



PAY-FOR-PERFORMANCE IN BRAZIL: UNIMED-BELO HORIZONTE PHYSICIAN COOPERATIVE

Paulo Borem, Estevão Alves Valle, Monica Silva Monteiro De Castro, Ronaldo Kenzou Fujii, Ana Luiza de Oliveira Farias, Fabio Leite Gastal, and Catherine Connor

Inside

- About the P4P Case Studies Series **2**
- Acronyms **2**
- Introduction **3**
- Background **4**
- P4P Programs at UBH **7**
- General Lessons on P4P **27**
- Acknowledgments **28**
- References **28**

This case study presents the initial results of the pay-for-performance (P4P) experience of UNIMED-Belo Horizonte (UBH), a private, nonprofit organization in Brazil. UBH is both a health insurance company and a medical cooperative operating in a highly competitive market. UBH is implementing two P4P programs: paying contracted hospitals to pursue and eventually achieve accreditation, and paying physicians to follow disease management protocols for selected conditions such as diabetes, cardiovascular disease, and childhood asthma. This case study provides an example of private sector P4P to improve service quality and efficiency.



ABOUT THE P4P CASE STUDIES SERIES

Pay-for-performance (P4P) is a strategy that links payment to results. Health sector stakeholders, from international donors to government and health system policymakers, program managers, and health care providers increasingly see P4P as an important complement to investing in inputs such as buildings, drugs, and training when working to strengthen health systems and achieve the Millennium Development Goals (MDGs) and other targets that represent better health status for people. By providing financial incentives that encourage work toward agreed-upon results, P4P helps solve challenges such as increasing the quality of, as well as access to and use of health services.

Many developing countries are piloting or scaling up P4P programs to meet MDGs and other health indicators. Each country's experience with P4P is different, but by sharing approaches and lessons learned, all stakeholders will better understand the processes and challenges involved in P4P program design, implementation, evaluation, and scale-up.

This Health System 20/20 case study series, which profiles maternal and child health-oriented P4P programs in countries in Africa, Asia, and the Americas, is intended to help those countries and donors already engaged in P4P to fine-tune their programs and those that are contemplating P4P to adopt such a program as part of their efforts to strengthen their health system and improve health outcomes.

Annexed to each case study are tools that the country used in its P4P program. The annexes appear in the electronic versions (CD-ROM and Health Systems 20/20 web site) of the case study.

Rena Eichler, Ph.D
Technical Advisor, Pay for Performance
Health Systems 20/20 Project

ACRONYMS

ANS	Agência Nacional de Saúde Suplementar (National Agency for Supplemental Health)
ANVISA	Agência Nacional de Vigilância Sanitária (National Agency for Sanitary Vigilance)
EMR	Electronic Medical Records
HDMU	Hospital Dia e Maternidade UNIMED-BH
HMO	Health Maintenance Organization
HSR	Health Services Relations
IHA	Integrated Healthcare Association (a statewide multi-stakeholder leadership group that promotes quality improvement, accountability and affordability of health care in California)
ISO	International Organization for Standardization
ONA	Organização Nacional de Acreditação (National Organization for Accreditation)
P4P	Pay-for-Performance
UBH	UNIMED-Belo Horizonte
USAID	United States Agency for International Development



INTRODUCTION

Physician referrals to health promotion and prevention programs allow patients to be more closely monitored.



This case study looks at UNIMED-Belo Horizonte (UBH), a private, nonprofit health care organization in Brazil that has implemented two pay-for-performance (P4P) programs to improve health service quality and efficiency among its network of 258 providers serving 800,000 people in the Belo Horizonte metro area. The first P4P program, which began in 2005, sought to improve the quality of inpatient care by encouraging UBH network hospitals to be accredited. UBH pays contracted hospitals to pursue and eventually achieve accreditation. By August 2009, 19 of the 45 hospitals in the UBH network, responsible for 69 percent of UBH admissions, had achieved accreditation. The second P4P program, which began in 2007, is to improve the quality and efficiency of disease management of selected conditions such as diabetes, cardiovascular disease, childhood asthma, and well-child care (birth to 1 year). If physicians refer eligible patients to health promotion and prevention programs, UBH pays an added US\$7.50 per encounter, 37.5 percent over the set consultation fee of US\$20. These conditions are managed by specific protocols established by UBH specialist committees based on widely accepted clinical evidence. Preliminary results indicate improved health status among patients enrolled in the P4P program, in terms of an increased number of cardiac and diabetic patients with better blood pressure and optimal serum glucose and cholesterol levels. Additionally, there was a significant drop in hospital admissions among asthma patients.



BACKGROUND

Even though the Brazilian government operates a national health care system, the Sistema Único de Saúde, Brazil is home to a vibrant private health sector of insurers and providers for the 23 percent of the population willing and able to pay for additional or alternative services. These private sector services play an important role in the overall health care system by enabling public funding to reach more impoverished populations.

One of the most prominent players in the private health sector is UNIMED. Founded in 1967, the UNIMED system has grown into a network of 377 nonprofit physician cooperatives throughout the country that provide health maintenance organization (HMO)-style¹ health insurance to a total of 15 million individuals and 73,000 companies. Each UNIMED cooperative has its own administration and competes in its geographic area with other private health insurers and providers.

UBH is both a health insurance company and a medical cooperative operating in a highly competitive market. In regard to health insurance, UBH competes on price (insurance premium) and service quality for



The Brazilian public and private health care sectors work together so that public funding can reach more impoverished areas.

¹ An HMO is an entity that combines health insurance and service provision



individual and group (company) clients. As a medical cooperative, UBH must attract and retain physician members (membership is determined through entrance examination) by offering adequate benefits and maintaining a reputation for clinical quality. UBH also competes with other insurers for physician members in terms of fee rates for seeing UBH patients, because physicians can also see patients covered by other insurance plans.

