Evaluation of the Quality Blue Primary Care Program on Health Outcomes

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The United States spent in excess of $3.0 trillion, or $9523 per person, on healthcare in 2014, reflecting an increase of 5.3% from 2013.[1,2] Louisiana ranks among the lowest states in healthcare quality and among the highest in healthcare expenditures per capita.[3-5] The national trend is further exacerbated by the rising number of aging individuals with chronic conditions, estimated to account for more than 75% of total healthcare costs.[6] Patients with more than 1 chronic condition are estimated to account for 95% of all Medicare spending.[7] The concentration of healthcare expenditures involved with chronic conditions is a major concern for individuals, insurance companies, and policy makers alike, and understanding how to effectively care for individuals with multiple chronic conditions is one of the most important challenges our healthcare system is facing.[8,9]

Various initiatives have targeted health management and quality improvement for patients with chronic conditions. Among the components in the chronic care model,[10] delivery system design and clinical information systems were proven effective in improving the management of chronic conditions.[11] Beyond those, innovations toward enhanced primary care performance[12] and payment systems also play important roles. In 2009, Blue Cross Blue Shield of Massachusetts launched a global payment system, the Alternative Quality Contract, to improve healthcare quality by offering substantial financial incentives to primary care providers based on performance against quality measures. Improvement in quality and reduced spending growth were observed 1 year after implementation.[13] Based on the success observed in Massachusetts, we recognize a significant potential in working with primary care networks to improve healthcare quality and expenditures.

The cornerstone of effective management of chronic conditions is collaborative team-based care.[14] In recognition of these solutions, Blue Cross and Blue Shield of Louisiana (BCBSLA) is taking a lead role in engaging and supporting primary care physicians (PCPs) to redesign healthcare. In 2012, BCBSLA piloted a population health and quality improvement program called Quality Blue Primary Care (QBPC) (see **eAppendix: Design and**

ABSTRACT

OBJECTIVES: This study aimed to investigate the role of the Quality Blue Primary Care (QBPC) program on healthcare utilization and overall cost among the beneficiaries of Blue Cross and Blue Shield of Louisiana (BCBSLA).

STUDY DESIGN: Retrospective observational cohort study using claims data from adults residing in QBPC-implemented regions continuously enrolled through BCBSLA from June 2012 to December 2014 (N = 89,034).

METHODS: Controlling for age, gender, and risk score by propensity score weighting, inpatient, outpatient, and corresponding medical expenditures were each compared between the QBPC group and the control group using a difference-in-differences regression model.

RESULTS: Average total cost increased in both the QBPC and control groups in 2014, but the increase was significantly less in the intervention group—a difference of $27.09 per member per month (PMPM) (*P* ≤.001). Savings in total cost were derived largely from a decrease in hospitalizations—a difference of $18.85 PMPM (*P* = .0023). Furthermore, savings were associated with shifts in healthcare utilization by the intervention group toward proactive management, including increased primary care physician visits (*P* = .0106) and higher screening rates for diabetes (*P* = .0019). Inpatient admissions also decreased in the QBPC group, most significantly among those with chronic conditions (*P* <.05). Conversely, an unexpected increase was observed in emergency department visits.

CONCLUSIONS: The QBPC program was associated with a shift in primary care delivery and reductions in overall cost. Savings were achieved largely through reductions in hospitalization costs.

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Implementation of Quality Blue Primary Care Program [eAppendix available at **ajmc.com**]) to improve patient care delivery for PCPs in any of 3 specialties: family medicine, internal medicine, and general practice. In the QBPC program, BCBSLA contracts with PCPs and provides a free Web-based patient-centric health information exchange tool to support the existing standard of care. This tool was designed to identify and manage chronic conditions that are prevalent and burdensome, while providing practices with data and resources that enable proactive, efficient, and high-quality care. QBPC leverages the current framework of the chronic care model and aims to create a minimally disruptive, efficient, and active care management process, whereby a BCBSLA-employed case manager acts as the care coordinator. Integration of the Web-based tool across multiple medical providers, including physicians, nurses, and care coordinators, enables all team members to act on timely key patient data. The program also equips primary care providers with an outcomes-based reimbursement structure that supports increased value and drives cost reduction through care coordination.[15]

QBPC was designed to improve the current quality of care. In this study, we identify changes in healthcare utilization and expenditures associated with implementation of the QBPC program in Louisiana.

METHODS

Study Design

This study was a retrospective observational cohort study of BCBSLA enrollees. Pre- and postintervention data were collected and balanced by propensity score weighting for both the QBPC and control groups, and a difference-in-differences (DID) multivariate regression analysis was used to identify changes in healthcare utilization and expenditures associated with the implementation of the QBPC program.

Data Source

Our study used medical and pharmacy claims data from BCBSLA. The study population included adults who were continuously enrolled in BCBSLA medical and pharmacy insurance from July 2012 through December 2014. All QBPC providers were enrolled in QBPC from July 2013 to December 2013 (enrollment period) and remained in QBPC during all of 2014 (outcome period). The members who visited the QBPC providers in 2014 were defined as the intervention group, and the members who visited non-QBPC providers in 2014 were defined as the control group. The baseline period was defined as 1 year before the QBPC start date (July 2012-June 2013).

TAKEAWAY POINTS

▸ Quality Blue Primary Care key integrations included health information exchange tools, standardized chronic condition management plans, and continuing medical education programs.

▸ Primary care was delivered at lower total cost—approximately $27 lower per member per month.

▸ Savings were derived largely from a shift to more primary care and decreases in hospitalization costs.

▸ Further intervention is necessary to manage emergency department visits.

