

Impact of an Independent Patient Centered Medical Home Clinic Experience during Residency Training on Post-Residency Confidence

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Abstract

Description of the problem: While previous studies have described the impact of incorporating a postgraduate year two (PGY2) Ambulatory Care resident on clinical outcomes and revenue, the impact of an independent Patient Centered Medical Home (PCMH) experience from the resident perspective has not been reported. The purpose of this study was to determine the impact of an independent PCMH rotation on resident confidence. *Description of the innovation:* A longitudinal, independent PCMH rotation has been part of a PGY2 Ambulatory Care residency since program inception. To determine the impact of this experience on resident confidence, a 23-item survey was developed and distributed electronically to all previous PGY2 Ambulatory Care residents who completed this experience. *Critical Analysis:* All invited residents (n=15) responded. Following PGY2 completion, 46.7% of respondents worked as a clinical pharmacist specialist at an academic medical center. Most (86.7%) practiced in primary care and/or population health. The majority responded that the independent PCMH clinic rotation resulted in a positive impact on their confidence in ownership of practice (100%), providing clinical care (93.3%), and pharmacist-patient interactions (86.7%). *Implications:* An independent PCMH rotation during PGY2 Ambulatory Care training can have a positive impact on post-residency clinical confidence.

Keywords: pharmacy resident, ambulatory care, collaborative practice agreement

Description of the Problem

Ambulatory care pharmacy practice is defined as the provision of integrated, accessible healthcare services by pharmacists who are accountable for addressing medication needs, developing sustained partnerships with patients, and practicing in the context of family and community as endorsed by the American College of Clinical Pharmacy, the American Society of Health-System Pharmacists, and the American Pharmacists Association and Board of Pharmacy Specialties.^[1,2] Chronic disease accounts for over three-quarters of the United States total health care expenditures and medication management plays a critical role in the management of these disease states across all settings.^[3] Helling and colleagues have documented the importance of growing postgraduate training opportunities in ambulatory care to help improve overall patient care through medication optimization.^[3]

Limited literature is available describing innovative pharmacy residency curricula and their effects on preparation of the graduate for clinical positions. A few studies have discussed the impact of integrating a Postgraduate Year Two (PGY2) Ambulatory Care pharmacy resident into clinical settings on clinical outcomes and revenue. In 2015, Lamb and colleagues evaluated the impact of a PGY2 run service within a Veterans Health Administration clinic.

This small pilot (n=24 patients) showed a statistically significant reduction in hemoglobin A1c, low density lipoprotein, and systolic and diastolic blood pressure for patients with Type 2 Diabetes Mellitus over the course of six months.^[4] In 2020, Musch and colleagues examined characteristics of 56 PGY2 Ambulatory Care residency programs through a survey-based study. They found that the majority of respondents included family medicine (66%), diabetes/endocrine (64%), and Patient Centered Medical Home (PCMH) model (64%) rotations. Details about these rotations and how they were set-up were not discussed.^[5]

Pierce and colleagues described having PGY2 Ambulatory Care pharmacy residents conduct Medicare annual wellness visits (AWVs).^[6] The pharmacy residents underwent a five week training period and then were able to conduct the AWVs on their own with note reviews and patient case discussions facilitated by the residency program director (RPD). Pharmacy residents completed 407 AWVs over 8.5 months and the average AWVs increased from 4.5 to 6.9 per day during this time. In addition to AWVs, pharmacy residents provided disease state management, answered drug information questions, and implemented a blood pressure monitoring program.^[6]

Most recently, Richards Brinton and colleagues described their experience with successfully credentialing a PGY2 Ambulatory Care resident with eleven third party payors to provide chronic disease evaluation and management under a collaborative practice agreement (CPA), generating revenue equal to 18.4% of the resident's salary.^[7] While each of these studies are valuable, especially for those aiming to expand PGY2 Ambulatory Care training opportunities, none directly

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addressed the impact of an independent clinical practice experience on resident confidence. Literature from medical training has demonstrated that autonomy during training correlates to more provider confidence in establishing their independent practice upon graduation.^[8] This confidence is believed to come from the responsibility the trainee has in clinical decision making and patient ownership.^[8] By incorporating intentional independent clinical practice into the PGY2 ambulatory care residency training, it was hypothesized that a similar impact on confidence in clinical ownership would be found.

