Fostering Provider-Pharmacist Team Management of Hypertension in the Community

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PROJECT SUMMARY

Hypertension contributes to many deaths and to significant healthcare costs in our society. Yet, the control rates for hypertension continue to be less than desired, especially in rural communities. One promising approach for improving blood pressure control is physician-pharmacists teams working together in primary care clinics. The purpose of this project was to develop and evaluate a program to foster provider-pharmacist teams in small communities to use a team approach for managing blood pressure.

Eleven provider-pharmacist teams were recruited in rural and micropolitan communities in Iowa. The teams participated in a face-to-face team building session facilitated by the project team, during which they discussed their team approach. Decisions were made on how to identify patients for team care, practitioner roles, and communication processes. Most teams had the pharmacists conducting blood pressure visits in which they took BP readings, and assessed anti-hypertensive medications. If the BP was not at goal, the pharmacist worked with the patient and provider to make improvements. The teams followed the team approach for 3-5 months. Data were collected via on-line surveys from the team members at baseline and after the team period, and from BP visit logs from the pharmacies.

Using a multi-case approach, 4 of the 11 cases were classified as Worked Well, 5 as Limited Success, and 2 as No Team Care. The Worked Well teams provided an average of 26.5 BP visits per team, while the Limited Success teams averaged 6.8 BP visits. The Worked Well teams established a system to support the team approach, and then were able to use it for more than a few patients. The Limited Success teams either didn’t fully establish their team support system, or used it for only a few patients. The No Team Care cases did not provide team management to any patients.

Factors that supported success were: positive provider-pharmacist relations, establishing a support system for team care, team member commitment to performing team care activities in their practices, and patient willingness to participate in team care. While this program had some success, several improvements were identified. These include more follow-up communication with the team members after the team building session, patient communication materials, and guidance on adjusting their practice sites to better support team care activities. Future work with refinements of this team building program is encouraged.
INTRODUCTION

Hypertension is a common condition that can be readily managed, but often is not adequately controlled. According to the CDC, 1 in 3 Americans, or 67 million have high blood pressure. In 2009, high blood pressure was the main or underlying cause of 348,000 deaths. High blood pressure costs the nation $47.5 billion annually in medical expenses alone [1]. Controlling blood pressure will help to decrease the negative outcomes of hypertension, such as myocardial infarction, heart failure, stoke, cardiac hypertrophy, and other vascular related health problems. Between 2000 and 2010, the percentage of adults over age 18 with controlled blood pressure rose from 26.8% to 45.9%, an increase of 71%. Among racial groups in 2009-2010, 49.1% of white, non-Hispanics over age 18 with hypertension were controlled. In contrast, only 31.6% of Hispanics and only 43.0% of black, non-Hispanics with hypertension were at goal. In this same period, hypertension also was better controlled in women (56.0% of women vs. 39.6% of men) [2].

Previous studies by University of Iowa researchers have shown that blood pressure control can be greatly improved with physician-pharmacist collaboration [3-6]. In a review of 63 clinic studies, the average systolic blood pressure was reduced by the greatest amount when case management was involved and a pharmacist was included [7-8]. Most studies of the team management of hypertension have been done in clinics that have pharmacists or in hospitals. Many communities, including rural settings, lack sufficient resources to have a team approach within a clinic. However, care teams could be formed within such communities if practitioners from different organizations were able to team up. For example, a physician from a medical clinic and a pharmacist from a community pharmacy could collaborate to manage blood pressure using a team approach [9-10]. Community pharmacists have continually added new areas to their practice including giving immunizations, assisting
with medication adherence, medication therapy management, and disease management to improve the health of every patient. As community pharmacists work to expand their roles in the management of chronic conditions, opportunities to promote provider-community pharmacist collaboration to manage blood pressure will arise.

**PURPOSE and OBJECTIVES**

The purpose of this project was to implement and evaluate a program to foster physician-pharmacist teams in small communities to manage blood pressure. The approach was to translate a proven physician-pharmacist team management within-clinic model to the community where the team members were not working within a clinic for the same employer. The project was conducted in both rural towns and micropolitan areas in Iowa, and included other providers besides physicians.

**Objectives**

1) Conduct team-building activities for up to 12 provider-community pharmacist teams in Iowa.

2) Assess the number of patients cared for through the team management of hypertension.

3) Determine impact of the team approach on provider-pharmacist professional relationship.

4) Identify obstacles to team approach and ways to overcome them.

**METHODS**

The first step of the project was to identify and recruit the clinics/providers and pharmacies/pharmacists that would make up the teams that would implement the team
management approach. Once the teams were recruited, we implemented the 3 phases of the project: 1) team building, 2) team management, and 3) evaluation.

Team Recruitment

The initial goal was to recruit twelve medical clinic-community pharmacy pairs. Potential practice pairs were linked at the community level. Each clinic and each pharmacy was expected to have one or more practitioners participate in the team management approach. For this project, community pharmacies included some pharmacies located in clinic buildings that were under separate ownership from the clinic. Even when located within the same building, teams in these situations still faced numerous challenges in establishing a team approach such as coordinating workflow, establishing accepted roles for practitioners, and having effective communication processes.

The team recruitment process used letters that were mailed, emailed or faxed to pharmacies and physicians. The pharmacies were on a list of 72 practice sites that provide practice experiences to University of Iowa pharmacy students, and provide advanced levels of pharmacy services. The list of physicians were members in the Iowa Research Network (IRENE), a practice-based research network in Iowa. The IRENE communication included 33 physicians working in areas with a rural urban commuting area (RUCA) code of 4 to 10 (micropolitan area to rural area).

The site recruitment letter provided a brief description of the team management of BP project, and asked them to return a fax to Professor Doucette at the University of Iowa. Those who returned a fax were called to provide further information and determine their willingness to participate in the project. Once a site stated its willingness to participate, we asked them to name likely sites to form a provider-pharmacist team. Once identified, the prospective sites
were contacted about participating in the project as well, using mailings, faxes, and telephone calls, depending on their preference for communications. After a provider/clinic and a pharmacist/pharmacy were recruited to form a team, a team-building session was scheduled at a suitable location on a day and time that would work for both team members.

Team Building

A face-to-face 60-minute team building session was held for providers and pharmacists from each clinic-pharmacy team. During the team building session, the project team from the University of Iowa facilitated a discussion between the providers and pharmacists that clarified their views of team management of hypertension, identified specific roles for the team members, discussed how targeted patients would be identified, and developed communication procedures to exchange information during team management. The teams completed a team worksheet that described their decisions for these topics. A copy of the completed team worksheet was given to each team member, while a copy was saved for data analysis. Some of the team building sessions included one provider and one pharmacist, while other sessions included multiple providers and/or pharmacists.

A toolkit document on team management of BP was used to support establishing and maintaining the provider-pharmacist teams. Both a printed version and an electronic version (E.g. pdf files) of the toolkit were given to the practitioners during the team building sessions. Topics addressed in the toolkit included: project team contact information, description of the team model to BP management, evidence supporting the team approach, goals for the study, references to the current BP management guidelines (JNC7), detailed suggestions for team management of BP, sample interventions to address uncontrolled BP, and instructions for
proper measurement of BP. In addition, numerous one-page documents suitable for patient education (E.g. diet, home BP monitoring) were included in the materials.

**Team Management**

Each provider-pharmacist team was able to tailor the model for team management of BP to fit their patients and their practice situations. For example, one team chose to have the pharmacist fax summaries of BP visits, while another team had the pharmacist call the provider directly. This tailoring began at the team building session, and was to continue throughout the team management process as the practitioners gained experience with what worked best for their team. The model for team management of BP contained the following activities: patient identification/recruitment, BP visits, and team member communication.

Providers and pharmacists identified patients who did not have their blood pressure controlled or were newly diagnosed with hypertension. Some pharmacies ran an initial report to identify their patients who had a BP medication prescribed by one of the participating providers. The list of such patients then was sent to the clinic to verify that those patients were currently receiving care from the providers at the clinic. Once those people were confirmed, the list served as a registry of “shared BP patients,” and was the focus of the team management of BP activities. Other teams simply had the provider and the pharmacist identify likely patients at the time of a clinic visit or a pharmacy visit respectively.

Patients who participated in team management typically met with the pharmacist for a baseline assessment that included: BP measurement and discussion of anti-hypertensive medications. If the patient was not at goal, then the pharmacist could ask about medication adherence, as well as lifestyle issues. If it appeared that the therapy was being taken as directed but not achieving the BP goal, the pharmacist would communicate with the provider
or recommend that the patient visit the provider. Pharmacists communicated with the providers in several ways, including fax, telephone, and face-to-face. Some teams had pharmacists recommend specific drug changes, while others relied solely on the provider to determine drug therapy adjustments.

Pharmacists scheduled subsequent follow-up visits with patients as needed. It was left to the practitioners to determine how many visits were needed with each patient during the team management period. The pharmacists logged the BP visits in order to track the extent of team management of BP. The log data did not include specific patient identification, which in most cases limited the ability to track the number of BP visits for individual patients. However, it did allow calculation of the average number of BP visits per patient in the team management approach.

**Evaluation**

To allow time for data analyses and reporting, final data collection was done in May and June of 2013. This resulted in some teams having 5 months for the team management period, while other teams had only 3 months. This variability resulted because of the time it took to recruit the teams and to schedule the team building sessions. Because this project had a multi-case design, we can account for the length of time of the team management period used by each team.

One set of data was collected from pharmacies. First, the pharmacists were asked to complete two surveys about team management: one at baseline and one after the team management period. The surveys asked about the team member relations, how the team BP management occurred for that team, the presence of any obstacles to team performance, how the members communicated, suggested improvements in the team management
approach, and the pharmacists' intention to continue team management of hypertension after conclusion of the project. It also contained descriptive items about the pharmacy and pharmacist(s). The team relations were measured using the Physician-Pharmacist Collaboration Index (PPCI), which assesses Trustworthiness, Role Specification, and Relationship Initiation [11-13]. The PPCI uses a 7-point Likert scale to rate the items: 1=strongly disagree, 2=disagree, 3=somewhat disagree, 4=neither agree nor disagree, 5=somewhat agree, 6=agree, 7=strongly agree. Also, data were collected from a BP management log maintained by the pharmacists, including: number of patients receiving team management, number of visits (initial and follow-up), number of BP readings at goal, and pharmacist actions (E.g. patient education, communication with provider). Only de-identified data were collected in the pharmacy logs.

Another data source was the providers, who provided feedback about team management through two surveys: one at baseline and one after the team management period. The surveys asked about the same topics as the pharmacist surveys. These data were combined in the analyses at the team level. Thus, we obtained feedback from both team members about specific topics, such as the obstacles that were encountered by the team.

The case analyses began with combining the data at the team level and writing a case report for each team (see Appendix). In addition to data about the team, the case report also included a case summary that addressed three guide questions, which are used in case studies to help summarize the data in each case [14]. The guide questions were: 1) How well did this team BP management work?, 2) How was the BP management done for this team?, and 3) What factors affected the success of this BP management team? Each case summary
provided a within case description about that team. In addition, the case reports were used in cross-case analyses that were based on overall case/team performance.

