Pharmacy Quality Alliance: Five Phase I demonstration projects: Descriptions and lessons learned

William R. Doucette, Mark Conklin, David A. Mott, Brand Newland, Kimberly S. Plake, and David P. Nau

Abstract

Objectives: To describe the five Phase I Pharmacy Quality Alliance (PQA) demonstration projects and discuss lessons learned across the projects.

Design: Descriptive nonexperimental study.

Setting: United States from July 2008 to November 2009.

Participants: Community pharmacies from five states.

Intervention: Pharmacies viewed their performance scores on a reporting website and provided feedback.

Main outcomes measures: Pharmacy performance scores and pharmacist feedback about the scores and reporting websites.

Results: Considerable variation was found in the pharmacy performance scores. Some pharmacies did not have enough patients taking medications that were included in specific performance measures. Use of a website to report pharmacy performance was feasible across several different approaches. PQA has developed measures of pharmacy performance that can be used in programs intended to report pharmacy performance.

Conclusion: It is feasible to calculate pharmacy performance scores and create Web-based pharmacy performance reports to provide feedback to community pharmacists. Further development of pharmacy performance reporting should occur.

Keywords: Quality improvement, performance measures, community pharmacy.

J Am Pharm Assoc. 2011;51:544–550.
doi: 10.1331/JAPhA.2011.10100

William R. Doucette, PhD, is Professor and Division Head, College of Pharmacy, University of Iowa, Iowa City. **Mark Conklin, PharmD, MS,** is Clinical Pharmacy Specialist, Highmark Blue Cross Blue Shield, Pittsburgh, PA. **David A. Mott, PhD,** is Associate Professor, School of Pharmacy, University of Wisconsin, Madison. **Brand Newland, PharmD, MBA,** is Vice President, Outcomes Pharmaceutical Health Care, Des Moines, IA. **Kimberly S. Plake, PhD,** is Associate Professor, School of Pharmacy and Pharmaceutical Sciences, Purdue University, West Lafayette, IN. **David P. Nau, PhD,** is Senior Director, Pharmacy Quality Alliance, Fairfax Station, VA.

Correspondence: William R. Doucette, PhD, S518 PHAR, University of Iowa, Iowa City, IA 52242. Fax: 319-353-5646. E-mail: william-doucette@uiowa.edu

The implementation of Medicare Part D has made the Centers for Medicare & Medicaid Services (CMS) one of the largest payers for prescription drugs in the world.[1] This role prompted CMS to support the formation of the Pharmacy Quality Alliance (PQA), a multistakeholder organization working to establish viable approaches for measuring and reporting pharmacy performance. The evolution of systems to report pharmacy quality is likely to quicken with the development of reliable pharmacy performance measures and establishment of mechanisms for collecting and reporting pharmacy performance. After initial work to develop a set of pharmacy quality measures, an important step in PQA's mission of improving the quality of medication use through a collaborative process was supporting five Phase I demonstration projects.

The intent of the Phase I projects was to test the feasibility of using various data sources to measure pharmacy performance and of using different approaches to reporting pharmacy performance to pharmacists. Before the Phase I demonstration projects, PQA led the development of a set of pharmacy performance measures that were calculated using pharmacy claims data or dispensing records. Pillittere-Dugan et al.[2] found that several of the measures they tested possessed some, if not all, of the properties of an ideal performance measure (relevant, feasible, and scientifically sound). That study also identified a potential problem with the measure criterion of at least 30 cases per measure in each pharmacy. Strategies for aggregating data across health and drug plans were suggested for overcoming sample size challenges. Table 1 describes the PQA-developed performance measures that were calculated and reported to pharmacists in the Phase I demonstration projects.

The PQA Phase I demonstration projects were designed to test the feasibility of aggregating pharmacy claims data to calculate and report performance scores to pharmacies. Insurers, pharmacies, and other organizations associated with each demonstration project collaborated in the effort to obtain sufficient reliable data to produce and report the performance measures. The five demonstration projects included one that involved an insurer/pharmacy chain team, one that involved a pharmacy chain/medication therapy management (MTM) service coordinator team, and three that followed a coalition model involving multiple insurers and a variety of pharmacies of different ownership.

Objectives

This report seeks to describe the five Phase I PQA demonstration projects and discuss lessons learned across the demonstration projects.

