Assessing the Value of Incentives and Rewards Programs: A Primer

By The HSM Group, Ltd. for The Leapfrog Group

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A Primer

I. How to Approach the Cost-Benefit Analysis

Pay-for-performance programs (P4P) have proven their value and they are being widely accepted. The literature on P4P programs asserts that, "the debate is over for all practical purposes on whether pay-for-performance programs are worth doing in health care."[1] Nonetheless, the decision by health plans, coalitions, or employers to implement an incentive and/or reward program should still be based on a systematic evaluation of benefits and costs. A comprehensive evaluation is necessary to:

- Credibly judge whether a P4P program is an overall success
- Justify expansion of the program
- Increase acceptance and cooperation of stakeholders, including physicians and hospitals
- Determine funding levels and whether funding is to come from new sources and investors or from cost decreases
- Compare the net benefits from the P4P program with alternative quality measures or with completely different investments available to the organization

One of the most common methods for this kind of evaluation is a return on investment (ROI) analysis. The ROI calculation is typically a standardized framework that allows organizations to compare the costs and benefits over time from alternative investment choices, and to select the investment that will generate the most value to the organization. In the case of a P4P program, the ROI analysis will systematically compare all of the savings that accrue when there are medically appropriate reductions in misuse, underuse, and overuse as well as reduced errors and improved outcomes with the costs of generating the improvements.

Although the financial ROI calculation is the core of the analysis, there are often benefits and costs associated with investments that cannot be directly translated into dollars and cents. These qualitative factors need to be recognized and described in the overall evaluation. The entire ROI analysis is likely to be a multidimensional study, rather than a single number that can be used to assess an incentive and reward program.

ROI formula at its simplest is a ratio

$$\text{ROI} = \frac{\text{Total benefits from the program}}{\text{Total costs associated with designing and implementing the program}}$$

This ratio is a convenient measure of proportionately how much greater the savings will be from an investment than the costs. However, the ratio itself does not reflect all of the relevant financial considerations, such as:

- The size of the investment or outlay — Even though an investment may have a high ROI, the investment must still fit within the organization's planned budget.

- Time frame of investment — It's important to know when the investment will provide benefits, and over what time frame.

a. ROI analysis is likely to involve three elements:

1. Defined and measurable concepts for program savings, such as reduced re-admissions for a specific condition or reduced treatment costs for a population getting care from a provider in an incentive program compared with a similar population seeing non-participating providers, and for program costs, such as incremental administration, IT, and reporting expenses.

2. Theoretical concepts that are credible parts of the analysis, but not directly measurable. For example, P4P programs may significantly improve employee absenteeism and productivity within payer organizations. These are important benefits but few companies track these metrics. A conceptual model can link improved health to higher productivity and help to determine the impact of the P4P program's benefits.

3. Qualitative factors that should be considered, but may not lend themselves to quantification. Improved working relationships with providers is an example of a qualitative factor.

Each of these components should be included in the analysis, even though they may not all be incorporated in the actual ROI calculation.

Percent ROI or net benefit?

Which measure is more important: the percent ROI or the absolute net savings from the pay-for-performance program?

Some discussions of P4P program evaluation argue that the absolute net benefit is the more important measure since the ROI percent itself does not show whether the dollar savings are large or small.