UBH serves 23 municipalities in the metropolitan area of Belo Horizonte, the capital of Minas Gerais state and the third largest metropolitan area in Brazil (total population 5.4 million). UBH covers around 800,000 people; 25 percent are individual clients, and 75 percent are covered through their employer. UBH controls 39 percent of the health plan market in Belo Horizonte, making it the leader in this area. Currently 4,700 physicians are members of the cooperative. UBH owns and operates seven facilities; it has six outpatient facilities and one hospital, the 102-bed *Hospital Dia e Maternidade UNIMED-BH* (HDMU). A new 250-bed hospital focused on urgent/emergency care is scheduled to open in December 2009. UBH contracts an additional 258 facilities (hospitals, laboratories, and clinics); the contracted network serves more than 70 percent of UBH clients. Physicians and contracted hospitals are paid on a fee-for-service basis according to a fee schedule, both in UBH-owned facilities and in the contracted network. Nonmember physicians who work at UBH-owned facilities are also paid fee-for-service.

In 1998, Brazil passed major reforms of the private health insurance sector after decades of weak regulation that allowed dozens of companies to enter and abandon the market, leaving consumers without coverage and providers without reimbursement. A new body, the National Agency for Supplemental Health (*Agência Nacional de Saúde Complementar*, or ANS), was established to regulate all private health plans, referred to as “supplemental health” relative to the public sector health system. The new regulations obligated all plans to establish high financial reserves to guarantee their operation and ensure client security, which required better management strategies and stimulated efficiencies within the contracted network.

As part of the ANS regulatory process, the quality of health plans started to be measured along four dimensions (see Figure 1),² with the greatest weight (50 percent) assigned to health care quality.³

² http://www.ans.gov.br/portal/site/_qualificacao/pdf/texto_base.pdf

³ Quality of care seeks to measure the impact of health promotion, prevention, and care provided to beneficiaries of private health plans.



The other dimensions are client satisfaction (10 percent),⁴ economic/ financial performance and stability (30 percent),⁵ and structure and management.⁶ The results are published annually on the ANS web site.

FIGURE 1: BRAZIL'S ANS MEASURES THE PERFORMANCE OF PRIVATE HEALTH PLANS ALONG FOUR DIMENSIONS AND 33 INDICATORS



UBH believes that most of the policies and procedures established by ANS are transforming the supplementary system in a positive way, putting the client at the center of the health care process. ANS wishes to build a partnering relationship with all private health care plans in its policy making, and UBH is working closely to provide data and scientific evidence to support or to refute regulatory initiatives.

UBH's vision for 2015 is to become a high quality, efficient, and responsive health care delivery system that is a model from which other systems and organizations can learn. A new health care model is essential – the key change is to create a patient-centered health care process in which incentives are aligned with quality of care. P4P is an important strategy for improving the quality of clinical care, gaining efficiency (reducing hospital admissions), and increasing patient satisfaction.

⁴ Client satisfaction indicators assess whether the consumers have their needs and expectations met by health plan operators, including insurance and health services providers, as established by law and by contractual terms.

⁵ Economic/financial performance assesses the financial situation and administrative structure of the health plan to provide and sustain all covered health services needed for comprehensive care that contributes to improving the health of its beneficiaries.

⁶ Management assesses the ability of the private health plans to maintain or increase the number of beneficiaries, offer a stable health care provider network, and meet ANS and other legal requirements



P4P PROGRAMS AT UBH

The creation of ANS further encouraged UBH to improve the performance of its health plan in terms of enhancing the quality of the health care delivered to its clients and operating more cost

effectively. This section looks at two UBH programs – for hospital accreditation and disease management – that incorporated P4P principles.

APPLYING P4P TO HOSPITAL ACCREDITATION

GENERATING BUY-IN AND DESIGN

The P4P hospital quality accreditation program, formally known as the Service Network Qualification Project, was conceived and designed primarily

by professional staff in the UBH Health Services Relations (HSR) department, a 130-person unit that employs doctors, nurses, and



The ANS allows for a more stable private health sector and therefore a better quality of health care delivered to its clients.



other health and administrative professionals. Dr. Monica Monteiro de Castro, current superintendent of the UBH Health Delivery Department, coordinates the accreditation program together with HSR department manager Dr. Sergio Bersan.

Currently, the contracted network serves approximately 70 percent of UBH clients with the remainder seen through UBH's own facilities. Regardless of facility ownership or the number of dedicated beds, UBH decided to implement the quality accreditation program in all 45 hospitals providing care to its patients. The accreditation program was intended to motivate hospitals to provide better and safer care and more professional and rational administration while continuously improving and providing measurable results. Increased overall efficiency was expected through reductions in readmissions, length of stay, and hospital-induced infection. These results were expected to improve patient satisfaction and increase the bond between UBH and its 258 contracted facilities.

Phase I of the accreditation program (2003–04) focused first on ensuring that the infrastructure to deliver quality services was adequate and that required legal documentation was in place. Later, the program began to focus on improving management processes. For example, before the P4P initiative, UBH improved efficiency by renewing network contracts that introduced cost-containment strategies, such as the introduction of annual inflation-based readjustments for per diem rates and fees (as opposed to monthly), global fees for surgical procedures, and payment for generic medications. Savings generated from these strategies were transferred to providers in forms of compensation unrelated to the P4P program. More significant for this case study, the savings enabled UBH to begin exploring P4P by improving overall efficiency. It should be noted that in this phase, financial incentives were not part of the program.

The accreditation audit of structural indicators at UBH hospitals began at the UBH's own HDMU in 2004; soon after it was implemented in all contracted hospitals, regardless of facility ownership or the number of dedicated beds. Indicators were the norms of Brazil's National Agency for Sanitary Vigilance (Agência Nacional de Vigilância Sanitária, ANVISA). A local quality rank was then established.