Sample Selection

The selected members were 18 years and older and were required to be residents in regions with QBPC providers (Baton Rouge, Lake Charles, Monroe, New Orleans, and Shreveport). BCBSLA needed to be the primary payer for the selected members. Members with supplementary plans only (BlueChoice 65, Variable Income Plan, Cancer and Serious Disease plan, dental, vision, or part D) were excluded from our sample. We also excluded members who crossed over between the comparison groups in the outcome period and members who had extremely high annual expenditures on inpatient care (≥$100,000 per year) (**Figure 1** shows the flow chart of sample selection).

Outcomes and Key Covariates

Inpatient admissions, office-based visits, and emergency department (ED) visits per 1000 members were estimated as utilization outcomes. Inpatient care included total admissions and admissions with any one, or more, of the following diagnoses: cardiovascular disease (CVD), hypertension (HTN), diabetes, and chronic kidney disease (CKD). Diagnoses were determined by *International Classification of Diseases, Ninth Revision, Clinical Modification* codes, independent of the individual order of diagnosis. Total office-based visits were estimated and further specified as visits to PCPs/nurse practitioners (NPs) and visits to specialists. ED visits were defined as total ED visits, ambulatory ED visits, and admitted ED visits (ie, ED visits followed by inpatient care).

Health expenditures in this study were defined as the allowed amount paid by BCBSLA, presented as dollars per member per month (PMPM). Total costs were summed by total medical costs and total prescription costs, estimated and shown in result table separately. The costs linked to utilization were captured and categorized by ED (ambulatory ED and admitted ED), inpatient admissions and admissions with chronic conditions, and office-based visits (eg, PCPs/NPs, specialists).

Diabetes management outcomes were measured by screening test rates of glycated hemoglobin (A1C), low-density lipoprotein cholesterol, and microalbuminuria.

Explanatory Variables

Age was defined as the age at the end of the baseline period. The DxCG risk score was classified into 5 levels: healthy, stable, at

FIGURE 1. Flow Chart for Sample Selection
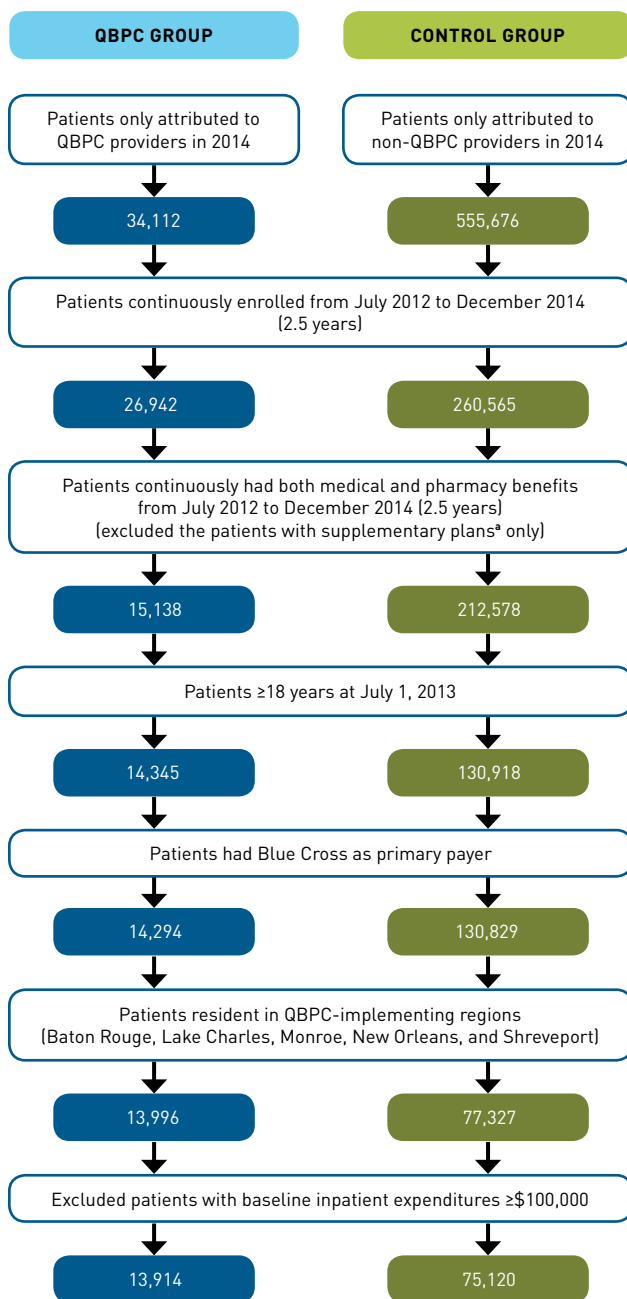
QBPC indicates Quality Blue Primary Care.

ᵃSupplementary plans: BlueChoice 65, Variable Income Plan, Cancer and Serious Disease plan, dental, vision, or part D.

risk, struggling, and in crisis. Insurance types were defined as the specific products members enrolled in through BCBSLA, listed as preferred provider organization (PPO), health maintenance organization (HMO), and Community Blue/Blue Connect (designed for lower monthly premiums).

Statistical Analysis

The demographic characteristics for the QBPC and control groups were described at the baseline period by means and percentages. The statistical differences between the 2 groups were compared by t test for continuous variables and χ^2 test for categorical variables.

To mitigate differences in members' baseline characteristics across QBPC and control groups, propensity score weights (PSWs) were estimated by age, gender, risk score, residential region, and insurance type in a logistic regression. The propensity score (PS) was predicted for both the QBPC and control groups, and the inverse and normalized PSs were used as PSWs in the outcomes analysis.[16]

Multivariate regression analysis of a DID model with PSW was used to estimate the impact of QBPC on healthcare utilization and expenditures and the quality of diabetes management, controlling for age, gender, product type, and categorized risk score. Generalized linear model (GLM) was used with Poisson distribution and log link function for outcome of utilization. Gamma distribution and log link function for outcome of expenditure, and binomial distribution and logit link function for lab test rate, were assigned in GLM.