Description of PQA demonstration projects

All five of the demonstration projects adopted a set of objectives that were developed by working with PQA. However, each of the five demonstration projects had the flexibility to address the objectives in the manner that best fit their situation. The main objectives of the demonstration projects were to (1) create an electronic pharmacy performance report that provided performance information on individual pharmacies for comparisons with other pharmacies, (2) identify obstacles encountered in creating the reporting system and provide recommendations on ways to overcome the obstacles, (3) obtain feedback from pharmacy staff and pharmacy managers/owners on the reporting system, and (4) conduct statistical analyses to determine the proportion of pharmacies with sufficient number of cases per measure to create reliable estimates of performance scores and determine the distribution of scores on an initial set of PQA measures across a mix of pharmacies.

In June 2008, PQA announced that five Phase I projects had been selected after a competitive review process. A Phase I kickoff meeting was held in July 2008. Although each of the projects started at that time, variation in study design and obstacles resulted in project completion being somewhat staggered during mid- to late 2009. The principal investigators of the Phase I demonstration projects presented their findings at the PQA annual meeting in Washington, DC, on November 9, 2009. The five Phase I PQA demonstration projects, which are identified by the state in which they primarily operated, are described below. A list of contacts for additional information on the demonstration projects is available in Appendix 1 (elec-

At a Glance

Synopsis: Community pharmacies from five states participating in Phase I Pharmacy Quality Alliance (PQA) demonstration projects showed considerable variation in pharmacy performance scores, and some pharmacies did not have enough patients taking medications that were included in specific performance measures. Among other objectives, the PQA demonstration projects sought to create an electronic pharmacy performance report that provided performance information on individual pharmacies for comparisons with other pharmacies and identify obstacles encountered in creating the reporting system and provide recommendations on ways to overcome the obstacles. The demonstration projects showed that calculating pharmacy performance scores is feasible and that Web-based pharmacy performance reports can be created to provide feedback to community pharmacists.

Analysis: In general, pharmacists enjoyed being able to see how their pharmacy compared with other pharmacies participating in the demonstration projects. Some also expressed the sentiment that they would prefer that their pharmacy be evaluated on concepts such as safety and adherence rather than volume of prescriptions dispensed. Pharmacists desire more guidance in developing performance improvement plans and in reengineering their services to improve quality of care. Future work is needed to determine ways of obtaining sufficient pharmacy claims samples to report reliable performance scores and methods for improving the quality of pharmacy services.

Table 1. Pharmacy performance measure descriptions

Measure type	No. indicators	Measure description
PDC	8	The percentage of patients who were dispensed a medication within the targeted drug class who met the PDC threshold of 80%. This category contained seven measures within targeted drug classes: ACE inhibitors/ARBs, beta-blockers, calcium channel blockers, statins, biguanides, sulfonylureas, and thiazolidinediones. A combined diabetes measure also was calculated.
Gap in therapy	8	The percentage of prevalent users of a medication within the targeted drug class who had a significant gap (>30 days) in medication therapy. This category contained seven measures with targeted drug classes: ACE inhibitors/ARBs, beta-blockers, calcium-channel blockers, statins, biguanides, sulfonylureas, and thiazolidinediones. A combined diabetes measure also was calculated.
Diabetes medication dosing	4	The percentage of patients who were dispensed a dose higher than the FDA-indicated maximum dose for the following three therapeutic categories of oral antihyperglycemic agents: biguanides, sulfonylureas, thiazolidinediones, and a combination score of the three.
Suboptimal treatment diabetes	1	Percentage of patients receiving a medication for diabetes and hypertension who are not receiving ACE inhibitors/ARBs.
Suboptimal treatment asthma: short-acting beta agonist	1	Percentage of patients with persistent asthma who were dispensed more than five canisters of a short-acting beta-2 agonist inhaler within a 90-day period.
Suboptimal treatment asthma: absence of controller therapy	1	Percentage of patients with persistent asthma who were dispensed more than five canisters of a short-acting beta-2 agonist inhaler within a 90-day period and did not receive controller therapy.
Potentially inappropriate medication, at least one high-risk medication in elderly 65 years or older	1	Percentage of patients 65 years or older who have received one or more high-risk medications.
Potentially inappropriate medication, two or more high-risk medications in elderly 65 years or older	1	Percentage of patients 65 years and older who have received two or more high-risk medications.

Abbreviation used: ACE, angiotensin-converting enzyme; ARB, angiotensin II receptor blocker; FDA, Food and Drug Administration; PDC, proportion of days covered.
Adapted from reference 2.

tronic version of this article, available online at www.japha.org).

