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Key words: community pharmacy, pharmacy practice residency, patient care services, training, service development

Abstract

Purpose: The purpose of this paper is to describe integration of a community-based patient care service development model, Partner for Promotion (PFP), within five community pharmacy residency programs (CPRPs) across the United States and provide insights and examples of methods for optimizing community pharmacy resident experiences, developing new patient care services, and achieving residency accreditation standards.

Summary: Five community pharmacy residency programs have integrated PFP that affiliated with Midwestern University – Glendale, Northeast Ohio Medical University, Ohio State University, University of Utah, and West Virginia University. Each college and residency program has identified different strategies through which PFP enhances their residency training and service development including completion of training modules, reflections and discussion on application of the PFP service development model to practice, research, and teaching, use of assignments to guide service creation, and mentoring of PFP student-pharmacist teams. All five sites directly link these activities to objectives required in PGY1 CPRP accreditation standards. PFP has resulted in resident-facilitated service development of a variety of patient care programs.

Conclusion: PFP applied to CPRPs enhances training on service development, builds new services within residency training sites, and assists programs with meeting residency accreditation standards. The experiences of five community pharmacy residency programs across the U.S. that have adopted the program has been positive, with creation of new services and residency sites, integration of novel teaching, practice, research, and learning opportunities for residents, and direct links from the PFP experience to achievement of residency objectives.

Introduction

Community pharmacy residency programs (CPRPs) provide unique post-graduate training experiences similar to inpatient pharmacy practice residency programs with key differences being the setting in which the residents train, the longitudinal nature of the practice experience, and a distinct set of accreditation standards focused in development of new patient care services. Thus, in addition to providing the resident with a quality experience in direct patient care, a well-structured approach to resident participation in the development of sustainable patient care services is key to meeting required accreditation goals and objectives. Table 1 highlights these goals and objectives for PGY1 CPRPs that directly relate to the development of patient care services.

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where they originated. No evidence exists of any formalized programs to improve service development skills for PGY1 CPRPs being used locally or shared with external programs.

Partner for Promotion (PFP) originated in 2005 as a student-led experience to advance pharmacist-provided care in community-based practices in Ohio. PFP was created as a longitudinal, elective Advanced Pharmacy Practice Experience (APPE) that guides students and community pharmacy preceptors through a stepwise approach to developing patient-centered services via a series of online training modules and faculty mentoring. Through PFP, students conduct a needs assessment, develop a solution to gaps identified in the needs assessment, and implement the solution as an advanced patient care service at a patient care site. The model is available online and created for turn-key integration into an academic setting. In 2009, the PFP model was shared with the University of Utah to enhance student APPEs, foster relationships with community pharmacy partners, and assist with building the infrastructure of preceptors and patient care services to support a new community residency program that was emerging at the University. Building upon the successful integration of the program in Utah and receipt of funding from the Community Pharmacy Foundation, four additional colleges of pharmacy have adopted PFP and integrated it into their curricula and residency programs in varying fashions. Impact of PFP on student skill development has been published previously. The purpose of this paper is to describe adaptation of the PFP model of community-based patient care service development within five community pharmacy residency programs across the United States to provide insights and examples of methods for enhancing community pharmacy resident experience in advancing pharmacist-provided, community-based patient care and achieving PGY1 CPRP accreditation standards.

Integration into Residency Programs
The five community pharmacy residency programs that have integrated PFP are affiliated with colleges of pharmacy, including Midwestern University – Glendale, Northeast Ohio Medical University, Ohio State University, University of Utah, and West Virginia University. Each college and residency program has identified different strategies through which PFP enhances their residency training and service development. Each college’s strategy is described below.