RESULTS

Eleven provider-community pharmacist(s) teams were set up throughout the state of Iowa. These teams will be referred to as cases in this report. A twelfth team had been recruited, but cancelled the team session on the day it was to be held. They later declined to participate, stating that their practice situation had changed. Given the lateness of their dropping, we were unable to replace them. As a group, the teams consisted of three in micropolitan areas (population of 10,000-49,999) and eight in rural communities (population less than 10,000). The average percent below the poverty line in these communities was 9.7%, with a range of 3.9% to 19.5%. The average percent of people over 65 was 19.7%, with a minimum of 3.5% and a maximum of 31.4%. The providers consisted of seven medical doctors, one doctor of osteopathic medicine, two physician assistants, and two advance nurse practitioners. Seven of the pharmacists had a PharmD degree and eight had their BS in pharmacy. Four of the pharmacies were independent, while the other seven were chain pharmacies (having 6-127 locations in the state of Iowa).

Each case was rated on overall performance, based on two criteria: 1) the extent to which they established a system to support the team management approach and 2) the number of patients who participated in their team BP management. The judgments were made initially by a single judge, but also were assessed by project team members to reach a single rating. Four teams were categorized as Worked Well (Cases A, B, C, D), five teams were classified as Limited Success (E, F, G, H, I), and two teams were rated as No Team Approach (J, K).
The four **Worked Well** teams were able to establish a system that supported the team management approach. The system components included an effective process for identifying and recruiting patients, clear roles for the team members, trusting relations between the team members, and effective communication procedures. Having a system in place for the team management of BP, these four teams identified and recruited 6-18 patients who received 22-33 BP visits. Unlike some of the lesser performing teams, patient factors were not obstacles to the team management approach for these four teams. Also, they were able to commit time to deliver the team care.

The five teams with **Limited Success** either did not fully establish a system to support the team approach (Cases E, F, G) or they did not deliver the team management to more than a few patients despite having a functional team system (Cases H, I). The teams without supportive systems did not have clear roles for team members, or lacked effective communication methods. Thus, when difficulties came up at their practices, such as identifying patients for team care or patient refusal to the team approach, these teams were only able to provide minimal team management of BP.

In contrast, two of the teams in this category appeared to have established functional systems to support their delivery of the team management approach. However, they did not have more than 3 patients receive the team management of their BP. Practitioner time (both provider and pharmacist) was a factor in both of these cases, stating that time constraints made it difficult to do the team approach activities. In one case both team members had significant administrative responsibilities, which likely contributed to their time challenges.

Patient factors also contributed to lower performance for these **Limited Success** teams. Several respondents stated that patients declined participating in the team approach, while others just said they needed more patients. This team approach focused on patients
who were cared for by both the provider and the pharmacy, which limited the number of patients who could be included. Other problems with patient acceptance could be that patients did not see a need for the team approach (E.g. BP was controlled, liked working with provider only) or patients were not ready to have their BP checked in a pharmacy. Patients’ willingness to utilize a new pharmacy service has been related to the value they think they’ll get from that service [15-16]. In addition, patients may not see BP management as an acceptable role for pharmacists, or might simply not like the access to pharmacists located in a clinic that doesn’t have long hours like those offered at many community pharmacies.

Two cases (Cases J, K) were rated as No Team Approach because team management of BP was not provided. A functional system to support the team approach was not established in either of these cases. That is, the practitioners had problems with some or all of the system components: identifying patients for team care, providing BP visits, and communication between the practitioners. In addition, no patients received team management of BP, though some initial efforts were made to identify patients. The members did not report good/trusting relations during the project, lacking the rapport needed to build a team. In the absence of the team support system, some patient resistance came up, and the practitioners were not able to overcome it.

It is possible that these No Team Approach cases did not receive a sufficient team building intervention. One case did not have a face-to-face team building session with the project team due to miscommunication. Rather the project team met separately with the team members and sent communications to each practitioner. The lack of the face-to-face session may have limited the focused discussions that could have supported the team approach. While the pharmacist did conduct a couple of BP visits, no coordination with the provider occurred.
The practitioners of the other case met face-to-face, but later reported confusion about the member roles and a need for better communication (E.g. forms). Both roles and communication were covered during their team building session and their plans were recorded in their team plans. It is unclear why this team did not develop, though both practitioners stated that patients were not interested in the team approach. This provider is a solo practitioner with a somewhat low patient volume. Perhaps her patients prefer having her handle all of their healthcare, and saw little to be gained from following a team approach. In support of this notion, the provider stated that she thought “just doing it herself” would be easier than the team approach. So, it seems that the provider and her patients tended to see limited value from following a team approach to managing BP.

DISCUSSION

Overall, the project was partially effective in fostering provider-pharmacist team management of blood pressure in smaller communities. The four successful teams were able to establish a system to support the team approach and then actively provided team management of blood pressure to more than a few patients. Five teams achieved limited success, either establishing a system for the team approach but not being able to use it for more than a few patients, or not being able to establish more than a low-functioning system for their team approach. Finally, two cases did not establish a team approach at all, by not establishing a sufficient team support system.

The next section will discuss each of the four project objectives.

Objective 1
Objective 1 was to conduct team building activities for up to 12 provider-community pharmacist teams in Iowa. Though we had 12 teams scheduled for team building sessions, we ultimately worked with 11 provider-pharmacist teams when the twelfth team dropped out late in the recruitment process. The central team building activity was a face-to-face team building session in which the project team met with the provider(s) and pharmacist(s) for that team. During these 1-hours sessions, the project team facilitated discussion of how the team management of BP could be operationalized for that team and community. The discussion addressed the vision for the team, and had the team members discuss several key decisions for planning their team, including practitioner roles, patient identification, communication strategies, patient follow-up schedule, and a team follow-up session. The team building session allowed the team to work through key decisions during a brief time period. The team members were sent a copy of the team worksheet that contained the decisions they made during the team building session. In addition, the session reviewed the project guide and toolkit materials, and briefly discussed a patient case.

Overall, this team building approach was successful in helping most teams establish a system to support their team approach. However, it was not effective for all teams, and could be improved. Three teams that did not establish a functioning system for their team were the first three teams that participated in the team building session. It is possible that the project team learned to lead more effective team building sessions, though a consistent outline was followed for all of the sessions. While follow-up emails were sent after the team building had occurred, no further face-to-face communication was provided by the project team.

It is likely that the team building intervention could be improved by providing more follow-up between the project team and care team. We had intentionally limited our follow-up with the teams to allow the team members to operate within the team support system they
had developed. Additional support could involve more face-to-face communication, or even conference calls, after the initial team building session to help teams identify and resolve obstacles that limit their progress in implementing a team approach. Such interactions could be helpful in addressing obstacles that emerge once the practitioners begin to try to use the team approach. They may not clearly recall their specific team roles, or might have problems with communications. Some follow-up team conference calls could boost the team members to more firmly establish a system to support the team approach. Similarly, such calls could help the project team and team members to identify ways to overcome problems in their practices such as workflow or time issues. Future work could be done that incorporates team support or team maintenance activities, such as conference calls or one-on-one interactions.

**Objective 2**

Objective 2 was to assess the number of patients cared for through the team approach. Across the 11 cases, a total of 62 patients received BP visits with a pharmacist. This varied from a mean of 12.8 patients for the Worked Well teams, a mean of 1.8 for the Limited Success teams, and a mean of 1 for the No Team care cases. In addition, the number of follow-up visits had a similar pattern, with the Worked Well teams conducting a mean of 13.8 follow-up BP visits, the Limited Success delivering an average of 5 follow-up visits, and the No Team care cases having no follow-up BP visits.

Some of the teams, especially the lowest performing teams, mentioned patient issues as obstacles to the team approach. Previous research on patient willingness to utilize new pharmacist services has shown that if the patient expects to receive something valuable from the service, then he/she is more willing to try it [15-16]. So, the manner in which the team approach was presented to the patients could have affected their interest in receiving it. For
example, if the pharmacist talked about better BP control or convenience for the patient, the patient may have been more interested than if the pharmacist talked about the team approach helping the pharmacist or physician. While we discussed how to approach patients during the team building sessions, we did not provide prepared talking points about team management for the practitioners. Rather, the patient materials were more about specific topics in managing their BP, such as home BP monitoring, taking their medications, and lifestyle changes. Future efforts should include materials and perhaps some training for practitioners, especially the pharmacists, to use when presenting the team care approach to patients.

**Objective 3**

Objective 3 was to assess the impact of the team approach on provider-pharmacist relations. The practitioner relations were generally good across the teams, though the lowest ratings occurred with the No Team Care cases. It appears that trusting professional relations are a necessary, but not sufficient, characteristic for the teams to develop enough to be successful. Because these practitioners generally had little opportunity for face-to-face communication, it was a challenge for them to develop their relations. However, some of the teams were able to improve their relations following the team building session, typically through being committed to using the care system that had been planned out at their session. The communications about the BP visits that the pharmacists delivered allowed the pharmacist to demonstrate his/her expertise. Expertise has been identified as a determinant of trustworthiness [17-18].

The team building session included a brief case discussion that was intended to allow the practitioners to discuss how to handle a patient’s issues clinically and practically.
However, most of the discussions tended to focus more on how communications would occur, given the problems identified in the case. So, the pharmacists generally did not have the opportunity to demonstrate their clinical expertise during the team building session. In addition, not all of the pharmacists took the opportunity to show their expertise by going ahead with the BP visits, and by recommending drug therapy adjustments. Interestingly, the pharmacists in the Worked Well teams recommended more adjustments to anti-hypertensive therapy than the pharmacists in the other teams (Worked Well: $x = 4$, Limited Success: $x = 1.4$, No Team: $x = 0$). A possible change in future team building sessions could be to incorporate greater discussion of clinical cases to help establish the clinical expertise of the pharmacist. Or, perhaps some discussion of treatment guidelines or issues could be incorporated into the team building session or into any follow-up conference calls.

**Objective 4**

Objective 4 was to identify obstacles to the team approach and ways to overcome them. Several obstacles to team management of BP in the community were identified during this project: failure to establish a system to support the team approach, relatively low levels of trust in the provider-pharmacist relations, system factors, practice workflow and time issues, and patient factors. Four cases did not establish a functional system to support the team approach. This suggests that a single team building session was insufficient for achieving that goal. As mentioned previously, perhaps more follow-up communications could be used to continue to establish the necessary infrastructure for the team management to occur at a reasonable level. Another idea would be to have the team members complete a worksheet prior to the team building session, to stimulate thinking about key issues such as identifying patients, practitioner roles, and communication processes. Such worksheets could then be
used during the team building session to better focus the discussion and decision making. Differences could more readily be identified, and hopefully resolved during the team building session.

The teams entered this project with varying levels of interprofessional relations, but all were positive enough to agree to participate in the project. For practitioners in separate organizations to collaborate under a team approach, a certain level of trust and open communication should be present. Some of the teams had previous relations to build on, while others did not. The challenge is to establish a working relationship that will support some initial trials of the team approach, and then build on that through strong performance. In a best case scenario, it would relate to the pharmacist contacting the provider with useful information about patients (E.g. who have very high BP readings, have been uncontrolled for a long time, are experiencing a likely adverse reaction). By showing their worth, the teams can improve their relations, while supporting the team approach.