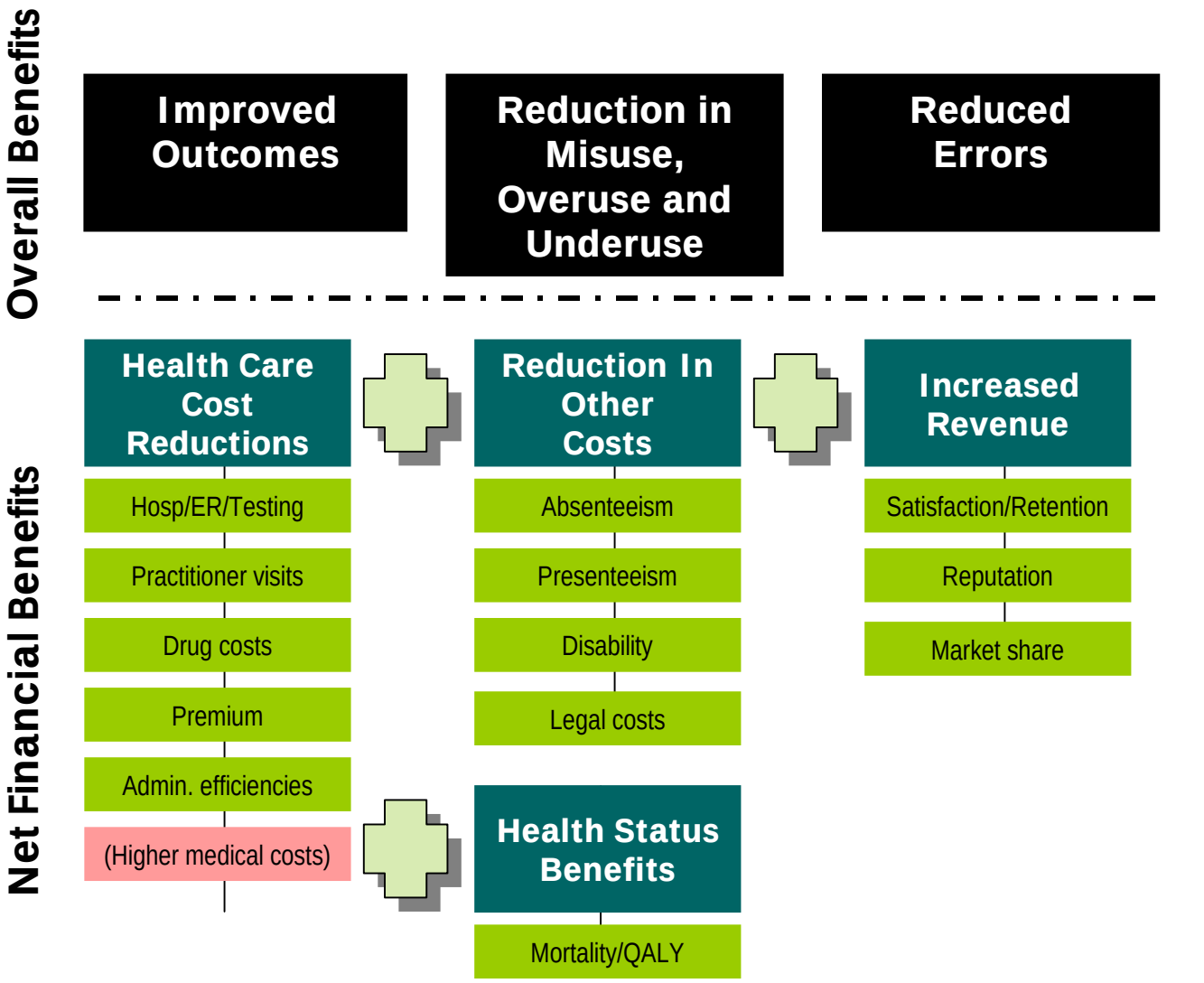
In practice, both measures are critical. The ROI percentage is a measure of the effectiveness of the program, and the higher the number, the more benefits are generated from the costs. But the total net savings may be small even with a high ROI. On the other hand, a high level of absolute savings might need a high level of investment, or costs, to generate the savings. In such a case, the absolute savings would be high but the ROI, or effectiveness of the investment, could be very low compared to alternative investments.

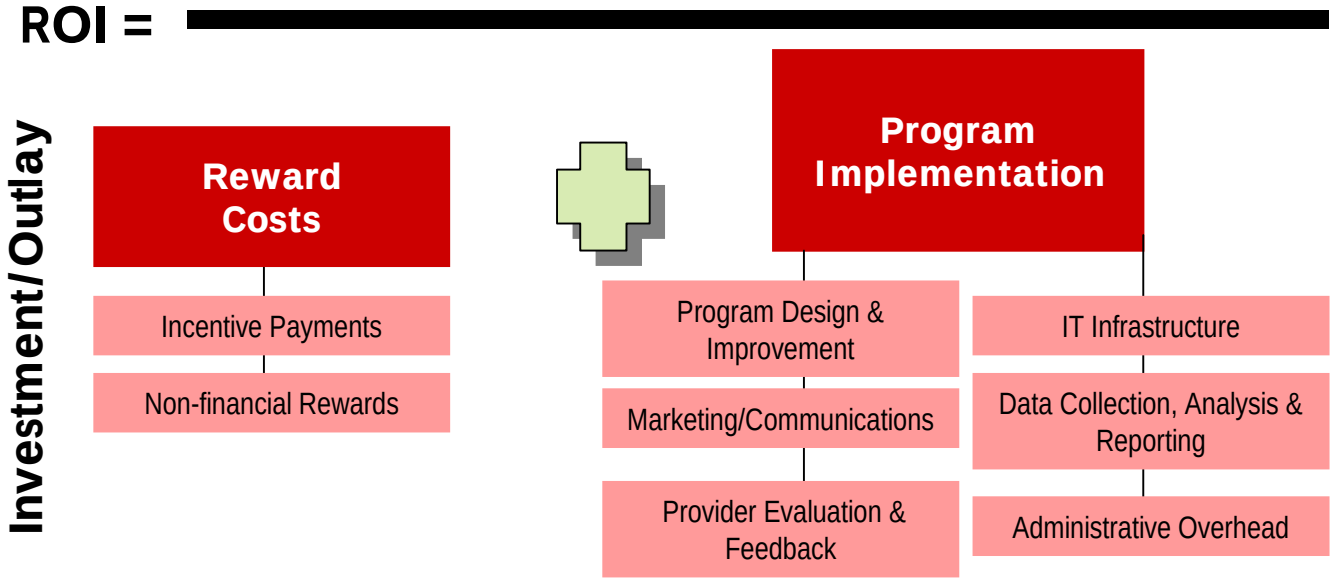
Analysis will compare long-term benefit against start-up costs