Rate ratios (RRs) and 95% CIs from multivariate regression models were presented, and a 2-tailed alpha level of 0.05 was used to determine statistical significance. SAS software version 9.4 was used to conduct statistical analyses (SAS; Cary, North Carolina).

RESULTS

Demographic Characteristics

A total of 89,034 BCBSLA members were included in the study sample, with 13,914 enrollees in the QBPC group and 75,120 enrollees in the control group (**Table 1**). An average age of 46.9 years was observed in the QBPC group compared with 45.2 years in the control group. A total of 54.1% of enrollees in the QBPC group were female compared with 52.5% in the control group. The general health of enrollees measured by risk score was worse in the QBPC group compared with the control group. Higher proportions of enrollees in the QBPC group were defined as at risk, struggling, and in crisis compared with the control group, which contained higher proportions of enrollees defined as healthy and stable. Enrollees in the QBPC group were primarily from Baton Rouge (58.6%), New Orleans (19.6%), and Shreveport (15.2%), whereas enrollees in the control group were primarily from New Orleans (34.7%), Baton Rouge (27.9%), and Lake Charles (16.0%). A total of 67.4% of enrollees in the QBPC group held PPO plans and 32.3% were HMO plan members, whereas 78.4% of enrollees in the control group held PPO plans and 21.51% were HMO plan members. There were no significant differences in gender, risk categories, and residential regions between the intervention and control groups after propensity score weighting (P >.05).

TABLE 1. Demographic Characteristics in QBPC and Control Groups With and Without PSW

Demographic	Before PSW			After PSW		
	QBPC (n = 13,914)	Control (n = 75,120)	P	QBPC (n = 13,914)	Control (n = 75,120)	P
Age (mean, years)	46.9	45.2	<.0001	45.1	45.5	.0407
Gender (%)			.0007			.1582
Female	54.1	52.5		52.1	52.7	
Male	45.9	47.5		47.9	47.2	
Risk category (%)			<.0001			.1354
Healthy	18.3	24.3		23.5	23.4	
Stable	29.6	30.2		31.1	30.1	
At risk	31.6	27.3		27.3	28.0	
Struggling	17.2	15.1		15.1	15.4	
In crisis	3.33	3.07		3.02	3.11	
Region (%)			<.0001			.1341
Baton Rouge	58.6	27.9		32.9	32.7	
Lake Charles	1.75	16.0		14.1	13.7	
Monroe	4.88	9.67		9.14	8.92	
New Orleans	19.6	34.7		31.2	32.3	
Shreveport	15.2	11.8		12.6	12.3	
Product type (%)			<.0001			.0017
PPO	67.4	78.5		75.3	76.7	
HMO	32.3	21.5		24.7	23.3	
Community Blue/Blue Connected	0.26	0.02		0.06	0.05	

HMO indicates health maintenance organization; PPO, preferred provider organization; PSW, propensity score weight; QBPC, Quality Blue Primary Care.

Healthcare Utilization

Total office-based visits increased in both the QBPC and control groups (**Table 2**). The increase in the intervention group was significantly less than the increase in the control group (RR, 0.99; P = .0066) due to increased visits to specialists by members of the control group (RR, 0.97; P ≤.0001). However, visits to PCPs/NPs increased in both the QBPC and control groups by 60.26 and 7.59 per 1000 members, respectively. The increase in the QBPC group was significantly greater than the increase in the control group (RR, 1.02; P = .0106).

The change in total admissions was not significant between groups. However, admissions for chronic conditions, including CVD, HTN, diabetes, and CKD, significantly decreased in the QBPC group compared with the control group (P ≤.05).

Total ED visits increased in both the QBPC and the control group by 13.86 and 1.84 per 1000 members, respectively, but the increase was significantly higher in the QBPC group (RR, 1.07; P = .0245). Ambulatory ED visits were significantly increased in the QBPC group compared with the control group (RR, 1.08; P = .0130). Admitted ED visits increased in both groups, but no significant difference was observed.

Allowed Amount

In the QBPC and control groups, total allowed amounts increased by $55.15 and $82.24 PMPM, respectively, but the QBPC group had a significantly lower increase compared with the control group (RR, 0.92; P ≤.0001) (**Table 3**). Total medical cost also increased in both groups, but again, the increase in the QBPC group was significantly less than in the control group (RR, 0.87; P ≤.0001).

Total allowed amounts for office-based visits and specialists were both reduced in the QBPC group compared with the control group (RR, 0.97; P = .0047; and RR, 0.95; P = .0002, respectively). However, the difference of allowed amount for visits to PCPs/NPs was not significant between groups (RR, 1.01; P = .4595).

Total costs for admissions decreased in the QBPC group and increased in the control group by $6.10 and $12.75 PMPM, respectively. The decrease in the QBPC group was significant compared with the control group (RR, 0.87; P = .0023), but the cost for admissions with chronic conditions was not significant between groups (P ≥.05).