Also, the team members of four cases were located within the same building. Two of these were rated Worked Well, while two were Limited Success. Despite the potential for face-to-face meetings, the two Limited Success cases were unable to fully establish a functioning team system. Both of these were in clinics that had recently rented space to the community pharmacy within the clinic. It is likely that the staffs of the clinic and pharmacy had insufficient history to establish open and flexible relationships. So, while the provider was open to using the team approach, the other clinic staff may have been less willing to accommodate the team activities (E.g. communications). Also, both of these clinics were in the same organization. It is possible that their structure or culture was rigid, and less welcoming to a team approach that involved an “outside” organization (E.g. the pharmacy). More work is needed to better determine which health systems will support a team model.
In addition, practitioners in some of the lower performing cases reported problems with performing team care activities in their respective practice sites. In today’s healthcare environment, workloads can limit the time that practitioners have to spend with each patient. If the practitioners did not have any slack in their workflow, it would be more difficult to find time to do blood pressure visits, read and respond to communications, as well as conduct other team care activities. Some organizations build in redundancy which can support flexibility for practitioners to better allocate their time. It is likely that certain best practices could be developed for the clinics and pharmacies to consider when incorporating a team approach such as that followed in this project. These could be shared with each potential team to consider as they discuss adopting a team approach to managing chronic conditions such as hypertension.

Some patient factors appeared as obstacles, such as an unwillingness to participate in a team care approach or confusion about their role while under team management. As mentioned previously, some materials such as a script, could be provided to the team members to support engaging patients in the using a team approach to managing their BP. In addition, we could provide promotional materials that could be used in the practice sites, such as a poster or brochures about the benefits of a team approach. For example, some materials from the Team Up Pressure Down web site could be utilized to promote the team management approach to patients.

**Conclusion**

This project showed that a team building intervention could support some practitioners in small communities to follow a team approach to managing high blood pressure. While most of the teams had at least limited success, some changes could be made in the intervention to
improve team formation and performance. Likely changes include scheduled follow-up communications among the team members after the team building session, tools for communicating with patients, and guidance on adjusting their practice sites to accommodate the team care activities. Future work with refinements of this team building project is encouraged.
References


APPENDIX A
Case Reports

Worked Well Cases (A, B, C, D)

Case A

This is a rural community located in northwestern Iowa. The population has 26.3% who are 65 years of age or older, 78.3% who have a high school degree or higher, and 4.8% who are below the poverty line. The per capita income is $19,228 (American towns.com). This community’s health care system consists of one medical clinic with a PA, one hospital within 25 miles, and one pharmacy.

We enrolled one clinic that was affiliated with an integrated health system. In this clinic there is 1 provider (a physician assistant). The patient population consists of 15% Medicaid and 50% Medicare beneficiaries, wherein 50% of all clinic patients have hypertension. The provider team member was a male PA, age 50, who cares for about 90 patients per week.

The pharmacy that paired with the clinic was an independent. The pharmacy staff includes 1 pharmacist and a clerk. The prescription volume averages 500 per week, all of which are dispensed by the team member. Of these prescriptions, 84% are for Medicaid beneficiaries and 15% are for Medicare beneficiaries. At this pharmacy 75% of the patients have hypertension. The pharmacist team member was a male, age 55, with a BS in pharmacy.

Team relations from baseline to follow up changed somewhat during the team BP management period. The provider’s baseline rating for trustworthiness in the pharmacist was 7 and after the follow-up survey it ended at 7, while the pharmacist’s was 6.33 and ended at 6.5. The baseline rating for role specification of the provider was 6.44 and after the follow-up survey it ended at 6.56, while the pharmacist’s was 4.11 and ended at 4.56. Baseline rating of relationship initiation for the provider was 6.33 and after the follow-up survey it ended at 6.33, while the pharmacist’s was 6 and ended at 7. Overall the team relations were improved.

The Team planned the BP management as follows: Prescriber’s Roles: Refer patients to pharmacist as needed, Other clinic patients will also be referred to pharmacy, Clinic does offer BP checks; Pharmacist’s Roles: Conduct BP visits with patients, Communicate with provider as needed; Patient Identification: Pharmacist identified patients with hypertension who were willing to be monitored; Communication Strategies: Faxes sent to an electronic file and clinic staff reviews, STAT fax-send BP’s of >160/90 to PA, Pharmacy will create BP check fax form with: patient, date, time and BP, Email addresses exchanged, Inform patient that collaboration is taking place; Patient Follow-up Schedule: PA re-checks patients in 1-2 weeks, then re-checks in 1 month then, if controlled every 3 months.
The total number of BP visits was 22 (9 initial, 13 F/U). The BP readings ranged from 128/58 to 156/90, with 13 of 22 (59.1%) BP readings at goal. At 8 visits the pharmacist conducted patient education and at 1 visit made a recommendation to the prescriber to change therapy.

Summary

Guide Question 1: How well did this team BP management work?

This team had good relations at the start of this project, based on years of serving as the only provider and only pharmacist in the community. This was reflected in the relatively high relationship ratings at baseline and after the team management period. The pharmacist provided 22 BP visits, with 9 of these being initial visits. Four of the 9 (44.4%) initial BP readings were at goal, while 8 of 13 (61.5%) of the follow-up BP readings were at goal. The pharmacist worked primarily with patients only (E.g. patient education) when BPs were not at goal. Overall, this BP management team worked well.

Guide Question 2: How was the BP management done for this team?

The pharmacist identified patients with hypertension at the pharmacy and then asked about getting blood pressure checked. The provider made few referrals, since his clinic was able to readily conduct BP visits. The pharmacy provided the BP readings to the patients only, unless the readings exceeded 160/90 – which were sent to the physician assistant via STAT fax.

Guide Question 3: What factors affected the success of this BP management team?

Team members knew each other professionally for years, which supported commitment to the team approach. The practitioners were able to trust each other, which allowed them to follow the team approach as they had planned.

A key challenge at this site was that there was only one pharmacist, so workload influenced ability to do BP checks. That is, when he was busy with dispensing activities, it was difficult to perform BP visits. Despite this, it appears that the pharmacy was able to establish a process for conducting the BP visits. Both team members reported that the team approach helped improve communication between them. Though little communication was recorded in the pharmacy’s BP log, none of the BPs were high enough to trigger the STAT fax process that had been established during the team building session.
The provider stated a desire for an automated/easier way to enter the pharmacist-taken BP readings could be entered into the clinic’s electronic records. The pharmacist readings were faxed, but then had to be manually entered into the patient’s clinic record.

Patient acceptance of the team management approach was reported to be good. Some patients preferred to get their BP checked at the clinic, while others did not.
Case B

This is a rural community located in southwestern Iowa. The population has 20.1% who are 65 years of age or older, 84.3% who have a high school degree or higher, and 19.5% who are below the poverty line. The per capita income is $19,861 (Census.gov). This community’s health care system includes six medical clinics which have MDs, DOs, ARNPs and/or PAs, one hospital, and three pharmacies.

We enrolled one clinic that was affiliated with a larger organization. In this clinic there are 5 practitioners. The patient population consists of 30% Medicaid and 30% Medicare beneficiaries, wherein 20% of all clinic patients have hypertension. The physician team member was a male MD, age 39, who cares for about 120 patients per week.

The pharmacy that paired with the clinic was a chain which owns over 100 pharmacies in the state of Iowa. The pharmacy staff includes 4 pharmacy technicians and 3 pharmacists. The prescription volume averages 1,680 per week, 750 of which are dispensed by the team member. Of these prescriptions, 30% are for Medicaid beneficiaries and 55% are for Medicare beneficiaries. At this pharmacy 80% of the patients have hypertension. The pharmacist team member was a female, age 36, with a PharmD.

Baseline rating for trustworthiness for the physician was 6 and after the follow-up survey it ended at 6.67 while the pharmacist’s was 7 and ended at 6.83. The baseline rating for role specification of the physician was 4.89 and after the follow-up survey it ended at 5.11 while the pharmacist’s was 7 and ended at 6.89. Baseline rating of relationship initiation for the physician was 5.67 and after the follow-up survey it ended at 6 while the pharmacist’s was 7 and ended at 7. Two of the pharmacist’s ratings dropped only slightly, while all three physician’s ratings increased slightly. Overall the team relations were improved.

The team planned the BP management as follows: Prescriber’s Roles: Refer patients to pharmacist-PRN; Pharmacist’s Roles: Conduct BP visits with patients, Communicate with physicians-PRN; Patient Identification: Physician identifies patients with new HTN diagnosis, Pharmacist open to collaborate with non-pharmacy patient; Communication Strategies: MD has a communication form, Pharmacy fax or Email to clinic; Patient Follow-up Schedule: Clinic rechecks BP at 2 weeks after a dose change, Pharmacy may follow-up between clinic visits, Meet at hospital, Send reminders

The total number of BP visits was 23 (18 Initial and 5 Follow up). The BP readings ranged from 110/65 to 165/107, with 7 at goal. At 19 visits the pharmacist conducted patient education, at 6 the pharmacist made an adherence intervention, and at 2 visits made a recommendation to the prescriber to change therapy.

Summary
Guide Question 1: How well did this team BP management work?

This team felt good about the whole project and worked well together. They were able to put together effective communication forms, modeled after those used by the clinic to communicate with a LTCF, to address any issues that came up. Good communication was established with quick responses. Though it was sometimes hard to recruit patients, the pharmacy worked on letting them know the pharmacist was available to check the BP and educating them on how important monitoring is to controlling the BP. The pharmacist provided 23 BP visits, with 18 of these being initial visits. Only 5 of 18 (27.8%) initial BP readings were at goal, while 2/5 (40%) of the BP readings at follow-up were at goal. Though this team had success, there was even more opportunity to improve BP control. Overall, this BP management team worked well.

Guide Question 2: How was the BP management done for this team?

As some of the physician’s patients already went to the pharmacy, the pharmacist would look for patients that qualified for the study while verifying their prescriptions. The pharmacist would then place a green card in their bag indicating to the cashier to speak with the patient about the study or have the pharmacist explain it. Though the patient did not always choose to have their BP taken, this discussion allowed them to become aware of the opportunity. The pharmacist faxed the prescriber after each BP check and the prescriber responded quickly with any changes that needed to be made.

Guide Question 3: What factors affected the success of this BP management team?

One challenge the pharmacist faced was that some patients that qualified came through their drive-thru and their BP could not be taken. However, the pharmacist was able to make them aware of the opportunity to get the BP taken and encouraged them to come in the store on their next visit. The physician also noted that some patients may have had trouble with access to the pharmacy and/or office.

Though both team members worked well together, they both felt that more providers should be included and develop blood glucose monitoring as well.
Case C

This is a rural community located in northeastern Iowa. The population has 18.8% who are 65 years of age or older, 82.8% who have a high school diploma or higher, and 7.8% who are below the poverty line. The per capita income is $18,280 (Americantowns.com). This community's health care system includes three medical clinics which have MDs, DOs, ARNPs and/or PAs, and one hospital within 14 miles.

We enrolled one clinic that was affiliated with a larger organization. In this clinic there are 1.5 practitioners and the patient population consists of 15% Medicaid and 40% Medicare beneficiaries, wherein 30% of all clinic patients have hypertension. The provider team member was a female ARNP, age 44, who cares for about 30 patients per week.

The pharmacy that paired with the clinic is a small chain which owns less than 10 pharmacies in the state of Iowa. The pharmacy staff includes 3 pharmacy technicians and 2 pharmacists. The prescription volume averages about 675 per week, where 450 and 225 of which are dispensed by the two team members. Of the prescriptions, 10% are for Medicaid beneficiaries and 60% are for Medicare beneficiaries. On average, 50% of the pharmacy’s patients have hypertension. The pharmacist team members were males, age 45 with a BS in pharmacy, and age 38 with a PharmD.