The purpose of this study was to determine the impact of an independent PCMH rotation on confidence, in terms of clinical practice ownership and serving as the primary clinical pharmacist within in an internal medicine clinic, as well as identifying and describing the rotation strengths.

Description of the Innovation

At the University of Michigan Health (UMH), there are currently 18 postgraduate year 1 (PGY1) and 13 PGY2 residents. The UMH PGY2 Ambulatory Care program was established in 2012. In 2015, the program grew to include two PGY2 Ambulatory Care residents and has continued to graduate two residents per year since that time. The PGY2 Ambulatory Care pharmacy residency offers numerous primary care rotation sites in internal and family medicine and subspecialty elective rotations. From program inception, the innovative independent PCMH rotation has been part of the core required PGY2 Ambulatory Care curriculum. The rotation is located within an Internal Medicine clinic associated with the UMH and provides a half-day per week, longitudinal learning experience that spans the entire residency year. Residents serve as the primary clinical pharmacist for their half-day clinic, utilizing their own CPA signed by clinic providers. This independent experience starts with credentialing and privileging the PGY2 Ambulatory Care residents in July. Clinical care begins in August of each residency year and continues through June. During the first month of rotation, review and feedback on clinic note documentation is provided by the preceptor. Pre-rounding is completed with the preceptor each week from September to December. From December through the end of the residency year, any preceptor contact is resident initiated.

PGY2 Ambulatory Care pharmacy residents provide patient care for chronic diseases, including diabetes, hypertension, and hyperlipidemia. Residents have their own clinic schedule built into the electronic health record (Epic[®]; Verona, WI) and a panel of patients. Patient visits consist of new patient and follow up appointments and can be scheduled as in-person clinic or telehealth (phone or video) visits. Six 30-minute appointments per four-hour half day session are available for scheduling. Other responsibilities include answering drug information questions from patients and healthcare professionals, providing comprehensive medication reviews, and delivering

in-services on various pharmacy-related topics. Pharmacy residents are responsible for direct patient care, medication management and patient education. This rotation allows the pharmacy residents to build long term relationships with patients, promote patient wellness and health, and assist with coordination of care, which highlights the definition of Ambulatory Care pharmacy. This learning experience was designed to assess and evaluate goals and objectives within the leadership and management competency area; R3.2 (demonstrate management skills in the provision of care for ambulatory care patients) and R3.3 (manage the operation of an ambulatory care pharmacy service) from the PGY2 Ambulatory Care residency program standards.^[9]

A 23-item anonymous, online survey was created using Qualtrics (Qualtrics, Seattle, WA) to assess the impact of the independent PCMH clinic experience on post-residency confidence. The survey was drafted by a workgroup of three clinical pharmacists within UMH, the current residency program director, current residency program coordinator, and the past residency program director. Prior to drafting the survey questions, an extensive review of the literature was performed. Given that no literature was closely associated with the constructs of interest, the questions were developed by the workgroup. The survey questions focused on resident confidence in providing clinical care and ownership of practice, interactions with physicians and medical residents and overall strengths and weaknesses of the experience. Given the size of the survey and surveyed population, no pilot testing was performed. Demographic information, positions obtained post-PGY2 Ambulatory Care residency training, and involvement in experiential education in post-residency positions was also captured.

Survey links were emailed to all previous residents who had completed a PGY2 residency in Ambulatory Care at UMH (n=15), except for one, who was excluded to prevent any conflict of interest due to involvement in the study. Given the size of the survey population, a goal of having the survey completed within one month was set. If the survey was not completed after the initial email contact, a reminder email was sent at day 10. Survey responses were analyzed using frequency and descriptive statistics. There was a total of two open-ended questions, one focused on disease states respondents felt unprepared to manage and one focused on any recommended changes to the program. Comments were summarized. This study was classified as exempt by the Institutional Review Board.

Critical Analysis

A total of 15 survey responses were received between April 10 -19, 2022 (100% response rate). A detailed breakdown of demographics, including PGY1 training, and post-residency job placement, can be found in Table 1. Following graduation from the PGY2 Ambulatory Care program, 46.7% of respondents

accepted a position as a clinical pharmacist specialist at an academic medical center. Eighty-six percent of the clinical roles accepted post-residency were in the primary care or population health space. A total of eight (53.3%) respondents reported that clinical practice in their first position post-PGY2 Ambulatory Care training was less progressive than the practice experienced as a resident in the independent PCMH clinic.