Indiana

Purdue University School of Pharmacy coordinated the research team, developed the training materials, developed Web-based reports, and collected and analyzed feedback. The Regenstrief Institute coordinated the receipt of claims data and completed the data analysis to provide PQA measures. The Polis Center provided neighborhood-level contextual data. The Indiana Pharmacists Alliance engaged central Indiana pharmacists regarding the PQA project. A total of 25 pharmacies (3 Wishard Health Services clinic pharmacies, 3 Kroger grocery store pharmacies, and 19 CVS chain pharmacies) and 87 pharmacists participated in the project.

Purdue University School of Pharmacy and Pharmaceutical Sciences collaborated with the Regenstrief Institute and the Indiana Health Information Exchange to create the pharmacy performance scores, which were posted on the Indiana Pharmacy Compare website. Pharmacists could view their pharmacy's performance scores and compare them with the average score from all participating pharmacies. If the pharmacy performance score was not as desirable as the average score,

then an icon indicated that the performance measure was an improvement opportunity. In addition, the reporting website ranked the participating pharmacies based on their scores. The last column on the report was a pharmacy loyalty score, which was calculated by using a denominator of the number of people who qualified for each performance measure and a numerator of how many of those people had all of their prescriptions for that medication dispensed at the pharmacy.

In addition to the pharmacy report, educational materials were posted on the Indiana Pharmacy Compare website. Pharmacists could access a PowerPoint presentation that gave an overview of pharmacy quality improvement and the PQA demonstration project. A frequently asked questions section and supplemental reading materials also were available. Using an online survey on the Indiana Pharmacy Compare website, pharmacists could provide feedback regarding the performance reports. Of the 87 participating pharmacists, 37 responded to the survey (42.5% response rate).

Iowa

The University of Iowa College of Pharmacy provided project coordination, website design, pharmacist feedback, and reporting. The Iowa Foundation for Medical Care (IFMC) was

responsible for claims data collection, pharmacy performance scoring, and reports to the University of Iowa to be posted on the project website. Wellmark, Inc., and Iowa Medicaid Enterprise provided pharmacy claims data for the full year of 2008 for the participating pharmacies. A total of 43 pharmacists from 43 Iowa community pharmacies participated in the project. IFMC calculated the pharmacy performance scores for the 43 pharmacies. The University of Iowa College of Pharmacy published the scores in a pharmacy performance reporting website that was designed and hosted by the university. Iowa community pharmacists visited the website to view their performance report and compare their scores with the averages. In addition, they could learn about which drug classes were included to calculate each performance score by hovering their mouse over an icon. Their numerator and denominator also were displayed so that the pharmacist could understand why they received the score. An icon on the report indicated whether they scored better or worse than the average.

Pharmacist education was offered before the website was available to the pharmacists using a 1-hour program created by the Collaborative Education Institute that discussed quality improvement in pharmacy. The program, which also was used by the Wisconsin project, was titled Advancing Pharmacy Practice through Performance Measurement: A Primer. After pharmacists had viewed their performance report on the website, they were directed to an online survey, through which 35 pharmacists provided feedback about the performance scores and the reporting website.

North Carolina
Outcomes Pharmaceutical Health Care of Des Moines, IA, worked with Kerr Drug of North Carolina. A total of 30 pharmacies and 97 Kerr Drug pharmacists participated in the project. Kerr Drug provided prescription claims data and engaged their pharmacists to review the reports and provide feedback. Outcomes incorporated the PQA measures into its existing MTM reporting platform. The reports were generated three different times (March 2009, May 2009, and June 2009) using the previous 12 months of data for each report. The performance scores were displayed on the Outcomes website alongside an average score calculated from all of the pharmacies. In addition to the scores, the reports had a column that specified whether the desired score was high (e.g., near 100) or low (e.g., near 0). The last column in the report was a plus/minus indicator icon that indicated whether the score was above or below the system average, respectively.

Outcomes developed pharmacist training and gathered feedback from the pharmacists. Outcomes and Kerr Drug conducted three PQA training webinars to introduce the PQA reports to pharmacists. The webinars included a general overview of the PQA demonstration projects, an overview of the performance measures, a description of the patient survey, details on the specific strengths and weaknesses of the model created to generate the quality reports (e.g., attribution, small numbers), and an introduction to accessing and using the reports available on the Outcomes website. A survey was distrib-

uted to the clinical team pharmacists who were involved in the project. The survey consisted of four open-response questions such as "Do you believe the reports are accurate?" and "If you came to believe the reports were accurate, would you care or have the ability to do something about them?" Pharmacists were asked to complete this survey and return via fax.