Team relations from baseline to follow up did (not) change. Baseline rating for trustworthiness for the provider was 7 and after the follow-up survey it ended at 7 while the pharmacists’ were 6.83 and 6.5 (avg. 6.67) and ended at 7. The baseline rating for role specification of the provider was 7 and after the follow-up survey it ended at 6.78, while the pharmacists’ were 6.44 and 6.44 (avg. 6.44), and ended at 6.89. Baseline rating of relationship initiation for the provider was 6.33 and after the follow-up survey it ended at 7 while the pharmacists’ were 7, 6.67 (avg. 6.84) and ended at 7. Overall the team relations improved.

The team planned the BP management as follows: Prescriber’s Roles: Refer patients to pharmacist as needed, If patient is controlled- pharmacy does BP checks, If not controlled-go to pharmacy in 1-2 weeks, Respond to pharmacist recommendations- via phone or paper; Pharmacist’s Roles: Conduct BP visits with patients, Communicate with provider as needed; Patient Identification: Provider identifies patients with new HTN diagnosis, Identify patients as they present; Communication Strategies: If patient NOT controlled, send BP reading from pharmacy, Send BP readings one time/week unless not controlled, Send uncontrolled more urgently- walk over to clinic that day, Will check on putting alert in EMR, Walk over paper forms with recommendations, Will investigate the use of E-prescribing; Patient Follow-up Schedule: 1-2 weeks after change until controlled, Every 6 months thereafter (when controlled)

The total number of BP visits was 33 (6 Initial and 27 Follow up). The BP ratings ranged from 93/62 to 164/109, with 13 of 33 at goal. At 11 visits the pharmacist conducted
patient education and at 11 visits made a recommendation to the prescriber to change therapy.

Summary

Guide Question 1: How well did this team BP management work?

Both team members rated each other rather high in each of the three categories, especially during the follow-up survey. The pharmacists provided 33 BP visits, with 6 of these being initial visits. The majority were not at goal (20 of 33). The team was able to communicate well and change patient’s medications to improve their BP readings. Overall, this BP management team worked well.

Guide Question 2: How was the BP management done for this team?

The provider identified patients who were not well controlled and most of those that were newly diagnosed with HTN and sent them to the pharmacy for additional monitoring and intervention. The pharmacist would try to schedule BP visits for time when they were not as busy, especially for the initial screenings. Otherwise they worked around patients that were walk-ins, which were not usually a problem. The pharmacist often educated the patient (11 of 33) and did make some recommendations (11 of 33), which the ARNP changed with success for the patient. The ARNP and the pharmacist communicated daily to improve their patients’ control of their BP.

Guide Question 3: What factors affected the success of this BP management team?

One challenge that arose during the study was that some patients had trouble making their follow-up visits. Educating patients on the benefits of monitoring their BP at every visit may help to prevent this in the future.

The pharmacist also noted that educating prescribers about what pharmacists can do in helping to manage disease states could be very beneficial, especially in rural communities. Establishing good communication and collaboration can help improve many patients overall health. Both agreed they would like to add more patients and possibly more conditions in the future.
Case D

This is a rural community in east-central Iowa. The population has 19.3% who are 65 years of age or older, 85.2% who have a high school degree or higher, and 15.1% who are below the poverty line. The per capita income is $17,900 (Census.gov). This community’s health care system includes eight medical clinics which have MDs, DOs, ARNPs and/or PAs, one hospital, and 2 pharmacies.

We enrolled one clinic that was affiliated with a larger organization. In this clinic there are 5 practitioners. The patient population consisted of 30% Medicaid, 25% Medicare, wherein 10% of all clinic patients have hypertension. The practitioners are MDs and ARNPs, and are both male and female. The provider team member was a female DO, age 35, who cares for about 250 patients per week.

The pharmacy that paired with the clinic was an independent which owns 3 or less pharmacies in the state of Iowa. The pharmacy staff included 8 pharmacy technicians and 7 pharmacists, 4 of which have a PharmD. Of the pharmacists, only one is a male. The average prescription volume ranges from 1800-2000 per week, with a range of 50 to 500 dispensed per week by individual team members. Of these prescriptions, 23% are for Medicaid beneficiaries, and 35% are for Medicare beneficiaries. At this pharmacy, respondents indicated about 45% of the patients have hypertension. The pharmacist team members were 4 females, ages ranged from 29 to 48, with 1 BS in pharmacy and 3 PharmDs, including 1 residency.

Baseline rating for trustworthiness for the provider was 6.17 and after the follow-up survey it ended at 7, while the baseline average for pharmacists was 6.09 and the final was 6.67. The baseline rating for role specification of the provider was 5.33 and after the follow-up survey it ended at 6, while the pharmacists’ baseline average was 5.67 and final mean was 6.15. Baseline rating of relationship initiation for the provider was 6 and final rating was 6.33, while the pharmacists’ baseline average was 6.17 and final mean was 6.44. Overall the team relations were improved.

The team planned the BP management as follows. Provider’s Roles: Refer patients to pharmacists as needed; Pharmacist’s Roles: Conduct BP visits with patients, Communicate with provider as needed, Pharmacy offers BP checks to new BP patients, Refer emergent patients to clinics; Patient Identification: Provider identifies patients with new HTN diagnosis, Pharmacy will generate a list, Pharmacy will talk with patients too; Communication Strategies: Faxes, Physician to make a note on Rx order, Pharmacy has fax forms to note and ID patients for BP readings at pharmacy; Patient Follow-up Schedule: Try to check BP on new medications in 1-2 weeks, Check approximately 1 month if controlled.

The total number of BP visits was 28 (18 initial, 10 follow-up). The BP readings ranged from 124/64 to 154/98, with 10 of 28 readings at goal. At all 25 visits, pharmacists educated patients about their medications and BP management. At 4 BP visits the pharmacist also
conducted an adherence intervention, while communication with the provider occurred at 16 BP visits.

Summary

Guide Question 1: How well did this team BP management work?

The team relations were favorable at baseline, and improved during the team management period. This site was the last to have the team-building session, so had the least time for team development and management. The provider rated team performance as excellent, while the pharmacists rated it very good to excellent. Team members stated that communication between the provider and pharmacists improved during the team management period. The provider reported incorporating pharmacist recommendations into her patients’ treatment plans for BP. The pharmacists provided 28 BP visits, with 18 being initial visits. Most of the BP readings (18 of 28) were at goal. The pharmacists provided patient education at all of their BP visits. Overall this BP management team worked well.

Guide Question 2: How was the BP management done for this team?

Patients were identified at the pharmacy when patients of the provider received new or refill prescription medications for hypertension. Patients also were asked about any difficulties in managing their BP, as well as about their interest in getting their BP checked in the pharmacy. The pharmacists provided BP visits (some walk-in and some scheduled), and then typically faxed the BP readings to the provider. A pharmacist stated that the walk-in visits were somewhat problematic if they occurred during a busy period at the pharmacy.

Guide Question 3: What factors affected the success of this BP management team?

Multiple pharmacists participated in the team approach. One issue that emerged was communication among the pharmacists about the patients in the team BP approach and their blood pressure management activities. They discussed these issues at multiple staff meetings to be able to coordinate care properly within the pharmacy.

The communication between the provider and pharmacists was primarily via fax. The pharmacists had experience with writing concise visit notes to communicate to providers, which supported effective communication within this team. The team members had pretty high ratings in performance and trustworthiness, which suggests that the team approach was working well.
A pharmacist mentioned that patients were unwilling to participate in pharmacist BP visits. This also was mentioned by the provider. It is possible that such patients utilized the nearby clinic for BP checks, or did not recognize BP visits as an acceptable role for pharmacists.

This team involved one provider and multiple pharmacists. This approach allowed the team to accrue a relatively high number of patients who participated in the team approach. This occurred despite a short (i.e. about 3 months) period to operate the team management of BP approach. The team approach within the pharmacy helped contribute to the provider-pharmacist team, since the pharmacists coordinated effectively. The provider and pharmacists stated that their experience with this team BP management approach was a good platform for future collaboration.
Limited Success Cases (E, F, G, H, I)

Case E

This is a micropolitan community in central Iowa. The population has 16.7% who are 65 years of age or older, 81.4% who have a high school diploma or higher, and 15.4% who are below the poverty line. The per capita income is $21,924 (Census.gov). This community’s health care system includes 11 medical clinics which have MDs, DOs, ARNPs and/or PAs, one hospital, and ten pharmacies.

We enrolled one clinic which was affiliated with a larger organization. In this clinic there are 5 practitioners. The patient population consists of 10% Medicaid and 50% Medicare beneficiaries, wherein 30% of all clinic patients have hypertension. The physician team member was a male MD, age 64, who cares for about 140 patients per week.

The pharmacy that paired with the clinic is located in the same building as the clinic. It is one of a large chain that owns over 10 pharmacies in the state of Iowa. The pharmacy staff included zero pharmacy technicians and 1 pharmacist. The prescription volume averages 150 per week, all of which are dispensed by the team member. Of the prescriptions, 10% are for Medicaid beneficiaries, and 70% are for Medicare beneficiaries. At this pharmacy 75% of the patients have hypertension. The pharmacist team member was a female, age 45, with a BS in pharmacy.

Team relations from baseline to follow-up declined slightly. Baseline rating for trustworthiness for the physician was 6.5 and after the follow-up survey it ended at 6.83, while the pharmacist’s was 6.83 and ended at 6.5. The baseline rating for role specification of the physician was 5.67 and after the follow-up survey it ended at 5.33, while the pharmacist’s was 5.56 and ended at 4.67. Baseline rating of relationship initiation for the physician was 6.67 and after the follow-up survey it ended at 6.33, while the pharmacist’s was 7 and ended at 5.67. Overall the team relations worsened somewhat during the team period.

The team planned the BP management as follows: Prescriber’s Roles: Refer patients to pharmacist-PRN; Pharmacist’s Roles: Conduct BP visits with patients, Communicate with physicians-PRN, Source of drug info and formulary info, might want more BP measurements for more info, Suggest seeing dietician if diet is a problem (in clinic); Patient Identification: Physician identifies patients with new HTN diagnosis, Triage nurse could send for BP check; Communication Strategies: Email a possibility-check on encryption, or written note once/day or once/week, or add names to 3 ring binder log for each patient; Patient Follow-up Schedule: Nurse phone in follow-up

The total number of BP visits was 3 (1 initial and 2 follow-up). The BP readings ranged from 97/66 to 107/79, with all 3 at goal. None of the BP readings were communicated to the physician.
Summary

Guide Question 1: How well did this team BP management work?

The team relation ratings actually decreased during the team management period, which is one of the few cases where that occurred. The team members had difficulty in identifying and recruiting patients for the team BP approach. Perhaps the limited success affected the team relation ratings. Also, both team members rated the team's performance as good, which is in the middle of the rating scale. The pharmacist provided 3 BP visits, and all the readings were at goal. The physician stated that the team discussed patients who were non-adherent, though the BP readings were done in the clinic (not the pharmacy). Overall, the BP management team had limited success.

Guide Question 2: How was the BP management done for this team?

The pharmacist tried to identify patients through walk-in, after an initial list was shared with the physician. She performed the BP visits in the pharmacy, which is located within the clinic building, typically at the time of dispensing. Since all the BP readings were at goal, the pharmacist did not communicate with the physician about them.

Guide Question 3: What factors affected the success of this BP management team?

One challenge was the limited staffing at the pharmacy. Typically there was only one pharmacist working. It was a small space, so it could be handled by one person. However, such staffing could make it difficult to conduct BP visits when other patients were waiting.