Ohio State University PGY1 Community and Ambulatory Pharmacy Practice Residencies
The Ohio State University College of Pharmacy (OSU COP) offers community and ambulatory care PGY1 and PGY2 residency training programs for a total of up to twelve residents per year. The practice sites include an independent community pharmacy, a grocery chain retail pharmacy, a 501(c)3 non-profit charitable pharmacy, a patient-centered medical home affiliated with an academic medical center, and an interprofessional urgent/primary care clinic and pharmacy associated with university employee health services. Since the faculty creator of PFP is a preceptor within the residency programs, the connectivity between the residency and PFP has been ongoing since the initiation of PFP. At the start of the residency year, the faculty director of PFP presents the program to the incoming residents with opportunities for involvement during their residency year. All PGY1 residents review Partner for Promotion training modules, a series of twelve recorded, online modules that serve as the “toolkit” for service development through PFP. Residents write a reflection and meet one time with the PFP faculty director for an interactive discussion to apply the PFP concepts to their residency and practice site as part of an orientation session focused on project management. Further involvement in PFP can be longitudinal throughout the year or project-based. At what level residents participate in PFP depends upon resident interest and fit with each resident’s individualized plan for the year. Residents at Ohio State may serve as mentors to student-pharmacist teams developing novel community-based services through PFP. In the resident mentorship experience, residents get the opportunity to not only enhance their service development skills, but also teaching skills through providing one-on-one student evaluations as well as providing formative feedback to students longitudinally over the year. Other, more focused projects have allowed residents to enhance research skills through mentoring PFP site-specific research projects. Teaching skill development has also been an experience through developing and/or updating PFP training modules, recording them, and delivering them through the program. Evaluations of the residents regarding their PFP experiences are individualized as quarterly, snapshot, or customized depending upon the experience with both summative and formative feedback mechanisms applied to the assessments.

University of Utah PGY1 Community Pharmacy Practice Residency
The University of Utah College of Pharmacy began offering PFP in collaboration with The Ohio State University in 2009 with two practice partners. The success of the program and the sustainable addition of clinical services to the community practice sites led to the popularity and continuation of the program in subsequent years for students and ultimately migrated from a student education program to one focused on training PGY1 CPRP residents. Implementing PFP at the University of Utah has allowed College of Pharmacy faculty to impact the level of outpatient clinical pharmacy practice...
within the state, develop and expand PGY1 CPRPs and mentor current practitioners and residents to establish clinical pharmacy services at community pharmacy sites. One of the first practice partners to collaborate with the College of Pharmacy was an independent pharmacy located within an independent grocery store near a family medicine clinic located about 25 miles north of Salt Lake City. The first set of students to participate in PFP helped the preceptor develop an influenza immunization service. The extra revenue from this service allowed the pharmacy to participate in PFP again the next year and develop a clinical pharmacy service at the nearby family medicine clinic. This collaboration and clinical service progressed over the next couple of years and led to the launch of a PGY1 CPRP in 2011 with one other site within University of Utah Health Care.

The PGY1 CPRP has grown to one resident at three different practice sites including the independent pharmacy previously mentioned and two sites with University of Utah Health Care. Each resident participates in PFP during the training year. The residents complete all of the modules of the program, develop a sustainable and needed clinical service at his or her home practice site by following the stepwise approach laid out in the modules, and analyze outcomes regarding impact of the program by the conclusion of the residency experience. Formal evaluations of the residency objectives related to the patient care project are evaluated quarterly. The resident also receives formative feedback throughout the year when he or she completes each module and project associated with PFP.

**Northeast Ohio Medical University PGY1 Community Pharmacy Practice Residency**

Northeast Ohio Medical University College of Pharmacy offers a PGY1 CPRP in conjunction with AxessPointe Community Health Center, a section 330 funded federally-qualified health center. In 2010, PFP was adopted as a college-based program partnering student pharmacists with community pharmacies throughout Northeast Ohio. After success with developing innovative and sustainable patient care services, the program was expanded to the PGY1 CPRP in 2013. The intent of the expansion to the PGY1 CPRP was to provide the resident with a more structured experience with developing, implementing, and evaluating patient care services. In addition, the program was implemented to allow for expansion of sustainable patient care services at the practice site, which ultimately increases the depth and breadth of services offered in the residency experience. PFP is a required component of both the orientation and project management learning experiences for residents. Each incoming resident reviews the PFP training modules prior to developing, implementing, and evaluating a patient care project. The resident’s PFP project is evaluated as part of the quarterly summative evaluation of the project management learning experience.

**West Virginia University PGY1 Community Pharmacy Practice Residency**

The West Virginia University School of Pharmacy (WVU) offers two, PGY1 CPRP positions each year. The practice sites include an independent community pharmacy and a grocery chain. WVU CPRP residents may complete PFP on a longitudinal basis or can apply aspects of the program to their residency research projects. Both residents complete all modules, as well as assignments as incorporated into their residency training plans related to the stepwise approach to service development laid out in the modules. In addition, residents utilize PFP modules to assist them with their final project of the residency year, creating and implementing a business plan. Evaluations of the residency objectives related to the patient care project are evaluated as part of their summative quarterly assessment.