The audit showed that hospitals were not “buying into” quality improvement through ANVISA accreditation. In fact, the audit process revealed enormous tension between UBH and contracted hospitals, which felt that UBH reimbursements to them were insufficient to pay for the investments that the accreditation program demanded.



In response to provider demands for financial resources, in 2005 UBH redesigned the accreditation program. Phase 2 incorporated

Box 1: Partnering with ONA for Hospital Accreditation

The National Organization for Accreditation (*Organização Nacional de Acreditação*, or ONA), is a nongovernmental organization that evaluates and accredits various categories of health care organizations in Brazil. Each organization's accreditation status is posted on the ONA web site (www.ona.org.br).

For the UBH accreditation program, ONA tailored quality indicators to the hospital setting and in compliance with national health care standards. The Minas Gerais hospital association participated in the selection process. ONA undertook negotiations with each hospital to determine steps needed to achieve accreditation, based on the specifics of each institution.

incentive payments and technical support for hospitals that initiated and achieved quality accreditation. On the recommendation of UBH and with agreement of the majority of contracted hospitals, criteria were defined by the National Organization for Accreditation (*Organização Nacional de Acreditação*, or ONA) (see Box 1) and, if possible, International Organization for Standardization (ISO) certification.⁷

UBH offered to increase the per diem rate⁸ it paid to hospitals by 7 percent simply for initiating the process aimed at achieving accreditation (Table 1).

It is important to note that each hospital was allowed to establish its

own deadline – within a 36-month window – for achieving accreditation, based on what it thought would be feasible given its individual circumstances.⁹ UBH formed a team of outside auditors to evaluate whether each hospital met its deadline; if not, the incentive payment was suspended until the hospital did so. It took hospitals an average of 30 months to achieve accreditation. The suspension of incentives during the accreditation process was rare. Annex A shows a report used by UNIMED-BH and the auditor to record regular audit visits to a hospital to measure progress toward accreditation.

⁷ ISO provides guidelines for quality management of health care organizations.

⁸ Per diem is the amount an insurer pays a contracted hospital for each inpatient day.

⁹ The hospital was able to have the deadline extended if it provided an acceptable justification for an extension.



TABLE I: P4P DESIGN – HOSPITAL QUALITY ACCREDITATION PROGRAM

Payer: UBH

Recipient: any of UBH's 45 contracted hospitals

Indicator	Target	P4P Incentive Payment	Measurement	Validation
Accreditation process	Initiated	7% increase in per diem rate	ONA and/or ISO*	Confirmation from ONA and/or ISO*
Accreditation process	On schedule to meet self-defined deadline	Maintain the same 7% increase in per diem rate	On schedule	UBH auditors
Accreditation status	Achieved	7% level I (made permanent through accreditation period) Increases from 7% to 9% level II Increases from 7% to 15% level III	ONA and/or ISO* inspection	ONA web site and/or UBH auditors for ISO
Accreditation status	Maintained	7% level I 9% level II 15% level III	ONA and/or ISO* inspection	ONA web site and/or UBH auditors for ISO

* ISO accreditation was optional

Accredited hospital were awarded an increased per diem rate for the duration of the accreditation period; the rate of increase by 7 percent for hospitals that achieved level I certification (i.e., a continuation of the 7 percent paid for initiating the accreditation process), 9 percent for hospitals that achieved level II, and 15 percent for hospitals that achieved level III. In addition, UBH covered half of the costs associated with inspection visits by the certifying institutions.

The impact of the accreditation initiatives on economic efficiency and quality of care is being evaluated, with findings expected in 2011.

SOURCES OF FINANCING FOR P4P ACCREDITATION

Since the P4P hospital quality accreditation program began in 2005, UBH has invested approximately US\$10 million in accreditation-related activities in both its own hospital and its contracted network. All financial resources for the accreditation program come from UBH's insurance premium revenues.



RESULTS OF THE P4P HOSPITAL ACCREDITATION PROGRAM

In 2008, accredited hospitals accounted for 65 percent of all UBH hospital admissions. By 2009, 19 of the 45 UBH network hospitals were accredited (Table 2). These hospitals account for 69 percent of UBH hospital admissions.

TABLE 2: NUMBER OF HOSPITALS ACCREDITED, BY TYPE OF ACCREDITATION

Type of Accreditation	Number of Hospitals
Only ONA	7
Only ISO	9
ISO and ONA	3
Total	19

UBH is currently the health plan with the highest number of accredited hospitals in Brazil. The World Bank recognized the UBH program as one of the most successful and best performing in the world, and recommended it as an accreditation model for other plans.¹⁰ Several of the accredited hospitals serve public sector patients as well, so UBH's P4P program may benefit the larger population; however, this has not been measured.

An unexpected result reported by the hospitals was that services such as laundry, nutrition and dietetics, and hematology that are part of the UBH system were also motivated to enhance quality. These results also have not yet been measured.

Unpredicted improvements in service quality were seen throughout many areas of hospitals.



¹⁰ La Forgia, Gerard M. and Bernard F. Couttolenc. May 2008. Hospital Performance in Brazil: The Search for Excellence. Washington, DC: The World Bank.



OTHER INITIATIVES TO IMPROVE HOSPITAL CLINICAL PERFORMANCE AND COST EFFECTIVENESS

UBH continues to explore additional ways to improve the quality of care while further improving efficiency.

In 2007, UBH was the first health insurance company and large service provider in Brazil to apply the Diagnosis-Related Groups (DRG)¹¹ methodology. The DRG method links to P4P by allowing comparison of hospital performance. UBH has some initial experience using DRGs in its own hospital (UDMU) and is still working to understand the results. UBH has agreed with its network hospitals to use this method in the near future as part of hospital P4P, and such clauses are expressed in the service contracts. The DRG initiative identified important gaps in data gathering, information quality, and technology structuring, which were then addressed.