Also, the pharmacy is located directly off the clinic waiting room, with few physical barriers. Thus, it is possible that some patients felt the space was not private enough to have their BP checked by the pharmacist.

Another difficulty for this team was identifying and recruiting patients who needed and were willing to use the team approach. The clinic offered accessible BP checks, which some patients utilized instead of going to the pharmacy.

Also, since the pharmacy was in the clinic, it had limited hours compared to other pharmacies in the community. Thus, the pharmacy had a limited pool of patients for the team approach. Also, the pharmacist stated that patients were unwilling to participate in the team approach, perhaps because the access was similar to the clinic.
Case F

This is a micropolitan community in eastern Iowa. The population has 3.5% who are 65 years of age or older, 97.9% who have a high school diploma or higher, and 4.6% who are below the poverty line. The per capita income is $30,002 (Census.gov). This community’s health care system includes nine medical clinics which have MDs, DOs, ARNPs and/or PAs, three hospitals within 10 miles, and four pharmacies.

We enrolled one clinic that was not affiliated with a larger organization. In this clinic there are 4 practitioners. The patient population consists of 2% Medicaid beneficiaries and 15% Medicare beneficiaries, wherein 20% of all clinic patients have hypertension. The physician team member was a female MD, age 56, who cares for about 75 patients per week.

The pharmacy that paired with the clinic was a small chain which owns less than 10 pharmacies in the state of Iowa. The pharmacy staff included 6 pharmacy technicians and 4 pharmacists, 3 of which have a PharmD. The prescription volume averages 1200 per week, 400 of which are dispensed weekly by the team member. Of these prescriptions, 10% are for Medicaid beneficiaries, and 25% are for Medicare beneficiaries. At this pharmacy, about 25% of the patients have hypertension. The pharmacist team member was a female, age 50, with a BS in pharmacy.

Team relations from baseline to follow-up improved. Baseline rating for trustworthiness for the physician was 7 and after the follow-up survey it ended at 7, while the pharmacist’s was 6.5 and ended at 7. The baseline rating for role specification of the physician was 4.89 and after the follow-up survey it ended at 6, while the pharmacist’s was 4.56 and ended at 6.11. Baseline rating of relationship initiation for the physician was 6.33 and after the follow-up survey it ended at 7, while the pharmacist’s was 6.33 and ended at 6.67. Overall the team relations were improved.

The Team planned the BP management as follows: Prescriber’s Roles: Refer patients to pharmacist as needed; Pharmacist’s Roles: Conduct BP visits with patients, Communicate with physician as needed, Looking over medication, Teach patients how to self-monitor BP, Emphasize DASH diet; Patient Identification: Physician identifies patients with new HTN diagnosis, Clinic may refer patients that do not fill at pharmacy, Adherence issues recognized at the pharmacy; Communication Strategies: Consider E-script for HTN management, “Journal Club” Meeting Dec. 21- review HTN studies: HYVET, Chlorthalidone use; Patient Follow-up Schedule: If med change recommend by pharmacist, office see patient, If office changes med, see patient back in 4 weeks- may recommend pharmacy re-check in 2 weeks, Pharmacy could to follow-up in about 1 week after new med started.

The total number of BP visits was 3 (1 initial, 2 follow-up), with one visit being conducted over the telephone. One patient dropped after being diagnosed with cancer in 2nd week. The BP readings taken at the pharmacy and reported by patient from home monitoring ranged from 99/65 to 122/92, with 6 of 8 BP readings at goal. The pharmacist educated
patients about medications and lifestyle, and worked with patient and physician to add and adjust BP medications.

Summary

Guide Question 1: How well did this team BP management work?

This team had good relations at the start, which continued during the team management period. Both team members rated the team performance as very good. The pharmacist worked closely with one patient and the physician to adjust the medications for a newly diagnosed HTN patient. The communication between the pharmacist and physician was strong for this patient. While the intensity of the team management was good for the one patient, the overall volume of patients was quite low. Overall, this BP management team had limited success.

Guide Question 2: How was the BP management done for this team?

The physician identified two patients for team management, while the pharmacy was not very proactive about recruitment. The pharmacist said that she thinks running reports to identify patients would be helpful. For the one patient, the pharmacist took BPs in the pharmacy during two visits, and also had the patient report home monitoring BP readings over the phone. The pharmacist and physician talked several times on the telephone about adjustments to the patient’s anti-hypertensive medications. The approach for the single patient appeared to be effective, but the low volume of patients was disappointing.

Guide Question 3: What factors affected the success of this BP management team?

Positive team member relations supported an initial effort with this team. They have worked together professionally, with the pharmacy and clinic staff meeting monthly for a journal club. Despite these solid relations, this team was only able to achieve limited success.

Both practitioners stated that time was a limitation to following the team approach for more patients with high BP. Also, the pharmacist said that the team did not refine their communication process, since they only had one patient. She thought that they could have improved communication if needed.

The pharmacist also, said that patient identification could have been improved by running reports at the pharmacy to identify patients of the team physician who were taking anti-hypertensive medications. A more proactive approach to identifying and recruiting
patients for the team approach could have increased the number of patients receiving such care.

The pharmacist stated that the patient was not clear about her own role in managing BP when working with both the pharmacist and physician. They discussed the roles for the physician, pharmacist, and patient to work out the team management process. This patient was actively engaged in monitoring and managing her BP, and adapted to working with the team.
Case G

This is a micropolitan community in central Iowa. The population has 16.7% who are 65 years of age or older, 81.4% who have a high school diploma or higher, and 15.4% who are below the poverty line. The per capita income is $21,924 (Census.gov). This community’s health care system includes 11 medical clinics which have MDs, DOs, ARNPs and/or PAs, one hospital, and ten pharmacies.

We enrolled one clinic that was affiliated with a larger organization. In this clinic there are 7 practitioners. The patient population consists of 8% Medicaid beneficiaries and 25% Medicare beneficiaries, wherein 20% of all clinic patients have hypertension. The physician team member was a male MD, age 52, who cares for about 150 patients per week.

The pharmacy that paired with the clinic was a large chain, which owns 10 or more pharmacies in the state of Iowa. The pharmacy staff included 1 pharmacy technician and 1 pharmacist. The prescription volume averages 100 per week, all of which are dispensed by the team member. Of the prescriptions, 35% are for Medicaid beneficiaries and 50% are for Medicare beneficiaries. At this pharmacy 20% of the patients have hypertension. The pharmacist team member was a female, age 26, with a PharmD.

Baseline rating for trustworthiness for the physician was 6.33 and after the follow-up survey it ended at 6.83 while the pharmacist’s was 5.33 and ended at 7. The baseline rating for role specification of the physician was 4.67 and after the follow-up survey it ended at 5.56 and for the pharmacist’s was 4.89 and ended at 7. Baseline rating of relationship initiation for the physician was 4.67 and after the follow-up survey it ended at 6 while the pharmacist’s was 5.66 and ended at 7. Overall the team relations were improved.

The Team planned the BP management as follows: Prescriber’s Roles: Refer patients to pharmacist as needed, OK to have pharmacist do BP checks, Uses Mediterranean food diet pyramid; Pharmacist’s Roles: Conduct BP visits with patients, Communicate with physician as needed, Give patients wallet car, Pharmacist will get Mediterranean diet from oldways.com; Patient Identification: Physician identifies patients with new HTN diagnosis; Communication Strategies: Faxes, Pharmacist can fax BP logs to prescriber, E-prescribe comment section-uses to notify, Pharmacist can communicate with nurse, Add info to pharmacist notes in E-prescribing; Patient Follow-up Schedule: Doctor will see patient every 2 weeks if new med or dose change, Then in 3-6 months if at goal, depending on other issues

The total number of BP visits was 7 (3 Initial and 4 Follow-up). The BP readings ranged from 110/79 to 128/97, with 4 of 7 at goal. At 7 visits the pharmacist conducted patient education, while at 1 visit the pharmacist made an adherence intervention.
Summary

Guide Question 1: How well did this team BP management work?

At baseline, both the pharmacist and physician rated each other about average in all three categories, but in the end both increased their ratings of the other in all three categories. The pharmacist provided 7 BP visits, with 3 of these being initial visits. For the initial BP readings, 2 of 3 were at goal, while 2 of 4 of the follow-up BP readings were at goal. During each BP visit the pharmacist would educate the patient on BP management as well as the uses of the Mediterranean diet. The pharmacist felt that the physician was very timely in following up with faxes and accepted all recommendations. Overall, this BP management team had limited success.

Guide Question 2: How was the BP management done for this team?

The pharmacist looked up the patients seen by the physician and started the project with those 3 patients in mind. The physician also sent over other patients when they were interested, believing that it may be more comfortable for a patient to take their BP at another location besides their office. After each BP check the pharmacist would fax the information to the physician’s office and educate the patient on BP management as well as the uses of the Mediterranean diet.

Guide Question 3: What factors affected the success of this BP management team?

The pharmacy was new and therefore had few patients, 3 of which were seen by this physician. So recruiting patients was challenging for this team. Though there were few patients and most had their BP controlled. The pharmacist felt that good communication was established with the physician. Both agree that more patients and more time for the project would be beneficial in the future. The pharmacist also felt that more disease management conditions could be added.
Case H

This is a rural community in central Iowa. The population has 23.9% who are 65 years of age or older, 83.3% who have a high school diploma or higher, and 4.8% who are below the poverty line. The per capita income is $15,510 (Americantowns.com). This community’s health care system includes one medical clinic which has MDs, DOs, ARNPs and/or PAs, one hospital within 10 miles, and one pharmacy.

We enrolled one clinic that was affiliated with a larger organization. In this clinic there are 3 practitioners. The patient population consists of 15% Medicaid and 40% Medicare beneficiaries, wherein 33% of all clinic patients have hypertension. The practitioners have MD, ARNP and PA licenses. The provider team members were a male MD, age 44, a female ARPN, age 53, and a female PA, age 26, who care for about 125, 100, and 54 patients respectively, per week.

The pharmacy that paired with the clinic was a large chain which owns over 40 pharmacies in the state of Iowa. The pharmacy staff included 1 pharmacy technician and 1 pharmacist. The prescription volume averages 720 per week, 600 of which are dispensed by the team member. Of these prescriptions, 10% are for Medicaid beneficiaries, and 20% are for Medicare beneficiaries. At this pharmacy 40% of the patients have hypertension. The pharmacist team member was a female, age 50, with a BS in pharmacy.

Team relations from baseline to follow-up did (not) change. Baseline ratings for trustworthiness for the providers were 6.83, 6.67, 7, (avg. 6.83) and after the follow-up survey it ended at 6.67, while the pharmacist’s was 7 and ended at 7. The baseline ratings for role specification of the providers were 6.22, 6.22, 7, (avg. 6.48) and after the follow-up survey it ended at 6.67, while the pharmacist’s was 7 and ended at 6.78. Baseline ratings of relationship initiation for the providers were 7, 5.67, 7 (avg. 6.56) and after the follow-up survey it ended at 6.67, while the pharmacist’s was 7 and ended at 7. Overall the team relations were unchanged.

