmacist thoughts on providing care, demand for increased time in the practices, and implications for team development in PCMH.

To our knowledge, the IMPACT (Integrating Family Medicine and Pharmacy to Advance Primary Care Therapeutics) project in Canada is the only other previous qualitative analysis on pharmacist integration into primary care physician practices. Unlike the IMPACT project, the negative perceptions of “feeling like a nuisance, or working too slowly” were not reported by the pharmacists in the current study. This may be because we used a run-in period of 3 months that allowed project participants to adapt and because our practices were already functioning as medical homes with functional interdisciplinary clinician teams. We did find several similarities between the studies, including the challenge of time management faced by pharmacists, perceived importance of specific traits of pharmacists, and the use of pharmacist-to-pharmacist mentoring during the integration process. The pharmacists attributed their difficulty with time management to the variety of needs that can arise within the practice as a result of the spontaneity of patient, staff, and physician requests. This highlights the importance of pharmacists remaining flexible. Importantly, while the SCRIPT pharmacists were sensitive to the needs that arose within the practices, they maintained a consistent focus on their unique skill set as pharmacists balanced with the needs of the practice. Last, our study confirms the findings from the IMPACT project of the benefit of pharmacist-to-pharmacist mentoring while building relationships with practices.

The overwhelming and early acceptance of the pharmacists into these practices came as a surprise. We expected that it would take longer and at least some people would have negative or challenging aspects of the integration to share. This was not the case. We attribute this in part to the well-developed and longstanding relationships that senior SCRIPT team members have with most physician practices associated with UPMC St. Margaret, including the study practices. Using existing relationships may help to increase the rate of acceptance of pharmacists into a practice. Continual communication facilitated by collegiality and trust between research team and the SCRIPT pharmacists allowed for real-time solving of practice-related and patient care issues.

The importance of pharmacists having ready access to the EMR to work collaboratively with physicians has been suggested in the literature. We confirmed this as the clinicians and staff emphasized that the EMR made it easier to communicate with the pharmacist. Consensus existed that having the EMR made the integration smoother and enhanced communication, especially when the pharmacists were not in the office. This likely enhanced integration because each pharmacist split time between two separate offices. Even more interesting, the patients identified pharmacists having access to their complete medical record and communicating more readily with their physician as a major benefit.

The pharmacists noted that they saw a distinct benefit to having time devoted to direct patient care. As noted in a recent editorial by Stubbings et al., time devoted to patients is not only a benefit for the provision of patient care but also an important distinction for payment of such services. Although payment for services is not addressed in the current study, the role of pharmacists in the practice and their focus on the drug-related needs of patients and those that arose as part of the practice are consistent with the philosophy of pharmaceutical care and the recommendations of how pharmacists can be paid for their services.

We found it striking that the clinicians and office managers...
were afraid of losing their pharmacists’ services, and the most frequent suggestion was to have the pharmacist in the office full time. Many factors may have influenced the successful integration seen in the results, including several traits and actions by the SCRIPT pharmacists. The pharmacists were the initiators of relationships with physicians, which has been noted as an important step in achieving successful collaboration with physicians.\textsuperscript{28–30} They also found that it was initially difficult for physicians to learn how to use pharmacists and remember to use them, but over time, this issue disappeared. In addition, pharmacists freed up time for physicians and provided a quick, reliable resource for drug information.

A topic throughout the interviews was the pharmacists’ ability to adjust and meet specific needs of patients, physicians, or staff. We believe the pharmacists were able to accomplish this because of their keen awareness and communication with the staff and continual feedback to the members of the SCRIPT project team, who were able to brainstorm and draw from previous patient care experience to assist pharmacists in effectively meeting patient and practice needs. This highlights the importance of the mentoring and collegial relationships that pharmacists need to have with one another and other clinicians.

Each pharmacist developed a role consistent with the pharmacist’s strengths and the practice’s needs, leading to a set of core pharmacist practice functions. Those functions included MTM, medication reconciliation post–hospital discharge, patient chart review, and patient phone follow-up. Unlike services that focus on disease-specific interventions, the pharmacists provided comprehensive MTM and follow-up, which was clearly valued by physicians, staff, and patients.

Team effectiveness is particularly important in primary care and is associated with more successful implementation of clinical innovations.\textsuperscript{31} Building collaborative working relationships with physicians, nurses, and nonclinical office staff is a cornerstone of team development and is recognized as being critical to the ability of pharmacists to improve patient outcomes.\textsuperscript{32} As indicated in the thematic analysis, the pharmacists quickly built collaborative working relationships with the clinicians and their staff and were incorporated into the team-based workflow of the practices.