The total allowed amount for ED visits increased in both the QBPC and control groups by $5.07 and $2.62 PMPM, respectively; however, the increase was significantly greater in the QBPC group

TABLE 2. Changes of Healthcare Service Utilization in QBPC Intervention and Control Groups Among Adults Insured by BCBSLA

Visits Per 1000 Members Per Year	QBPC	Control	RR	95% CI	P
Office-based visits	307.99	378.45	0.9875	0.9786-0.9965	.0066
PCP/NP	60.26	7.59	1.0214	1.0049-1.0381	.0106
Specialists	247.73	370.86	0.9706	0.9600-0.9813	<.0001
Admissions	−2.98	2.76	0.9041	0.8107-1.0083	.0701
Admissions with CVD	−3.34	1.34	0.5932	0.4489-0.7838	.0002
Admissions with HTN	−1.67	2.81	0.8375	0.7074-0.9915	.0395
Admissions with diabetes	−0.81	2.44	0.7405	0.5645-0.9714	.0301
Admissions with CKD	−0.38	1.26	0.5232	0.2955-0.9266	.0263
ED visits	13.86	1.84	1.0705	1.0088-1.1359	.0245
Ambulatory ED visits	11.90	−0.88	1.0844	1.0172-1.1559	.0130
Admitted ED visits	1.96	2.72	0.9793	0.8347-1.1489	.7971

BCBSLA indicates Blue Cross and Blue Shield of Louisiana; CKD, chronic kidney disease; CVD, cardiovascular disease; ED, emergency department; HTN, hypertension; NP, nurse practitioner; PCP, primary care physician; QBPC, Quality Blue Primary Care; RR, rate ratio.

TABLE 3. Changes of Allowed Amount on Healthcare in QBPC Intervention and Control Groups Among Adults Insured by BCBSLA

	QBPC	Control	RR	95% CI	P
Cost in Dollars Per Member Per Month					
Total cost (medical+drug)	55.15	82.24	0.9206	0.8949-0.9471	<.0001
Medical cost	24.25	51.90	0.8743	0.8481-0.9014	<.0001
Office-based visits	5.34	7.66	0.9660	0.9431-0.9895	.0047
PCP/NP	0.73	0.50	1.0078	0.9873-1.0287	.4595
Specialists	4.61	7.15	0.9452	0.9177-0.9737	.0002
Admissions	−6.10	12.75	0.8746	0.8026-0.9531	.0023
Admissions with chronic conditions	0.99	10.03	0.9579	0.8216-1.1167	.5827
ED visits	5.07	2.62	1.1032	1.0337-1.1775	.0031
Ambulatory ED visits	5.01	2.38	1.0810	1.0126-1.1541	.0196
Admitted ED visits	0.07	0.23	0.9631	0.8156-1.1373	.6580
Cost in Dollars Per Admission					
Admissions	-35.63	91.24	0.9230	0.8523-0.9994	.0484
Admissions with chronic conditions	25.76	50.21	1.0842	0.9308-1.2629	.2988

BCBSLA indicates Blue Cross and Blue Shield of Louisiana; ED, emergency department; NP, nurse practitioner; PCP, primary care physician; QBPC, Quality Blue Primary Care; RR, rate ratio.

compared with the control group (RR, 1.10; *P* = .0031). Cost for ambulatory ED visits increased significantly in the QBPC group compared with the control group (RR, 1.08; *P* = .0196). There was no significant difference between groups in the allowed amount for admitted ED visits (RR, 0.96; *P* = .6580).

The allowed amount per admission decreased by $35.63 in the QBPC group and increased by $91.24 in the control group. The decrease in the QBPC group was significant compared with the control group (RR, 0.92; *P* = .0484). The allowed amount per admission with chronic condition increased in both the QBPC and control groups, but the difference in increase was not significant between groups (RR, 1.08; *P* = .2988).

Diabetes Management

Screening test rates for A1C increased in the QBPC group by 3.92% and decreased in the control group by 1.66% (**Figure 2**). The increase in the QBPC group was significant (*P* = .0019). Screening test rates for lipids increased in the QBPC group by 1.36% and decreased in the control group by 1.63%. The increase in the QBPC group was not significant compared with the control group (*P* = .1081). Screening test rates for microalbuminuria increased in the QBPC and control groups by 3.53% and 1.32%, respectively. The increase in the QBPC group was not significant compared with the control group (*P* = .2536).

DISCUSSION

The QBPC program was associated with a shift in healthcare utilization toward proactive management and reductions in overall cost during the first year after implementation. These changes were associated with a significant difference in total cost savings between the QBPC and control groups of $27.09 PMPM (Table 3). Savings were derived largely through reductions in total admissions, where we observed a cost difference between the QBPC and control groups of $18.85 PMPM (Table 3). In addition, savings in expenditures were associated with shifts in healthcare utilization by QBPC enrollment toward cost-effective prevention practices. We observed increases in the QBPC group in visits to PCPs and NPs and decreases in visits to specialists (Table 2). We observed a cost reduction in total office-based visits, a difference between the QBPC and control group in total cost of $2.32 PMPM (Table 3). Furthermore, we observed increases in the QBPC group in screening test rates for chronic conditions like diabetes (Figure 2).

The unexpected increase in overall ED visits observed in the QBPC group was associated with a significant increase in ambulatory ED visits (Table 2). QBPC enrollment was associated with a decrease in ED admissions, but this decrease was not significant

(Table 2). An increase in ED use, especially for ambulatory ED visits, can be due to multiple factors. First, other study results have shown that recent changes in health insurance status under the Affordable Care Act for newly insured adults and newly uninsured adults were associated with greater ED use. As policy and economic forces create disruptions in health insurance status, new surges in ED usage should be anticipated.[17] Second, increased access to primary care but failure to provide timely care has been shown to increase preventable ED visits (ie, visits for conditions likely preventable by timely outpatient care). By contrast, study findings have shown no significant change in emergent, nonpreventable visits.[18] Delayed primary care, defined as a wait of more than 2 weekdays to access a PCP, has been observed to be associated with a higher rate of self-referred ED usage and subsequent discharge.[19,20] These data suggest that the increase in ED visits observed in the QBPC group can be attributed to factors (eg, longer wait time to see PCP) beyond the scope of the QBPC program. Furthermore, these findings support our observed increase in ambulatory ED visits, although there was a decrease in total admissions.