**Midwestern-Glendale PGY1 Community Pharmacy Practice Residency**

Midwestern University College of Pharmacy-Glendale (MWU-CPG) currently offers four PGY1 CPRPs in three sites. One is a national retail pharmacy chain, while the other two are regional grocery store chains. Initial planning meetings have been held with the residency program directors to explain PFP and how it could be utilized in community pharmacy residencies. Those who have been involved in early discussions have expressed interest and meetings are ongoing to discuss using PFP in the 2016-2017 residency year. Preliminary plans would utilize the PFP curriculum in order to walk the resident and their preceptor through the initiation of a new service within one of the residency’s pharmacy locations. Going forward, the resident would participate in PFP with their residency preceptor with additional guidance from a faculty member from MWU-CPG.

**Description of Impact**

Partner for Promotion learning experiences can be linked directly to the ASHP PGY1 CPRP objectives as is described in Table 2. Concepts covered in the online modules guide those residents who apply the stepwise approach to creation of a novel service at their community practice site as well as those who consider the concepts in the context of their major research project or another longitudinal, needs-based project such as a quality improvement initiative or teaching opportunity. While achievement of objectives vary by residency program, PFP-related learning experiences consistently link to R3.3.1 through R3.3.8, which are within the goal of “Exercise leadership and practice management
skills”, with the most specific being “Goal R3.3:Contribute to the development, implementation, and evaluation of a new pharmacy service or to the enhancement of an existing service”.1 (Table 1).

Table 2 links the activities conducted at each CPRP to learning objectives and showcases the impact PFP has had on service development with each program. Services created at these sites reflect the opportunities of the individual states with regard to their pharmacy practice acts and patient populations served as well as the resources available with each pharmacy site. Common services developed and implemented include medication therapy management (MTM), immunizations, and more specialty services such as compounding and medical nutrition therapy. These services have shown longevity at the pharmacy sites following creation during the residency with PFP, which is notable.

Evaluations of resident perceptions of Partner for Promotion have been conducted through written reflections composed by residents engaged in PGY1 community and ambulatory care pharmacy practice residencies at OSU COP for the 2013-2014 and 2014-2015 classes. A total of 12 residents composed reflections after reviewing the online modules and prior to a group discussion on application of the concepts. Resident journal reflections were downloaded and de-identified and then evaluated for thematic content. Open-ended journal responses were reviewed by two faculty members at different colleges of pharmacy and assigned to emerging categories after consensus among the faculty. Major themes emerged and are described in Table 3. The major themes included in reflective journals by 75% or more of residents were that residents felt the information included in the PFP modules was new beyond what they had learned in pharmacy school, of high quality and value, and was applicable to their clinical practice.

Conclusion
Partner for Promotion is a model of practice development that can be applied to PGY1 CPRPs to enhance training on service development, build new services within residency training sites, and assist programs with meeting PGY1 CPRP accreditation standards. The experiences of five community pharmacy residency programs across the U.S. that have adopted the program has been positive, with creation of new services and residency sites, integration of novel teaching, practice, research, and learning opportunities for residents and pharmacy students, and direct links from the PFP experience to required goals and objectives. Comprehensive service development programs similar to Partner for Promotion have not been described in the pharmacy practice or education literature. However, residency programs have shown impact on expanding practice capacity and development of novel services in the areas of osteoporosis and hypertension / stroke screening. A survey conducted by Schommer et al, showed that the types and intensity of services provided at CPRP sites gave residents opportunities for advancing patient care services training, directing patient contact, and creating opportunities to be engaged in practice innovation.11 Partner for Promotion provides an enhancement of training beyond provision of care, allowing residents to foster development of a novel service through a stepwise approach. For the CPRP, this lends consistency in training year to year and a formal process around which evaluations can be structured as well as an organized approach to practice site development. This structure can address common sources of cited partial compliance for PGY1 residency programs, such as: developed and documented descriptions of learning experiences, linking activities to objectives, and completing evaluations using a set process.3