The ROI analysis is also a way to include the element of **time** in the evaluation of a P4P program. Many costs are incurred at the time the program is initiated, whereas many benefits are likely to be realized in later years.

The ROI analysis can be an involved process, but it is a critical one. Many P4P programs will require a sizeable commitment in time and dollars. As with any large investment, it is prudent to demonstrate the net benefits that will result from the investment.

The graphic on the following page lays out the categories of financial benefits and investments that should be considered when conducting a ROI analysis as well as the overall system benefits.


Overall Benefits
Improved Outcomes
Reduction in Misuse, Overuse and Underuse
Reduced Errors
Net Financial Benefits
Health Care Cost Reductions
Hosp/ER/Testing
Practitioner visits
Drug costs
Premium
Admin. efficiencies
(Higher medical costs)
Reduction In Other Costs
Absenteeism
Presenteeism
Disability
Legal costs
Health Status Benefits
Mortality/QALY
Increased Revenue
Satisfaction/Retention
Reputation
Market share


ROI =
Investment/Outlay
Reward Costs
Incentive Payments
Non-financial Rewards
Program Implementation
Program Design & Improvement
Marketing/Communications
Provider Evaluation & Feedback
IT Infrastructure
Data Collection, Analysis & Reporting
Administrative Overhead

II. Savings and Benefits Are Complex

The benefits to an organization undertaking a pay-for-performance program can be wide-ranging and complex. Not only do specific benefits differ depending upon the quality factors being measured, but there will be very different types of savings for different stakeholders (such as employers, managed care organizations, coalitions, and hospitals). Savings can also vary depending on the local marketplace and payer mix. In addition, the level of benefits can depend on the timing of the program initiation and where that falls within the contracting cycle.

Some benefits are "hard" costs — such as savings from reduced length of stay in the hospital — while others are considered "soft" benefits, such as improved consumer satisfaction. Certain savings directly impact the program sponsor, such as a health plan benefiting from the cost savings of avoided emergency room visits. Other savings may accrue to the employer. For example, improvements in the medical conditions of employees may result in improved presenteeism (productivity of employees who show up for work, but operate at less than 100% effectiveness). In many cases, benefits are reciprocal. If a health plan sponsors a P4P program that benefits purchasers by lowering the indirect costs of presenteeism and absenteeism, purchasers have an added incentive to contract with the health plan. In return, the plan may realize the benefit of increased market share and revenue. Since it may be extremely difficult to attribute many savings specifically to the incentive program, it will be necessary to document all assumptions and to use research-based studies to estimate improvements in those categories where actual data is not available.

Consider financial benefits in these categories

The numerator in the return on investment formula includes several general categories of savings, listed below. The complexity and degree of precision possible in computing the financial benefits for each of these categories varies considerably.

Health Care Cost Reductions	+	**Reduction in Other Costs**	+	**Increased Revenue**
Hospital/ER/testing		Absenteeism		Satisfaction/Retention
Practitioner visits		Presenteeism		Reputation
Drug costs		Disability		Market share
		Legal costs		
Premium Costs		+		
Administrative Costs		**Health Status Benefits**		
Efficiencies				
(Higher medical costs)		Mortality/QALY		

As you see from this table, a reduction in premium increases represents a cost savings if you are an employer, while at the same time, a potential loss of revenue for a health plan. Thus, when utilizing this formula, it is important to recognize that some categories in the numerator can *reduc*e, or offset, the total benefits from the P4P program. For example, a P4P program may result in a greater number of individuals being diagnosed and treated properly, which will result in higher treatment costs. These higher costs are an offset to the total savings that will accrue as a result of the improved treatment.

The next section contains suggestions of specific costs to consider in each category, as well as suggestions on how to obtain some of the data for computing reduction in costs and increased revenue.

III. P4P Impact on Direct Health Care Costs

In considering health care costs, the goal should be for an overall decrease in direct costs recognizing that costs in some categories might increase as costs in other categories decrease.