Through 2008, ONA/ISO accreditation was the only quality-enhancing activity agreed upon by network members. In 2009, UBH added a new quality-of-care program. The chosen model was health care risk management, guided by the AS/NZS 4360 standard.¹² Like the accreditation program, the initiative was piloted at UBH's HDMU, and later UBH began to implement it throughout

The quality of care program, which addresses health care risk management, uses client satisfaction as one its indicators.



¹¹DRG is a system to classify hospital cases into one of approximately 500 groups that are expected to have similar hospital resource use based on ICD diagnoses, procedures, age, sex, discharge status, and the presence of complications. DRGs have been used in the United States since 1983 to determine how much Medicare pays hospitals, because patients within each category are similar clinically and are expected to use the same level of hospital resources.

¹²AS/NZS is a cross-organizational generic risk management guide: <http://www.noweco.com/risk/riske19.htm>



the larger network. Unlike the accreditation program, AS/NZS does not use P4P. Among the chosen indicators are client satisfaction, preventable re-hospitalizations, and the hospital's Earnings before Taxes, Interest, Depreciation, and Amortization (EBTIDA).

CHALLENGES AND LESSONS LEARNED IN IMPLEMENTING THE P4P HOSPITAL QUALITY ACCREDITATION PROGRAM

UBH identified information technology weaknesses, such as deficiencies in implementing electronic medical records (EMR). Even though EMR is not a requirement for ONA or ISO accreditation, its absence was one of the challenges faced at the beginning of the implementation process.

The lack of an evaluation culture allied with the fear of verifying, publishing, and punishing bad performance (i.e., not achieving accreditation) also were important challenges.

Finally, the program had not captured baseline clinical quality-of-care indicators in order to measure changes after accreditation is achieved. UBH recommends identifying clinical quality indicators at the beginning of the process together with the accrediting agency (ONA and ISO).

APPLYING P4P TO DISEASE MANAGEMENT

Concurrent with the hospital accreditation program, UBH began to explore ways to improve quality and efficiency of care delivered by individual primary care providers through better chronic disease management and patient health. UBH identified clients with high-risk profiles, examined inpatient utilization patterns, and studied disease-management literature to identify clinical conditions that were the “low-hanging fruit” for improving quality and efficiency. The hypothesis was that, with the implementation of a more effective care model, doctors and patients would adopt behaviors and take actions to sustain good health status, control disease, and ensure better quality of life, therefore avoiding unnecessary hospitalizations. Obstacles to better disease management were lack of knowledge and/or willingness on the part of physicians and patients to comply with specific practices.

For example, in 2006, UBH established internal goals to increase screening rates for breast, colorectal, and cervical cancer. In 2007, in response to a request from one of its biggest clients, UBH established an experimental quality-of-care incentive program for chronic disease



management within the client's offices using a specially trained team of doctors. Also in 2007, UBH opened the Health Promotion Center that would allow for the expansion of the chronic disease management program.

However, similar to the hospital accreditation program, when persuasion and information sharing alone was insufficient, UBH was finding primary care physicians slow to adopt the new disease management practices. Given that climate, UBH again chose to undertake an innovative P4P initiative that departed from the traditional fee-for-service model.

UBH adopted a P4P system for physicians that introduced financial incentives tied to physician practices and patient outcomes. (Specific P4P payments are discussed below, under "Design.") The P4P system was introduced for selected diseases in phases, beginning with cardiovascular disease and diabetes mellitus in 2007. UBH selected these chronic conditions because their prevalence in the UBH client population made them leading causes of hospital admissions and they offered potential for health improvement if managed properly. Other conditions were added each year: in 2008, UBH added childhood asthma (ages 2–18 years) and well-child care (up to 1 year of age), and in 2009, chronic mental health conditions (bipolar disorder and schizophrenia) and maternal health (high rate of C-sections).

Also similar to hospital accreditation, the disease management initiative was driven by dedicated individuals. In September 2007, Dr. Estevão Alves Valle became program coordinator and with the UBH team has implemented the disease management innovations, working primarily on childhood asthma.

Dr. Paulo Borem, UBH's commercial director and an executive director, has been a leader throughout the disease management design and implementation: In 2007, he contacted Kaiser Permanente, a leading nonprofit health plan based in California, which uses incentives to create a culture of continuous improvement. He communicated with Kaiser Permanente's Paul Wallace, MD, and Molly Porter, who related their knowledge and experience with P4P, and who visited UBH in 2008 to share learning. Dr. Borem attended the Integrated Healthcare Association (IHA)-sponsored P4P summits in California in 2008 and 2009, which exposed him to insights of international P4P models and allowed him to propose improvements to UBH's existing programs. Dr. Borem signed up for Google Alert for P4P and read available literature and updates. He also performed a critical analysis of UBH's programs



and advised broadening the model to include the three dimensions of quality recommended by the U.S.-based Institute of Medicine:¹³

- Clinical effectiveness, that is, what is done for the patient, adjusted for individual risk, that results in improved health. Clinical effectiveness can be evaluated through processes (blood pressure reading, HbA1c measurement, etc.), intermediate outcomes (reduction in the levels of HbA1c and average length of hospital stay, prevention measures such as controlling blood pressure, etc.), and major outcomes (reduced deaths, blindness, amputation rates, and heart attack, improved quality of life, etc.).
- Technical efficiency, which is related to the cost and use of health care resources.
- Client satisfaction with the cooperative's medical services.

These dimensions of quality were selected for use to make UBH's program comparable to the largest and most successful international programs.

Currently, Dr. Borem is leading a UBH group that works on initiatives related to P4P. The working group comprises Dr. Alves Valle, Dr. Fábio Gastal, and Dr. Ronaldo Fujii, as well as the professional journalist Ana Luiza Farias.

