

5-2015

Bridging the Location Gap: Physician Perspectives of Physician-Pharmacist Collaboration in Patient Care (BRIDGE Phase II)

Keri D. Hager

Donald Uden

Daniel M. Tomaszewski

Chapman University, tomaszew@chapman.edu

Follow this and additional works at: http://digitalcommons.chapman.edu/pharmacy_articles

 Part of the [Health Services Administration Commons](#), [Health Services Research Commons](#), [Other Medicine and Health Sciences Commons](#), [Other Pharmacy and Pharmaceutical Sciences Commons](#), and the [Pharmacy Administration, Policy and Regulation Commons](#)

Recommended Citation

Hager K, Uden D, Tomaszewski D. Bridging the location gap: How can pharmacists and physicians collaborate to provide patient care. *J Res Interprof Pract Educ*. 2015;5(2):1-14. <http://www.jripe.org/index.php/journal/article/view/199>

This Article is brought to you for free and open access by the School of Pharmacy at Chapman University Digital Commons. It has been accepted for inclusion in Pharmacy Faculty Articles and Research by an authorized administrator of Chapman University Digital Commons. For more information, please contact laughtin@chapman.edu.

Bridging the Location Gap: Physician Perspectives of Physician-Pharmacist Collaboration in Patient Care (BRIDGE Phase II)

Comments

This article was originally published in *Journal of Research in Interprofessional Practice and Education*, volume 5, issue 2, in 2015. It is licensed under a [Creative Commons Attribution-Noncommercial-No Derivative Works 2.5 Canada Licence](#).

Copyright

Journal of Research in Interprofessional Practice and Education (JRIPE)

Bridging the Location Gap: Physician Perspectives of Physician-Pharmacist Collaboration in Patient Care (BRIDGE Phase II)

**Keri D. Hager, PharmD, BCACP, Donald Uden, PharmD FCCP,
& Daniel Tomaszewski, PharmD**

Abstract

Background: To optimize patient outcomes, the patient-centred medical home model emphasizes comprehensive team-based care. Pharmacists are qualified to enhance appropriate medication use and help improve patient outcomes through provision of medication therapy management (MTM) services. To optimally provide MTM, pharmacists must effectively collaborate with physicians. This study explored factors that influence pharmacist-physician collaboration.

Methods and Findings: A convenience sample of five physicians participated in semi-structured interviews and the resulting data were analyzed using qualitative methods. Transcripts of the interviews were independently coded for themes by two researchers. Five themes emerged: trustworthiness, role specification, relationship initiation, effects on practice, and professional awareness/expectations.

Conclusions: Overall interviewees spoke positively about pharmacists; however, when discussing collaboration, they spoke almost exclusively about pharmacists within their clinic. Since most pharmacists practice outside of clinics, bridging the location gap is imperative for collaboration. In addition, physicians lacked an overall understanding of pharmacists' training and clinical capacity. This may inhibit pharmacists from participating to their full professional capability within integrated healthcare teams. One approach to resolve this lack of physician understanding of pharmacists' role and value may be to co-educate health professional students. Further research is needed to explore ways to improve interprofessional collaborative care.

Keywords: Medication therapy management; Interprofessional; Collaboration; Pharmacist

Introduction

The U.S. healthcare system is in the midst of redefining its approach to providing patient care. To optimize patient outcomes, the patient-centred medical home model emphasizes comprehensive, co-ordinated, team-based care [1]. Appropriate medication use improves outcomes in patients with chronic medical conditions, and pharmacists are qualified to enhance appropriate medication use through provision of medication therapy management (MTM) [2-7].

To optimally provide MTM, pharmacists must effectively collaborate with other members of the healthcare team, including physicians. After assessing a patient's

drug-related needs, pharmacists may make recommendations for changes in prescription medications, including, but not limited to, a recommendation to initiate additional prescription medications, a change in the dose of a current medication, a medication to be discontinued, or additional medication monitoring. Pharmacist recommendations for changing prescription medications require the prescriber's approval. Therefore, pharmacist-physician collaboration is vital.

In addition to the need for the prescriber approval, collaboration between healthcare providers has the potential to improve patient outcomes and reduce overall healthcare costs [8]. Pharmacists providing MTM services in our local community were finding this collaboration to be challenging, particularly if the pharmacist was providing MTM at a location separate from the physician practice. Previous research determining factors impacting pharmacist-physician collaboration is limited [9-11].