Limitations to Partner for Promotion and the application to residency training in a widespread fashion include the current focus the training modules have toward the community practice setting. The program was created to foster community practice service development and advancement; thus, the modules do not directly apply to other practice settings. However, in recent years at Ohio State, students have engaged in PFP with health care systems and ambulatory care clinics to advance pharmacy practice. As the healthcare system evolves to focus on team-based, integrated care, PFP is adapting to support pharmacist-provided direct patient care through updating of training modules to address a broader scope of practice settings and opportunities. Additional limitations include geography and pharmacy practice laws being variable across the United States; thus, opportunities and potential for service development may be optimized or limited based upon state law. Finally, Partner for Promotion is a licensed product with an associated fee for use. Most schools have funded the license through education and community practice grants. Next steps for this program include fostering a practice based-research network among residents and residency program directors, as well as PFP alumni. These networks provide opportunities to collaborate on practice and research projects locally and nationally as well as to broadly evaluate PFP and other models that enhance residency training. Another opportunity exists in using the training modules in preceptor development, another commonly cited accreditation standard3.

As the number of accredited community pharmacy residency programs entering the ASHP Residency Matching Program increases (n = 82 in 2010 and 160 in 2014) and the profession
grows in the level of post-graduate training provided to pharmacy practitioners in the community setting, there is an opportunity to not only advance clinical skills, but also enhance pharmacists’ capabilities and roles in management and practice development. Partner for Promotion provides a model that integrates with residency training to foster practice growth as well as enhance skills in practice advancement.

References
Table 1: Required (R) goals and objectives for PGY-1 community pharmacy residency programs (CPRP) related to patient care service development.

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Associated Goal(s)</th>
<th>Associated Objective(s)</th>
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<tbody>
<tr>
<td>R1: Manage and improve the medication-use process.</td>
<td>R1.2: Identify, design, and implement quality improvement changes to the organization’s (e.g., community pharmacy, corporation, health-system) medication-use system.</td>
<td>R1.2.4: (Synthesis) Participate in the process by which the organization identifies the need for, develops, implements, and evaluates evidence-based treatment guidelines/protocols for specific patient populations.</td>
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<tr>
<td>R2: Provide evidence-based, patient-centered care and collaborate with other healthcare professionals to optimize patient care.</td>
<td>R2.1: Establish collaborative professional relationships with other healthcare professionals involved in the care of patients.</td>
<td>R2.1.1: (Comprehension) Explain the process by which collaborative practice agreements are developed and implemented. R2.1.2: (Synthesis) Develop a collaborative practice agreement (may be hypothetical) that could be used in the community pharmacy.</td>
</tr>
<tr>
<td>R3: Exercise leadership and practice management skills.</td>
<td>R3.1: Exhibit essential personal skills of a practice leader</td>
<td>R3.1.4: (Characterization) Serve as a role model for pharmacists, pharmacy students, pharmacy technicians, and other healthcare professionals.</td>
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<td></td>
<td>R3.2: Exhibit practice leadership in organizational and management activities.</td>
<td>R3.2.1: (Synthesis) Participate in the pharmacy's planning processes. R3.2.2: (Synthesis) Use knowledge of an organization's political and decision-making structure to influence the accomplishment of a practice area goal. R3.2.3: (Application) Use group participation skills when leading or working as a member of a committee or informal work group. R3.2.4: (Synthesis) Integrate compliance with community practice accreditation, legal, regulatory, and safety requirements into daily practice. R3.2.5: (Synthesis) Prioritize the work load, organize the work flow, and verify the accuracy of the work of pharmacy technical and clerical personnel involved in all community pharmacy services. R3.2.6: (Application) Observe organizational customer service policies and procedures in the conduct of daily practice activities. R3.2.7: (Application) Use knowledge of the principles of change management to achieve organizational, departmental, and/or team goals.</td>
</tr>
<tr>
<td>Outcome</td>
<td>Associated Goal(s)</td>
<td>Associated Objective(s)</td>
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<tr>
<td>R3: Exercise leadership and practice management skills.</td>
<td>R3.3: Contribute to the development, implementation, and evaluation of a new pharmacy service or to the enhancement of an existing service.</td>
<td>R3.3.1: (Synthesis) Generate an idea for a new service or evaluate a current pharmacy service or program to determine if it meets the stated goals.</td>
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<td>R3.3.2: (Synthesis) Develop a business plan for a new service or an enhanced service, if applicable.</td>
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<td>R3.3.3: (Application) Use presentation and persuasive skills to secure approval of a plan for a new or enhanced service.</td>
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<td>R3.3.4: (Synthesis) Contribute to the development of a marketing strategy for a new or enhanced service that is integrated with the overall marketing plan.</td>
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<td>R3.3.5: (Comprehension) Explain the various mechanisms by which pharmacists can be paid for the patient care services they provide.</td>
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<td>R3.3.6: (Analysis) Employ an effective strategy for obtaining compensation for a new or enhanced service from appropriate potential sources of compensation.</td>
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<td>R3.3.7: (Synthesis) Implement a new or enhanced service according to the business and marketing plans.</td>
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<td>R3.3.8: (Evaluation) Evaluate the new or enhanced service to determine if it meets the stated goals.</td>
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<tr>
<td>R4: Demonstrate project management skills.</td>
<td>R4.1: Conduct a practice-related project using effective project management skills.</td>
<td>R4.1.1: (Synthesis) Identify a topic for a practice-related project of significance for community pharmacy.</td>
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<td>R4.1.2: (Synthesis) Formulate a feasible design for a practice-related project.</td>
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<td>R4.1.3: (Synthesis) Secure any necessary approvals, including IRB and funding, for one’s design of a practice-related project.</td>
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<td>R4.1.4: (Synthesis) Implement a practice-related project as specified in its design.</td>
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<td>R4.1.5: (Synthesis) Effectively present the results of a practice-related project.</td>
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<td>R4.1.6: (Synthesis) Successfully employ accepted manuscript style to prepare a final report of a practice-related project.</td>
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<td>R4.1.7: (Evaluation) Accurately assess the impact, including sustainability if applicable, of the residency project.</td>
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Table 2: Overview of the utilization of the Partner for Promotion (PFP) program at five PGY-1 community pharmacy residency programs (CPRPs) in the US.