Pennsylvania
Highmark Blue Cross Blue Shield worked in collaboration with CECity, Inc., and Rite Aid pharmacies in western Pennsylvania. A total of 50 Rite Aid pharmacies in five counties, with about 120 pharmacists, participated in the project. Two hours of live training were delivered to the participating pharmacists. The training topics included an overview of quality measurement, a description of the PQA measure set, and an orientation to the demonstration project procedures.

Highmark used the PQA/National Committee for Quality Assurance (NCQA) technical specifications to calculate the performance measures using data from Rite Aid pharmacies and then supplied the results to CECity. The measures were calculated on a quarterly basis using 12 months of data for each quarterly report. CECity adapted their existing Lifetime platform to develop, maintain, and deliver the performance reports to the Rite Aid pharmacies. The pharmacy performance scores were posted for three consecutive quarters on the reporting website. Each time the report was posted, pharmacists could view their pharmacy's scores for each performance measure and compare their pharmacy against the average score for the other Rite Aid pharmacies in their region (n = 4–8 pharmacies per region) or against the average scores of the entire project population (n = 50). The second and third posting included an icon that indicated whether the score had changed since the last posting, what direction the score changed, and whether the change was in the desired direction.

Rite Aid hosted an electronic feedback survey tool that allowed pharmacists to respond to a brief electronic survey upon reviewing each performance report for their pharmacy. Feedback was elicited after each round of the reporting process. The survey consisted of both open-ended responses eliciting qualitative feedback and a number of items scored on a Likert-type scale, in order to elicit more quantitative feedback.

Wisconsin
The Pharmacy Society of Wisconsin coordinated the project and recruited pharmacies and payers through the Wisconsin Pharmacy Quality Collaborative (WPQC). WPQC is a statewide consortium of community-based pharmacists and health plan/purchaser representatives dedicated to creating a quality-based pay-for-performance business model that aligns incentives for both pharmacists and payers in the private and public sector.[3] The University of Wisconsin Center for Health Systems Research and Analysis (CHSRA) arranged business associate agreements, obtained and managed pharmacy claim and eligibility data, and calculated pharmacy performance scores. CHSRA also designed the performance reports and created and hosted the project website. The reporting website contained five main content sections. The first four sections contained

pharmacist education resources, including an introduction with link to the Collaborative Education Institute's PQA program, a section defining the quality indicators, a section about the reports, and frequently asked questions. The fifth section contained the actual performance report for each specific pharmacy. The pharmacy performance report showed the performance score for the individual pharmacy and a comparison performance score of the average of all participating Wisconsin pharmacies. The report also gave the pharmacy a percentile ranking. Rankings in the top quartile were flagged with a star, and rankings in the bottom quartile were flagged with an exclamation point.

The University of Wisconsin School of Pharmacy Sonderegger Research Center coordinated the pharmacist education, assisted with the development of the quality indicator report, and developed the content for the website. It also coordinated and received pharmacist feedback about the website and reports. Unity Health Insurance, Group Health Cooperative of South Central Wisconsin, and the State of Wisconsin Medicaid program provided prescription claims data (January 1, 2007, to June 30, 2008) to CHSRA for analysis.

Performance scores were calculated for all Wisconsin pharmacies serving Medicaid. A total of 41 pharmacists representing 19 pharmacies were invited to give feedback on performance reports. The 19 pharmacies were selected based on having denominators of sufficient size for 10 or more of the performance reports. Representatives from the three partici-

pating payers also were invited to provide feedback. Ten pharmacists and two payer representatives submitted answers to the feedback questions.

Reported pharmacy performance

Pharmacy performance scores showed considerable variation across the pharmacies and projects (Table 2). For example, the mean rating of proportion of days covered (PDC) for beta blockers across the five projects ranged from 46% to 71%. Further, the minimum among all pharmacies in the five demonstration projects was 15%, while the maximum was 87%. This level of variation shows that these performance scores have room for improvement. The PDC and Gap in Therapy measures reflect patient adherence for different classes of chronic medications. Although pharmacists could act to improve patient adherence, these numbers show that our current pharmacy system does not readily support pharmacists in such a role. Future work by PQA and its partners will address pharmacists' impact on patient adherence.