GENERATING BUY-IN

For each condition, UBH formed a Specialists Committee that developed disease-management protocols. The committees, which are part of UBH's organizational structure, are composed of specialist physicians and headed by presidents of the Sociedades de Especialidades da Associação Médica de Minas Gerais (equivalent to the American Medical Association's specialists subcommittees). The P4P program targets specialists who handle the more prevalent and serious chronic disease cases, including clinical medicine, geriatrics, cardiology, endocrinology, pediatrics, pediatric pulmonologists, nephrology, psychiatry, and obstetrics and gynecology.

To build understanding and support among physicians and patients, Ms. Farias, the journalist, developed materials and a communications campaign for each group. Over six months in 2007, UBH conducted a

¹³ Institute of Medicine. March 2001. Crossing the Quality Chasm: A New Health System for the 21st Century. Consensus Report.



series of meetings with UBH-contracted doctors to introduce the P4P concept and disease management protocols. Based on discussions during these meetings, several adjustments were made to the protocols, the data collection system, and the operationalization of programs.

UBH-contracted doctors attend meeting to learn about the P4P concept and disease management.

The relationship between the recipients of the incentive payments and UBH is interesting in that it is both a payer-provider and cooperative-voting member relationship. In other words, the executive directors of UBH who manage the payer and lead the P4P program are elected by and accountable to the physician members.

Physician compliance with disease management protocols is voluntary. Figure 2 shows the numbers of physicians that participated in the program. (Participation is defined as following the new disease management protocols and receiving the incentive payment.) Participation in cardiovascular and diabetes management has grown steadily and in 2009, the third year of the P4P program, surpassed 12 percent of all eligible physicians. P4P for pediatrics achieved participation of 18.4 percent of all pediatricians in its first year. Doctors managing asthma showed the lowest level of participation, 8 percent; a possible explanation for this lower level of participation is that the program included clients up to 18 years of age, and these clients could seek care from other doctors who are not enrolled in the P4P program.

UBH identified opportunities to improve the design of the P4P program. UBH is introducing new measures such as patient satisfaction and technical

UBH-contracted doctors attend meeting to learn about the P4P concept and disease management.





efficiency (see under Section 3.2), and aiming to increase P4P incentive payments to represent a minimum of 10 percent of the total annual income per physician. Heath promotion measures (cancer screening, smoking cessation, and good eating habits) will be extended to all physicians, giving them the opportunity to receive annual bonuses.

FIGURE 2: PARTICIPATION OF TARGET PHYSICIANS IN THE P4P PROGRAM

	2007		2008		2009	
	n	% of all eligible	n	% of all eligible	n	% of all eligible
Cardiovascular	26	3.1	85	10.0	104	12.2
Diabetes	24	2.8	84	9.9	106	12.5
Child health	-	-	91	18.4	93	18.8
Asthma	-	-	39	7.9	41	8.3

Figure 3 shows the growth of patients in disease management for four conditions.

FIGURE 3: INCREASE IN NUMBERS OF PATIENTS IN DISEASE MANAGEMENT PROGRAM

	2007	2008	2009
Cardiovascular	706	1844	765
Diabetes	202	2158	756
Child health	-	2570	900
Asthma	-	478	245



DESIGN

Table 3 shows the overall design of the disease management program. Doctors enroll their patients in the disease management program using an electronic risk stratification questionnaire (see Figure 4) available on the Internet (web-based). The questionnaire permits the collection of data relating to clinical indicators based on predefined protocols and according to doctors and the U.S.-based National Committee for Quality Assurance (NCQA). The system automatically generates the client's stratified risk of adverse events based on methodologies such as the Framingham cardiac risk score and degree of injury to organs that diabetes targets. This information defines a program of care that delineates a predetermined number of visits, exams to be performed, and necessary referrals (tobacco cessation programs, ophthalmologist visits, cardiac rehabilitation, etc.). As treatment progresses, the questionnaire collects data that are used to monitor the individual physician's compliance with the case management protocol, and aggregated data are used to measure the P4P program's achievement of targets overall (see Table 6, "Preliminary Results," in section 3.3.5). Annex B contains screen shots of UNIMED-BH's information system, including risk stratification questions, used to register patients in the disease management program.

Currently, the electronic records of the disease management system are separate from UBH's EMR system, necessitating double entry and thereby making the data-entry process time-consuming for doctors. UBH plans to incorporate the questionnaire into the EMR so that doctors no longer have to input data in two different systems.



TABLE 3: P4P DESIGN – DISEASE MANAGEMENT PROGRAM

Indicator	Target	Payment	Annual Bonus	Measurement	Validation
Cardiovascular					
Referrals for cardiac rehabilitation	Patients who had acute myocardial infarction, CABG, PTCA, heart failure	US\$7.50 per patient who goes to rehab	N/A	Electronic record system	Claim data
Referral to tobacco cessation course	All eligible patients	US\$7.50 per patient who attends course	N/A	Electronic record system	Claim data
Blood pressure <140/90mmHg	75% of eligible patients	US\$7.50 per encounter	US\$13 per registered client reaching the goal	Electronic record system	*Nurses through call center
LDL <130mg/dL	50% of eligible patients	US\$7.50 per encounter	US\$13 per registered client reaching the goal	Electronic record system	*Nurses through call center
Diabetes					
Referral for annual eye exam	All eligible patients	US\$6 per patient who takes exam	N/A	Electronic record system	Claim data
Referral to tobacco cessation course	All eligible patients	US\$6 per patient who attends course	N/A	Electronic record system	Claim data
Blood pressure <130/80mmHg	25% of eligible patients	-	US\$8.80 per registered client reaching the goal	Electronic record system	*Nurses through call center
LDL <100mg/dL	36% of eligible patients	-	US\$8.80 per registered client reaching the goal	Electronic record system	*Nurses through call center
Hb glyclated <7%	40% of eligible patients	-	US\$8.80 per registered client reaching the goal	Electronic record system	*Nurses through call center
Pediatrics					
Emergency visits during first year of life	<2 visits/patient/year	-	US\$38 per patient	Electronic record system and administrative data	Claim data
Asthma					
Hospital admissions for asthma (ICD10)	No admissions	US\$17.50 per patient/6 months	-	Electronic patient record system and administrative data	Claim data
OB/GYN					
Vaginal deliveries	20% of eligible patients	US\$100/ patient/year	-	Electronic patient record system and administrative data	Claim data

*Nurses verify whether blood pressure was measured or if lab tests were ordered.