The Team planned the BP management as follows: Prescriber’s Roles: Refer patients to pharmacist as needed, Have pharmacist track BP’s at refills; Pharmacist’s Roles: Conduct BP visits with patients, Communicate with provider as needed, Notify prescriber if drug interaction with BP meds; Patient Identification: Provider identifies patients with new HTN diagnosis, Patients having dose adjustments in meds or dose recommend pharmacist to monitor, Prescribers start noting with HTN and use E-Rx when refilling or starting new meds, Insurance Company notifies prescriber of patient non-adherence; Communication Strategies: Faxes, E-Rx with note to pharmacist to check BP at each refill, Provider will inform pharmacist of patient BP at the clinic, Pharmacist will notify clinic/prescriber when sys >180, Fax notes of BP readings, Pharmacist to track BP in E-prescribing: target about 25 patients; Patient Follow-up Schedule: 1-2 weeks for medication like amlodipine, 2-4 weeks for other agents.
The total number of BP visits was 9 (2 Initial and 7 Follow-up). The BP readings ranged from 150/72 to 152/94, with none at goal. At 4 BP visits the pharmacist conducted patient education, 3 faxes were sent to the physician, and at each visit a pulse rate was also taken.

Summary

Guide Question 1: How well did this team BP management work?

Although the overall ratings from baseline to follow-up did not change much, both the providers and pharmacist felt the project went very well. The pharmacist provided 9 BP visits, with 2 of these being initial visits. All of these were not at goal. The pharmacist also took the time to check the patients’ pulse and educate them at each visit. The providers feel that the pharmacist can play a bigger part in helping to management patient’s BP and treatment. Though the patients did not meet their goal, after implementing changes recommended by the pharmacist the patients BPs were slowly decreasing. Overall, this BP management team had limited success.

Guide Question 2: How was the BP management done for this team?

The providers referred the patients to the pharmacy for the study and would also call when patients were identified. The pharmacist would take the patients BP as part of the dispensing and counseling workflow. The pharmacist used a separate counseling room to check the BP and to counsel the patient. The pharmacist had agreed to fax the clinic whenever a patient had a systolic reading greater than 160, which happened on three occasions.

Guide Question 3: What factors affected the success of this BP management team?

Pharmacist noted that one patient with BP of 158/90 said that BP at home is normal. It may be possible that the situation affected the patient’s BP readings. Neither the providers nor pharmacist felt there were many problems, however, the pharmacist thought that if the patient volume increased in the future that there might be more difficulty with having enough time. Both agreed it would be good to have more patients being monitored.
Case I

This is a rural community located in southeastern Iowa. The population has 31.4% who are 65 years of age or older, 86.8% who have a high school degree or higher, and 7.7% who are below the poverty line. The per capita income is $25,681 (Census.gov). This community’s healthcare system includes two medical clinics which have MDs, DOs, ARNPs and/or PAs, one hospital, and one pharmacy.

We enrolled one clinic that was not affiliated with a larger organization and it was located within the community hospital facility. In this clinic there are 8 practitioners: 4 physicians, 3 PAs, and 1 ARNP. Five of the practitioners are male. The physician team member was a male DO, age 62, who cares for about 70 patients per week.

The pharmacy that paired with the clinic was an independent pharmacy. The pharmacy staff includes 1 pharmacy technician and 1 pharmacist. (This pharmacist also provides pharmacy services in the community hospital.) The prescription volume averages 1,500 per week, 800 of which are dispensed by the team member. Of the prescriptions, 12% are for Medicaid beneficiaries and 48% are for Medicare beneficiaries. At this pharmacy 65% of the patients have hypertension. The pharmacist team member was a male, age 64, with a BS in pharmacy.

Baseline mean rating for trustworthiness items for the physician was 7, while the pharmacist’s was 7 and ended at 7. The baseline rating for role specification of the physician was 6.56, while the pharmacist’s was 6.44 and ended at 6.56. Baseline rating of relationship initiation for the physician was 6.33, while the pharmacist’s was 6.67 and ended at 6. Overall the team relations generally were unchanged, though the physician’s follow-up values were not available.

The team planned the BP management as follows: Prescriber’s Roles: Refer patients to pharmacist as needed; Pharmacist’s Roles: Conduct BP visits with patients, Communicate with physician as needed, Pharmacy Logs; Patient Identification: Physician identify patients with new HTN diagnosis; Communication Strategies: Use communication through the community hospital’s EMR – MD worked with pharmacist to learn how to use the electronic medical record to exchange patient information for BP management; Patient Follow-up Schedule: MD to see patient within 30 days of new Rx, especially if older patient, pharmacist checks BP’s

The total number of BP visits was 12 (2 initial, 10 follow-up). The BP readings ranged from 111/72 to 154/86, 3 of 12 (25%) BP readings were at goal. After 5 of the BP visits the pharmacist telephoned the physician, twice recommending a therapy change. The patient was advised to see the physician two times.
Summary

Guide Question 1: How well did this team BP management work?

This team had good relations based on years of knowing each other and working together professionally. In addition, the community pharmacist provided hospital pharmacy services, which added to the physician-pharmacist relations. The pharmacist rated the team’s performance as excellent, while the physician’s rating was not available. The team BP management approach involved only two patients. However, these patients were managed actively, with the pharmacist conducting six BP checks for each over three months, with multiple contacts with the physician. The later BP levels were at or near goal, which suggests that the team approach did improve the BP for these patients. The pharmacist recommended a change in drug therapy that was accepted, and that improved BP control. Overall, this BP management team had limited success.

Guide Question 2: How was the BP management done for this team?

The pharmacist recruited patients for the team approach, but did not recruit very many patients. He worked with them intensively with multiple consultations with the physician, including a recommended change in antihypertensive drug therapy. Telephone was the most common mode of communication, likely reflecting the team members’ long history together.

Guide Question 3: What factors affected the success of this BP management team?

These team members have known each other for over 40 years, and had developed an effective professional relationship. This relationship supported close communication between the practitioners during the team management. The team intends to continue to follow the team approach for BP management in the future.

The team members stated that limited time to identify patients was an obstacle for the team management of BP. Both the physician and pharmacist have administrative duties in addition to their care responsibilities. Further, the physician was gone for part of the team management period, which reduced the time for them to utilize the team approach on more patients.

Patient response was not stated to be a problem for this team. This is supported by the relatively large number of BP checks for the patients who were followed (6 for each). The support of the team approach by both physician and pharmacist could have helped the patients to see the benefit of following it.
No Team Approach Cases (J, K)

Case J

This is a rural community located in central Iowa. The population has 14.0% who are 65 years of age or older, 89.5% who have a high school diploma or higher and 7.6% who are below the poverty line. The per capita income is $26,620 (Census.gov). This community’s health care system includes four medical clinics which have MDs, DOs, ARNPs and/or PAs, one hospital, and two pharmacies.

We enrolled one clinic which was not affiliated with a larger organization. In this clinic there is 1 practitioner. The patient population consists of 0% Medicaid beneficiaries and 50% Medicare beneficiaries, wherein 50% of all clinic patients have hypertension. The physician team member was a female MD, age 47, who cares for about 50 patients per week in a solo practice.

The pharmacy that paired with the clinic was a large chain, which owns over 10 pharmacies in the state of Iowa. The pharmacy staff includes 3 pharmacy technicians and 2 pharmacists. The prescription volume averages 1,250 per week, 500 of which are dispensed by the team member. Of the prescriptions, about 20% are for Medicaid beneficiaries and 30% are for Medicare beneficiaries. At this pharmacy 40% of the patients have hypertension. Of the pharmacists, one is a female PharmD, age 26 and the pharmacist team member was a male PharmD, age 29.

Baseline rating for trustworthiness for the physician was 5.83 and after the follow-up survey it ended at 6, while the pharmacist’s was 5.5 and ended at 6. The baseline rating for role specification of the physician was 2.67 and after the follow-up survey it ended at 3.11, while the pharmacist’s was 5.56 and ended at 5.56. Baseline rating of relationship initiation for the physician was 3 and after the follow-up survey it ended at 4.33, while the pharmacist’s was 5.66 and ended at 6. Overall the team relations were somewhat improved from baseline to the end of the team management period.

The Team planned the BP management as follows. Prescriber’s Roles: Refer patients to pharmacist as needed, Take BP before medication change, Call the pharmacy about medication costs; Pharmacist’s Roles: Conduct BP visits with patients, Communicate with physician as needed, Medication consultation, Provide medication costs to clinic when called; Patient Identification: Physician identifies patients with new HTN diagnosis, MD refers patients who need additional BP checks before making changes, Take BP at clinic and pharmacy before a medication change, Include patients who need more monitoring, Consultations between physician and pharmacist; Communication Strategies: Electronic prescription from MD to see a patient, Fax from Pharmacy, Electronic data exchange (EDI) - use to send note back to pharmacy, E-fax- also could do referral report; Patient Follow-up Schedule: follow-up for a new medication treatment in 2 weeks, wants patient to follow-up at clinic for refills.
This efforts at team’s management of blood pressure resulted in no patients being cared for under the team approach. Both team members rated the performance of the team as poor. Though they did initial work to identify shared hypertension patients, subsequent work did not lead to collaboration for those patients. The provider stated that it was easier for her to manage the patient’s BP herself. Similarly, the pharmacist thought having more forms available and support to establish their system would have supported information exchange about BP levels among the team members. Further, both team members reported that patients were unwilling to participate in the team approach. Lack of time for the practitioner also was identified as an obstacle by both team members. Though the team approach was not adopted here, the practitioner relations and communication improved somewhat. Neither team member reported an interest in continuing team management, which is understandable given their lack of progress.

Summary

Guide Question 1: How well did this team BP management work?

This team’s relations at baseline were not rated very highly by the provider. Despite little progress on the actual team approach, the relations did improve somewhat. The team approach failed to be adopted at this site, with no patients being cared for under such an approach.

Guide Question 2: How was the BP management done for this team?

This team discussed several ways to communicate about patients’ blood pressure, and at the team-building session appeared to be willing to adopt the team approach. However, they were not able to establish a viable system for collaborating on their patient’s BP.

Guide Question 3: What factors affected the success of this BP management team?

The team was not able to establish a system for routine communication of blood pressure readings. One part of this was that the pharmacist reported a desire for easy forms and a system to support the team approach. Similarly, the physician reported little need for adding a role for the pharmacist in managing patients’ BP. So, at a basic level, despite some initial progress (E.g. identifying shared patients with hypertension), this team was not able to develop some key components necessary for the team to successfully function: a common vision with accepted roles and ways for adequate communication. Further, the provider rated relations with the pharmacist low.
Both team members reported that they were too busy to make changes in their practices that would support a team approach. This happened despite a positive team-building session, and subsequent work to identify common patients. The physician’s office is a sole practitioner operation, which means resources were limited, which could have constrained flexibility to accommodate a team approach. The pharmacy was short a pharmacist for part of the team management period, which could have made it difficult to embrace changes to support the team approach.

Patient acceptance of the team management approach was reported to be low. Both team members reported that patient interest in a team approach was an obstacle. This physician reported caring for a relatively low number of patients weekly, which presumably allowed her to spend more time with each patient. Thus, it may be that she could have readily managed their BPs during clinic visits. Thus, patient may have seen little benefit from involving the pharmacist through a team approach.
Case K

This is a rural community located in southeastern Iowa. The population has 26.5% who are 65 years of age or older, 81.5% who have a high school degree or higher, and 3.9% who are below the poverty line. The per capita income is $17,962 (Americantowns.com). This community's health care system consists of four medical clinics which have MDs, DOs, ARNPs and/or PAs, one hospital, and four pharmacies.

We enrolled one clinic that was not affiliated with a larger organization. In this clinic there was 1 practitioner. The practitioner team member was a female DO, over 60 years of age. She did not submit survey data.