Limitations

Our study has several limitations. It was designed as a retrospective database analysis using BCBSLA claims data, which include limited clinical information. Due to insufficient data in reference to partial attribution information for baseline characteristics, the attribution model of patients to providers was defined by the information attained in 2014, which was after the QBPC program was implemented. Baseline characteristics were comparable after adjusting for PS, with the exception of significant differences in age and product type. These differences may reflect imperfect weighting, and thus age and product type were also included in our regression models for utilization and costs. The evaluation of QBPC was limited to those early adopter providers in Louisiana. Therefore, the results may not be generalizable to other insurance policies (eg, Medicare/Medicaid population) or to other states. Results may also not be generalizable to the control group (ie, late adopters or providers that refused to adopt QBPC). Our cost analysis accounted solely for the amount paid by the primary payer (BCBSLA) and assumed that additional payer (out-of-pocket) behavior was independent of the QBPC program. Furthermore, we did not examine the details of each QBPC contract, which varied to some degree, or collect information on clinical procedures and outcomes of enrollees. Although we identified associated improvements and cost reductions, these measures do not consider qualitative feedback provided by enrollees and healthcare providers. The long-term effect of QBPC on improving the quality of care at a lower total cost remains contingent on future financial incentives toward preventive care and providers' ability to further improve synergies between physicians and their chronic condition management teams.

FIGURE 2. Annual Change in Test Rates for QBPC and Control Groups Among Members With Diabetes (n = 17,494)
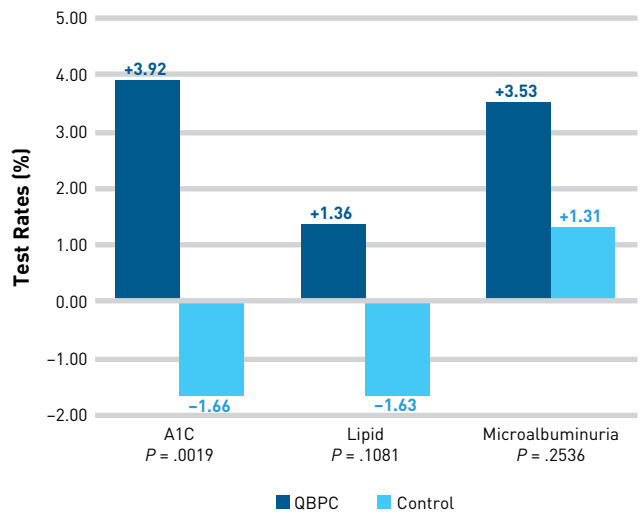
A1C indicates glycated hemoglobin; QBPC, Quality Blue Primary Care.

CONCLUSIONS

The QBPC program was associated with shifts in healthcare utilization toward proactive management and reductions in overall cost. During the first year of implementation in Louisiana, savings were achieved largely through reductions in office-based visits to specialists and inpatient care. The long-term implications of the QBPC program on improving primary care and patient outcomes at lower total costs warrant additional research. ∎

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eAppendix

Design and Implementation of Quality Blue Primary Care Program

Background:

With many studies about Patient Centered Medical Home (PCMH) initiatives having mixed results, these results may seem to add to the confusion. But, QBPC is not a PCMH model, and the purpose of this article is to document those differences and provide insight into primary care transformation interventions that may initiate transformation for primary care practices.   Some of the key differences between QBPC and a typical PCMH are shown in Table 1 below.

eAppendix Table 1. List of Key Differences between QBPC and PCMH.

QBPC	PCMH
Electronic collection of data	No organized, consistent system of data collection across multiple practices
Measures based on electronic medical record (EMR) data the provider collects	Commonly based on claims data only, and the payer sets the measures
Measures based on composite outcomes measures	Measures predominately based on multiple individual process measures
Claims data supplements provider dashboard daily to provide a more comprehensive view of a patient's care across the care continuum	Claims data infrequently provided to providers without integrating into the appropriate clinical context for each patient (e.g.. eye exam data integrated with other diabetic measures)
Align and leverage population health expertise of the health plan/payer	No (or little) synchronization between the practice and health plan / payer.
Minimized impact to primary care practice	Significant impact to primary care practice workflows and staffing
Integrated alignment between payer and primary care practices around patient	Primary care practice functions independently to achieve results aligned to PCMH accreditation requirements or other objectives

outcomes and performance visibility against targets	
Access to patient and patient population health data across network of EMRs and claims, beyond what is available in EMR and practice management system	Access to data in the practice's EMR and practice management system
Virtual team of centralized clinical professional resources shared across primary care practices to work with patients	Each practice invests in hiring/engaging a team of clinical professionals resulting in duplication across practices
Learner-centric (doctor) Continuing Medical Education (CME) is required based on a practice's performance, to enhance provider and staff competency – gets new research/evidence into practice sooner	No specific CME focus
Whole practice tools that aggregate EMR data and plan-provided claims and pharmacy data displaying all members' measures are provided to the practice by the health plan at no cost	Doctors' investment in technology is required for care management, registry, performance reporting, and gaps in care identification.
Primary care doctors have input and a forum to discuss program design, measurement, and performance targets via a Physician Advisory Committee (PAC) that Blue Cross holds quarterly	Program guidelines are typically predetermined with little or no input from primary care doctors
Serial doctors' patient population performance achievement reports that are outcome-based with near real-time data across all providers	Point-in-time gaps or performance reports based on EMR data or reports from payers.