FIGURE 4: QUESTIONNAIRE FOR THE P4P AND DISEASE MANAGEMENT PROGRAM

Registrar Atendimento

Inscrição do Programa de Saúde Cardiovascular

Identificação | Ficha

Dados Pessoais

* Idade

Fatores de risco e Comorbidades

* Diabetes Sim Não

* Tabagismo Sim Não

* Insuficiência Cardíaca Sistólica Sim Não

* Angina Sim Não

* Hipertensão Arterial Sim Não

* Dislipidemia Sim Não

Medicamentos

* Usa ácido-acetil salicílico? Sim Não

Exame Físico

* Peso(kg)

* Altura(cm)

PA (mmHg MSE) * Sistólica * Diastólica

Exames Laboratoriais

Hemoglobina Glicada (%)

* Colesterol Total (mg/dl)

* LDL Colesterol (mg/dl)

* HDL Colesterol (mg/dl)

Observações

* Cliente assinou a Ficha de Cadastro Sim

Obs

Salvar Definitivo Salvar Parcial Cancelar

Over the year of the program, participating doctors receive a US\$7.50 incentive payment over the regular consultation fee for each visit by patients with cardiovascular disease. At the end of the year, if the doctor communicates with UBH the clinical results obtained during the period, and, if the goals for that patient were reached, the doctor receives an additional US\$26. If not all of the goals were met, a bonus is paid based in proportion to the percentage of the goals achieved. Table 4 illustrates how the incentive payments would be applied over a one-year period



to Dr. X, who registered 40 patients into the cardiovascular disease management program. Annex C contains screen shots of UNIMED-BH's information system used to capture the results of each patient in the disease management program and calculate the physician's P4P payment.

TABLE 4: EXAMPLE OF P4P PAYMENTS TO DR. X WHO HAS 40 PATIENTS REGISTERED IN THE CARDIOVASCULAR DISEASE MANAGEMENT PROGRAM

P4P for Cardiac Patients			Performance of Dr. X			
Indicator	Target	Payment	No. of patients	No. of	Payment rate	Total payment
P4P payments by patient and by encounter						
Referrals for cardiac rehabilitation	All eligible patients	US\$7.50 per patient who goes to rehab	20	n/a	\$7.50	\$150.00
Referral to tobacco cessation course	All eligible patients	US\$7.50 per patient who attends course	20	n/a	\$7.50	\$150.00
Blood pressure monitored and cholesterol (LDL) monitored	All eligible patients	US\$7.50 per encounter	40	96	\$7.50	\$720.00
P4P annual bonus						
Blood pressure <140/90mmHg	75% of eligible patients = 30 for Dr. X	US\$13 per registered client reaching the target	30	n/a		\$390.00
LDL <130mg/dL	50% of eligible patients = 20 for Dr. X	US\$13 per registered client reaching the target	20	n/a		\$260.00
Total P4P payments earned by Dr. X in one year						\$1,670.00

Note: The annual bonus is paid only when 75 percent of all patients have had their blood pressure controlled and 50 percent have had their LDL cholesterol controlled.

The P4P program did not require the development of new or separate contracts because UBH had the advantage of already using a modern claims processing system whereby physicians bill UBH electronically and UBH pays physicians through direct deposit. In fact, prompt payment was cited in an independent survey by 99 percent of UBH members as one of the main reasons for their satisfaction with UBH.¹⁴ The P4P payments (e.g., the additional US\$7.50 per visit) are made through the same billing and payment system following verification that the doctor achieved the indicator. Physicians report their compliance with disease management protocols (e.g., refer patient to tobacco cessation program) or achievement of an indicator (e.g., blood pressure <130/80mmHg)



in the electronic patient record system. All registered clients are contacted by professional nurses employed by UBH who reinforce medical instructions, recruit for health promotion activities, and verify select information from the electronic record in their role as medical assistants.

RESULTS

This section describes the amount paid to member doctors and observed client outcomes attributed, at least in part, to the P4P program.

MEMBER DOCTORS

In 2008, the maximum annual compensation was US\$1,334 (US\$121 on average) in the cardiovascular health program, US\$2,970 (US\$241 on average) in the diabetes program, US\$2,117 (US\$350 on average) in the well-child program, and US\$1,635 (US\$128 on average) in the childhood asthma program (Table 5).

TABLE 5: ANNUAL P4P PAYMENTS TO DOCTORS IN 2008 BY PROGRAM

Program	Annual P4P Payments (average)	Annual P4P Payments (maximum)
Cardiovascular health	US\$121	US\$1,334
Diabetes	US\$241	US\$2,970
Well-child	US\$350	US\$2,117
Childhood asthma	US\$128	US\$1,635

Pediatricians had the highest average number of patients (29) and earned the highest average payment amount (US\$350), with one doctor receiving a total of US\$2,117 in incentive revenue. Diabetes was the second, in terms of both patients and payments, with one doctor receiving US\$2,970 in additional income. Doctors managing childhood asthma had the highest level of incentive income as a percentage of their normal income (6.3 percent).

¹⁴ Datafolha Institute 2008, one of the largest market survey and opinion poll companies in Brazil. <http://datafolha.folha.uol.com.br>



CLIENTS

Preliminary results for three of the targeted conditions (Table 6) indicate improved health status among clients enrolled in the P4P program in terms of an increased number of cardiac and diabetic patients with adequate levels of blood pressure, cholesterol, and H1Ac glycated hemoglobin. Hospital admissions among asthma patients also dropped significantly.

TABLE 6: PRELIMINARY RESULTS OF P4P DISEASE MANAGEMENT

Indicators	Before P4P	After P4P	Interpretation
Cardiovascular (n=31)*			
Blood pressure <140/90	12	20	😊
LDL <130 mg/dL	22	28	😊
Diabetes (n=255)*			
Blood pressure ≤130/80	34	64	😊
Blood pressure ≥140/90	7	2	😊
LDL <100 mg/dL	103	170	😊
LDL >130 mg/dL	38	49	😞
Hb glucose <7%	106	158	😊
Hb glucose >9%	38	50	😞
Asthma (n=537)**			
Hospital admissions	22	5	😊***

Note: There were no control groups for the disease management programs.

* Enrolled in 2007 and 2008 and had a minimum of 12 months of follow-up

** Enrolled in 2008 and had a minimum of six months of follow-up

*** p<0.005

SOURCES OF FINANCING FOR THE P4P DISEASE MANAGEMENT PROGRAM

Funds for the P4P disease management program came from UBH's specific capital investment funds as per decisions made at the annual strategic planning meeting and from operational savings realized from reduced hospital admissions and decreased use of urgent/emergency care.

Approximately US\$55,000 was spent by UBH on incentives for doctors during the first year. The design and launch of the program used the existing UBH administrative structure so no extra expenditures were made except for a communications campaign and for covering costs incurred to hold the doctors' informational sessions.



There is concern about future sources of financing, but UBH's experience so far shows that resources can be generated by the reorganization of care processes, optimal utilization of resources, and initiatives for health prevention and promotion. In contrast, the traditional fee-for-service model can stimulate the excessive use of procedures and the inappropriate use of resources. In the case of urgent/emergency care for patients with pleuritic chest pain, for example, following the adoption of the Manchester protocol, UBH found that 80 percent of patients in fact needed an elective medical consultation in physicians' offices and not more expensive and less efficient urgent care. In 2008, UBH spent US\$25 million in urgent care; it could have had significant savings if it had delivered the care in the right place.

By reducing the number of hospitalizations, the total cost to treat the patients enrolled in the P4P disease management program over six months dropped from US\$90,000 to US\$75,000, a saving of US\$15,000 in savings.



Improving the quality and efficiency of health care at the primary care level reduces the number of hospitalizations and the total cost of treatment for patients.

CHALLENGES AND LESSONS LEARNED IN MANAGING THE P4P DISEASE MANAGEMENT PROGRAM

The main challenge to realizing sustainability is to break with the conventional practice of paying by procedure, a deeply rooted tradition in medicine that is unsustainable in the long run. The change should be gradual and widely discussed with all affected parties. The client should be at the center of this discussion and should be the primary beneficiary of the changes.

Lessons on performance payments:

1. It is necessary to clearly distinguish P4P from other measures/ initiatives that increase provider remuneration so that providers link the incentive payment with the desired performance.



2. Payment of an annual bonus based on clinical results is one of the innovations of UBH's remuneration model in addition to defining plans of care and protocols. The incentives must be significant enough to motivate doctors to change their routines. Cumulative remuneration and an annual bonus payment is an attractive model because it allows physicians to correct their activities during the year in order to earn the bonus.
3. Initially, there was uncertainty regarding what amount of incentive payment would motivate change and, in fact, whether any incentive would. Based on the results, it appears that for some programs and certain specialties, the same amount generates different results.
4. The financial resources will be garnered from corrections to the excessive and inappropriate use of health care resources, mainly avoidable hospitalization and urgent/emergency care. As noted earlier, by reducing the number of hospitalizations, the total costs to treat the patients enrolled in the P4P program dropped from US\$90,000 to US\$75,000, a savings of US\$15,000 over six months.

Lessons on getting and maintaining buy-in:

1. Involving representatives of the specialties committees in program development is essential and provides credibility to the process. In most cases, the presidents of the various Brazilian Medical Association specialties committees were members of the UBH specialties committees.
2. A significant renegotiation of clinical practices with physicians founded on evidence-based practices as the way forward.
3. Plan operators must recognize that the primary objective is improved client health.

Lessons on information systems to support P4P:

1. It is critical to develop a system of clinical data collection integrated with the doctors' payment system.
2. The existence of an electronic patient registration system (in contrast to a paper record) is fundamental.
3. Ideally, the patient registration system is integrated into the existing medical record system because asking doctors to enter the same information more than once is frustrating and can increase the chance of physician noncompliance.



Lessons on indicators:

1. Criteria for selecting health conditions and indicators should include:

Clinical, population, and economic relevance

- The medical condition is prevalent.
- The type of care delivered has a positive impact on the clinical result.
- Measures of cost-effectiveness are available.
- Process indicators should have a strong link to the result.
- All dimensions of quality should be included if possible.

Scientific evidence

- Clinical processes are linked with results.
- Results are replicable.
- Results are internally and externally valid.
- Results are accurate.

Feasibility

- There are clear and precise specifications for data collection and analysis.
- Data are easy to collect and analyze.
- Program cost is reasonable.
- The program is logistically feasible.
- There are means to validate and resist data manipulation and fraud.

2. The improved clinical indicators (process and intermediate outcomes) are significant in the population that completed the entire plan of care. Due to the small number of enrolled patients thus far, UBH decided to redesign, refine, and develop new approaches while measuring program cost-effectiveness.



GENERAL LESSONS ON P4P

1. A major barrier to health care improvements in Brazil is that physician training focuses on working independently. The country's health care process is highly fragmented and efforts to change this are needed.
2. P4P contributes to redefining health delivery based on scientifically based best practices.
3. The P4P program should not be fragmented into isolated initiatives. Rather, it should be a program that contemplates health care quality, client satisfaction, clinical quality, and technical efficiency. However, it should be simple enough so that a doctor will know how to improve his/her performance.
4. It is necessary to introduce client satisfaction, clinical effectiveness, and technical efficiency dimensions to achieve significant improvements and drastically enhance the level of performance.
5. Only consensus building, adequate definition of indicators, incentives focused on quality, and publication and comparison of results effectively constitute a P4P program.
6. Dissemination of the results of P4P improves performance. Dissemination should include individual reports for the physicians, reports by specialty or point-of-service (facility), and publication of "best providers." For UBH customers, such as a company that buys UBH coverage for its employees, results can be presented in a simple annual report summarizing the evolution of their employees' health status and the providers (hospitals) with best performance



ACKNOWLEDGMENTS

UNIMED-Belo Horizonte would like to acknowledge Dr. Sergio Adriano Loureiro Bersan for his important role in designing and implementing the initiatives for hospital quality improvement and disease management program that are described in this report..

REFERENCES

- Bellows, B., M. Hamilton, and F. Kundu. 2009. *Vouchers for Health: Increasing utilization of facility-based FP and safe motherhood services in Kenya*. Bethesda, MD: Health Systems 20/20 project, Abt Associates Inc.
- Bellows, B., E. Mulogo, and F. Bagenda. 2008. *Evaluation of output-based aid (OBA) in Uganda: Impact of contracted facilities and social marketed vouchers on knowledge, utilization, and prevalence of sexually transmitted infections (STIs) 2006-2007*. Berkeley, California: Venture Strategies for Health and Development.
- Bellows, B., F. Bagenda, and E. Mulogo. 2007. "Preliminary report: STI Prevalence and Behavioral Survey in Mbarara, Kiruhura, Ibanda, Isingiro and Bushenyi Districts - 2006." Berkeley: Venture Strategies for Health and Development.
- Griffith, D. 2004. "HIV/AIDS Prevention Output-based Aid: Introducing voucher systems for health care provision in Uganda (Preliminary Design)." Frankfurt: KfW (German Development Bank).
- Grosskurth, H., R. Gray, R. Hayes, D. Mabey, and M. Wawer. 2000. "Control of sexually transmitted diseases for HIV-1 prevention: Understanding the implications of the Mwanza and Rakai trials." *Lancet* 355:1981-87.
- Grosskurth, H., J. Todd, E. Mwijarubi, P. Mayaud, A. Nicoll, G. ka-Gina, J. Newell, H. Grosskurth, J. Todd, P. Mayaud, A. Nicoll, J. Newell, D. Mabey, R. Hayes, F. Moshia, K. Senkoro, J. Chagalucha, A. Klokke, E. Mwijarubi, G. ka-Gina, and K. Mugeye. 1995. "Impact of improved treatment of sexually transmitted diseases on HIV infection in rural Tanzania: randomised controlled trial." *The Lancet* 346(8974):530-36.
- Hagenmeyer, E. 2005. *Final report on program design for OBA in Uganda*. Berlin: IGES.
- Ho, M., E. Owusu, and P. M. Aoki. 2009. "ClaimMobile: Engaging conflicting stakeholder requirements in healthcare in Uganda." Presented at International Conference on Information and Communication Technologies and Development, April 17-19, Carnegie Mellon University in Qatar; in ICTD2009.
- Kiwanuka-Mukiibi, P. 2005. *Introducing voucher systems for healthcare provision: Baseline audit*. Kampala: PS Consulting.
- Kyomuhendo, G. B. 2003. "Low Use of Rural Maternity Services in Uganda: Impact of Women's Status, Traditional Beliefs and Limited Resources." *Reproductive Health Matters* 11(21):16-26.
- Mayaud, P. and D. Mabey. 2004. "Approaches to the control of sexually transmitted infections in developing countries: old problems and modern challenges." *Sex Transm Infect* 80(3):174-82.
- Nuwaha, F., E. Faxelid, S. Neema, and B. Hojer. 1999. "Lay people's perceptions of sexually transmitted infections in Uganda." *Int J STD AIDS* 10(11):709-17.

Health Systems 20/20 is a five-year (2006-2011) cooperative agreement No. HS-A-00-06-00010-00 funded by the U.S. Agency for International Development (USAID). The project addresses the financing, governance, operational, and capacity-building constraints that block access to and use of priority population, health, and nutrition services by people in developing countries. Health Systems 20/20 offers global leadership, technical assistance, training, grants, research, and information dissemination.

Abt Associates Inc. (www.abtassociates.com) leads a team of partners that includes: Aga Khan Foundation | Bitrán y Asociados | BRAC University | Broad Branch Associates | Deloitte Consulting, LLP | Forum One Communications | RTI International | Training Resources Group | Tulane University School of Public Health

Recommended Citation: Borem, Paulo, Estevao Alves Valle, Monica Silva Monteiro De Castro, Ronaldo Kenzou Fujii, Ana Luiza de Oliveira Farias, Fabio Leite Gastal, and Catherine Connor. January 2010. *Pay for Performance in Brazil: UNIMED-Belo Horizonte Physician Cooperative*. Bethesda, MD: Health Systems 20/20 project, Abt Associates Inc.

Photos: Paolo Borem

DISCLAIMER: The author's views expressed here do not necessarily reflect the views of the U.S. Agency for International Development or the U.S. Government.

For more information about Health Systems 20/20 please contact:
Health Systems 20/20 | www.healthsystems2020.org
Abt Associates Inc. | www.abtassociates.com
4550 Montgomery Lane
Suite 800 North | Bethesda, MD 20814 | USA
E-mail: info@healthsystems2020.org