The majority responded that the independent PCMH clinic rotation resulted in a positive impact on their confidence in ownership of practice (100%), providing clinical care (93.3%), and pharmacist-patient interactions (86.7%) (Table 2). Responses to the survey indicate that the independent practice model contributed to the confidence prior residents had going into their post-residency experiences. Respondents identified the independent practice model (100%), having their own CPA (86.7%), and the opportunity to build rapport with patients (80%) and providers (73.3%) independently as strengths of the experience.

Analysis of comments indicated that the most frequent area for improvement was the lack of a warm handoff for patients who were transitioning care from the previous PGY2 Ambulatory Care resident to the new incoming resident over the summer (33.3%). Respondent feedback was generally positive with recommendations for improvement focusing on ways to further integrate with the medical residents in the clinic (6.7%) and increasing preceptor feedback (6.7%). Almost half (46.7%) of respondents indicated feeling underprepared to manage at least one disease state they were expected to manage in their first position post-PGY2 residency training, with tobacco cessation and pain/opioid management/substance use disorder most frequently noted. All respondents recommended that the independent PCMH rotation continue to be offered to future PGY2 Ambulatory Care pharmacy residents. The findings of this study show the positive impact an intentional independent practice had on post-PGY2 clinical practice and practice ownership confidence.

Incorporation of an independent PCMH rotation into a PGY2 Ambulatory Care program was shown to have a positive impact on post-residency clinical confidence and overall resident experience. All respondents reported this experience helped with ownership of practice upon graduation, highlighting the importance of independent practice experience in residency training, and reported this as a strength of the residency program. Serving as the primary clinical pharmacist during this experience affords the resident the opportunity to have ownership of a practice with the comfort of knowing there is preceptor support if and when needed.

Next Steps

As a result of the survey findings, moving forward, the independent PCMH rotation will be embedded into a different primary care clinic where the residents will also spend a half-

day per week working under a preceptor's schedule. This shift in the model will provide one full day per week of exposure to the same clinic (one half-day working under the preceptor's schedule and one half-day of independent practice) and allow for more interactions with a preceptor and easier patient hand-offs from preceptor to resident and integration into the clinic itself.

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Table 1. Demographics and Involvement in Experiential Education and Residency Training

Location of PharmD Program	n (%)
Midwest	12 (80)
Northeast	3 (20)
Type of PGY1 Program	n (%)
PGY1 Community Practice	2 (13.3)
PGY1 Pharmacy Practice	13 (86.7)
Location of PGY1 Program	n (%)
Midwest	13 (86.7)
Northeast	2 (13.3)
First Position Upon Completion of PGY2	n (%)
Academia with practice in academic medical center	3 (20)
Academia with practice in non-academic medical center	2 (13.3)
Clinical specialist in academic medical center	7 (46.7)
Clinical specialist in non-academic medical center	3 (20)
First Practice Site Upon Completion of PGY2	n (%)
Primary Care	9 (60)
Specialty Care ^a	2 (13.3)
Other ^b	4 (26.7)
Involved in Pharmacy Student Training	n (%)
Yes	14 (93.3)
Involved in Pharmacy Resident Training	n (%)
Yes ^c	10 (66.7)

^aAnticoagulation

^bPopulation health

^cParticipants may have multiple roles in Residency training

Table 2. Impact of Independent PCMH Rotation within PGY2 Program on Resident Confidence

Factor	Negative Impact	Slightly Negative Impact	No Impact	Slightly Positive Impact	Positive Impact
Establishing clinical pharmacy services			1 (6.7%)	3 (20%)	11 (73.3%)
Ownership of practice					15 (100%)
Pharmacist-provider interactions				4 (26.7%)	11 (73.3%)
Pharmacist-patient interactions				2 (13.3%)	13 (86.7%)
Providing clinical care				1 (6.7%)	14 (93.3%)
Performing comprehensive medication reviews				8 (53.3%)	7 (46.7%)
Providing care for patients with diabetes			1 (6.7%)	3 (20%)	11 (73.3%)
Providing care for patients with hypertension			1 (6.7%)	3 (20%)	11 (73.3%)
Providing care for patients with hyperlipidemia			2 (13.3%)	3 (20%)	10 (66.7%)