To address the differences between PCMH and QBPC for a commercial population for Blue Cross, two aspects should be explored: Original intent of PCMH and the population. Most

people remind us that PCMH was a concept the American College of Pediatrics coined, but the original intent was to focus on children with "chronic disease or disabling conditions" (Sia, Tonniges, Osterhus, & Taba, 2006). A primary care physician's commercial population includes many adults who are relatively healthy but need urgent care and/or primary preventive services. Providers who were part of Blue Cross's prior programs that used PCMH criteria (Bridges to Excellence) gave feedback that these programs didn't have much benefit to them and were expensive to implement. This feedback is supported by many health services researchers. (Jaén CR) (Zimlich, 2013). Ultimately, commercial members seeing a primary care doctor for most of their medical treatment will not realize the benefits of PCMH model because many of them are relatively healthy. Additionally, our chronic disease-focused model may get primary care "re-engaged," and as practices advance in maturity, PCMH certification may play a bigger role after the initial re-focus on chronic diseases. It also allows a focused financial return for the payer, while also funding the practice that is critical for transformative work. Higher performing practices state that the financial investment was critical for their improvement.

Those patients who have chronic conditions in Louisiana are more likely to have diabetes, hypertension, cardiovascular, and/or kidney disease than people from other states. These conditions are not only associated with increases risk for poor health quality, they drive a majority of healthcare costs. Furthermore, since the medical knowledge and treatments are well within the realm of primary care for these common conditions, they seemed to be a perfect focus for QBPC. The program that ensued includes basically four components: 1) Data and Analytics, 2) Financial Incentives, 3) Learning and Recognition, and 4) Population Health Alignment. The program design, program implementation, and stakeholder engagement will be discussed in the remainder of this article.

Program Design

Previous programs led to Blue Cross leadership forming some basic principles, which are seen through the design of QBPC:

1. Focus on a **few** medical conditions
2. Select medical conditions that have **high impact** in health and financial results
3. Select medical conditions that are **prevalent** in Louisiana
4. Promote **patient-centered care**

5. Use **understandable** data
6. Have minimal "intrusion" in the physician **workflow**
7. Use **multiple program interventions** to achieve results
8. **Enable primary care** through financial support at program start and provide monthly revenue stream
9. **Align** stakeholders in the effort
10. Focus on **outcomes composite metrics** pertinent to holistic care
11. **Align Population Health** resources with primary care practices
12. **Benefit design** to align member incentives with program objectives
13. Allow the **clinic to identify** their attributed panel of Blue Cross patients using their own internal EMR registry
14. Provide useful claims and pharmacy **data integrated** with the practice's EMR data to give a holistic view of a patient's health status
15. **Transparency** in Program Design, Participation Requirements, and Care Management Fees-contract template and all program material published on the plan's website on a dedicated program page (www.bcbsla.com/QBPC)

Standard Program Care Management Fees were published and implemented statewide with no exceptions. As a result of applying these principles, we will describe some of the most important aspects of the program design next.

Accountability starts with the simple question, "Who is accountable for what?" Unlike most payers (Centers for Medicaid and Medicare Services) who use claims-based attribution, QBPC uses the physicians' Electronic Medical Record (EMR) to define both patient attribution and chronic disease registry listing, based on documented diagnosis. This data is checked against the most current eligibility Blue Cross submits, along with claims data, so that each Blue Cross member is only attributed to a single physician. This attribution method allows the practice and the primary care doctors to maintain current listings and registries without having to consider claim lag time or delayed plan confirmation.

Blue Cross selected four chronic medical conditions to target in QBPC: hypertension, diabetes, cardiovascular disease, and chronic kidney disease. These fulfill the principle of high-impact, high-prevalence conditions in in Blue Cross' commercial population. Additionally, Blue

Cross planned to collect practices' EMR data (such as blood pressure, tobacco use status, Hemoglobin A1c results, etc.) in addition to claims measures. Along with EMR-based attribution, EMR-based outcomes data has a high-degree of buy-in from the physicians. This is also a major differentiation point with QBPC compared to other health plans' transformation programs.

Once these data points are captured, structuring the measures in a manner that medical evidence strongly supports was necessary, but adoption of a "minimally sufficient" approach was important. An example of this is QBPC's target for glycosylated hemoglobin in diabetic patients. There are different national recommendations for a goal that indicated a patient's diabetes is controlled, but QBPC adopted a less-stringent goal of less than 8% versus the more rigorous target of less than 7% (National Diabetes Education Initiative). Since achieving 8% on a population basis will result in significant improvement in reducing patient morbidity risks, this is a sound approach that also helps to obtain buy-in from providers who mistrust these types of programs. Additionally, behavioral economics supports that people will try harder to reach a goal if they are closer to achieving that goal, which may again affect the mindset of the provider to strive for these less-stringent targets (E. J. Emanuel, 2016).

QBPC measures are patient-focused achieved by adopting composite measures. A simple example is shown below for diabetes, with just two data points for three hypothetical patients:

eAppendix Table 2. Approach to Measure Success - by Measure or by Patient

Patient	Blood Pressure Controlled?	Glycosylated Hemoglobin controlled?	Patient controlled?
1	Yes	No	No
2	Yes	Yes	Yes
3	No	Yes	No
Percent Controlled	2 out of 3	2 out of 3	1 out of 3

As the table shows, a simple measure about blood pressure, as well as glycosylated hemoglobin, may show control 66% of the time, but the percentage of patients at goal for both measures is only 33%. QBPC measures results as a composite, which is literally translated into,