The pharmacy that paired with the clinic was a large chain, which owns over 20 pharmacies in the state of Iowa. The pharmacy staff includes 1 pharmacy technician and 2 pharmacists. The prescription volume averages 500 per week, 500 of which are dispensed by the team member. Of these prescriptions, 50% are for Medicaid beneficiaries, and 70% are for Medicare beneficiaries. At this pharmacy 40% of the patients have hypertension. The pharmacist team member was a female, age 43 with a BS in pharmacy.

Baseline rating for trustworthiness for the pharmacist was 7 and ended at 6.3. The baseline rating for role specification of the pharmacist was 6.3 and ended at 5.8. Baseline rating of relationship initiation for the pharmacist was 7 and ended at 6.7. Overall the team relations worsened over time.

The team planned the BP management as follows: Prescriber’s Roles: Refer patients to pharmacist as needed, Recommend patient get BP checked when pick up meds, Take one week to ID 10-20 patients and share uncontrolled, non-adherent, medication change, and change by cardiologist; Pharmacist’s Roles: Conduct BP visits with patients, Communicate with physician as needed, monitoring adherence, coordination of med changes by multiple providers, Alert prescriber of urgent HTN patients with diastolic >100; Patient Identification: Physician identifies patients with new HTN diagnosis; Communication Strategies: E-Prescribing.

The pharmacist conducted two initial BP visits, but did not coordinate with the provider. Neither of the BP readings were at goal, and the pharmacist educated these patients. Also, the pharmacist reported that patients checked their BP with a BP machine in the pharmacy, and that she did not record those as visits.

Summary

Guide Question 1: How well did this team BP management work?
This team was not successful at establishing a team approach to managing BP. Though they did some initial efforts to identify patients, they did not work together to manage any patient’s BP. The pharmacist reported that she learned some things from the BP materials that were helpful when talking with her patients about managing their BP.

Guide Question 2: How was the BP management done for this team?

The pharmacist reported that a team approach was not established. She did try to talk to her patients with HTN, though she did not conduct BP checks. Rather, she had them check their BP using a machine in the pharmacy. Communication between the pharmacist and physician was not improved.

Guide Question 3: What factors affected the success of this BP management team?

This team did not meet with the research team for a joint team building session, due to a miscommunication. Rather, the research team met face-to-face with the physician, visited the pharmacy, and talked with the pharmacist over the telephone. The team members later talked together over the phone. It appears that the lack of a face-to-face team building session with the project team was an obstacle for establishing a team approach to managing BP.

Given the limited connection with the physician, the pharmacist worked with her BP patients by providing patient education. She utilized some of the materials provided with study guide. Since she was the only pharmacist, she had the patients use the BP machine in the pharmacy, rather than taking their BPs herself.

Another issue mentioned by the pharmacist was that some of her patients did not have health insurance, so were reluctant to visit the physician. The lack of insurance limited the patients’ connection with the physician, which was an obstacle for the team approach (i.e. no regular physician).
APPENDIX B

Surveys

- Pharmacist Baseline Survey
- Pharmacist Follow-up Survey
- Prescriber Baseline Survey
- Prescriber Follow-up Survey
BP Team Management Pharmacist Baseline

Q1.1 The purpose of this survey is to identify the factors that influence the development of collaborative working relationships between pharmacists and physicians. Please base your answers on the relationship with the physician with whom you work the most. Think, in general, about the interactions you have had with this physician over time. Please indicate your level of agreement with each statement.

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<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Somewhat Disagree</th>
<th>Neither Agree nor Disagree</th>
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<tbody>
<tr>
<td>1. I intend to keep working together with this physician. (1)</td>
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<td>3. I trust this physician’ s drug expertise. (3)</td>
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<td>5. This physician works with me to overcome any disagreements that may emerge about my role in managing drug therapy. (5)</td>
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<td>6. Decision-making responsibilities for our patients’ drug therapy are shared between this physician and myself. (6)</td>
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<td>9. This physician is a credible practitioner. (9)</td>
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<td>10. I provide information to this physician about specific patients. (10)</td>
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<td>11. This physician and I negotiate to come to agreement on our activities in managing drug therapy. (11)</td>
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<td>12. In making decisions for our patients, both physician and pharmacist opinions are considered. (12)</td>
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<td>14. My interactions with this physician are characterized by open communication by both parties. (14)</td>
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<td>15. I can count on this physician to do what he/she says. (15)</td>
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<td>16. There is cooperation between this physician and myself in managing the drug therapy of our patients. (16)</td>
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<td>17. I show an interest in helping this physician improve his/her practice. (17)</td>
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Q1.2 In the past 6 months, please estimate the number of patients for whom you collaborated with this physician to manage hypertension:

_______ patients (1)
Your Demographic Information

Age
Q2.1 ______ years (1)

Q2.2 Gender
☐ Male (1)
☐ Female (2)

Q2.3 Please indicate your level of pharmacy training. (Check all that apply)
☐ BS Pharmacy (1)
☐ PharmD (2)
☐ Residency (3)
☐ Masters (4)
☐ Other (Please list type and field of study or certification): (5) ____________________

Q2.4 Please check the one item that best describes your pharmacy:
☐ Independent Community Pharmacy (3 or fewer stores under the same ownership) (1)
☐ Small Chain Community Pharmacy (4-10 stores under the same ownership) (2)
☐ Large Chain Community Pharmacy (more than 10 units under the same ownership) (3)
☐ Mass Merchandiser (e.g., Wal-Mart) (4)
☐ Supermarket Pharmacy (5)
☐ Other (Please describe): (6) ____________________

Q2.5 On average, how many prescriptions does your pharmacy dispense per week?
______ prescriptions/week (1)

Q2.6 On average, how many prescriptions do you personally dispense per week?
______ prescriptions/week: (1)

Q2.7 About what percentage of patients at your pharmacy have hypertension?
______ % patients with hypertension (1)

Qend That’s all! Please click the SUBMIT button to complete your survey.

End Message: Your survey answers have been recorded. Good luck with your efforts toward team management of hypertension. Thank you for your participation in this project.
Q1.1 The purpose of this survey is to identify the factors that influence the development of collaborative working relationships between pharmacists and physicians. Please base your answers on the relationship with the physician or other provider with whom you have worked the most. Think, in general, about the interactions you have had with this provider over time. Please indicate your level of agreement with each statement.

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Q1.2 Since the team building session, please estimate the number of patients for whom you have collaborated with this provider to manage hypertension:

_____ patients (1)
Q2.1 Now that you have worked as part of a physician-pharmacist team to lower blood pressure, we would like to gather your impressions about the team management approach. How would you rate the performance/functioning of the team approach to blood pressure management since you started collaborating?

- Poor (1)
- Fair (2)
- Good (3)
- Very Good (4)
- Excellent (5)

Q2.2 Briefly describe how patients were identified for team care. Include both pharmacy and clinic.

Q2.2.1 Briefly describe how the team approach for blood pressure management affected the following 2 items:

- How you fit the blood pressure visits into your workflow. (E.g. walk-ins, scheduled visits, staffing adjustments.)

- Q2.2.2 How responsive the provider was to your communications, e.g., timeliness, consideration/use of treatment recommendations and/or medication changes.

Q2.3 How did you communicate to the physician? Check all that apply.

- Fax (1)
- Email (2)
- Phone (3)
- Face to Face (4)
- Other (5) ____________________

Q2.4 How did the physician communicate with you? Check all that apply.

- Fax (1)
- Email (2)
- Phone (3)
- Face to Face (4)
- Other (5) ____________________
Q3.1 Did your team experience any difficulties while collaborating to improve blood pressure?

☐ Yes (1)
☐ No (0)

Answer If Yes Is Selected

Q3.2 Which of the following difficulties did your team experience while collaborating to improve blood pressure? Check all that apply.

☐ Patients were unwilling to participate. (1)
☐ There were few patients with uncontrolled hypertension. (2)
☐ Lack of time. (3)
☐ Poor communication. (4)
☐ Other: Please describe any other difficulties that you experienced (5) ____________________

Answer If Count Is Greater Than or Equal to 1

Q3.3 These are the difficulties you identified. Please check the box for those that were resolved. (If no issues were resolved, please continue to the next page.)

Answer If Count Is Greater Than or Equal to 1

Q3.4 You have indicated that these items were resolved.

Answer If Count Is Greater Than or Equal to 1

Q3.5 Briefly describe how each item shown above was resolved within the team. __________

Q3.6 List or briefly describe any obstacles that currently exist in your team's management of blood pressure.

Q3.7 What were the benefits of the team management approach? Check all that apply.

☐ The approach helped patients control their blood pressure. (1)
☐ The approach means more opportunity for pharmacists. (2)
☐ This is a valuable platform we can continue to use for services. (3)
☐ Provider and/or clinic staff indicated that the approach benefited clinic time management. (4)
☐ The approach helped improve/increase communication between the pharmacist and physician. (5)
☐ Other. (Please describe): (6) ____________________
☐ No benefits. (0)
Q3.8 Please suggest improvements to the team approach for managing blood pressure. (Feel free to comment on team training or actual team care in your community.)

Q3.9 Do you intend to continue or expand the team management approach for managing chronic conditions?

- Yes (1)
- No (0)

**Answer If Yes Is Selected**

Q3.9.1 Since you indicated you intend to continue or expand your team approach, please describe your intentions: e.g., involve more personnel, include more patients, expand to more conditions, etc.

**Answer If No Is Selected**

Q3.9.0 Since you indicated NO, please explain why you do not intend to continue or expand the team management approach.
Q4 Please complete the next six items to better describe your pharmacy:

Q4.1 Number of pharmacists in your pharmacy:
______ Pharmacists in pharmacy (1)

Q4.2 Number of those pharmacists who participated in the team management of blood pressure:
______ Pharmacists who participated (1)

Q4.3 Number of technicians in your pharmacy:
______ Technicians in pharmacy (1)

Q4.4 Percentage of prescriptions dispensed to Medicare beneficiaries at your pharmacy:
______ % Medicare prescriptions (1)

Q4.5 Percentage of prescriptions dispensed to Medicaid beneficiaries at your pharmacy:
______ % Medicaid prescriptions (1)

Q4.6 Is your pharmacy part of an integrated health system?
☒ Yes (1)
☒ No (0)
Q5.1 Pharmacists have started to offer a variety of services at their practice sites. From the list below, please indicate which services are offered at your practice site. Check all that apply.

- Disease state management (1)
- Specialty/complex compounding (2)
- Medication therapy management services (3)
- Adherence management/packaging (4)
- Medication reconciliation (5)
- Immunizations (6)
- Other services not listed above. (7) ____________________
- No additional services (0)

Q5.2 Please describe what role the technicians played in the team management of blood pressure.

That was the final question. You may go back and review your answers, or submit your survey at this time. Thank you for your time.
Q1.1 The purpose of this survey is to identify the factors that influence the development of collaborative working relationships between physicians and pharmacists. Please base your answers on the relationship with the pharmacist with whom you work the most. Think, in general, about the interactions you have had with this pharmacist over time. Please indicate your level of agreement with each statement.

