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Trang T. Nguyen, PharmD[1]; Bella H Mehta, PharmD, FAPhA[2]; Jennifer L. Rodis, PharmD, BCPS[2]; Kristin A. Casper, PharmD[2]; and Randell K. Wexler, MD, MPH[3]

[1]Roseman University of Health Sciences, College of Pharmacy; [2]The Ohio State University, College of Pharmacy; and [3]The Ohio State University Wexner Medical Center

Abstract

Purpose: The National Committee for Quality Assurance (NCQA) has standards for recognizing Patient-Centered Medical Homes (PCMH) including one for medication management. Study objectives were to identify if and how providers within a PCMH recognized under the 2008 guidelines were documenting components of medication management to meet NCQA's 2011 requirements including: 1) providing information about new prescriptions to >80% of patients; 2) assessing understanding of medications for >50% of patients; and 3) assessing response and barriers to medication adherence for >50% of patients.

Methods: Physician and pharmacist-led patient visits from a family medicine office, from February 1 to August 1, 2012 were assessed. Patients over 18 years old taking at least one medication were included. A retrospective chart review was performed to assess documented components of medication management. Descriptive statistics were used to analyze data.

Results: A systematic sampling of 450 physician-led and 195 pharmacist-led patient visits, demonstrated providers did not meet documentation goals for providing patients information on new prescriptions (65% pharmacist, 24% physician, 36% of total provider notes) or for assessment of patients' understanding of medications (9% pharmacist 12% physician, 11% of total provider notes). Individually each type of provider did not meet the goal of assessing patient response and barriers to adherence to medication, but with combined intervention by the pharmacists and the physicians, the site was able to surpass NCQA's percentage goal (57% and 58%).

Conclusions: No components of medication management are well documented. Using the electronic medical record, pharmacists may be able to develop documentation tools and assist sites to meet NCQA's goals for medication management.

Introduction

With healthcare reform legislation, patient-centered medical homes (PCMH) are considered be the future of primary care in the United States.[1-2] PCMHs facilitate collaboration among health professionals to provide team-based, coordinated care with a focus on chronic disease state management and preventive care.[2-4] Introduced by the American Academy of Pediatrics (AAP) in 1967, PCMHs have evolved through collaboration with AAP, the American Academy of Family Physicians (AAFP), the American College of Physicians (ACP), and the American Osteopathic Association (AOA) and has resulted in the development of the joint definition of PCMH by these organizations.[5-6] As healthcare continues to evolve in the United States, the number of PCMHs are likely to grow

and the need to standardize qualifications to become a PCMH will become increasingly important.

There are multiple organizations that accredit or recognize PCMHs including The Joint Commission (TJC), the Accreditation Association for Ambulatory Health Care (AAAHC), and the National Committee for Quality Assurance (NCQA). NCQA standards are used most often to distinguish sites as PCMHs. As of October 2014, there were over 8,300 NCQA recognized PCMHs in the US.[3] There are six 2011 NCQA standards used to evaluate PCMHs and these standards are further divided into elements and factors used to assess the sites. (Table 1) The levels of PCMH recognition include basic (tier 1), intermediate (tier 2), or advanced (tier 3), and sites are awarded a tier based on the number of points accumulated by fulfilling components of each standard.[3, 7] Sites are reevaluated every three years and those that are recognized as advanced or tier 3 PCMHs may receive the highest levels of reimbursement from insurance companies.[3,8] To be evaluated for PCMH recognition, NCQA will review

Corresponding author: Bella H. Mehta, PharmD, FAPhA
The Ohio State University College of Pharmacy
Parks Hall, 500 W. 12th Ave, Rm 214A, Columbus, OH 43210
Phone: 614-688-8313; Email: Mehta.6@osu.edu

providers' documentation of patient care visits and activities to assess completion of the standards. There is no literature that discusses if and how providers are documenting to meet NCQA PCMH standards.

Pharmacists can be integral members of the interdisciplinary PCMH team, and they continue to expand their role in direct patient care services by performing chronic disease state management, medication therapy management, medication reconciliation, and assistance with transitions of care.[2,4,6,8,10-11] There is little literature discussing how pharmacists can assist their site in meeting the NCQA PCMH standards. In a white paper created by the Pennsylvania Pharmacists Association, Berdine et al. states that pharmacists are in the position to help with the accreditation of their sites and provide collaborative drug therapy management within a PCMH.[8] A review done by Abrons and Smith, suggests that pharmacists should help their sites by focusing on sections of the PCMH standards related to "medication workflow, processes, and quality measures." [2] The section of the 2011 NCQA PCMH standards directly related to medications is Standard 3D, medication management. Pharmacists may have a significant role in helping provide and document patient care activities to meet Standard 3D, as pharmacists are the most qualified healthcare professional to assess all components of medication management. (Table 2) When this project was completed, it was based on existing 2011 NCQA PCMH guidelines. These guidelines were updated in 2014 after completion of this project. The 2014 guidelines, the third edition of the PCMH standards, reorganized previous versions to focus on team-based care. Despite updates in the PCMH guidelines, components of medication management and the role for pharmacists to participate in this element has not changed.

At the time of this project, our site was converting from the 2008 standards to the 2011 NCQA standards. We saw that as an opportunity for pharmacists to assist since the 2008 NCQA standards did not require sites to meet medication management metrics as compared to 2011 standards. The 2011 standard for medication management required sites at a minimum to meet the critical factor of reviewing and reconciling medications for more than fifty percent of care transitions or during fifty percent of patient visits.[3,] The focus of this study was to evaluate if and how providers, including pharmacists and physicians working as a team under the 2008 guidelines, document NCQA's updated 2011 standard 3D medication management beyond medication reconciliation including: 1) Providing information to patients about new prescriptions to >80% of patients, 2) assessing patient understanding of medications for >50% of patients, and 3) assessing patient response and barriers to adherence to medications for >50% of patients.

Table 1

NCQA's Standards for Patient Centered Medical Home 2011[7]	NCQA's Standards for Patient Centered Medical Home 2014[15]
1. Enhance Assess and Continuity	1. Patient-Centered Access
2. Identify and Manage Patient Populations	2. Team-Based Care
3. Plan and Manage Care	3. Population Health Management
A. Implement Evidence-Based Guidelines	4. Care Management and Support
B. Identify High-Risk Patients	A. Identify Patients for Care Management
C. Care Management	B. Care Planning and Self-Care Support
D. Medication Management*	C. Medication Management*
E. Use Electronic Prescribing	D. Use Electronic Prescribing
4. Provide Self-Care Support and Community Resources	E. Support Self-Care and Shared Decision Making
5. Track and Coordinate Care	5. Care Coordination & Care Transitions
6. Measure and Improve Performance	6. Performance Measurement and Quality Improvement

*Focus of this study

Table 2

2011 NCQA Standard: 3D: Medication Management[9] and 2014 NCQA Standard 4C: Medication Management[15]
Factors:
1. Reviews and reconciles medications for more than 50% of care transitions-CRITICAL FACTOR
2. Reviews and reconciles medications for more than 80% of care transitions
3. Provides information about new prescriptions to more than 80% of patients*
4. Assess patient understanding of medications for more than 50% of patients*
5. Assesses patient response to medication and barriers to adherence for more than 50% of patients*
6. Documents OTCs, herbal/supplements, for more than 50% of patients, with date of update

Critical factor: must be met by PCMHs to receive any points for this standard
*Focus for this study

Methods
Setting
Exempt status for this study was granted by The Ohio State University Institutional Review Board. This study evaluated a large primary care/family medicine office that is one of eight PCMHs within a large academic medical center. This site was

recognized as a 2008 NCQA tier 3 PCMH and at the time of this study was preparing for re-accreditation under the 2011 NCQA standards. The interdisciplinary team is comprised of ten family medicine physicians, three College of Pharmacy faculty pharmacists that are employed for 0.4 full time equivalents (FTEs), one PGY-1 pharmacy resident that spends approximately 0.3 FTE at the site, twenty-one medical assistants, a part-time dietician, a nurse practitioner specializing in mental health, and a part-time social worker. At this location, pharmacists provide services including chronic disease state management with a primary focus on diabetes, hypertension, and hyperlipidemia, perform comprehensive medication reviews, and answer drug information questions from the staff.

Data Collection
The electronic medical record (EMR) was used to generate a report of patients who were between the ages of 18-89 years and had a visit with a family medicine physician or pharmacist during February 1, 2012 to August 1, 2012. Patients not taking medications were excluded from the study. All pharmacist-led patient visit notes and a systematic sample of physician-led patient visit notes were included. Due to the consistent documentation of each physician, we only evaluated 50 care visits from each of the physicians. A total of nine physicians x 50 visits each = 450 total visits analyzed.

For the selected patient visits, a retrospective chart review was performed to identify if providers documented completion of the NCQA's components of medication management beyond medication reconciliation using the NCQA's 2011 PCMH evaluation document. (Table 2) These 2011 medication management components are the same in the updated 2014 NCQA standards. To assess if physicians and pharmacists provided information or counseled patients on new prescriptions, each patient visit note was reviewed to see if a new medication(s) was prescribed during the visit. If a new medication was added that day, the note was reviewed to see if the provider documented that they gave information or counseled the patient about the new prescription. Each patient visit note was also reviewed to see if the provider documented the patient's understanding of his/her medications, if the patient had problems or difficulty taking their medications, and assessed adherence to medications and barriers to adherence. NCQA does not specify how providers should document these items, which allows each provider the freedom to document in a variety of methods. Examples of how providers documented each of these components were recorded along with the total number of patient visits conducted by providers during the inclusion period and are described in the results. [12]

Results
From February 1, 2012 to August 1, 2012, there were a total

of 11,932 patient visits for nine family medicine physicians, three pharmacists, and one pharmacy practice resident at the practice site. One family medicine physician changed practice locations during this time period, and those patients were excluded from the analysis. Of those total patient visits, 11,737 or 98.4% were physician-led visits and 195 or 1.6% were pharmacist-led visits. After the systematic sampling, 450 of the physician-led visits were analyzed along all the pharmacist-led visits in the retrospective chart review. The data was evaluated from December 2012 until February 2013. The providers documented the components of medication management using a variety of methods. Percentage of providers that documented components of medication management are shown in Figures 1, 2, and 3.

Figure 1 depicts the incidence of documentation within the patient note related provision of information to patients on new prescriptions. The total providers' documentation of this factor did not meet 2011 NCQA's percentage goal of at or greater than 80%, but this documentation occurred more often in pharmacist-led visits versus physician-led visits (65% vs 24%). To account for documentation of this factor, the provider must have included that they counseled the patient, reviewed the medication, or informed the patient of what to expect from the new medication including side effects, risk and benefit of the medication, or any medication precautions or warnings. Simply mentioning the new medication in the electronic medical record including the instructions for use was not accepted as adequate documentation to meet this factor. Examples of provider documentation accepted to meet this factor included: treatment risk and benefits of medication discussed, side effect profile and precautions discussed with patient, medication use if applicable has been reviewed, discussed medication and potential side effects, provided counseling on [name of medication].

Figure 2 illustrates documentation of the assessment of patients' understanding of their medication(s). The total providers' documentation of this factor did not meet the 2011 NCQA's percentage goal of at or greater than 50%, but this documentation occurred more often in physician-led visits versus pharmacist-led visits (12% vs 9%). To account for the documentation of this factor, the provider must have documented that they asked the patient if they understood the medication's directions or instructions for use or answered questions about the medication to the patient's satisfaction. Examples of provider documentation accepted to meet this factor included: patient verbalized understanding of [medication name] instructions, patient voices understanding of [medication name] directions, and answered medication questions to patient's satisfaction.

Figure 3a displays the incidence of documentation related to assessment of patients' response to medication(s).

Documentation of this medication management component occurred more often in pharmacist-led visits versus physician-led visits. (77% vs. 49%) To account for the documentation of this factor, the provider must have documented that they asked the patient if they were able to tolerate or had side effects to their medication(s). Examples of provider documentation accepted to meet study objective 3a included: patient tolerates medications, patient compliant without side effects, no new side effects, patient currently experiencing the following side effects [side effects], and patient has/had [signs/symptoms] reaction to medications.

Figure 3b highlights documentation related to assessment of patients' adherence and barriers to adherence. To account for the documentation of this factor, the provider must have documented if they asked the patient if he or she missed any doses of medication, was adherent or compliant to the medication regimen, or reasons for non-adherence. Documentation of this medication management component occurred more often in pharmacist-led visits versus physician-led visits. (96% vs. 42%) Examples of provider documentation to meet study objective 3b included: no missed medications, patient adherence [number of days] out of the week, compliance with medication regimen [number of days] out of the week, non-adherence discussed, patient non-adherence due to [insert reason for non-adherence], and barriers to adherence addressed.

Discussion
The results of this study showed that neither group of providers met the 2011 NCQA's percentage goals for documentation of components of medication management related to providing information to patients about new prescriptions and assessing patients' understanding of medications. Except for the documentation of assessing patients' understanding of medication, pharmacists documented components of medication management more often than physicians. In assessing and documenting the patient's response to medications and barriers to adherence, physicians did not meet the 2011 NCQA's documentation percentage goal of at or greater than 50% of patient visits, but together physicians and pharmacists surpassed 2011 NCQA's percentage goal. (57% and 58%)

The site's lower percentages for the completion of these components could be contributed to provider under-documentation, lack of time to document after patient encounters, and providers still utilizing the 2008 NCQA guidelines for documentation during the transition to 2011 requirements. Providers in this setting may have assessed components of medication management but might not have documented completion of these activities in their patients' notes. Providers also may not have been aware of the changes between the 2008 and 2011 standards. The 2011

version had percentage goals for the components of medication management and providers maybe unfamiliar with these requirements for documentation and evaluation of these standards.

There are several limitations to this study that relate to the general limitations of using the EMR to document and evaluate patient visits. [13, 14] In analyzing documentation of thirteen different providers, a challenge in data collection was sifting through all the information and interpreting how each of these providers documented completion of medication management. Many of the providers had their own individualized style when it came to documentation of their patient encounters. Within the EMR, all of the physicians had different documentation templates to record patient encounter notes while the pharmacists used the same templates. Some of the providers incorporated the assessment of medication management into their documentation template, so providers were prompted to assess and document Standard 3D in all of their patients' visits. To decrease variations in interpreting providers' documentation, analysis of patient charts was conducted by one pharmacist.

During the course of this study, the pharmacists were invited to be a part of the steering committee responsible for the re-evaluation of the eight PCMH sites within the academic medical center for reaccreditation under the 2011 standards. The PCMH site has made many quality improvements related to medication management including the incorporation of Standard 3D into all of the providers' documentation templates in preparation for re-accreditation based on the 2011 guidelines. These improvements have made it easier for each patient to be assessed for this standard at each visit. The pharmacists within the network have also developed documentation shortcuts for commonly prescribed medications that can be used by any provider within the academic medical center. These shortcuts include basic counseling points for medications, such as, directions for use, common side effects, and warnings and precautions that can be quickly incorporated into the patient's after visit summary (AVS). The AVS is printed and given to each patient before they leave the PCMH office, and it can help providers meet the requirements of counseling patients on new medications. Providers have also begun to document patient self-management of disease states to help assess the effectiveness of medication, as well as the patients' use of OTC medications.

This is the first study to evaluate if and how providers are documenting to meet 2011 NCQA PCMH Standard 3D, medication management. Despite an update to the NCQA PCHM guidelines after the completion of this project, medication management and all of the components remain a

part of the 2014 guidelines. The new guidelines have reorganized and renamed each standard, and only change regarding this element is its placement in the guidelines. Medication management has moved from Standard 3, Element D in the 2008 and 2011 NCQA guidelines to Standard 4, Element C in the 2014 version.[15] (Table 1)

This study emphasizes the importance of documenting patient care activities not only for continuity of patient care and for liability purposes but also for NCQA PCMH evaluation. Medication reconciliation and medication management continue to be an important part of the NCQA PCMH standards and even though they may be performed by any members of the PCMH team, pharmacists are specifically trained to perform these activities. Pharmacists can also get involved with PCMHs by becoming a part of a steering committee that is responsible for NCQA evaluation and develop tools or resources to make medication management a routine part of patient care at their site.

The results of this study will aid the site and other PCMHs in the network to efficiently and effectively document medication management, as well as increase pharmacists' involvement in the PCMH evaluation process for the upcoming reaccreditation. Future studies in this area could evaluate if and how providers are documenting other NCQA standards and how pharmacists are involved in helping their sites meet other standards. Other studies could also evaluate how different sites and other medical centers document patient care activities using the EMR. As the number of PCMH sites continues to grow in the US, sites must be able to provide adequate documentation of all patient care activities to submit to NCQA for evaluation. Pharmacists may have a role in not only providing documentation of their activities but could also work with other providers to streamline the documentation process and help their site gain PCMH recognition.

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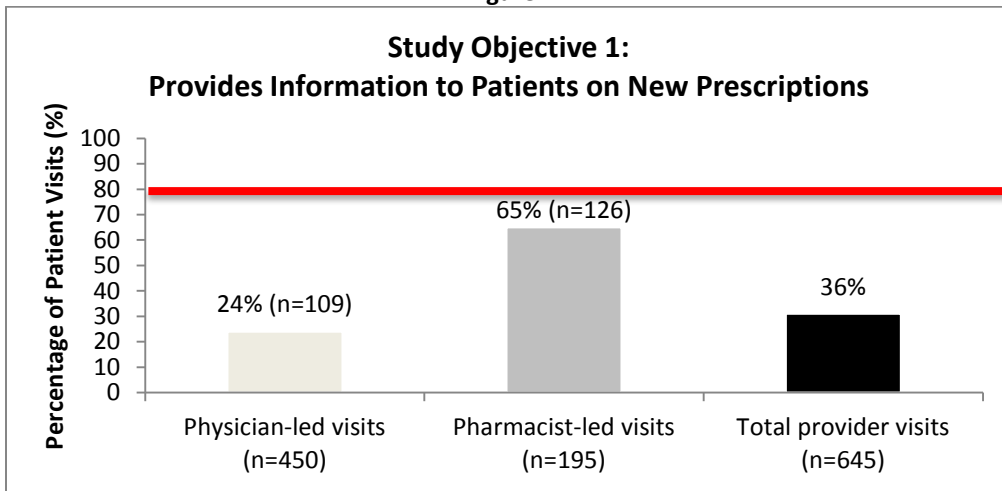
Figure 1

Study Objective 1:
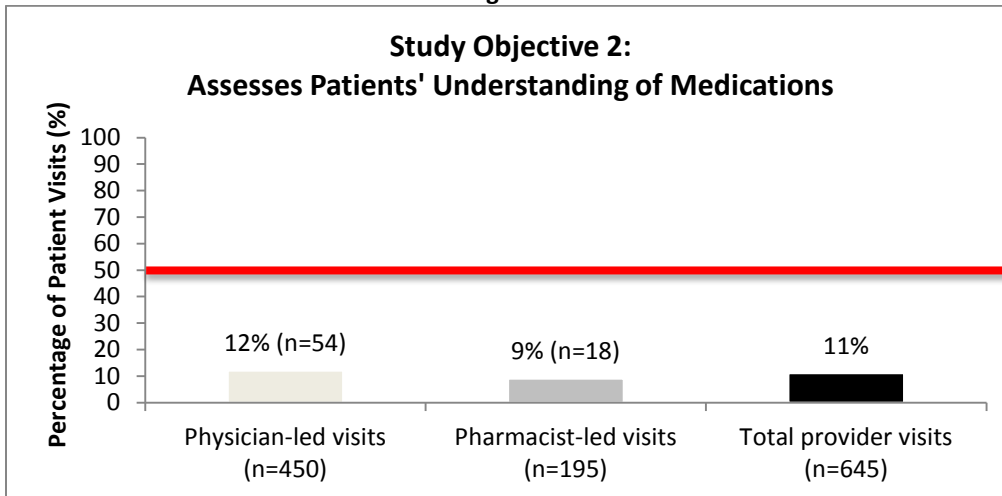**Provides Information to Patients on New Prescriptions**

NCQA's goal for the 2011 PCMH Standards (80%)

Figure 2

Study Objective 2:
Assesses Patients' Understanding of Medications

NCQA's goal for the 2011 PCMH Standards (50%)

Figure 3

Study Objective 3a:
Assesses Patients' Response to Medications

NCQA's goal for the 2011 PCMH Standards (50%)

Study Objective 3b:
Assesses Patients' Barriers to Adherence to Medications

NCQA's goal for the 2011 PCMH Standards (50%)