"What percentage of patients have all measures at their minimally sufficient goals or better?"
The measures initially used by the program are shown below:

eAppendix Table 3. Initial QBPC Measures

Clinical Quality and Efficiency Measures	Description	Weight
Optimal Diabetes Care	Percentage of patients who have all the following at goal: A1c <8.0% + BP <140/90 mmHg + LDL < 100 mg/dL + Non-smoker	1.0
Optimal Vascular Care	Percentage of patients who have all the following at goal: BP <140/90 mmHg + Non-smoker + LDL < 100 mg/dL + Antithrombotic Rx	0.80
Vascular Pharmacy Measure	Percentage of patients who have all the following at goal: Statin Use + Proportion of Days Covered >0.8	0.20
Optimal CKD Care	Percentage of patients who have all the following at goal: BP <140/90 + ACE/ARB Therapy if diagnosis of proteinuria	0.8
CKD Pharmacy Measure	Percentage of patients who are on an ACE/ARB if they have proteinuria + Proportion of Days Covered > 0.8	0.2
Hypertension Control	Percentage of patients who have all the following at goal: BP <140/90	1.0
Efficiency Measures 1. Imaging for Low Back Pain 2. Preventable ER Visits 3. Risk-adjusted Generic Fill Rate	Each measured on all attributed members as a ratio (observed / expected) and points allocated based on relative performance	1.0

The program includes three "efficiency" measures that apply to all of a practice's attributed Blue Cross patients, not just those who have cardio-metabolic conditions. This ensures recognition of providing efficient care, which will hopefully lead to cost savings. These measures only account for 20% of the weighting in the program, in which the four target chronic conditions carry an 80% weight. The efficiency measures are imaging for low back pain, preventable ER visit rates, and generic fill rates.

Practices see these measures and their performance on them via a dashboard provided by Symphony Analytics' MDinsight®. This adds an essential tool that some EMRs do not routinely include for physicians to manage their populations. QBPC tools allow the physician not only the population registry for Blue Cross members with cardio-metabolic diseases, but for all of their patients. This tool also allows Blue Cross claims information to fill in some of the data gaps that primary care physicians have for their patients, such as knowing a diabetic patient received an eye exam in the past 12 months. The dashboard allows for drill-down capability to generate exportable patient lists as determined by multiple point-and-click selection attributes. Practices are able to track their program performance in real time with drill-down capability to easily identify opportunities for improvement, rather than wait on a health plan to give them reports at certain intervals. On a patient level, the tool provides the date and the source of the documented measure results.

Financial support for primary care was one of the essential interventions of the program. This occurs through two components of QBPC: Reduced or waived co-payments for eligible Blue Cross patients seeing QBPC doctors, and Care Management Fees (CMFs) that Blue Cross pays to QBPC-enrolled primary care practices on a monthly basis. To encourage more members to get care with a primary care doctor and have follow-up as needed, and to get more members attributed to QBPC so they experience the care coordination benefits of this program, Blue Cross lowered and/or waived copayments for office visits with QBPC-enrolled primary care doctors on its fully insured block of business in 2015. Blue Cross' covered Administrative Services Only groups also have the option to offer this benefit to their members. The waived or lowered copayment applies to the office visit only, and depends on what type of Blue Cross plan a member is on and that plan's covered benefits and services. This approach benefits the primary care doctors as well as the members because it steers volume to their offices and encourages

members to see doctors who are participating in the QBPC Program, therefore becoming attributed to those doctors. Members can search the Blue Cross online directory to find QBPC doctors, who are designated with a blue 'Q'.

The Care Management Fee (CMF) was developed to transition physicians away from fee-for-service (FFS) toward fee-for-value (FFV). Practices are paid CMF immediately upon their QBPC "go-live" date, which Blue Cross defines as the ability to exchange data between the plan and the practice, using the QBPC-provided software tool and the practice's EMR. This was a critical element of QBPC success. Blue Cross pays the CMF in addition to and separate from the standard FFS payments the practice already receives. Blue Cross made a decision at the start of QBPC to offer the program with one standard set of CMFs and no allowed exceptions. The plan is fully transparent and publishes the program participation requirements, the provider participation agreement, and the reimbursement exhibit containing the standard CMF rates (www.bcbsla.com/qbpc). At the start of QBPC, each enrolled practice receives a flat monthly CMF for treating patients who have one or more of the four targeted medical conditions. After a practice has been in QBPC for a full year, Blue Cross will "tier" the practice twice a year and adjust the practice's CMF up or down based on its relative performance compared to other QBPC practices.

This simple tiering is synonymous with a value payment because Blue Cross is paying more to those practices that get the best outcomes. Furthermore, Blue Cross sets the targets and makes them clear to enrolled practices at the start of their QBPC participate, so they know up front what they must achieve to earn higher CMF payments in the future. Blue Cross publishes these targets three to four months before practices' CMFs are adjusted. This approach, as opposed to a retrospective adjustment, is more transparent and consistent with performance improvement approach. The analogy often given is that students are told what it takes to get an "A" in a college course, instead of forcing the grading into "only X% will achieve the top grade." If applied, the second method would discourage learning among students. QBPC wanted good collaboration among providers, along with a fair approach, and thus uses a prospective target-setting approach.

QBPC encourages learning through several mechanisms. The first mode of learning is delivered through Continuing Medical Education (CME), which is a requirement of QBPC. The CME modules focus on the medical conditions pertinent to the health outcomes measured, with

composite metrics to determine CMF.   Additionally, providers earn CME credits s and, initially performance improvement CME were given that could satisfy the Maintenance of Certification (MOC) part IV of the American Board of Family Medicine and the American Board of Internal Medicine.

QBPC providers also have learning opportunities through frequent face-to-face meetings. These include four meetings in various regions of the state each year, an annual statewide meeting, and some practice site visits. And, Blue Cross formed a Physician Advisory Committee (PAC) at the onset of QBPC, which significantly contributed to the program designs and adjustments Blue Cross has made as it evolves.