<table>
<thead>
<tr>
<th>Strongly Disagree; Disagree; Somewhat Disagree; Neither Agree nor Disagree; Somewhat Agree; Agree; Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I intend to keep working together with this pharmacist. (1)</td>
</tr>
<tr>
<td>2. In providing patient care, I need this pharmacist as much as he/she needs me. (2)</td>
</tr>
<tr>
<td>3. I trust this pharmacist’s drug expertise. (3)</td>
</tr>
<tr>
<td>4. This pharmacist has spent time trying to learn how he/she can help me provide better care. (4)</td>
</tr>
<tr>
<td>5. I work with this pharmacist to overcome any disagreements that emerge about his/her role in managing drug therapy. (5)</td>
</tr>
<tr>
<td>6. Decision-making responsibilities for our patients’ drug therapy are shared between this pharmacist and myself. (6)</td>
</tr>
<tr>
<td>7. This pharmacist depends on me as much as I depend on him/her. (7)</td>
</tr>
<tr>
<td>8. Communication between this pharmacist and me is two-way. (8)</td>
</tr>
<tr>
<td>9. This pharmacist is a credible practitioner. (9)</td>
</tr>
<tr>
<td>10. I provide information to this pharmacist about specific patients. (10)</td>
</tr>
<tr>
<td>11. This pharmacist and I negotiate to come to agreement on our activities in managing drug therapy. (11)</td>
</tr>
<tr>
<td>12. In making decisions for our patients, physician and pharmacist opinions are considered. (12)</td>
</tr>
<tr>
<td>13. This pharmacist and I are mutually dependent on each other in caring for patients. (13)</td>
</tr>
<tr>
<td>14. My interactions with this pharmacist are characterized by open communication by both parties. (14)</td>
</tr>
<tr>
<td>15. I can count on this pharmacist to do what he/she says. (15)</td>
</tr>
<tr>
<td>16. There is cooperation between this pharmacist and myself in managing the drug therapy of our patients. (16)</td>
</tr>
<tr>
<td>17. This pharmacist has shown an interest in helping me improve my practice. (17)</td>
</tr>
<tr>
<td>18. Decision-making for our patients is coordinated between this pharmacist and me. (18)</td>
</tr>
</tbody>
</table>

Q1.2 In the past 6 months, please estimate the number of patients for whom you collaborated with this pharmacist to manage hypertension:

______ patients (1)
Your Demographic Information

Q2.1 Age
______ years (1)

Q2.2 Gender
☐ Male (1)
☐ Female (2)

Q2.3 Please check the one item that best describes your practice specialty:

☐ Family Medicine (1)
☐ Internal Medicine (2)
☐ Pediatrics (3)
☐ Other (Please describe): (6) ____________________

Q2.4 During your typical work week, approximately how many patients do you see personally?
______ patients seen weekly (1)

Q2.5 About what percentage of patients at your clinic have hypertension?
______ % patients with hypertension (1)

End That's all! Please click the SUBMIT button to complete your survey.

End Message: Your survey answers have been recorded. Good luck with your efforts toward team management of hypertension. Thank you for your participation in this project.
Q1.1 The purpose of this survey is to identify the factors that influence the development of collaborative working relationships between physicians and pharmacists. Please base your answers on the relationship with the pharmacist with whom you have worked the most. Think, in general, about the interactions you have had with this pharmacist over time. Please indicate your level of agreement with each statement.

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<td>□ □ □ □ □ □ □</td>
</tr>
</tbody>
</table>

Q1.2 Since the team building session, please estimate the number of patients for whom you have collaborated with this pharmacist to manage hypertension:

_____ patients (1)
Q2.1 Now that you have worked as part of a physician-pharmacist team to lower blood pressure, we would like to gather your impressions about the team management approach. How would you rate the performance/functioning of the team management approach to blood pressure management since you started collaborating?

- Poor (1)
- Fair (2)
- Good (3)
- Very Good (4)
- Excellent (5)

Q2.2 Briefly describe how patients were identified for team care. Include both clinic and pharmacy.

Q2.2.1 Briefly describe how the team approach for blood pressure management affected the following 2 items:

- How you view the pharmacist’s role in blood pressure visits and making treatment recommendations.

Q2.2.2 How you responded to the pharmacist’s communications, e.g., timeliness, consideration/use of treatment recommendations and/or medication changes.

Q2.3 How did you communicate to the pharmacist? Check all that apply.

- Fax (1)
- Email (2)
- Phone (3)
- Face to Face (4)
- Other (5) ____________________

Q2.4 How did the pharmacist communicate with you? Check all that apply.

- Fax (1)
- Email (2)
- Phone (3)
- Face to Face (4)
- Other (5) ____________________
Q3.1 Did your team experience any difficulties while collaborating to improve blood pressure?

- Yes (1)
- No (0)

Answer If Yes Is Selected

Q3.2 Which of the following difficulties did your team experience while collaborating to improve blood pressure? Check all that apply.

- Patients were unwilling to participate. (1)
- There were few patients with uncontrolled hypertension. (2)
- Lack of time. (3)
- Poor communication. (4)
- Other: Please describe any other difficulties that you experienced (5) ______________

Answer If Count Is Greater Than Equal to 1

Q3.3 These are the difficulties you identified. Please check the box for those that were resolved. (If no issues were resolved, you will need to continue without answering.)

Answer If Count Is Greater Than Equal to 1

Q3.4 You have indicated that these items were resolved.

Answer If Count Is Greater Than Equal to 1

Q3.5 Briefly describe how each item shown above was resolved within the team.

Q3.6 List or briefly describe any obstacles that currently exist in your team's management of blood pressure.

Q3.7 What were the benefits of the team management approach? Check all that apply...

- The approach helped patients control their blood pressure. (1)
- The approach means more opportunity for pharmacists. (2)
- This is a valuable platform we can continue to use for services. (3)
- Provider and/or clinic staff indicated that the approach benefited clinic time management. (4)
- The approach helped improve/increase communication between the pharmacist and physician. (5)
- Other. (Please describe): (6) ______________
- No benefits. (0)
Q3.8 Please suggest improvements to the team approach for managing blood pressure. (Feel free to comment on team training or actual team care in your community.)

Q3.9 Do you intend to continue or expand the team management approach for managing chronic conditions?

- Yes (1)
- No (0)

Answer If Yes Is Selected

Q3.9.1 Since you indicated you intend to continue or expand your team approach, please describe your intentions: e.g., involve more providers, include more patients, expand to more conditions, etc.

Answer If No Is Selected

Q3.9.0 Since you indicated NO, please explain why you do not intend to continue or expand the team management approach.
Q4 Please complete the next six items to better describe your clinic:

Q4.1 Number of providers in your clinic:
______ Providers in clinic (1)

Q4.2 Number of those providers who participated in the team management of blood pressure:
______ Providers who participated (1)

Q4.3 Average number of patients seen per day (for any condition, by all providers):
______ Patients seen per day (1)

Q4.4 Percentage of patients seen at your clinic with Medicare:
______ % patients with Medicare (1)

Q4.5 Percentage of patients seen at your clinic with Medicaid:
______ % patients with Medicaid (1)

Q4.6 Is your clinic part of an integrated health system?
☐ Yes (1)
☐ No (0)
Q5 Which type of license do you hold? Check all that apply.

- M.D. (1)
- D.O. (2)
- P.A. (3)
- N.P. (4)
- Other - please list: (5) ____________________

END That was the final question. You may go back and review your answers, or submit your survey at this time. Thank you for your time.
APPENDIX C

Forms and Other Materials

- Case D
  - Rx Notification Form
  - MD Notification Form
  - MD Communication Form

- Case B
  - Communication Examples and BP Flag

- Case I
  - 2 Patient Case Histories
Notification of Patient Identification – HTN Collaboration

To: Clinic - MD

Pages: 1

Fax: Phone:

We have identified this patient for inclusion in the HTN Collaboration Program.

Patient: ______________________ DOB: __________

We have asked them to follow-up in the pharmacy in ____ weeks for BP monitoring and reinforcement of education regarding BP management and lifestyle changes. We will inform you of what occurred during this encounter.

Thank you for partnering with us to manage this patient’s hypertension.

DATE: __________

Pharmacist Signature: Date:
Clinic
Address
Address
Phone: FAX:

Notification of Patient Identification – HTN Collaboration

To: PHARMACY
Fax: Phone:

We have identified this patient for inclusion in the HTN Collaboration Program.

Patient: ______________________ DOB: _______

We have asked them to contact the pharmacy for blood pressure monitoring and reinforcement of education regarding hypertension management and lifestyle changes.

DATE: ____________

Physician Signature: Date:

This form will serve as a prescription if recommendations are accepted by the physician.

Confidentiality Notice: These photocopies of original records are provided with the understanding that the information contained therein shall not be used for purposes other than those for which the information is requested. Disclosure of the information transmitted to another party is a violation of this trust. When purpose for which information was transmitted has been fulfilled, photocopies should be returned or destroyed. If you received this fax by error, please notify us by phone immediately so that we can arrange for either the retrieval of the transmitted documents at no cost to you, or destruction of the transmitted documents if authorization is granted.
We saw this patient for monitoring of BP in accordance with our BP Collaboration. Following is the information gathered during this meeting.

<table>
<thead>
<tr>
<th>BP Reading</th>
<th>ADR’s Reported</th>
<th>Compliance</th>
<th>Education Provided</th>
<th>Follow-up (e.g., report back to pharmacy for BP reading, report to physician by ___)</th>
</tr>
</thead>
</table>

**Recommendation for Medication Change**

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*This form will serve as a prescription if recommendations are accepted by the physician.*
University of Iowa Blood Pressure Study

Date: 2-28-13

Attention Dr. Z

Patient Name: ___________________________  Client DOB: __________

Blood Pressure recorded: 143/98

Pulse: 75

Date of BP reading: 2/28/13

Signature of staff member: ___________________________

Pharmacist Recommendation: Encouraged M to keep a record of blood pressure readings in preparation for March appointment w/ Dr. Z - BP still high. Better, but high.

Physician Response: ___________________________
University of Iowa Blood Pressure Study

Date: 3-15-13

Attention Dr. 'B'

Patient Name: _____________________ Patient DOB: __________

Blood Pressure recorded: __110/65__
Pulse: __74__
Date of BP reading: __3-15-13__
Signature of staff member: ________________________

Pharmacist Recommendation: Note: Pt. hasn't taken Toprol XL 25 from Dr 'A' in 7 days. She ran out & just didn't take it x 7d. Today's BP is w/o Toprol. I am wondering if she is to be on both Amlodipine 10 from Dr 'B' AND Toprol XL 25 from Dr 'A'.

Physician Response: Please Advise: ___________________________
**Stop**

See RPh for Blood Pressure check University of Iowa Study

**Stop**
**Initial Assessment**

Patient is a 63 year old white female with normally low blood pressure.

**Past Medical History**

Normally low blood pressure  
Treated acute UTI in September and October  
Osteopenia  
Mitral Valve Prolapse  
Hypercholesterolemia

**Family History**

Father – HTN – Diabetic-living and 88 years old  
Mother – Cancer of breast and brain, deceased

**Medication List**

Amitriptyline 10 mg at HS  
Lovastatin 20 mg at HS  
Verapamil ER 120 mg daily  
Evista 60 mg daily  
Premarin Cream 1 – 2 times weekly  
Relpax 40 mg prn

**Social History**

Drinks socially  
Works full time
Initial Assessment

Patient is a 65 year old white male with blood pressure not at goal.

Past Medical History

HTN for three years
Gastric Reflux
Hypercholesterolemia

Family History

Father HTN-deceased
Mother HTN-deceased

Medication List

Terazosin 5 mg bid
Pravastatin 20 mg daily
Omeprazole 20 mg daily
HCTZ 12.5 mg daily
Meloxicam or Naprosyn PRN
OTC vitamins
Aspirin 81 mg
Recent Labs/tests (good; exception-cholesterol 229)

Social History

Drinks socially
Works full time