Pay-for-performance effects on direct costs depend on the standards of care selected for the incentive program. A reduction in hospital-acquired infections, for example, avoids additional days in the hospital, lowers the costs of medication, and in some cases, prevents patient deaths. A focus on reducing misuse of antibiotics will positively impact the cost of drugs. Improved diabetes treatment may result in short-term increases in direct costs (for more frequent diagnostic testing and medications) but lower health care costs in the long term as hospital admissions are avoided.

Health care cost savings can be measured in multiple areas

Hospital/ER/Testing: Improvement in certain quality measures will result in:

- Fewer hospitalizations
- Shorter average length of stay in the hospital
- Avoided visits to the emergency department
- Fewer re-admissions for complications
- Reduced overuse of certain diagnostic tests that may be offset by a greater number of diagnostic tests when certain guidelines are followed and underuse is corrected

One example of savings in a hospital setting

Misadventures during hospital, medical, and surgical care include accidental cuts or punctures, foreign objects left in the body, failure of sterile precautions during procedures, and contaminated or infected blood. During 2003, 3.4 of every 1,000 admissions in Pennsylvania hospitals had a misadventure resulting in an estimated $64 million of additional hospital charges and 8,000 added days. With 1.8 million inpatient admissions that year, that translates into 6,120 total misadventures at approximately $10,000 per misadventure. Based on this reported data, a reduction in the rate of errors per 1,000 hospitalizations in Pennsylvania can be translated into dollar savings.[2] Programs in other states can conduct a similar study or decide to use the Pennsylvania data findings as a surrogate.

Practitioner visits: Savings can be realized when medically appropriate utilization is achieved, including reduction of inappropriate interventions and office visits. In some situations early referral to a specialist may be more cost-effective than treatment by a PCP.

Pharmaceuticals: Many P4P programs have seen reductions in pharmacy costs due to broader use of generics, as well as reduced use of inappropriate drugs, such as

antibiotic treatment for upper respiratory infections or use of ARB/ACEI rate for hypertension. Savings in this category may be offset by improved compliance to treatment recommendations and by the greater number of individuals who are prescribed medications based on improved adherence to guidelines.

Major savings from reducing misuse of antibiotic

Rochester Individual Practice Association saved $150,000 per year in reduced misuse of an antibiotic when the IPA implemented its sinusitis pathway. Physicians were advised when incorrect antibiotics were being used to treat more than 15,000 cases of sinusitis per year. The cost per case decreased by $10 after the first year for a savings of $150,000.

Premium: Over the long term, employers and coalitions may see less of an increase in health care premiums based on lower direct costs incurred by the plan. As co-pays change, how to account for the co-pay amount must be decided.

Getting data on direct costs often a challenge

When conducting an ROI analysis prospectively, estimating direct cost savings will be challenging. Certain cost savings can be estimated based on published studies that look at the cost-effectiveness of a particular therapy. For example, a study published in *Diabetes Care*[3] in 1999 reported on the cost-effectiveness of statin therapy for diabetic patients with CHD. In that analysis, treatment with a statin reduced CVD-related hospitalizations for a net savings of $1,801 in direct medical costs per individual. Yet other studies have found that using statins for primary prevention of major CVD events in patients with diabetes is cost-effective but does not result in cost savings.[4]

Another example comes from the Centers for Disease Control (CDC). The CDC offers an online tool that enables a user to compute smoking-attributable expenditures (and thus savings by reducing the number of smokers), including direct and indirect costs as well as mortality. This tool, Adult Smoking-Attributable Mortality, Morbidity, and Economic Costs can be accessed at http://apps.nccd.cdc.gov/sammec/.

Administrative Efficiencies: Savings in this category might include reduced waste and inefficiency as a result of P4P program efforts. Savings can also be derived from increased use of electronic information systems (including EMR and disease registries) that result in improved data collection, tracking, and reporting.

Certain factors may reduce cost savings in the short-term

Higher medical treatment costs: Additional treatment costs may be incurred when more individuals are diagnosed with a condition or receive appropriate treatment when guidelines are followed. In the short run, costs can be higher when underuse is corrected for tests, such as colon cancer and breast cancer screenings, HbA1c, and LDL testing. It should be remembered, however, that additional treatment costs could be short-term expenses that translate into savings in the long term. Additionally, recognition of a health plan or a provider group for its high-quality treatment of chronic conditions

might lead to a greater number of high-risk members selecting the plan or provider. This is likely to reduce the health care cost savings realized from a P4P program.