Recognition of "high-performers" (David R Marsh, 2004) is used to both reward practices and individuals performing well, but also to identify best practices so that the entire QBPC provider community can learn from their peers. When QBPC began, Blue Cross had no method to identify top performers because the program had not generated sufficient data to measure this. So at the beginning, Blue Cross contracted with non-practice partners to provide clinical and scientific advice (Dr. W.H. Bestermann (Bestermann, 2011)), CME (The Consortium for Southeastern Hypertension Control) and practice process improvement (Integrated Medical Processes (IMP - Integrated Medical Processes) (Ferrario, et al., 2013)). Practices who engaged with these experts early in their QBPC enrollment have significantly improved their performance and are some of the highest performers in the program at its three-year point. This may reflect a willingness-to-change attitude that may be critical for these high-performers and will be further discussed in a future article.

Traditionally, Blue Cross Population Health nurses have engaged members for health coaching to help them stay on top of chronic conditions without coordinating with or relaying information to the members' primary care doctors. In QBPC, Blue Cross re-organized its clinical outreach approach. Each QBPC practice designates a Patient Coordinator, who speaks with a Blue Cross staff member called a "Quality Navigator" at least weekly to discuss information that both the practice and the health plan may not understand. One example may be that a member visited an ER out of state. Blue Cross would be able to see that information via its claims data, and could inform the practice about this so the member's doctor could address it at his/her next office visit. After the visit on another week, perhaps the practice may inform Blue Cross that a

patient has educational needs, and suggest connecting that patient with a Blue Cross nurse for health coaching between visits.

The Blue Cross care team includes registered nurses, dietitians, licensed vocational nurses, social workers, pharmacists, and non-licensed staff who educate and coordinate both clinical and social services, working with members. The Population Health team assesses barriers to treatment plan adherence, such as health literacy, support systems, patterns of seeking care, psychosocial issues, functional limitations, the living/work environment, and other clinical factors. The nurses work with the patients to develop individualized care plans that reduce or remove barriers to health and wellness. The team may identify specific things the member's doctor can address during office visits, and these items are communicated during the weekly calls between the practice and the Quality Navigator.

QBPC Implementation

The old saying "the devil is in the details" may be appropriate when discussing the implementation of the QBPC design. Blue Cross needed to engage both internal and external stakeholders regarding the program commitments and financial investments. First, Blue Cross formed a dedicated team with experienced leaders to navigate the multiple aspects that were required to be addressed. These functions included contracting, reimbursement, claims processing, data storage, report generation, IT support functions, and population health and quality improvement expertise. Having a dedicated team that was entirely focused on implementation was the essential ingredient that resulted in the growth and performance of the QBPC program.

One critical external stakeholder Blue Cross engaged was self-insured businesses that would incur CMF payments in their medical claims. Blue Cross made a commitment that QBPC was a "whole system" program that included all members in hopes of fulfilling its mission of improving the health and lives of Louisianans. Furthermore, national efforts to include members from other Blue Cross and Blue Shield plans living in Louisiana was a vision that needed to be championed from the beginning. Much focus has been spent engaging and implementing this vision and mission.

Blue Cross had historically supported the Louisiana Academy of Family Physicians (LAFP) and collaborated with LAFP on supporting the PCMH recognition prior to QBPC. This

included frequent support of speakers during sponsored conferences, vendor booths, and references on the LAFP website that supported primary care initiatives. In addition to LAFP, the Louisiana Department of Health and Hospitals, Blue Cross, and a private practice participated in the Institute of Healthcare Improvement's (IHI) "Triple Aim Collaborative." This resulted in a look at expanding QBPC into evaluating health and costs. Additional reporting and data to QBPC providers, including ER utilization reports, medication compliance, and other impactful data, have been developed as the program expands as a result of the "Triple Aim Collaboration." In late 2015, Blue Cross and Louisiana's Medicaid program began sharing information about primary care initiatives. Additionally, QBPC partners with clinical transformation, COSEHC and IMP, obtained a CMS grant that includes many of the QBPC interventions. With Blue Cross collaborating through the national CMS grant and the state-level Medicaid program, QBPC could become a dominant model of primary care.

To finish describing alignment of QBPC with the overall Blue Cross strategy, the company Blue Cross, included its growth among corporate goals for 2014 and 2015, measured by membership attributed to the program. Additionally, specific targets for hypertension and diabetes were included in Blue Cross 2015 corporate goals, which will continue to be included in the corporate goals through the end of 2017.

Summary

QBPC has been evaluated and was shown associated with favorable results in this study. Blue Cross and Blue Shield of Louisiana (Blue Cross) has designed and implemented a successful primary care transformation program that has the potential to become the premier model for primary care transformation. Furthermore, the design and implementation approaches outlined here may help with better understanding QBPC program and serve policymakers well as a best practice for this type of work.
Some of the key aspects of the design are:

- early reimbursement to enable change
- understandable and actionable data
- focused efforts on a few high-impact medical conditions
- shared clinical resources working to the top of their licenses, and
- excellence in execution of the program.

Multiple interventions are necessary to achieve a change (Grenny, Patterson, Maxfield, Mcmillian, & Switzler, 2013). Many transformation efforts do not adequately address the capability of change and usually only address motivation. By deploying early reimbursement based on a few medical conditions using EMR biometric and health plan claims data, physicians were able to quickly improve the populations they served in their practice. The future goals of QBPC are to continue to improve the initial metrics, expand the medical conditions when practices are prepared, grow transfer of expertise and knowledge between health plans and primary care practices, and collaborate with governmental payers to make the program the dominant program in Louisiana.

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