Anecdotally, local MTM pharmacists at sites external to the physicians with whom they shared mutual patients sought to collaborate with these physicians but reported their efforts were not effective or efficient. In an effort to improve this collaboration, they (including one study investigator) sought to understand the physicians' perceptions about collaboration with MTM pharmacists internal and external to their practice settings.

The initial project, BRIDGE Phase I, was conducted in Duluth, MN, and included physicians from a healthcare system who had experience working with both internal and external MTM pharmacists [12]. The aim of the initial phase was to identify the potential impact of practice location on pharmacist-physician collaboration. In particular, researchers aimed to measure the effect on collaboration if a pharmacist was located off site (external) compared to those located within the same practice site (internal). The results of Bridge Phase I were based on data collected from a group of physicians completing a previously tested and validated survey, the Pharmacist-Physician Collaborative Index (PPCI) [13]. Participants for Bridge Phase I were selected based on their known history of interacting both with internal and external pharmacists providing patient care (MTM).

BRIDGE Phase I evaluation was limited by small sample size ($N = 11$ respondents) and the lack of qualitative data, but the PPCI scores did indicate the degree of collaboration among physicians and pharmacists tended to be higher when they practice within the same physical setting. BRIDGE Phase I did not, however, allow participants to describe factors impacting their responses and their overall level of collaboration with pharmacists.

Given the small sample size and limitations of the quantitative data from the initial BRIDGE Phase I study, the project was expanded to include collection of qualitative data. The purpose of this study expansion was to further explore factors that influence pharmacist-physician collaboration from the physician perspective.

Methods

Study design and participant recruitment

The study was a critical-theory-based investigation to further evaluate the relationship between physicians and pharmacists based on physician perceptions of the role

of pharmacists in the healthcare team. The study was conducted using semi-structured interviews and thematic analysis. Invited participants included physicians who participated in BRIDGE Phase I [12]. Participating physicians who enrolled in Phase II of this project were asked to provide contact information so that a semi-structured interview could be scheduled. Physicians were offered a \$150 gift card to a local retailer for participating in the interview process. A total of seven out of the 11 (64%) participants provided contact information indicating interest in participation in Phase II.

Potential participants were contacted using the preferred form of contact they indicated during the enrollment period, either through email or a telephone call. The interviewer performed the initial contact and worked with the potential participants to schedule a one-hour face-to-face interview at the preferred location and time for the interviewees.

The interviewer was a non-practicing clinical pharmacist who had no personal or professional relationships with any of the participants. Participants were not made aware of the moderator's professional background at the onset of interviews and were informed to answer as honestly as possible. The interviewer asked a set of open-ended questions (Appendix A) focused on the following areas: *development of trustworthiness, professional role specification, and relationship initiation* adapted from the PPCI (Appendix B) [11,13]. The sessions were audio recorded and manually transcribed using an external transcription service.

Data analysis

Thematic analysis was conducted using the transcripts from the recorded interviews. Two researchers independently reviewed the transcripts to identify themes. Following their initial review of the transcripts, they discussed the emerging themes, reconciled differences in the proposed themes, and established the coding frames. In addition, the researchers formulated definitions for each coding frame, which they used to guide their coding. The transcripts were then independently coded using those defined coding frames. All coding was evaluated and differences were reconciled. The final coded transcripts were used as a basis for the data analysis.

Results

Of the 11 respondents to BRIDGE Phase I, seven provided contact information indicating possible interest in participating in the BRIDGE Phase II semi-structured interview. Of those seven, five consented and participated in the interviews, which took place between July 2011 and May 2012. Each interview lasted approximately 45 minutes. The interviews took place at the practitioners' clinic site in either their office or a conference room.

Five coding frames emerged:

Trustworthiness

Any discussion relating to the realization or existence of assured reliance on the character, ability, strength, or truth of pharmacists as perceived by the physician.

Overall, interviewees described pharmacists as trustworthy individuals. Some interviewees differentiated between internal and external pharmacists.

I have not found any pharmacist to be untrustworthy. I have found them to be a very dedicated people who are trying to do a good job, and I haven't found any that I think lack the skills or professionalism. (P1)

I trust the internal ones more. I should clarify that by saying I don't distrust the external ones, but just by virtue of personally associating with [internal pharmacists], you build up a level of trust. (P2)

I work in an integrated system, so we are highly integrated. It's hospital and clinic, and we have credentialing, and we have a whole process to say somebody is really quality or not. That's the first step. It's not somebody off the street. It's someone whom we vetted, so we know that our PharmDs are part of that team. That is part of that deal. (P4)

Relationship Initiation

Discussions regarding the development of communication/dialogue between the pharmacist and the physician focused on building a rapport between both professionals.

Comments related to relationship initiation varied considerably. Interviewees commented on the ability to have face-to-face interactions and a brief summary of pharmacists' recommendations when collaborating with internal pharmacists. In contrast, when discussing pharmacists external to their practice, interviewees described a lack of knowledge of who these external pharmacists were.

Once in a while I will call a pharmacy, but I don't know who I'm speaking to at a pharmacy on prescribing issues. ... I get the MTM [medication therapy management] paperwork for patients who are [being seen at an external MTM clinic]. ... I will get several pages ... but I haven't personally interacted with them by phone or anything. (P2)

I almost never refer now to a pharmacist outside of our institution because we have them so handy. Normally, I start out with [internal MTM pharmacists], and then they may refer me on or refer the problem, usually. If they can't answer the question, they will refer the problem on to someone else who is in [sic] the staff. (P1)

Usually, I'll ask them why and what [internal MTM pharmacists'] thoughts are, and then we talk about it and come to a compromise. (P5)

One interviewee described the relationship developed with internal pharmacists as obligatory.

I don't do a lot of interaction per se, other than writing prescriptions, but here, of course, we have this thing ... that the pharmacist sees my

patients without my express consent. They see my patients, and they try to tell me from their perspective, so that is basically the interaction I have. (P3)

Professional awareness/expectations

Discussions highlighting the physician's understanding of a pharmacist's education level, clinical capabilities, and general knowledge of medicine/patient care.

The interviewees described their understanding of pharmacist training and clinical capability.

They are often very current on current medications. (P1)

Most of our MTMs have been PharmD. I don't know if it's a special degree to be an MTM or not. (P4)

So pharmacists' expertise focused on the hard science and hard numbers, and I don't think actually dealing with the patients. (P3)

A pharmacist is not trained in dealing with patients directly. I don't know about the current time. In fact, I think a lot of things have changed since I was in school. (P3)

I'm going to guess, I think it's three years. I think there are three-year residencies that you can do ... first, second, and third year. That's what I think, but I'm not sure. You get a bachelor's degree before that. I think it's three years at the school of pharmacy. I don't know; maybe it's four. (P4)

Interviewees went on to describe what they thought occurred during pharmacist-patient interactions and how a pharmacist approaches care of patients.

We do go over some of the same things. (P1)

Patients, I think, just enjoy being able to ask questions. I'm not sure that I know the full nature of the discussions that occur with them, but I would say the feedback from patients, the majority is very positive. ... I presume, are asking questions about how I take meds and the side effects and interactions, so it's those sorts of things. I think that the benefit is perceived more by the patients, just to have that full period of time with them. (P2)

My goal is try to get the patient to feel better, not just physically but mentally. And then, everybody knows that not all medication really does what it's supposed to do. Then there are plenty of medications in the market that probably should not be in the market. When a pharmacist approaches those problems, they approach them from purely factual information on this. (P3)

Evaluating medication side effects, making suggestions as far as other options, evaluating how effective medications are. (P5)

Role specification

Discussions establishing normative responsibilities for pharmacists within the “collaboration” with the physician.

Interviewees primarily described the pharmacists’ roles as complementary, augmenting physician-provided care.

Now, as we have been making formalized healthcare teams, we see the PharmDs as being an integral part of that team, regarding med management and being able to look at the meds and give us feedback on the use of the meds and how we are prescribing them. (P4)

They go in, see the patient. ... I’m usually seeing another patient at that time, and then we try to co-ordinate afterwards so that we can be verbally one-on-one with each other and they tell me what they have in mind. They also fill out a little sheet of their suggestions for changes. (P1)

Usually they will see patients prior to a visit ... then half the time they will stop by and we will just go over things and they will make some recommendations or comments. Sometimes we can’t catch each other because they’ve got another appointment, or I’m in an exam room, so they will scribble some notes for me on a standard format and leave that for me with the patient’s room and papers, and I will review that before I see the patient. (P2)

They also put on, most Tuesdays of the week, a little educational update, particularly on new medications. (P1)

They see our patients. Usually, they’ll see patients that are discharged from the hospital. They’ll see them before the visit and then collaborate with me before I go in. They see our diabetic patients and also patients who are on multiple medications at least once a year. They’re also available for consultations, so any time we want to have a consultation as far as pharmacists, we can just put a referral in and then they’ll be available for that. We also have a program that’s starting where they can see patients that are started on medications for hypertension, and then they can see them for follow-up, and then titrate those medications according to protocol, so they’re going to be doing it for blood pressure and for cholesterol now. Then I suspect they may be doing it for other things, too, but that’s the initial diseases that we’re using them for. (P5)

One interviewee described the pharmacists’ role as potentially duplicative or unnecessary for direct patient care.

Often times they tell me what the lab finding is, what the patient is complaining of; those things I don't need to know because I will find them myself.

And again, I don't believe it's pharmacy's work to clean up my medications. That is wrong; I have to do my part.

As far as the kind of role that I would like to see for pharmacist, it is just a very complicated thing. I would like the option of asking pharmacists, please look into this, instead of them cutting back some protocol of someone that had only two medications ... Some that are really complicated, I should do my own homework ... my content and then I would like to have the pharmacist kind of look through the list. But I'm really not sure if they should see the patient themselves. (P3)

While discussing the role of external pharmacists, interviewees described interactions with community pharmacists (versus pharmacists providing MTM services).

As far as my interaction with other pharmacists, that is pretty much via fax, so I don't get a one-on-one with them. Usually, they fax something to us or they will fax certain material or certain prescriptions, and often they will have suggestions on that or they will have certain interactions that they want to make sure that I'm aware of before I OK the prescription or re-OK the prescription.

It's interesting that prior to their coming I didn't really avail myself of the pharmacists at the commercial sites, because I didn't really think that was their job to do my research for them. (P1)

Effects on practice

Discussions on the impact of the current level of pharmacist-physician collaboration (or theoretical expansion of collaboration) on the physician's practice.

Interviewees primarily spoke of the pharmacist's ability to answer clinical questions and to impact patient satisfaction.

I think the benefits are really perceived by the patient ... so if my patients are happy with it then I'm happy with it.

They are a great resource if we have questions. (P2)

I think they help us in answering the med questions that happen with patients, and I think taking the time with patients for them to understand their meds and help them.

As a great asset, yes, and it makes our job easier, quite frankly.

I didn't realize how much I needed a pharmacist until we had them on staff, and then I found them so valuable I know don't know how we would live without them.

They also get into, sometimes, the vaccinations as well and suggest certain vaccinations that a patient has, and I find that immensely helpful. I go over some of the same things, but occasionally you miss things, and they often have good suggestions.

They are often very current on current medications. Most recently, a patient came in ... Citalopram 60mg a day, and they are current on the fact that, hey, QT interval prolongation—I just learned that from them today—so that prompted me to do an ECG, where I could check out the QT interval and make sure that is not a problem with this particular patient. I had an old ECG to compare it with, so that was helpful. So they are helpful in that regard.

I think to make sure that we are both are up on the changes in indication and the changes in contraindication. I think that is their most valuable service. (P1)

I think they help us in answering the meds that happen with patients, and I think taking the time with patients for them to understand their meds and help them. But then to emphasize the discipline for them being accountable for their meds and the taking of their meds, I think is really important. I think that is time down the line for the primary care Doc: there is so much that goes wrong with patients related to their medications. It's huge. Yes, taking the time to get that down is really important. (P4)

Pharmacy, I love my pharmacists. I think it's definitely a necessary field, and they've definitely added to my practice, as far as being available to answer questions. I definitely think they're necessary.