IV. Program Impact on Other Costs

Calculating the impact on other costs of employment including indirect costs can be more difficult than calculating direct health care costs. Numerous components of productivity — absenteeism, presenteeism, and employee turnover — can be included when measuring the impact of health interventions on workplace productivity. The impact on productivity for a company from health care interventions can be estimated based on published studies and application of the findings to your workforce. Other means of measurement include: conducting a productivity survey or using one of the instruments developed by, and available from, organizations that specialize in such tools. Short- and long-term disability benefits are also impacted when overall health outcomes are improved.

a. Many tools available to measure productivity cost savings

There are more than a dozen survey instruments that capture health-related workplace productivity loss, such as the Worker Productivity Index (WPI), Stanford Presenteeism Scale (SPS-6), WHO Health and Work Performance Questionnaire (HPQ), and Work Productivity and Activity Impairment Questionnaire – General Health (WPAI-GH). There are also a number of specialized tools for depression, migraine, GERD, and smoking, among others. A 2004 article in *Pharmacoeconomics* reviewed a comprehensive list of survey instruments.[5]

The Integrated Benefits Institute (IBI) conducted a benchmarking study in 2002 in 11 industry groups that found the full cost of absence is more than four times total medical payments when productivity loss from absenteeism is added to wage-replacement payments. The two largest categories of cost were incidental absence and short-term disability, programs that are often not tightly managed. Employers can use the results of the study to estimate costs for their own companies.[6] In addition, employers can subscribe to use IBI measurement tools ranging from low data requirement/low cost to program-specific benchmarking to full-cost benchmarking tools. These tools were developed by the National Business Group on Health's Council on Employee Health and Productivity.

A number of interactive tools available on the Internet enable a user to input company-specific data, such as size of workforce, industry, geography, wages, and benefits. The calculator then computes the expected number of days lost to absence and low productivity when certain diseases or medical conditions are not optimally treated as well as the potential savings when improved treatment is achieved.

Organizations tackle impact of health in the workplace

Organizations actively involved in the measurement and reporting on the workplace impact of health care:

- Institute for Health and Productivity Management (www.IHPM.org)
- Integrated Benefits Institute (www.ibiweb.org)
- National Business Group on Health (formerly Washington Business Group on Health) (www.WBGH.org)
- American College of Occupational and Environmental Medicine (www.ACOEM.org)

Absenteeism: Employers will benefit from fewer employee absences when employees' chronic conditions are better controlled. Some conditions — such as asthma and chickenpox — can also impact a worker's time at work if children are home ill. Thus a quality improvement program around asthma treatment for children will have an impact on indirect costs that should be considered. Significant absenteeism can impact employee turnover, and when that occurs, the cost of replacing employees should be included as well.

Presenteeism: Employees who come to work when they are not feeling 100% often are not as productive as healthy co-workers. In presenteeism, an employee is present at work but limited in some aspect of job performance by health-related problems and consequently the employer is losing productivity. While quantifying the savings from improved productivity can be complicated, there are some recent tools that can help attach a dollar value to particular conditions targeted by quality improvement measures.

Disability: Improved adherence to treatment guidelines has been shown to decrease the cost of short- and long-term disability.

Lower Legal Costs: Improvements in patient safety and reductions in medical and drug errors can result in lower legal costs, such as settlements, legal representation, and potentially lower malpractice premiums.

Existing tools can be used to calculate indirect savings from certain interventions

The Quality Dividend Calculator (www.ncqacalculator.com) is an interactive tool made available by NCQA that can provide data on savings from improvements in HEDIS scores. A company can input specific parameters, such as number of employees, location, industry, wages and benefits, and frequency of replacing absent workers. The calculator then computes the savings in direct and indirect costs (absenteeism and presenteeism) if specific HEDIS scores are input, or uses the default of HEDIS scores equal to the top 10% of health plans. For example, a manufacturer in the East with 10,000 employees targeting depression, asthma, and diabetes can save $1,062,027 in reduced absenteeism, presenteeism, and lower employee replacement costs if HEDIS scores improve from the average of non-accredited plans to equal the top 10% of health plans.

Single-condition, interactive Productivity Impact Models have been developed by PhRMA (Pharmaceutical Research and Manufacturers of America) and The HSM Group (HSM) for depression and migraine and are available for use on the Internet. Each of these calculators permits users to input the size of the workforce for an individual company in a particular industry and geographic location, and then the model calculates the expected incidence and impact of the particular disease. Users can employ the calculator to play "what-if scenarios" on the range of costs for treatment and savings in terms of absenteeism and productivity depending on the success of interventions. For example, an employee with untreated depression may miss between 30 and 50 days, considering both absences and reduced productivity.
These calculators can be found at:
www.depressioncalculator.com
www.migrainecalculator.com

Additional calculators are under development by PhRMA and HSM and when complete, will be available at www.phrma.org.

Employers can use the IBI Health & Productivity Snapshot, which offers a low-cost decision-support tool based on inputs about the employer's workforce. The report models expected workforce health conditions and the business impact from related absence, lost time from presenteeism, and lost productivity. More information about the service can be found at www.benefitsintelligence.org.

b. Health Status Benefits

Mortality and Quality-Adjusted Life Years: Two of the most important benefits of quality improvements, a better quality of life for patients and reduced mortality, do not have a specific dollar value that can easily be included in a financial cost/benefit calculation. In order to somehow account for these factors, medical researchers often attach a dollar value to an improved year of living (termed the value of a Quality-Adjusted Life Year [QALY]), and also use broad averages for the monetary value of a life saved. These averages try to reflect the impact of health changes on social or work-life capabilities, earning power, and other factors.

However, even if broad dollar values are not estimated for mortality and morbidity improvements resulting from P4P programs, the ROI decision should be a combination of a specific return on investment financial value with a careful and detailed consideration of non-monetary aspects, such as mortality and improved quality of life.

c. Increased Revenue

Difficult to measure but should be considered

While difficult to directly tie increased membership or revenue to specific quality initiatives, improvements in quality do influence consumer choice. Improved member satisfaction with health care has a strong correlation with loyalty to the health plan. In addition, quality of care and the perception of the *value* of health care coverage are two critical factors that influence the decision to stay with or leave a plan, for both members and payers. Quality improvements can also strengthen physician loyalty to a hospital or patient loyalty to a physician or medical group.

Research with members and with payers that focuses on disenrollment can provide critical information on *why* members or employers leave a plan. This research can identify the key factors that influence the disenrollment decision, and can also estimate the *improvement* in retention and in revenues that may occur when a P4P program increases member or payer satisfaction and loyalty. In addition, a P4P program may improve the brand image for a health plan concerning quality, helping the plan obtain a higher share of the available market.

Satisfaction: Higher patient satisfaction can be expected when quality programs result in improved outcomes.

Retention: Reduced turnover in health plan membership can be correlated to higher member satisfaction. Better relations with and retention of high-quality providers in the network will also impact an organization's ability to hold on to members and employers.

Increased Market Share: A P4P program may improve satisfaction and loyalty among members and payers, and may also improve the brand image for a health plan concerning quality. All of these factors can help a plan obtain a higher share of the available market.

V. Investments and Outlays Include Many Hidden Costs

The most obvious financial outlay in incentive and reward programs is the actual incentive dollars paid out. In addition to the monies paid to providers, sponsors should consider less obvious costs involved in managing the reward process, developing the program, and building and maintaining the necessary infrastructure. Spending in certain categories will vary widely, depending upon the objectives and priorities of the program. Another consideration is that providers participating in the incentive program will also accrue expenses in a number of the categories discussed below.

Consider Expenses in These Categories

The two most important cost items to include in the denominator of the ROI formula are **reward costs** and **program implementation** costs. The incentive payouts will be variable while the program implementation costs can be generally considered fixed costs. Following are cost categories that should be taken into account, as well as descriptions of specific costs in each category and suggestions on obtaining cost data.

Reward Costs	+	**Program Implementation**
Incentive Payments		Program Design & Improvement
Nonfinancial Rewards		Administrative Overhead
		IT Infrastructure
		Data Collection
		Marketing/Communications
		Provider Evaluation & Feedback

Rewarding Results grantee Blue Cross Blue Shield of Michigan conducted an analysis of program costs and found that incentive payments comprised two-thirds of total program costs with administrative costs borne by the plan and hospital providers accounting for the remaining one-third of costs.

a. Reward Costs

Incentives include bonuses, added reimbursement, and improvement grants

The two types of financial incentives most commonly used in existing P4P programs are bonuses and performance-based reimbursement. Performance-based reimbursement may or may not include withholds and/or penalties for providers and health plans that do not meet specified quality levels. Employers may hold a percentage of a health plan's administrative fee, while health plans may put at risk a percentage of a provider's base reimbursement. Withholds and penalties offset financial outlays and should be deducted from the projected incentive costs.

Other financial incentives include: rewards or grants for targeted procedural, clinical, or technological improvements and consumer incentives. The latter might include offering lower co-payments to consumers for using high-quality providers or reduced premiums for employees utilizing certain high-quality plans. In some cases, incentive programs

pay consumers directly for participating in specified health improvement activities. For example, health plans contracted with Xerox offer discounts of up to $200 off premiums if enrollees complete a health assessment survey and accept calls from a health coach.[7]

One more example comes from The Boeing Company. The Boeing Company adopted a benefit differential to encourage members of its PPO plan, the Traditional Medical Plan (TMP), to use hospitals that meet the Leapfrog quality and patient safety practices. Effective July 1, 2004, employees and early retirees represented by two unions and enrolled in the TMP will obtain 100% coverage after deductible for inpatient and outpatient services provided by a "Leapfrog-compliant" hospital. Employees hospitalized in facilities that do not meet the Leapfrog safety practices will obtain 95% coverage after deductible. This benefit design will remain in place until July 1, 2006 when a new collective bargaining agreement becomes effective. By measuring the benefit differential's impact, Boeing will be able to determine if such a differential can be applied to other Boeing populations as well as other Boeing self-insured plans.

Performance payouts to physician groups reach $100 million in California

For Integrated Healthcare Association's (IHA) first year payouts for its pay-for-performance program, physician groups received approximately $50 million in additional income based on their performance on the P4P standardized measurement set. Six health plans, 7 million commercial HMO enrollees, 215 physician groups, and 45,000 doctors participate in IHA's P4P program. Overall, pay-for-performance programs throughout California resulted in health plans paying California physician groups an estimated total of $100 million for quality performance in 2003.[8]

Non-financial rewards also require staff time and materials

Costs for non-financial rewards involve staff time and materials for promotional activities. Non-financial rewards typically include: recognition programs that acknowledge and promote higher quality providers, reduced administrative burdens for high-quality providers, and technical assistance to develop or enhance quality practices.

- **Recognition activities,** such as best practice awards, focus on providers. Staff time and hard costs are necessary to craft consumer awareness campaigns, add provider recognition to a health plan or employer Web site, and print provider listings to encourage consumer use of high-quality providers. These expenses should be included in the cost calculations.

- To provide **reduced administrative oversight** as a reward for high-performing providers, a P4P program must incur costs for incremental tracking, claims reconciliation, and administration.

- **Technical assistance** programs may exist in the areas of clinical or administrative functions. Assistance programs used by employers to target health-plan improvement or by health plans to assist high-volume, lower performing practices have operational costs. Estimates of any incremental personnel costs to provide technical assistance in data collection, customer service, or other areas should be included in the ROI denominator.

b. Program Implementation

Any expenses that an organization might incur when designing and putting into practice an incentive and reward program are part of the ROI denominator. Costs for start-up planning, IT infrastructure, data collection, marketing and communications, provider evaluation, and ongoing administrative outlays should be included. Several categories of costs will affect the participating providers as well as the sponsoring organization. While not necessarily part of the ROI calculation for the health plan or employer sponsoring the incentive program, it should be recognized that providers incur costs as well.

The element of time is a critical component of this analysis. Many of the costs for program implementation will be one-time "upfront" costs, or formal investments at the beginning of the project, and will not continue throughout the program. However, a successful P4P program may be expanded, likely incurring additional implementation costs over time.

Adjusting costs for time

In order to more accurately compare costs of the program (some of which may be incurred at start-up) with the benefits of the program (which are likely to increase over time), the ROI evaluation typically uses a Net Present Value (NPV) calculation. The NPV calculation translates a stream of costs or savings that occur over several years into a single number.

The NPV calculation acknowledges the fact that future savings, or cost reductions, must be large enough to cover the program implementation costs and the cost of funds, or the company's internal interest rate, over the program period.

Program design and improvement costs are incurred in many areas

Program development and structure design involve costs related to calculations and analysis necessary to determine the elements that will be incorporated in the program — including prevalence analysis to identify conditions driving cost and utilization, and yield analysis to identify measures critically impacting costs and outcomes.[9] Additional, ongoing program improvement and changes should be considered. Other expenses to include under the umbrella of program development relate to review and selection of data sources, assigning scoring criteria, developing systems for tracking, and related protocols. Organizational meetings are usually necessary throughout the development and implementation phases. There are costs for stakeholder participation in project, technical reporting, and steering committee meetings. In addition to the investment of personnel time, there may be hard costs related to meeting locations, travel, and compensation.

Administrative costs are broad

The administrative functions related to P4P are broad and may include personnel time for managing the incentive/reward process, general administrative costs for processing and scoring providers and plans, annual program evaluation, and incremental network management. These administrative costs should reflect the proportion of time spent by

existing staff, including senior managers, on implementation and operation of the program. This is in addition to salaries and benefits of any dedicated program employees. This cost category may increase over time if the program expands with additional performance measures or provider participants.

- **Managing the incentive/reward process:** Costs for operating and managing the payment systems vary depending on the number of payment recipients (*i.e.*, whether individual physicians or group practices receive incentives), the level of automation, and the frequency of payments generated (*i.e.*, monthly, quarterly, annually).

- **General administrative costs for processing and scoring providers and health plans:** Considerations include the number of performance measures being monitored, the purchase of scoring software or internal systems development, along with the associated monitoring and scoring of provider performance measures.

- **Program evaluation:** Staff time needed to perform internal evaluations and reporting as well as any costs related to incremental surveys should be considered.

- **Additional network management:** Expenses in this area relate to changes in physician turnover, development and management of tiered strategies, and additional staff salaries required by increased network management as a result of P4P. While there is a potential savings with improved provider retention or satisfaction, the cost of any short-term negative impacts should be factored into the equation.

Actual cost to profile participating physicians

Profiling 900 primary care physicians and 2,300 specialists three times a year costs Rewarding Results grantee Excellus Health Plan $1.3 million each year. This cost includes software license fees, hardware, and personnel costs as well as printing the individual profiles for the physicians in Rochester Individual Practice Association (RIPA).

$100,000 start-up for one program, with $360,000 in annual operations

The start-up costs for the Hospital Quality Program sponsored by Anthem Blue Cross Blue Shield plans in Indiana, Kentucky, and Ohio were estimated at $100,000 and included staff salaries related to development, implementation, and hospital site visits as well as design and printing of materials.[10] Annual operations cost of the program is about $360,000 (or $1,000 per participating hospital), which includes salaries for nine full-time employees and two administrative assistants, printing, and postage for frequent communications to hospitals.[11]

IT infrastructure: Electronic medical records (EMR), computerized order entry, and clinical information systems are required for robust data collection and analysis. Although some investments in technology are paid for by providers, some P4P sponsors compensate providers for a portion of the technology costs. Additionally, IT upgrades may be necessary to facilitate communications as well as purchase of new software programs. The costs for provider connectivity, Web-reporting portals, care alert platforms, and Web portals for consumers to identify effective providers should be considered.

Data collection and analysis: Data sources needed to measure performance can include administrative claims data, medical chart review, and data collected for other quality improvement projects such as HEDIS. Costs should also be calculated for technical assistance to providers, aggregating and auditing or verifying data, creation and maintenance of an accurate database of providers, consumer and provider surveys, and incremental data warehousing.

Provider Evaluation and Feedback may include seminars, coordination of learning collaboratives, and/or other educational tools developed to explain program goals, reward structure, and clinical guidelines. P4P sponsors should consider personnel and hard costs for ongoing training and educational efforts to assist provider improvement.

Marketing/communications: Getting the message to the appropriate target may require development of a communications strategy. After the strategy is set, a host of potential marketing and communications efforts may be undertaken and the costs to develop should be considered, including:

- Written resource materials for providers
- Reporting P4P results (report cards, annual reports, Web site)
- Patient education materials
- Public relations and media relations
- Ongoing provider communication tools (Webcasts, newsletters)

Intangible costs: There are, of course, intangible costs, such as stress on the organization, that can be considered without factoring a dollar total.

VI. Conclusion

While a graphic return-on-investment formula was offered at the beginning of this Primer, it is not expected that any organization could readily populate each of the boxes with available figures. The intent is to raise awareness of sponsors and participants of incentive and reward programs to the broad array of factors that should be considered when evaluating the cost-effectiveness of such programs. In spite of the added difficulty in isolating savings and costs attributable specifically to program measures, the ROI analysis can add a great deal of credibility to the projected reductions in misuse, overuse, and underuse in the health care system, improved outcomes, and reduced medical errors, all of which will positively impact population health.

VII. Sidebars

a. Sidebar 1

Some questions to consider when developing ROI

Prior to undertaking the ROI analysis, the organization should ponder the following issues, among others, and be prepared to indicate how each has been addressed in the ensuing calculation.

- When calculating direct costs for specific episodes of care, are outliers included or excluded?
- How should short- and long-term disability be handled if there are not a sufficiently large number of individuals in a particular population who have had disability claims in the time period under study?
- What is an adequate sample size?
- Is one year of data sufficient or are multiple years of experience necessary before the ROI is credible?
- Since it will be difficult to attribute a change in expenditures to a specific program or intervention, what assumptions have been used?
- If the CFO (or other executives) at the sponsoring organization requires that an ROI include only hard cash savings from reduced direct costs specifically attributed to the program measures, how are the “soft” savings such as reduced absenteeism and presenteeism handled?

b. Sidebar 2

Dealing with Concerns or Unintended Consequences

Observers of the pay-for-performance movement have raised a number of concerns that question whether all consequences are positive. Some of these concerns[12] include:

- Will P4P create a two-class system if co-payment tiering is used, since access could worsen for patients whose physicians or hospitals are underperforming and as a result have higher co-payments?
- Will incentives create a monopoly of high-quality providers who can later increase fees?
- What should be done with the "bad" doctors or hospitals — those who do not earn rewards?
- Will less attention be paid to patients' psychosocial needs due to an increased biomedical orientation on which rewards are based?
- Will paying incentives cause physicians or hospitals or plans to "cherry-pick" the easiest patients to manage and avoid those that are complicated or noncompliant?
- Will incentives threaten physicians' job satisfaction?

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