Team development has been studied in many different settings of health care. The development of family health teams (FHTs) that integrate pharmacists has been described in two studies from Canada.\textsuperscript{33,34} Open communication, including formal and informal mechanisms for sharing information, approachability, availability, and proximity, has been found to facilitate team development. In addition, innovative and creative physicians, leadership, and management were found to be critical factors in the integration of pharmacists into FHTs.\textsuperscript{34} We found this to be true in the cur-

Figure 1. Summary of pharmacist activities at all four practice sites

Abbreviation used: med rec, medication reconciliation.
dent study as well. Although not a part of the analysis, when the decision was pending regarding whether to continue the SCRIPT project, physicians from each practice attended an early-morning meeting, some on their day off, to advocate for the continued presence of the pharmacist in their practice. In fact, the decision was made to extend the project past the original first year, which was a testament to the perceived value of the collaborative relationships and the strength of the teams that had been built.

Limitations
Our research had several limitations. The interviews were conducted during a 3-month time period, preventing a true comparison of early and late perceptions during the entire year of pharmacist integration. In addition, the results were based on the impact of two pharmacists who were extremely motivated to initiate practice sites and may not be generalizable to all pharmacists. Clinicians also expressed concern that the positive results could not be replicated with just any pharmacist and that the success of the project was largely a result of the specific pharmacists who were integrating into the practices. The personality traits of the pharmacists may have influenced acceptance and use by office staff. However, four offices had similar opinions about two different pharmacists, making this less likely. Similarly, many family medicine clinicians in the Pittsburgh, PA, area have worked with clinical pharmacists in some capacity in the past and knew the SCRIPT senior investigators; therefore, they may have had an easier time adjusting to pharmacist services than clinicians in other areas. Participants may have been hesitant to share negative experiences with study investigators, who also were pharmacists. However, attempts were made during the interviews to elicit negative thoughts and challenges that may have been occurring.

Conclusion
The success of pharmacist integration into these four primary care offices is evident from the responses received from physicians, staff, patients, and pharmacists. We found that physicians became quickly accustomed to having a pharmacist present and began to depend on them. Patients expressed their understanding of the value of having a pharmacist in their physician office and their pharmacy. Staff sought out pharmacists readily as a reliable resource for identifying and solving drug-related problems, which staff recognized as a considerable benefit to workflow and patient care. The pharmacists noted that integration into the practices was time consuming but rewarding professionally. Each of these findings suggests that successful integration of a pharmacist is possible, relevant, and fills a gap in primary care.

ACA section 3502 (Establishing Community Health Teams to Support the Patient-Centered Medical Home) suggests that pharmacists should be included in these teams. Further, section 3503 calls for a medication management grant program to be established within the Agency for Healthcare Research and Quality to support the coordination of MTM through local community health teams.35 Our study provides evidence of the willingness of physicians, staff, and patients to work in collaboration with pharmacists in family medicine practices as part of the medical home model. Eliciting thoughts and feelings from all roles within a primary care practice is unique. Bislow and Sorensen36 conducted focus groups of patients and nurse practitioners to tell part of the story of pharmacist incorporation. Our study allowed for an even more comprehensive picture of pharmacist integration. Although measuring the effect of pharmacist services has become important, the perceptions of those involved are crucial to starting and sustaining pharmacist integration into individual practices.

This study provides a compelling story for pharmacists and physicians who are interested in working collaboratively within a primary care medical home to enhance patient care. The results can assist physicians and their office staff in transitioning pharmacists into their practice more easily. Pharmacists and physicians also can use this as a means to understand what can be expected while integrating a pharmacist into a medical home. The current report also provides further support for enhancing pharmacist and physician education and training to include cross training to breakdown misconceptions of one another’s role and to better understand how to work together in practice. Within 6 months, the pharmacists in our study felt that they were part of the team. The need for the pharmacist was quickly evident in these practices, speaking to the untapped opportunities that are likely in many physician practices.

The role of the pharmacist in primary care needs to increase in the pharmacy school curriculum, and opportunities for pharmacist residency training need to improve. Pharmacy schools have an obligation to train future pharmacists to meet the needs present in primary care. Pharmacists should graduate with skill sets that enable them to take care of patients in the outpatient setting. Even more importantly, mentoring must occur in order for pharmacists to adapt to and implement patient care practices in primary care and community settings. Further research is needed to quantify pharmacists’ impact simultaneously with the perceived clinical benefits, but these results should encourage pharmacists and physicians that collaboration and integration into the health care team as a part of the medical home model is possible and well accepted by all parties.

Throughout the United States, physicians, pharmacists, and other health care practitioners are interested in learning how to function within a medical home and function as a team to provide effective and efficient patient care. Our study offers an early look at the positive integration of pharmacists into family physician offices functioning as medical homes. The results provide key insight into how the early concerns and challenges posed by the physicians and staff were overcome and the importance of the pharmacists’ willingness to adapt while being focused on their unique ability to contribute to the drug-related needs of patients. This study provides insight and a behind-the-scenes look at strategies for pharmacists and physician practices interested in building a pharmacist-integrated medical home team.

References