I think from the feedback they give, when the patients come back, re-evaluating how they are after medication changes. They definitely come up with things that I don't think of, or are able to identify things right away that maybe it's hard to fit into a short visit, so it is helpful. (P5)

Some interviewees also described how a pharmacist's care could impact physician practice unfavourably.

Our only problem sometimes in the clinic situation is if the patient arrives late, and the pharmacist has 30 minutes beforehand, and then I'm put 30 minutes behind, so as a trickle-down effect of putting doctors behind, there is some resistance among doctors to it for that very reason.

There are some patients who are a little antagonistic to taking that much time out of their schedule to come a half-hour early and to do this, and some will refuse. Some have seen a pharmacist, perhaps a year before, and say I don't need it. Some just do not want to take the time to do it, so that's the only stumbling block I see to that. (P1)

I don't know that there are drawbacks. Sometimes a pharmacist resident will focus on things that I think would be less helpful to me. Aspirin for primary prevention sometimes, there are some things that I think the answers are less clear. Calcium supplements as well, too. You can ask ten Docs and get eleven different opinions there, so I think that sort of input for some primary prevention things is less helpful, but I don't think it's necessarily bad. I don't think it's a bad thing though. (P2)

From my perspective, I don't find it [pharmacists meeting with patients] very useful.

Patients actually ask "why do I have to see the pharmacist?" I don't want to say I want you to see them because that's not true, but I don't also want to also say because it's a protocol and then say why should I pay for this, and have them asking "are you not competent enough to manage my medication, as a doctor?" And this does come up sometimes, and that is one problem.

The other problem is that the pharmacist makes one recommendation, but I don't agree with it in a lot of patients, because, again, you look at the factual, and in many cases it does apply in real life, so I will find myself trying to justify pharmacists ... for the patients. (P3)

Discussion

A number of factors that impacted physicians' perceptions of collaboration or their willingness to collaborate with pharmacists were identified. Not surprisingly, these factors included trustworthiness, relationship initiation, and role specification, which were the three themes from the PPCI on which our structured interview questions were based [11,13]. In addition to these, two additional factors emerged, including professional awareness/expectations and effects on practice. However, all of these factors appear to be solely directed at collaboration with internal pharmacists. It is unclear if the factors related to the five coding themes also pertain to external pharmacists because the majority of comments were in reference to internal pharmacists.

For the themes of trustworthiness and relationship building, physicians did note that all pharmacists were generally trustworthy. However, they did differentiate between internal and external, with internal pharmacists being described as generally more trusted. When discussing relationship building, participants stated that little to no relationship existed with external pharmacists. Building trust and

relationships between external pharmacists and physicians may best be accomplished through increased interaction.

Perceived effects of pharmacists on a physician's medical practice also appeared to impact collaboration. Physicians noted that pharmacists working internally were incorporated into the daily workflow. They wrote patient notes in the internal electronic health record or spoke directly with the physician prior to their patient interaction. Not being incorporated into usual clinic workflow appears to have created a negative perception of the external pharmacists' effect on practice. Developing techniques to integrate pharmacists' recommendations into usual workflow and documentation may improve overall collaboration.

The unclear role specification and lack of knowledge about pharmacists' clinical education were additional factors that appear to impact physician-pharmacist collaboration. Physicians stated they were unclear about what took place during the pharmacist-patient visits. Some described their role as duplicative, while others described it as adding a unique perspective. In addition, the lack of understanding of pharmacists' education was explicitly identified as a reason for one physician's unwillingness to collaborate with pharmacists who provided direct patient care. Other physicians were unable to accurately depict the education and abilities of pharmacists. One approach to improving role specification and knowledge about pharmacists' clinical education may be through the increased use of interprofessional education and additional outreach to physician groups describing the professional capabilities of pharmacists.

In general, interviewees spoke positively about interactions with pharmacists. However, when interviewees focused on collaboration, they spoke almost exclusively about the pharmacists working within their clinic. The physicians' focus on internal pharmacists during the majority of their commentary implies that the level of collaboration is disparate between internal and external pharmacists. This aligns with BRIDGE Phase I results, where only 36% of survey respondents completed the portion of the survey asking about collaboration with external pharmacists [8]. Unless the interviewer directly asked the participants to consider external pharmacists, the physicians spoke solely about the pharmacists embedded in their practice. Those who did acknowledge some sort of past interaction with external pharmacists still focused their responses on collaboration with the internal pharmacists. This lack of collaboration with external pharmacists appeared to impact physicians' willingness to accept or consider their recommendations. One physician noted that when s/he received recommendations from an external MTM pharmacist s/he doesn't "read them always in detail, but kind of jump[s] to the end to see what their lower-play recommendations are." (P2)

Since the majority of pharmacists do not practice within physician clinics, bridging the location gap is imperative for pharmacist-physician collaboration. Pharmacists providing MTM services often seek collaboration with physicians that provide care for mutual patients to more effectively care for those patients. These pharmacists have struggled to establish a meaningful collaborative relationship. Pharmacists need to collaborate with physicians to optimize the effectiveness of MTM services and improve patient outcomes. However, physicians may not perceive

the need to collaborate with pharmacists, particularly external pharmacists, and therefore may not seek collaboration.

This study is limited by a small convenience sample of physicians from one health-care system, and therefore may not be generalizable to other contexts or settings.

Conclusion

There is limited research that pertains to physician-pharmacist relationships and the delivery of MTM services. McGrath and colleagues conducted focus groups with a small random sample of physicians who were not related to an MTM clinic [14]. After a presentation reviewing the core principles of MTM services, a series of questions related to the themes of medication needs, collaboration regarding medication issues, the overview of MTM, and communication of MTM were asked. Consistent with the present study, the physicians mentioned that established and trusting relationships as well as the close proximity of the pharmacist were essential for the success of MTM. Similarly, in an established MTM program, within a large medical centre, physicians would use pharmacist services more if they were readily available in the clinic [15]. They suggested that the use of telemedicine technology may alleviate the access issue.

In this study, the interviews provided insight into physician perspectives of factors that may influence collaboration with pharmacists. In general, interviewees spoke positively about interactions with pharmacists. However, when interviewees focused on collaboration, they spoke almost exclusively about the pharmacists working within their clinic. Since the majority of pharmacists do not practice within physician clinics, bridging the location gap is imperative for pharmacist-physician collaboration in patient care. This may inhibit pharmacists contributing to their full professional capability within integrated healthcare teams. One approach to resolve this lack of physician understanding of pharmacists' role and value may be to co-educate health professional students. In addition, developing techniques that help to virtually insert external pharmacists into the standard workflow of clinics using internal MTM pharmacists may also help reduce the burden of collaboration placed on physicians. Further research is needed to explore ways to improve interprofessional collaborative care and develop methods to alleviate some of the barriers that may currently exist.

Acknowledgements

The authors would like to thank Elizabeth Dow, PharmD, Tim Cernohous, PharmD, Mike Swanoski, PharmD for their contribution to this work.

References

1. *Patient-Centered Primary Care Collaborative (PCPCC)*. (2014). URL: <http://www.pcpcc.org/> [March 5, 2014].
2. Bunting, B., & Cranor, C. (2006). The Asheville project: Long-term clinical, humanistic, and economic outcomes of a community-based medication therapy management program for asthma. *Journal of the American Pharmacists Association*, 46(2), 133–147.
3. Chrischilles, E., Carter, B., Lund, B., Rubenstein, L., Chen-Hardee, S., Voelker, M., Park, T., & Kuehl, A. (2004). Evaluation of the Iowa medicaid pharmaceutical case management program. *Journal of the American Pharmacists Association*, 44(3), 337–349.

4. Cranor, C., Bunting, B., & Christensen, D. (2005). The Asheville project: Long-term clinical and economic outcomes of a community pharmacy diabetes care program. *Journal of the American Pharmacists Association, 43*(2), 173–184.
5. Garrett, D., & Bluml, B. (2005). Patient self-management program for diabetes: First-year clinical, humanistic, and economic outcomes. *Journal of American Pharmacists Association, 45*(2), 130–137.
6. Isetts, B., Schondelmeyer, S., Artz, M., Lenarz, L., Heaton, A., Wadd, W., Brown, L., & Cipolle, R. (2008). Clinical and economic outcomes of medication therapy management services: The Minnesota experience. *Journal of American Pharmacists Association, 48*(2), 203–211.
7. Tejal, K., Gandhi, T., Weingart, S., Borus, J., Seger, A., Peterson, J., Burdick, E., Seger, D., Shu, K., Federico, F., Leape, L., & Bates, D. (2003). Adverse drug events in ambulatory care. *New England Journal of Medicine, 348*(16), 1556–1564.
8. Ramalho de Oliveira, D., Brummel, A., & Miller, D. (2010). Medication therapy management: 10 years of experience in a large integrated health care system. *Journal of Managed Care Pharmacy, 16*(3), 185–195.
9. Hojat, M., & Gonnella, J. (2011). An instrument for measuring pharmacist and physician attitudes towards collaboration: Preliminary psychometric data. *Journal of Interprofessional Care, 25*, 66–72.
10. Snyder, M.E., Zillich, A.J., Primack, B.A., Rice, K.R., Somma McGivney, M.A., Pringle, J.L., & Smith, R.B. (2010). Exploring successful community pharmacist-physician collaborative working relationships using mixed methods. *Research in Social & Administrative Pharmacy, 6*, 307–323.
11. Zillich, A., McDonough, R., Carter, B., & Doucette, W. (2004). Influential characteristics of physician/pharmacist collaborative relationships. *The Annals of Pharmacotherapy, 38*(5), 764–770.
12. Dow, E., Hager, K.D., & Cernohous, T. (2014). Proximity of medication therapy management pharmacist to physician site may impact the degree of collaboration (BRIDGE Study Phase I). *Journal of Research in Interprofessional Practice and Education, 3*(3), 1–13.
13. Zillich, A., Doucette, W., Carter, B., & Kreiter, C. (2005). Development and initial validation of an instrument to measure physician-pharmacist collaboration from the physician perspective. *Value Health, 8*(1), 59–66.
14. McGrath, S., Snyder, M., Duenas, G., Pringle, J., Smith, R., & McGivney, M. (2010). Physician perceptions of pharmacist-provided medication therapy management: Qualitative analysis. *Journal of the American Pharmacists Association, 50*(1), 67–71.
15. Maracle, H.L., Ramalho de Oliveira, D., & Brummel, A. (2012). Primary care providers' experiences with pharmaceutical care-based medication therapy management services. *Innovations in Pharmacy, 3*(1), 1–12.

Appendix A: Core structured interview questions

Bridge II: Physician-
Pharmacist
Collaboration

Hager, Uden, &
Tomazewski

Tell me a little bit about your practice. [Take less than 5 minutes for this question]

Can you tell me a little about how you work and interact with pharmacists during a typical day or week?

Thank you for telling me about the interactions you have with pharmacists. Do any of these pharmacists benefit you or your practice more than others? Why? *Do any of these pharmacists negatively impact your practice? If so, how? [New after first three interviews]

I would now like to have you think about a person with whom you have a trusting relationship within your practice.

Why do you trust this person? [Note to interviewer: Try to draw out characteristics]—why trust? Collaboration? How did this collaboration begin?

Do any pharmacists that you work with display any of these same trust characteristics?

What role should the [insert preferred pharmacist title here] play on a patient's healthcare team? Do you see them as a consultant for specific situations, or should they be part of every patient's primary care? How should the [insert preferred pharmacist title here] initiate this role in your opinion?

**Appendix B: Physician–Pharmacist Collaboration
Index (PPCI) items [11,13]**

Bridge II: Physician-
Pharmacist
Collaboration

Hager, Uden, &
Tomazewski

Trustworthiness

The pharmacist is credible.
I trust this pharmacist's drug expertise.
I can count on this pharmacist to do what he/she says.
Communication between this pharmacist and myself is two-way.
I intend to keep working together with this pharmacist.
My interactions with this pharmacist are characterized by open communication of both parties.

Role specification

This pharmacist and I negotiate to come to agreement on our activities in managing drug therapy.
This pharmacist and I are mutually dependent on each other in caring for patients.
I will work with this pharmacist to overcome disagreements on his/her role in managing drug therapy.
In providing patient care, I need this pharmacist as much as this pharmacist needs me.
This pharmacist depends on me as much as I depend on him/her.

Relationship initiation

This pharmacist has spent time trying to learn how he/she can help you provide better care.
This pharmacist has provided information to you about a specific patient.
This pharmacist has showed an interest in helping you improve your practice.