<table>
<thead>
<tr>
<th>Residency Program</th>
<th>Residency program areas for inclusion of PFP</th>
<th>Objectives covered by the PFP program</th>
<th>Services developed to date</th>
</tr>
</thead>
</table>
| Ohio State University College of Pharmacy | • Orientation to service development and project management  
  • Mentoring of student PFP group through service development and research  
  • Creation of PFP online module | R3.1.4  
R3.2.1-7  
R3.3.1-8  
R4.1.1-7  
R5.1.1-4  
E3.1.1-10 | Residents mentor student-driven projects and have not applied PFP directly to service development at their residency sites. Mentored student projects have developed:  
• Immunization screening and mobile clinics  
• Medication therapy management (MTM) services  
• Point-of-care testing/screening services |
| Northeast Ohio Medical University College of Pharmacy | • Orientation learning experience (project management section)  
  • Project management learning experience | R3.3.1-8 |  
• Immunization service  
• Medication therapy management (MTM) services  
• Anticoagulation management service |
| University of Utah College of Pharmacy | • Orientation learning experience (project management section)  
  • Project management learning experience | R2.1.3  
R3.1.2  
R3.1.4  
R3.1.5  
R3.2.1  
R3.2.2  
R3.2.3  
R3.2.4  
R3.2.6  
R3.2.7  
R3.3.1-8 | • Clinical Pharmacy Service at Family Medicine Clinic  
• Diabetes Store Tours Program  
• Asthma Service  
• Medication Reconciliation Program |
| West Virginia University School of Pharmacy | • Orientation to service development and project management  
  • Creation of PFP online module | R3.3.1-8  
R5.1.1-2 | • Medication synchronization program |
Table 3: Themes Identified from PGY1 Pharmacy Practice Residents’ Written Journaling Reflections after completing Partner for Promotion (PFP) Training Modules (N=12)

<table>
<thead>
<tr>
<th>Theme</th>
<th>N (%)</th>
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<tbody>
<tr>
<td>Information in PFP modules was new and not learned in pharmacy school</td>
<td>11 (91.6%)</td>
</tr>
<tr>
<td>Information was applicable to clinical practice</td>
<td>10 (83.3%)</td>
</tr>
<tr>
<td>Quality and value of the PFP module content was high</td>
<td>9 (75%)</td>
</tr>
<tr>
<td>The step-by-step process was beneficial for comprehensive planning</td>
<td>5 (41.6%)</td>
</tr>
<tr>
<td>Reimbursement content was useful</td>
<td>4 (33.3%)</td>
</tr>
<tr>
<td>Information was applicable to teaching</td>
<td>3 (25%)</td>
</tr>
<tr>
<td>Information was applicable to conducting research</td>
<td>2 (16.7%)</td>
</tr>
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</table>