Because these performance measures are relatively new, accepted benchmarks have not been established. For example, the projects reported that, on average, 13% to 28% of elderly patients were taking a medication considered to be high risk for older adults (i.e., Beers criteria). A target level for the percentage of older adults who can take these medications safely has not been set. Although some people would recommend that no older patient should take one of these medications, dis-

Table 2. Selected performance measure statistics across five PQA demonstration projects

Performance measure	Mean ± SD (minimum, maximum)				
	Indiana	**Iowa**	**North Carolina**	**Pennsylvania**	**Wisconsin**
PDC					
ACE inhibitors/ARBs	53 ± 6.9 (41, 70)	77 ± 7.7 (60, 89)	66 ± 5.5 (54, 77)	75 ± 6.3 (55, 87)	64 ± 11.4 (25, 89)
Beta blockers	46 ± 11.3 (15, 61)	61 ± 12.6 (27, 81)	67 ± 5.9 (54, 80)	71 ± 8.8 (30, 87)	48 ± 11.8 (13, 78)
Calcium channel blockers	52 ± 7.8 (36, 63)	51 ± 10.1 (28, 63)	73 ± 6.6 (53, 87)	74 ± 8.8 (57, 87)	52 ± 14.4 (23, 84)
Statins	52 ± 7.3 (31, 61)	71 ± 8.5 (49, 85)	57 ± 5.9 (41, 69)	74 ± 4.6 (63, 82)	60 ± 12.2 (24, 87)
Diabetes	45 ± 9.9 (28, 68)	60 ± 10.8 (35, 75)	NA	67 ± 8.4 (45, 81)	NA
Gap in therapy					
ACE inhibitors/ARBs	30 ± 5.5 (20, 41)	15 ± 5.0 (4, 25)	32 ± 5 (21, 44)	7 ± 2.8 (0, 17)	34 ± 8.7 (5, 61)
Beta blockers	35 ± 7.6 (21, 55)	14 ± 5.5 (4, 28)	31 ± 5.6 (16, 49)	10 ± 3.5 (1.2, 18)	29 ± 8.0 (3, 63)
Calcium channel blockers	28 ± 6.6 (14, 44)	12 ± 7.2 (4, 29)	24 ± 6.8 (9, 46)	3 ± 2.8 (0, 10)	29 ± 8.8 (11, 53)
Statins	35 ± 6.0 (25, 51)	22 ± 6.0 (14, 43)	42 ± 5.4 (30, 55)	10 ± 2.7 (4, 15)	36 ± 8.1 (9, 61)
Diabetes	36 ± 8.0 (23, 59)	25 ± 7.1 (11, 38)	NA	11 ± 5.0 (2, 25)	NA
High-risk medication in the elderly					
≥1 medication	NA	28 ± 11.3 (4, 45)	23 ± 5.5 (11, 38)	13 ± 2.8 (7, 21)	21 ± 7.5 (3, 47)
Suboptimal treatment					
Diabetes	22 ± 9.3 (13, 53)	26 ± 8.7 (17, 41)	32 ± 6.7 (17, 54)	26 ± 6.0 (20, 42)	25 ± 8.3 (10, 46)

Abbreviations used: ACE, angiotensin-converting enzyme; ARB, angiotensin II receptor blocker; NA, not applicable; PDC, proportion of days covered.
The scores reported are composite scores from 12-month datasets.
Not applicable (NA): If the pharmacy did not have enough cases in the specific measure to meet the minimum threshold, the score for that measure was not reported and is not included in the calculations for Table 2.
Indiana used data from January 1, 2008, to December 31, 2008. The threshold for reporting was 20 or more cases.
North Carolina used data from January 1, 2008, to December 31, 2008. The threshold for reporting was 30 or more cases.
Wisconsin used data from July 1, 2007, to June 31, 2008. The threshold for reporting was 30 or more cases.
Iowa used data from January 1, 2007 to December 31, 2007. The threshold for reporting was 20 or more cases.
Pennsylvania used data from April 1, 2008, to March 31, 2009. The threshold for reporting was 30 or more cases.

agreement on the issue exists.[4] Future research can address this question. In the absence of a benchmark, these numbers represent opportunities for pharmacists to verify that the high-risk medication is the best choice for the patient.

