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RESEARCH NOTES

Pharmacy characteristics associated with the provision of medication management services within an integrated care management program

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ABSTRACT

Objectives: To examine pharmacy operational and personnel characteristics that influence engagement in providing a community pharmacy medication management service within a statewide integrated care management program.

Methods: Before the program launch, all of the pharmacies were surveyed to collect demographic, operational, and personnel characteristics such as weekly prescription volume and number of staff, respectively. Those data were then compared with engagement in the program. Engagement was defined as providing initial comprehensive medication review as part of the medication management service. Three months after program launch, pharmacies were dichotomized as consistently engaged or inconsistently engaged. Data were analyzed with the use of descriptive statistics and chi-square and *t* tests to test for statistical significance between consistent and inconsistent engagement groups.

Results: A baseline survey was collected for all 123 pharmacies who joined the integrated care management program. After the first 3 months, 50 pharmacies were consistently engaged in the program. Compared with inconsistently engaged pharmacies, consistently engaged pharmacies employed more full-time pharmacists (mean 2.1 vs. 1.8; $P = 0.05$) and more full-time technicians (mean 4.0 vs. 3.0; $P < 0.01$), allocated more nondispensing hours for pharmacists (88% vs 60%; $P < 0.01$), were more likely to employ a dedicated clinical pharmacist (20% vs 5%; $P = 0.013$), and hosted more pharmacy residents (78% vs 22%; $P = 0.02$). Years of pharmacy operation ($P = 0.05$) and pharmacy store type ($P = 0.05$) also were significantly associated with level of engagement. Neither prescription volume dispensed per week, number of hours of pharmacist overlap, nor hosting pharmacy students was statistically different between consistent and inconsistent pharmacies.

Conclusion: Engagement in clinical activities in community pharmacy appears to improve with adequate staffing, availability of time for nondispensing activities, and having 1 or more pharmacists dedicated to clinical activities.

Community pharmacies are positioned to provide medication management owing to their unmatched patient accessibility and training.[1-3] There is growing interest in the integration of nondispensing services into community pharmacy practice, and there has been an increase in the number of pharmacies focused on these activities; however, effective practice management models for these activities have not been identified.[3-7] The lack of clarity around effective practice management models is problematic because available resources,[8] such as staffing and access to medical information, differ across pharmacies, which could contribute to a variation in program quality. We are given some insight from a multiple regression analysis of factors that the 2014 National Pharmacist Workforce Survey associated with a community

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pharmacy offering nondispensing services: involvement with an interprofessional team, innovativeness, perceived workload, staffing 3 or fewer pharmacy technicians, and being a pharmacy chain or supermarket pharmacy.[9] In a similar analysis from the 2004 survey, greater number of pharmacists on duty, innovativeness, and being an independent or supermarket pharmacy were associated with nondispensing services.[10] In 2014, staff pharmacists reported spending less time dispensing medication and more time in patient care services compared with 2009.[11] Anecdotally, several different pharmacist staffing models (e.g., dedicated clinical pharmacists, scheduling overlap hours) have become more common, but it is unclear whether these models and or other resources are associated with starting a new and specific pharmacy service. This raises the question whether certain pharmacy characteristics are needed for successful implementation of clinical services.

To support the delivery of nondispensing services in community pharmacies, Community Care of North Carolina (CCNC) established a statewide Community Pharmacy Enhanced Services Network (CPESN). CCNC works with health care partners to provide cooperative coordinated care through a patient-centered medical home (PCMH) model to serve the needs of vulnerable populations in North Carolina. In 2014, CCNC won a Center for Medicare and Medicaid Innovation (CMMI) Round 2 Health Care Innovations Award to expand CPESN in the PCMH model.[12] CPESN integrates longitudinal medication optimization services with care management services provided by CCNC's multidisciplinary care teams, which are rooted in more than 1800 patient-centered medical homes in North Carolina.[12,13] Pharmacies that joined CPESN were responsible for providing medication management to high-risk patients and coordinating referrals both to and from CCNC's multidisciplinary care teams. A comprehensive medication review (CMR) is provided as 1 component of the medication management service within the integrated care management program. The integrated care management program is described in detail in a corresponding article.[14]

Three months after program launch, more than one-half of the pharmacies did not provide a CMR in 1 or more months. Therefore, to understand the impact of operational and personnel characteristics on implementing a medication management service, characteristics of CPESN pharmacies consistently conducting CMRs were compared with pharmacies that had difficulty conducting reviews regularly in the first 3 months of the program. We expected that certain personnel characteristics, such as presence of pharmacist overlap hours, would allow for more patient contact time to conduct medication management, and that other operational characteristics, such as average prescription volume per week, may influence reallocation of resources. This study is the first of its kind to examine community pharmacies implementing the same service in a statewide program. Baseline pharmacy characteristics and those associated with patient preference seeking a pharmacy have been reported internationally[15,16]; however, similar analysis in the United States is limited before Medicare Part D implementation of medication therapy management.[17,18] The present analysis provides novel information on the operational and personnel characteristics of pharmacies that are most successful at incorporating medication management into their practices.

Objectives

To examine community pharmacy operational and personnel characteristics that influence engagement in providing a community pharmacy medication management service within a statewide integrated care management program.

Methods

An online survey was developed by the University of North Carolina at Chapel Hill and CCNC to gather baseline demographic information for all pharmacies participating in CPESN. The survey consisted of 68 items (a combination of closed and open-ended questions) covering a range of characteristics such as pharmacy ownership, services provided, and staffing. See Supplemental Table 1 for the survey items used for this study. The survey was piloted by 9 pharmacists, who did not complete the final survey. Results of the pilot survey were used to revise and improve the survey for readability and comprehension. Through initial pharmacy user agreements, CCNC was able to collect e-mail addresses for the pharmacists-in-charge at each pharmacy. When necessary, follow-up telephone calls were made to the pharmacy to verify these details and ensure that 1 survey for each pharmacy location was completed. The survey was administered 1 month before the program launch to the pharmacist-in-charge at 123 pharmacies via e-mail with the use of Qualtrics (Provo, UT), a Web-based survey tool. Pharmacists were given 10 days to complete the survey, and 1 reminder e-mail was sent to prompt nonresponders.

The CPESN program required pharmacists to document the comprehensive medication review as a patient visit note that included multiple components.[14] We used this documentation to generate our measure of program engagement. Specifically, pharmacies were dichotomized as consistently engaged if they documented at least 1 initial CMR per month for the first 3 months and inconsistently engaged if they had no documented CMR in any of the first 3 months. Pharmacies in the consistently engaged category could be thought of as "early adopters."[19] Given that changes in staffing could occur later in the year, we thought that analyzing early adoption was best. We thought that the conservative measure of only 1 documented review per month was appropriate, because pharmacies may choose to implement program activity on a small scale and then increase the volume of activity over time. Operational and personnel data from the survey were used to analyze associations between pharmacy characteristics and engagement in CPESN. Data were analyzed in Stata version 13.0 (Statacorp, College Station, TX). First, we examined if any independent variables were unequally distributed between the consistently and inconsistently engaged pharmacies, using means for the continuous variables and percentages for the categoric variables. We treated the variable of weekly prescription volume as nominal with the use of 5 indicator variables based on the frequency distribution. Then we examined the relationship between each independent variable and engagement; t tests and 1-way analysis of variance were used for continuous variables and Pearson chi-square for categoric variables.

Results

A pharmacist-in-charge for each of the 123 pharmacies who joined CPESN at project launch responded to the survey, a 100% response rate. Fifty pharmacies met the criteria for