The results for the suboptimal diabetes treatment measure show that, on average, 22% to 32% of a pharmacy's patients with a drug for diabetes and for hypertension were not taking an angiotensin-converting enzyme (ACE) inhibitor or an angiotensin II receptor blocker (ARB), which would follow treatment guidelines. Again, these numbers reflect opportunities for pharmacists to work with patients and physicians to ensure patients are receiving drug therapy that is consistent with accepted guidelines. Although pharmacists ultimately will need to work with individual patients, every pharmacy is likely to need a system that supports pharmacists in addressing their performance. The PQA Phase I projects described here did not assess the ability of pharmacies to improve their performance scores. Future Phase II activities, expected to begin in 2010, are designed to address those issues.

Discussion of lessons learned

Common themes were found in the pharmacist feedback from all five projects. Many pharmacists were curious about the reports and provided feedback. In general, they liked being able to see how their pharmacy compared with other pharmacies within the project. Some also expressed the sentiment that they would prefer that their pharmacy be evaluated on concepts such as safety and adherence rather than volume of prescriptions dispensed. However, many pharmacists were interested in getting individual patient reports that identified specific patients not meeting performance cutoffs. Such reports would allow pharmacists to target patients in need of pharmacy care services while working to improve their pharmacy's performance scores. The Wisconsin project included strategies that pharmacists can use to change the value of each group of performance measures. Even with this additional information, some pharmacists desired even greater direction on how to improve their pharmacy's performance. A more fundamental challenge was faced by one project in that the pharmacists could not view the Web-based reports because the pharmacies did not have Internet access. Although a workable solution was created, pharmacists in such pharmacies will have a challenge to interact readily with online pharmacy performance reports and other quality improvement activities that are supported by interactive media.

One common response was in regard to the "ideal" score for an indicator. Pharmacists were confused about whether a high or low score was optimal in each indicator. All of the demonstration projects included a visual representation (e.g., icon) showing how a pharmacy compared with the average scores, but some confusion still occurred. The PDC indicators were ideally high, whereas all other indicators were preferably low.

The educational material provided to the participating pharmacists varied from live training to Web-based tutorials and continuing education programs. The live training was viewed positively by the pharmacists; however, it is the most

expensive approach. Support existed among pharmacists for interactive Web-based training about quality scoring and reporting. Static online training is flexible in that the pharmacists can access it when they have time. However, the absence of an interactive capacity can limit the pharmacists' ability to ask questions. In addition to feedback on how to deliver the training, some comments about content were made by pharmacists. One issue was to have more detail on the performance measures. For example, several pharmacists stated that they wanted to know the medications included in each measure. The websites developed by the Wisconsin and Pennsylvania projects included detailed information about how each performance measure was calculated and the drugs that were included in it.

The calculation of the pharmacy performance scores varied somewhat across the five demonstration projects. One issue was the need for an up-to-date list of National Drug Codes (NDCs) in order to accurately create scores as new NDC numbers emerge over time. Several projects had issues related to NDCs, such as higher nonadherence rates resulting from patients switching to new prescriptions with unrecognized NDCs. Therefore, the specifications of the pharmacy performance measures will need to be regularly updated to accommodate products with new NDCs that should be included in the measures. PQA recently implemented a process for annual updates of the technical specifications and NDC lists for the performance measures. This should provide a consistent and up-to-date list of drugs to be included in each measure.

Another issue for the performance scores across all five projects was low denominators (i.e., number of cases) for some of the measures. For example, all five projects found that participating pharmacies had very low denominators in the asthma controller therapy measure. Thus, the majority of participating pharmacies in all five projects had too few patients to report reliable performance scores for this measure. The standard set by NCQA for reliable measure reporting is 30 cases in the denominator. The Highmark project found that 47% of the calculated performance scores were ineligible for reporting within this guideline across all of the quality measures. The University of Iowa project found that 31.9% of calculated performance scores were ineligible for reporting because the number of cases was insufficient. To increase the number of evaluable pharmacies, one could either lower the threshold for the acceptable number of cases for a performance measure or aggregate data from multiple payers.

The Wisconsin and Iowa projects included data from more than one payer but still found that some measures did not reach the minimum threshold of 30 patients per measure. After exploring this threshold issue, the University of Wisconsin noted that the number of pharmacies for which reliable scores could be calculated would be increased dramatically when the minimum denominator size changed from 30 to 1. For example, for the adherence measures related to thiazolidinediones, the number of pharmacies that were evaluable increased from 16 to 950 when the minimum denominator size was changed from 30 cases to 1 case. For the adherence measures related to ACE inhibitors, the number of evaluable pharmacies increased from

573 to 1,197 when the minimum denominator size changed from 30 cases to 1 case. This problem is not unique to pharmacy performance measurement and has been a concern for physician performance measures. Several pay-for-performance initiatives have begun to use lower denominator thresholds of 5 or 10 patients per measure. PQA is currently testing different thresholds to determine the optimal balance of reliability in measurement versus the proportion of pharmacies that can be included in performance reports.

A concern expressed by some pharmacists was whether comparing pharmacies that serve populations that differ greatly regarding sociodemographic characteristics is appropriate. The Indiana project included a report of the demographics of the pharmacy neighborhood to aid in interpretation of differences between pharmacies. PQA plans to evaluate the need for case-mix adjustment in comparative reports on pharmacy performance.

Phase II demonstration projects

PQA is partnering with researchers, health plans, and pharmacists to leverage the tools and lessons learned from the Phase I sites into Phase II demonstration projects that:

- Test the effectiveness of one or more pharmacist interventions to improve patient medication use by measuring some or all of PQA's quality measures in ambulatory community pharmacy settings.
- Create or refine standardized pharmacy performance reports that will enable pharmacy managers and payers to determine the cost and effectiveness of the tested interventions.
- Produce the data necessary to enable PQA to build a model for pay for performance for pharmacy services.

The Phase II projects focus primarily on interventions to improve medication adherence and will track improvements in adherence using the PQA-recommended measures of adherence. Medical claims data from the health plans also will facilitate economic analyses to determine the impact of the interventions on use of medical services and total health care expenditures. These data will be crucial in measuring the cost savings to payers and in formulating a viable model for pay for performance. PQA envisions that a Phase III demonstration will include implementation of the pay-for-performance model for pharmacies.

Conclusion

The five PQA Phase I demonstration projects found that it is feasible to calculate pharmacy performance scores and create Web-based pharmacy performance reports to provide feedback to community pharmacists. However, pharmacists desire more guidance in developing performance improvement plans and in reengineering their services to improve quality of care. Future work should examine ways to obtain sufficient pharmacy claims samples in order to report reliable performance scores and methods for improving the quality of pharmacy services.

References

1. Kaiser Family Foundation. Prescription drug trends: September 2008. Accessed at www.kff.org/rxdrugs/upload/3057_07.pdf, June 22, 2010.

2. Pillittere-Dugan D, Nau DP, McDonough K, Pierre Z. Development and testing of performance measures for pharmacy services. J Am Pharm Assoc. 2009;49:212–9.

3. Trapskin K, Johnson C, Cory P, et al. Forging a novel provider and payer partnership in Wisconsin to compensate pharmacists for quality-driven pharmacy and medication therapy management services. J Am Pharm Assoc. 2009;49:642–51.

4. Jano E, Aparasu RR. Healthcare outcomes associated with Beers' criteria: a systematic review. Ann Pharmacother. 2007;41:438–48.

Appendix 1. Contacts for additional information on five Phase I PQA demonstration projects

Pennsylvania
Mark Conklin, PharmD, MS
Highmark BCBS
120 5th Ave, Ste 1812
Pittsburgh PA, 15222
Phone: 412.544.4389
mark.conklin@highmark.com

North Carolina
Brand Newland, PharmD, MBA
Outcomes Pharmaceutical Health Care
Vice President
Phone: 515.237.0001 x124
bnewland@getoutcomes.com

Indiana
Kimberly S. Plake, PhD, BSPharm
Purdue University
School of Pharmacy and Pharmaceutical Sciences
575 Stadium Mall Drive
West Lafayette, IN 47907
Phone: 765.494.5966
Fax: 765.494.0801
Email: kplake@purdue.edu

Wisconsin
David A. Mott, PhD
University of Wisconsin
School of Pharmacy
777 Highland Avenue
Madison, WI 53705-2222
Phone: 608-265-9268
Fax: 608-262-5262
E-mail: damott@pharmacy.wisc.edu

Iowa
William R. Doucette, PhD
University of Iowa
S518 PHAR
Iowa City, IA 52242
Phone: 319-335-8786
Fax: 319-353-5646
Email: william-doucette@uiowa.edu mailto: