Assessing Quality-Based Benefit Design

Prepared for
California HealthCare Foundation
Pacific Business Group on Health

Prepared by
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About the Foundation

The **California HealthCare Foundation**, based in Oakland, is and independent philanthropy committed to improving California's health care delivery and financing systems. Formed in 1996, our goal is to ensure that all Californians have access to affordable, quality health care.

This paper was produced under the direction of CHCF's Health Insurance Program, which works to serve the public by increasing access to insurance for those who don't have coverage, and helping the market work better for those who do. Visit **www.chcf.org** for more information about CHCF and its programs.

About the Pacific Business Group on Health

The **Pacific Business Group on Health** (PBGH) is one of the nation's top business coalitions focused on health care. PBGH's member organizations provide health care coverage to more than 3 million employees, retirees, and dependents. PBGH also operates PacAdvantage, a small group purchasing pool providing health coverage to the employees of thousands of California's small businesses. Partnering with the California health plans, provider organizations, consumer groups, and other stakeholders, PBGH works on many fronts to promote value-based purchasing in health care. For additional information, visit **www.pbgh.org**.

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TABLE OF CONTENTS

EXECUTIVE SUMMARY

Quality-based health benefit design is a process that explicitly takes into account the effect a health plan design element will have on employees' health and the health care they receive. The Pacific Business Group on Health (PBGH) and the California HealthCare Foundation (CHCF) engaged PricewaterhouseCoopers (PwC) to assess the state of the research evidence regarding quality-based benefit design strategies.

PwC conducted a review of the Health Services Research (HSR) literature and "gray research"[1] published since 2000 to identify studies of the effects of quality-based benefit design tactics in six broad focus areas..:

1. Health Plan Options, Eligibility and Contributions
2. Provider Selection and Performance Differentiation
3. Inpatient and Outpatient Benefit Design
4. Pharmacy Benefit Design
5. Health Promotion, Health Risk Reduction and Chronic Care Management
6. Consumer Engagement: Tools and Incentives

Although this inquiry began with an extensive list of specific health benefit design tactics within these focus areas, the available research has not reported on all of the tactics. This appears to be due to a number of factors, including (1) the diversity of health plan benefit design across employers, (2) the extent of adoption of benefit design tactics, and (3) the length of time that the benefit design tactics have been in place.

In general, it is the national and other large employers that are investigating and adopting Quality-based Benefit Design features. These employers typically have varying health benefit designs. At a basic level, there are differences in the number of benefit options, the type of health plans that are offered—HMO, PPO, POS, and the benefit design features such as the amount of employer contribution and employee cost sharing. Other differences emerge in employee mix or by industry and geography. This paper reports on the subset of benefit design tactics within each focus area for which there was sufficient research to draw conclusions regarding the effectiveness of the benefit design tactic.

In doing so, this paper draws substantially upon the "gray" or field research. This study also identifies the characteristics that distinguish the academic health services research from the research identified from the review of gray literature and labels this Applied Health Benefits Research (AHBR).

What is Quality-based Benefit Design?

Employers always have considered "quality" of health care benefits as well as cost, when designing benefits programs for their workforce. Common examples of health benefits quality criteria are the quality of customer service or the timeliness and accuracy of claims payment. However, there has been less attention to the quality of health care services. Historically, one of the few "quality of care" criterion widely used were requirements that covered services be provided by licensed providers. Quality-based benefit design goes much further than this.

The "quality" in "quality-based benefit design," as used in this report, means that the process of designing a health plan explicitly takes into account the effect that a design element will have on the delivery of health care and the health outcomes of covered individuals.[2] From the employer's perspective, this means understanding:

- What is being purchased with the benefit dollars?
- Does the design foster employees' receipt of high quality health care at a reasonable cost?
- Does the design foster improved employee health (and productivity)?

Most benefit executives would likely say that a health plan that offers timely, safe, effective, patient-centered, and efficient care to its workforce is desirable in that it delivers good value. In fact, value-based purchasing is a close cousin of quality-based benefit design.

What is Value-based Purchasing?

An overriding objective of quality-based health benefit design is to increase the value of employer and employee health care spending. "Value" in this context is typically defined as "quality per dollar spent"—and, at the extremes, value can be increased by: (a) increasing quality without increasing costs; or, (b) reducing cost without reducing quality.

Value-based purchasing is the successful execution of quality-based benefit design in the sense that the design achieves intended results: more value from limited health care dollars. A value-based purchasing strategy adds quality-based benefit design considerations to traditional areas of employer focus, such as: employee contributions, plan choices, the scope[3] and level[4] of inpatient, outpatient and prescription drug benefits and member cost sharing, and provider networks. A quality-based benefit design strategy also adds new areas of focus, such as: care coordination and support services, risk reduction and health promotion, and consumer decision support tools.

Methodology for This Study

The goal of this study was to determine the strength of evidence regarding whether or not quality-based benefit design tactics are effective and achieve the intended results. Pursuit of this goal began with three major considerations:

1. What is meant by "effective"?: This study defined an effective quality-based design tactic as one that increases the net value of health care spending. Here, "net" value means that this assessment considered not only evidence as to whether or not a tactic increases value, but also whether there were other potential effects that might diminish value.

2. How are "benefit design tactics" defined?: Because of the diversity of employment-based benefit plan design, most research on benefit design does not closely parallel any given employer's specific plan design. The benefit design tactics in this report are defined more broadly and does not duplicate exactly a particular employer's design.[5]

3. How is the strength of evidence assessed?: PwC followed a three-step process that included development of hypotheses, a literature search, and an evaluation of the research identified in the literature search. Preference was given to articles found in major, widely read health journals (e.g., *Health Affairs*, the *Journal of the American Medical Association*, *Health Services Research*, *Medical Care*) and was supplemented by search in general news and trade publications as well as conference proceedings. The authors also reviewed "evidence from the field" such as actuarial practice, inference from health plan products and pricing, and employer and vendor case studies of results of changes in benefit design and implementation.

The literature search and review of the evidence confirmed that important quality-based benefit design tactics adopted by employers have not been studied or have been studied in a manner that is limited and may not clearly establish that implementation achieves the desired outcome. A significant finding was that much of the current reporting on the benefit design tactics came from the gray literature and evidence from the field. Therefore, it is necessary to understand differences between research reported from the academic and health policy research community and that reported from employers, health plans, and vendors.

Health Services Research Compared to Applied Health Benefits Research

Our review of the literature ascribed a high weight to research design, quality of data, and factors considered by peer-reviewed journals when selecting articles for publication. But that review of the health services research (HSR) literature yielded few studies specific to the benefit design tactics. What does this say about the evidence for the effectiveness of quality-based benefit design?

We conclude that employer assessment of benefit design features considers both health services research (HSR) and "applied" health benefits research (AHBR). For their purposes, HSR is neither better nor worse than the "applied" health benefits research (AHBR) but it is very different. Specifically, HSR differs for AHBR in many respects. The most important differences are summarized in the following table.

Health Services Research (HSR) Compared to Applied Health Benefits Research (AHBR)		
	HSR	**AHBR**
Research Focus	Add to the health services knowledge base to inform health policy decision making.	Inform a corporate decision or support a proprietary interest; greater focus on administrative complexity and regulatory compliance.
Sources of Data	Publicly available data sets, data from health plans, or data collected specifically for a particular research project; limited circumstances where insurers, health plans or employers collaborate with academic health policy researchers. Often has considerable time lag.	Proprietary data, including financial and administrative data (e.g., medical and prescription drug claims and eligibility records); often more current time period.
Study Design	Aspire to state-of-the-art study designs, such as randomized controlled trials, discloses the methodology and its limitations.	Often entails actuarial analysis of financial or administrative data relevant to the matter at hand; natural experiments that use comparisons to historical experience, similar groups or "industry benchmarks," often does not disclose the methodology and limitations.
Sponsorship	Historically sponsored by foundation and government grants.	Majority is sponsored by employers or health insurers for internal decision-making and business purpose. AHBR intended for publication generally is funded from public relations or marketing budgets.
Peer Review	HSR published by respected journals is subject to peer review by experts	AHBR used for internal decision-making is subjected to scrutiny

	in the field.	through corporate risk management and control processes; AHBR submitted for publication to "trade" publications and conferences is subject to editorial review and reliance on the credibility of the source.
Timeliness	The study design, data collection, analysis, writing and peer-review processes associated may consume one or more years.	Rapid completion to inform internal corporate decision-making for example to evaluate renewals, or prepare for a key benefit implementation or reporting date; AHBR conducted to further a vendor's product or service offering typically has a short turnaround time as the "half-life" of a market advantage can limit competitive advantage.
Relevance to a Particular Employer	HSR focus on enhancing the knowledge base or informing policy is often general — even "case studies" of specific employers or health plans are viewed as data points to inform others.	AHBR focus on internal decision-making means is what will the impact be on our [i.e., the sponsor's] experience? Other employers' experience or industry benchmarks are important, Published AHBR is often designed and/or presented in a form intended to be relevant in order to persuade corporate decision-makers.

Given the differences between HSR and AHBR, it is not surprising that HSR may be limited in its current capacity to inform employers on leading edge benefit design tactics. The research employers and vendors do to inform their own internal decision-making process is often rigorous, quality-controlled and professional, but, understandably, not published.

AHBR may be based on internal research but when made public is typically in summary form. Many large employers share their experiences with peers as part of mutual education and professional give and take through participation in the coalitions such as the National Business Group on Health. Vendors publicly reporting findings about innovative benefit tactics are often respected and credible organizations that also are

marketing the products and services. A weakness of virtually all public AHBR—whether a vendor's "marketing statement" or a corporate benefit manager's quote in a trade publication—is the lack of disclosure sufficient for the reader to judge the quality of the study or the strength of the evidence.

Is There Good Evidence That Quality-based Health Benefit Design Tactics Will Achieve Intended Results?

There is some good evidence that each of the tactics can achieve the intended result: generally, to increase the net value of health care purchasing by increasing or maintaining quality while limiting or reducing costs (see Exhibit 1). The evidence for approximately ¾ of the tactics reviewed was deemed "partial." Typically this was due to a case study approach and the lack of results regarding the quality impact or evidence specific to a given condition or program design. The tactics for which there was good HSR or AHBR evidence that tactics achieve intended results (and the source of the evidence) were:

- Employer Options, Eligibility and Contribution strategy to encourage enrollment in high value health plans (AHBR); and,

- Health Promotion Programs (HSR, AHBR)

Exhibit 1

Summary of Findings on Quality-based Health Benefit Design Tactics

		Is There Evidence That the Tactic Will Achieve Intended Result?	
Tactic	**Example**	**HSR**	**AHBR**
Employer Options, Eligibility and Contribution Strategy	Contribution Strategy to Encourage Enrollment in High Value Plans	Partial	Yes
Provider Selection	Tiered Networks	Partial	Partial
Provider Performance Differentiation	Pay for Performance	Partial	Partial
Inpatient and Outpatient Benefit Design	Consumer Directed Health Plans with High Deductible Health Plans	Partial	Partial
Cost-Sharing in Pharmacy Benefit Plan Design	Differential Cost-sharing to Encourage Generic Substitution	Yes	Yes
	Across-the-board Cost Sharing Increase	Partial	Partial
Health Promotion Programs	Encourage Participation of High-risk Employees in Health Promotion Programs	Yes	Yes
Disease Management Programs	Implement Disease Management Programs	Partial	Partial
Provide Price and Quality Information to Health Care Consumers	Provide Health Care Price and Quality Information to Employees	Partial	Partial
Provide Incentives for Individuals to Become Better Health Care Consumers	Offer Incentives to Encourage Employees to Engage in Value Purchasing	Partial	Partial

Is There Good Evidence That the Tactic May Interfere with Achievement of Other Benefit Objectives?

The HSR and AHBR literature reviews uncovered two tactics where implementation was found potentially to interfere with other benefits objectives such as employee recruitment and retention, employee satisfaction, and productivity. These were:

- Provider Performance differentiation may cause changes in provider networks that can disrupt employee-provider relationships (HSR, AHBR); and

- Increased prescription drug cost sharing can reduce patient compliance and increase physician office and emergency room visits—which in turn can increase absenteeism and reduce productivity (HSR).

Careful employers can overcome these potential risks; all of the tactics reviewed for this report are in use by major employers; yet, the literature review did not uncovered reports of negative or unintended consequences.

Is There Good Evidence That the Tactics Will Provide a Positive Short- or Long-Term Return on Investment?

This study found limited good evidence of positive short- or long-term return on investment (ROI) for quality-based benefit design tactics for two basic reasons. First, ROI measurement tends to emphasize costs, which are much easier to measure than quality impacts. Second, the chronic conditions that constitute a major share of the cost of care today take a long time to develop—and a relatively long time to turn around. Nonetheless, this study did find some good evidence of positive ROI as follows:

<u>Short-term</u>

- Provider Performance Differentiation (Partial—AHBR)

- High-Deductible Health Plans (Partial—AHBR)

- Increased pharmacy benefit cost sharing (Good—HSR, AHBR)

- Disease Management Programs (Partial—HSR and AHBR)

- Provision of price and quality information to health care consumers (Partial—AHBR)

<u>Long-term</u>

- Provider Performance Differentiation (Partial—AHBR)

What Are the Implications of This Study for Employers?

This review found that quality-based health benefit design strategies can be effective. Generally, the evidence for this conclusion is supported by greater amounts of less-

rigorous AHBR rather than the smaller amount of higher quality HSR or directional inferences that can be made from HSR when such research has features in common with an employer's benefit plan design. AHBR often does not include full disclosure of methods and data sources or objective third-party review.

The implications of these findings for employers are three-fold:

1. HSR and AHBR can both be helpful to employers in assessing quality-based benefit plan design tactics.

2. HSR is less likely to be "on-point" for a given employer than is AHBR -- HSR is more likely to address benefit design tactics that have been employed for many years (e.g., prescription drug cost sharing) than is AHBR. AHBR is more likely to inform employers about recent innovations in quality-based benefit design than is HSR, but AHBR evidence requires more scrutiny

3. Sharing of information among trusted practitioners will continue to be a key vehicle for disseminating what works and what does not.

Opportunities for Additional Research

Large employers' innovations in quality-based health benefits design are a laboratory for employers and health service researchers to learn how better to balance health care access, cost and quality objectives. Health Services Researchers may be able to have greater influence on assessing the evidence and influencing employer health benefit decision making. Opportunities include:

- Conduct AHBR that is relevant to corporate health benefits practitioners. This means studying privately sponsored health benefit plans and becoming more familiar with the overall context of employee benefits and the administrative, technology, legal, and regulatory constraints within which employers operate.

- Develop and subscribe to standard nomenclatures and metrics so that researchers and practitioners may communicate more easily with one another. This allows a body of relevant and accessible evidence can be built over time.

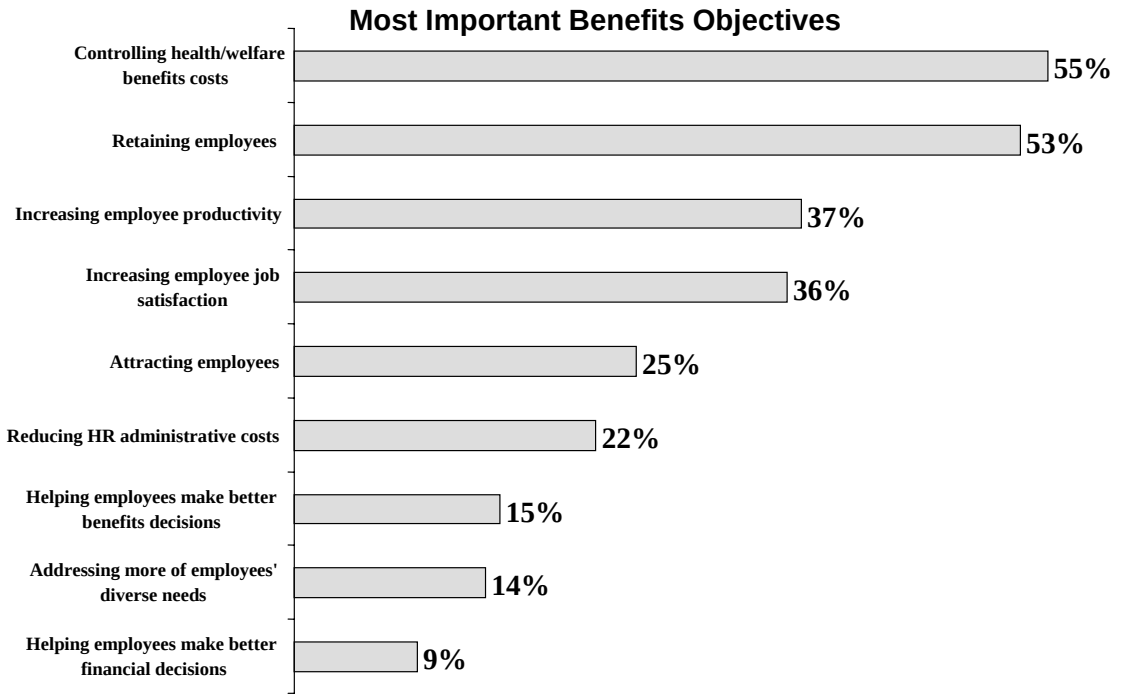
- Conduct research that quantifies the impact of benefit design tactics on cost and quality. Include not only quality measures and claim costs, but also administrative and managerial costs when measuring return on investment. Include the effect of health benefits on corporate objectives by considering impact on productivity and absenteeism and the net present value health value of quality-based health benefit strategies and tactics.

In addition, the authors encourage broader dissemination and review of Applied Health Benefits Research. Actuaries, consultants, and researchers outside of academia should submit more case studies and research to peer-reviewed journals. Even if the research is not published in such a venue, these practitioners should improve the disclosure of data sources, analytic methods and proprietary interests when AHBR is reported through other sources.

I. Introduction

Employers design health benefit programs with specific objectives in mind. While "controlling health care costs" very frequently is listed as the highest priority, employers balance this objective against other, potentially conflicting, objectives such as attracting and retaining employees, increasing employee job satisfaction and productivity, and reducing administrative costs. (see Exhibit 1). Health benefit plan designs that focus solely on controlling costs are not likely to achieve employers' objectives. For example, employers may reduce their costs by shifting more of the cost burden to employees only to find that employee dissatisfaction or turnover increases.

Exhibit 1



Source: The MetLife Study of Employee Benefit Trends: Findings from the 2004 National Survey of employers and Employees, November 2004

The Pacific Business Group on Health (PBGH) and the California HealthCare Foundation (CHCF) are leaders in encouraging employers to use a new approach, quality-based benefit design, as they seek to achieve their corporate benefits objectives. PBGH and CHCF engaged PricewaterhouseCoopers LLP (PwC) to assess the state of the evidence regarding the effectiveness of quality-based benefit design strategies. The basic question is, do they achieve their intended results? Are there unintended consequences? This is a report of the findings of that assessment.

II. About this Study

What is Quality-based Benefit Design?

Employers always have considered "quality" of health care benefits as well as cost, when designing benefits programs for their workforce. Common examples of health benefits quality criteria are the quality of customer service or the timeliness and accuracy of claims payment. However, attention to the quality of health care has lagged in consideration. Historically, about the only "quality of care" criterion widely used were requirements that covered services be provided by licensed providers. Quality-based benefit design goes much further than this.

The "quality" in "quality-based benefit design," as used in this report, means that the process of designing a health plan explicitly takes into account the effect that a design element will have on the health and health care of covered individuals[6]. From the employer's perspective, this means:

- What are we getting for the benefit dollars that we spend?
- Does the design foster improved employee health (and productivity?)
- Does the design foster employees' receipt of high quality health care at a reasonable cost?

In many ways, the new quality design criteria mirror the goals set by the national Institute of Medicine (IOM) in its landmark 2001 report, Crossing the Quality Chasm[7]. These goals and examples of potential quality-based benefit design considerations are listed in Table 1. While the IOM goals may at first glance appear quite different from the typical benefit objectives listed in Exhibit 1, the two are actually consistent with one another. Most benefit executives would likely say that a health plan that offers timely, safe, effective, patient-centered and efficient care to its workforce is desirable in that it delivers good value. In fact, value-based purchasing is a close cousin of quality-based benefit design.

Table 1

Illustrative Quality-based Benefit Design Considerations	
IOM Health Care Goal	**Quality-based Benefit Design Consideration**
Safety	Do network hospitals use computer-based order entry? Do prescribers prescribe electronically?
Effectiveness	Do network physicians adhere to evidence-based treatment guidelines? Do the services provided to members under the benefit program improve health?
Patient-centricity	Do patients participate in shared decision-making with providers? Is care for chronically ill coordinated across practitioners and settings?
Timeliness	Can members get care when they need it?
Efficiency	Are unit costs of services provided lower than benchmarks? Are superior health outcomes achieved in the least costly manner?
Equity	Do members have equal access to quality care regardless of socio-economic or cultural status?

What is Value-based Purchasing?

An overriding objective of quality-based health benefit design is to increase the value of employer and employee health care spending. "Value" in this context is typically defined as "quality per dollar spent"—and, at the extremes, value can be increased by: a) increasing quality without increasing costs; or, b) reducing cost without reducing quality.

Value-based purchasing is the successful execution of quality-based benefit design in the sense that the design achieves intended results: more value from limited health care dollars. A value-based purchasing strategy adds quality-based benefit design considerations to traditional areas of employer focus, such as: employee contributions, plan choices, the scope[8] and level[9] of inpatient, outpatient and prescription drug benefits and provider networks. Such a strategy also adds new areas of focus, such as: care coordination and support services, risk reduction and health promotion and consumer tools provided by the health plan.

Table 2 lists the major categories of quality-based benefit design ("areas of focus") studied by PwC.[10] Each of these categories comprises quality-based benefit design tactics in use by employers today. The areas of focus, the specific quality-based benefit design tactics in each area, and the results of PwC's review are described in more detail in Sections VII-XII of this report. The methods PwC used in its assessment are described below.

Table 2

Quality-based Benefit Design Strategies: Areas of Focus[11]
1. Health Plan Options, Eligibility and Contributions
2. Provider Selection and Performance Differentiation
3. Inpatient and Outpatient Benefit Design
4. Pharmacy Benefit Design
5. Health Promotion, Health Risk Reduction and Chronic Care Management
6. Consumer Engagement: Tools and Incentives

Methodology for This Study

The goal of this study was to determine the strength of evidence regarding whether or not quality-based benefit design tactics are likely to be effective, i.e., to achieve intended results. Pursuit of this goal began with three major considerations:

1. What is meant by "effective"?
2. How are "benefit design tactics" defined?
3. How is the strength of evidence assessed?

What is meant by effective? Does the tactic achieve "intended results"?

We defined an effective quality-based design tactic as one that increases the net value of health care spending. Here, "net" value means that this assessment considered not only evidence as to whether or not a tactic increases value, but also whether there were other potential effects that might diminish value. For example, an employer may consider offering only the highest-value HMO to its employees instead of a choice of two HMOs and a PPO. Depending on the preferences of that employer's workforce, such a tactic might reduce overall employee satisfaction if a significant number of employees prefer the previously offered HMO or the PPO.

How are Benefit Design Tactics Defined?

Because of the diversity of employment-based benefit plan design, most research on benefit design does not closely parallel any given employer's specific plan design. There are literally tens of thousands of employment-based benefit design variations,[12] hence, the benefit design tactics in this report are defined more broadly and it is likely that none, individually or collectively, will duplicate exactly a particular employer's design.[13] Appendix C lists the benefit design tactics, organized in the six Areas of Focus, initially considered for this report.

The benefit design tactics ultimately reviewed in this report represent a subset of the list originally identified, and, in some cases, a combination of one or more specific tactics. The need to balance the specificity typically found in the best research and the real-world considerations of benefits practitioners is particularly evident when one considers how to assess the strength of evidence.

How is the strength of evidence assessed?

PwC followed a three-step process to assess the strength of evidence regarding the effectiveness of quality-based benefit design tactics. The three steps are discussed below:

1. Preparation of Hypotheses
2. Literature Review
3. Assessing the Strength of Evidence

Step 1: Preparation of "Hypotheses"

The six "areas of focus" identified in Table 2 are broadly defined. In order to search the literature for relevant studies, it was necessary to identify the subjects of interest more specifically, so the authors identified "hypotheses" subsumed in each of the six "areas of focus" defined by PBGH and CHCF.

Step 2: Literature Review

In order to conduct electronic searches for relevant articles, PwC identified "key words" related to each hypothesis to be used as search terms. These key words are bolded in Appendix A and were used to conduct PubMed[14] searches for articles published since 2000. The searches identified almost 800 references that appeared to be potentially relevant to the questions at hand.

It is important to note at the outset, as have others[15], that all of the benefit design tactics reviewed in this study are in use today by leading corporations and such large employers seldom, if ever, implement new benefit designs without having undertaken due diligence. Since it was expected that this inquiry would find little peer-reviewed, academic research

that addressed current innovations in benefit design, PwC, PBGH, and CHCF agreed that significant weight should be given to "evidence from the field" such as actuarial practice, inference from health plan products and pricing or directionally consistent employer and vendor reports of results of changes in benefit design and implementation

Factiva®, a standard business search tool was used to search the business and trade literature for examples of such evidence. In addition, PBGH and CHCF identified and wrote to 45 health benefits experts requesting input and additional source materials.

Step 3: Assessment of the Strength of Evidence

To judge the strength of the evidence concerning benefit design tactics, the authors followed a proposal made in a 2002 report by the Agency for Healthcare Research and Quality (AHRQ)[16] and followed by others.[17] At first glance, this focus on health benefit plan design tactics may appear to be quite different from AHRQ's focus on clinical evidence; however, the goal here is similar: to assess the impact of certain actions (in this case benefit plan design tactics) on an individual's health and the quality of health care he or she receives (and other objectives). Hence, the authors concluded that it would be appropriate to follow the AHRQ report's suggestion that any system for evaluating the strength of scientific evidence should consider its quality, quantity, and consistency. Application of this approach entailed two steps:

1. Evaluation of individual studies

2. Evaluation of the body of evidence gleaned from individual studies

We used a simplified adaptation of the Strength of Recommendation Taxonomy (SORT)[18] to address the quality, quantity, and consistency of evidence to rate evidence found in individual studies or review articles. As shown in Appendix B, this report categorizes the quality of each study reviewed as "good," "limited quality" or "other" evidence based on the methodology used by the researchers, the comparability of results to this assessment's areas of focus and hypotheses, and other factors. These criteria are similar to those used in academic peer-reviewed publications and their weighting ascribed the highest quality to evidence published in such journals.

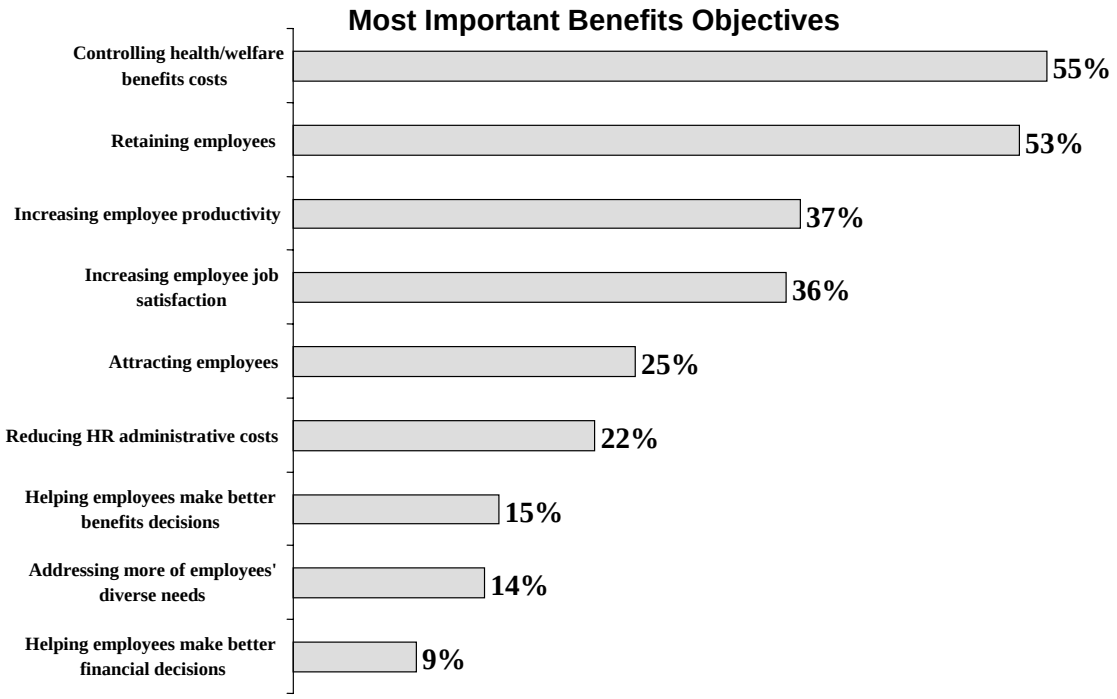
Out of the references from the electronic search that appeared to be potentially relevant for this study, approximately 250 were considered for review. Preference was given to articles where abstracts were indicative of relevance to this study, those found in major, widely read journals (e.g., *Health Affairs*, the *Journal of the American Medical Association, Health Services Research, Medical Care*) and systematic or other literature reviews. As articles were reviewed, some were quickly discarded due to poor relevance to the focus area. Also, during the review of articles that were particularly "on point," references cited in those articles were added to the list of articles for review.

Ultimately, approximately 100 articles were reviewed and scored for this study according to the criteria shown in Appendix B.

Continuing to follow generally the SORT method, the authors used the criteria shown in Appendix C to assess the quantity and consistency of evidence found in the individual studies that were reviewed. This process was undertaken in close consultation with the PBGH and CHCF project managers and was iterative in nature. During the course of the evidence review, initial expectations were confirmed: important tactics in widespread use today have not been studied or have been studied in a manner that sheds only some, but not all of the light desired for a given tactic.

The results of this inquiry in each Area of Focus are presented in a summary table. Exhibit 2, below, presents the format of the summary tables as well as annotations intended to guide the reader in their interpretation.

Exhibit 2



Source: The MetLife Study of Employee Benefit Trends: Findings f from the 2004 National Survey of Employers and Employees, November, 2004

III. Health Services Research Compared to Applied Health Benefits Research

As noted above, this initial review of individual studies ascribed a high weight to factors similar to those considered by peer-reviewed journals when selecting articles for publication. Arguably, such journals disseminate the "gold standard" quality of evidence: they publish studies by researchers using the most rigorous possible research methodologies. Why did this review of the health services research (HSR) literature yield so few studies specific to benefit design tactics under study here and what does this say about the effectiveness of quality-based benefit design?

As an overview, the simple answer to the first part of this question is that HSR is neither better nor worse than the "applied" health benefits research (AHBR) commonly found in the field, but it is very different. Specifically, HSR differs for AHBR in many respects, including:

- **Research Focus**: HSR is focused on adding to the health services knowledge base with historical emphasis on informing [government] health policy; AHBR is generally focused on informing a corporate decision or supporting a proprietary interest; HSR rarely makes administrative complexity or regulatory compliance the focus of research on employer-sponsored health benefits—AHBR typically places such concerns "front and center," as a challenge in either area can drive the ultimate decision;

- **Sources of Data**: Historically, HSR has relied on publicly available data sets,[19] data from not-for-profit HMOs or data collected specifically for a particular research project. There are limited circumstances where insurers, health plans or employers collaborate with academic health policy researchers. AHBR generally relies on proprietary, often financial and administrative data (e.g., medical and prescription drug claims and eligibility records). HSR articles generally disclose the data used and their limitations in detail; published AHBR generally does not provide such detail;

- **Study Design**: HSR typically aspires to state-of-the-art study designs, such as randomized controlled trials, and discloses the methodology and its limitations; internal AHBR (for corporate decision-making) often entails very detailed actuarial analysis of 100 percent of the financial or administrative data relevant to the matter at hand—randomized controlled trials are rare, while natural experiments that use comparisons to historical experience, similar groups or "industry benchmarks" or actuarial tables are more common ; published AHBR often does not disclose the methodologies used in detail;

- **Peer Review**: HSR published by respected journals is subject to peer review by experts in the field; AHBR used for internal decision-making is subjected to no less scrutiny through corporate risk management and control processes; AHBR

submitted for publication to "trade" publications is subject to editorial review and reliance on the credibility of the source;

- **Sponsorship**: Historically, HSR is sponsored by foundation and government grants—most HSR journals disclose the source of funding for research, including infrequent but increasing funding by proprietary interests including trade associations and companies that derive their revenues from health care goods and services; the vast majority of AHBR is sponsored by employers or health insurers for internal decision-making or other business purpose. AHBR intended for publication generally is funded from public relations or marketing budgets;

- **Timeliness**: The study design, data collection, analysis, writing and peer-review processes associated with HSR often consume one or more years; for AHBR conducted to inform internal corporate decision-making often time is of the essence, for example to evaluate renewals or otherwise prepare for a key benefit implementation or reporting date; AHBR conducted to further a vendor's product or service offering typically has a short turnaround time as the "half-life" of a market advantage can limit competitive advantage;

- **Relevance to a Particular Employer**: HSR's focus on enhancing the knowledge base generally or informing policy is often general—even "case studies" of specific employers or health plans are generally viewed as data points to inform others. AHBR's focus on internal decision-making means that, while other employers' experience (particularly in the same industry) or industry benchmarks are important, the sine qua non of AHBR is what will the impact be on our [i.e., the sponsor's] experience? Published AHBR is often designed and/or presented in a form intended to be relevant in order to persuade corporate decision-makers. Benefits practitioners at both large employers and insurance companies rely on such reports, assigning it a decision-making weight based on their experience.

Given the differences between HSR and AHBR listed above and summarized in Table 3, it should not be surprising that HSR may be limited in its current capacity to inform employers on leading edge benefit design tactics. While this research did find examples of HSR that is quite relevant to benefits practitioners, it also considered proprietary and public "applied" research.

As indicated in Table 4, there is much, generally actuarial, research or analysis done by employers and insurers and other vendors of health benefit services. The research employers and vendors do to inform their own internal decision-making process is often rigorous, quality-controlled, and professional, but, understandably, not published. Few if any large corporations—purchasers or vendors—would even consider undertaking an innovative benefit design tactic without actuarial analysis of its financial impact.

Public AHBR may be based on internal research but when made public is typically done in summary form. Many large employers share their experiences with peers more or less

as part of mutual education and professional give and take. Participation in the Pacific Business Group on Health or health plan customer advisory boards are examples of forums that facilitate such dialogue. Often, the more "private" such conversations are, perhaps the more detailed the information exchange. Vendors publicly reporting findings about innovative benefit tactics are often respected and credible organizations that also are marketing the products and services about which the reports are published. A weakness of virtually all public AHBR—whether a vendor's "marketing statement" or a corporate benefit manager's quote in a trade publication—is the lack of disclosure sufficient for the reader to judge the quality of the study or the strength of the evidence.

So, how might one judge the quality of evidence regarding innovative benefit design tactics? This is discussed in the following section.

IV. Evaluating the Evidence Regarding Quality-based Benefit Design Tactics

This section describes the framework used to sort out the differences between Health Services Research (HSR) and Applied Health Benefits Research (AHBR) described above and to present the results of this research. Good HSR and published actuarial studies[20] are both "gold standards" of evidence that employers and other benefits practitioners should consider when making decisions about benefit design. As a result, these types of evidence were given the greatest weight when they were available and addressed a tactic under study. Also, when review articles or meta-analyses published in credible journals were uncovered, their conclusions were relied upon without necessarily reviewing all of the underlying studies.

Many of the benefit design tactics under study here are quite new and, as a result, there are limited, or even no high-quality published studies about their effectiveness. Hence, when possible, this report also presents high-quality evidence that was related to a tactic even if it was not directly "on point." For example, there is virtually no published HSR or actuarial literature about the interactions between high-deductible health plans (HDHPs) and Health Savings Accounts (HSAs) or Health Reimbursement Arrangements (HRAs); however, there is quite a bit of good research published about the effects of high deductibles on individual behavior. In such instances findings from the literature are reported that reasonably may be extrapolated to make judgments about the tactic under review.

As is often the case in the employment-based health plan market, there is a substantial volume of published AHBR in the news media and trade publications about the "latest" or "leading edge" benefit design tactics. The poor disclosure of sources of data, methods and findings in these publications is problematic. The tendency of these publications is to report favorable results, though, in fairness, were significant problems encountered, they would also be newsworthy and would likely be widely disseminated. Since the benefit design tactics reviewed for this study are the "latest" and "leading" edge, the authors had to resist the inclination to equate quantity of evidence with quality. When applicable, however, this paper will point out the absence of negative reports and, in the final section of this report, present recommendations concerning the types of disclosures that ought to be sought when a plan sponsor considers a typical AHBR study result.

The following sections present the results of PwC's assessment of the quality of evidence regarding the effectiveness of quality-based benefit design strategies in the six (6) focus areas: Each focus area present the tactics that PBGH, CHCF, and PwC considered to be of greatest interest to the reader. Those interested in more specific tactics should refer to the bibliography that is included in this report as Appendix D. There you will find many more citations and sources of studies and review articles that address a much wider array of tactics than can be addressed here.

1. Health Plan Options, Eligibility and Contribution Tactics

Employer strategies to incorporate value based benefit design begin with the decisions regarding

1) what plans to offer, including consideration of HMO and PPO network products,

2) specific benefit coverage, including scope of services and member cost sharing,

3) who is eligible for coverage, and

4) the distribution of premium cost between the employer and the employee.

These standard decisions for any employer influence member's health plan choice: in quality-based benefit design and there is increased focus on how to combine these decisions to direct employees to the high value health plan. Overall, the evidence, primarily from the long term experience of health plan actuaries and company case studies, suggests that it is an interaction of these features, and primarily the relative cost position of the health benefits options, that influences the employee choice of health plan.

Employer-Sponsored Health Insurance Coverage

The employer sponsored health insurance provides coverage to nearly 160 million people, almost two thirds of the population under 65 years of age.[21] Continuing change in the employer sponsored health insurance coverage over the past five to ten years reflects the results of past employer decisions. An underlying trend has been erosion in employer sponsored coverage. Findings of the Kaiser Family Foundation/Health Research and Educational Trust 2005 Annual Employer Benefits Survey report that the percentage of all firms that offer health coverage has declined from 69 percent in 2000 to 60 percent in 2005. This has been driven primarily by the decline in the percentage of small firms, particularly firms with less than 50 employees, which offer health insurance.[22] Among large firms, those with more than 200 employees, 98 percent offer health insurance benefits, a percentage that has remained stable over the ten years of these surveys. Another important trend is that the market has seen a decline in the more tightly managed care HMO product design and an increase in less tightly managed PPO product design.

Premiums continue to increase much faster than the increase in the rate of general inflation and wage growth, although recent years of double digit premium increases appear to have moderated. Average annual premium cost was reported as $4,024 for single person coverage ($335 per month) and $10,880 for family coverage ($907 per month).[23] The worker contribution to premium has increased, but remains relatively constant as a percentage of premium. The 2005 average of $51 per month for single and $226 for family coverage represents 16 percent and 26 percent of monthly premium, respectively.

A number of tactics regarding health plan options, eligibility, and contribution strategy have been adopted by employers as part of their strategy to contain costs, increase member awareness and to implement value based benefit design. It may also be possible to implement these tactics in a manner that promotes quality-based design. Strategies may include:

1. Employers use of explicit criteria to select and offer "high value" plans
2. Health plan design structured to mitigate risk
3. Use of coverage rules and contribution strategy to assure access to coverage among active employees, dependents, early retirees, and retirees
4. Contribution strategies that encourage employee selection of high-value plans determined by performance benchmarking
5. Use of risk-adjusted plan premium contribution
6. Adjusting premium contributions by employee income

The current evidence on the effectiveness of these strategies to support quality-based benefit is summarized in this section.

Eligibility for Health Coverage

As already noted, there has been a decline in the proportion of firms that offer employer sponsored health coverage. The availability of coverage varies by firm size, industry, the proportion of part-time and temporary workers, and average wage, among other factors.

Results from the Medical Expenditure Panel Survey (MEPS) and the annual Kaiser/HRET Employer Health Benefits survey consistently show that firms most likely to offer coverage are larger, have a higher proportion of full time employees, and have more workers who make higher wages (above $20,000 per year). Government employers and firms with unionized workers are also more likely to offer health coverage.

Findings from analysis of the Medical Expenditure Panel Survey (MEPS) suggest that while the proportion of people in firms with employer sponsored health coverage, the offer rate, has increased, the proportion that are eligible and who enroll has decreased. For the period 1996 to 2002., the offer rate to private sector employees increased from 86.5 percent to 88.3 percent, but the eligibility rate decreased from 81.3 percent to 77.1 percent, while the enrollment rate dropped 4.5 percent, from 69.6 percent to 62.4 percent.24 Some portion of this decrease may be attributable to an increase in workers who enroll in a plan available to a spouse or other family member.

The Kaiser/HRET survey reports that there has been an increase in the percentage of firms that offer health coverage to part-time workers, 28 percent of firms overall, but this

ranges from 27 percent to 33 percent of firms of up to 999 workers to approximately 60 percent of jumbo firms with more than 5,000 workers. A much smaller proportion of firms, less than 5 percent, offer health benefits to temporary workers.

Choice of Health Plans

When all firms are considered, including firms that do not offer health benefits, most workers do not have a choice of health plans. This does not directly translate into limited choice of health coverage because approximately one third of covered workers have access to other coverage through another member of the family.[25]

Preferred Provider Organization (PPOs) are the most common type of health plan offered to workers, followed by Health Maintenance Organization (HMOs), Point of Service (POS) and then conventional indemnity plans. Of those who are offered coverage, approximately 82 percent are offered a PPO plan, and 44 percent have an HMO option, down from 54 percent in 2004. Less than 20 percent of covered workers have a POS option and only 12 percent may choose a conventional plan.

Overall, only 20 percent of firms offer a choice of two or more health plans, but this increases substantially with firm size. While only 19 percent of small firms (3-199 workers) provide a choice of plans, this increases to 52 percent for mid-size firms (200-999 workers), to 73 percent for large firms (1,000-4,999 workers, and to 83 percent for jumbo firms (5,000+ workers).

Among covered workers, approximately 63 percent are offered a choice of health plans, a percentage that has remained fairly stable since 1996. Over three quarters of workers in firms with 200 or more workers have a choice of health plans while only a third of the workers in small firms have a choice of plans. For those with a choice of health plans, the choice is most likely to be among different types of plans (PPO, HMO, POS or conventional plans) rather than a choice of two or more of the same type of plan. Employers who offer HMO plans as part of their options are somewhat more likely to offer a choice of multiple HMOs. The Kaiser /HRET 2005 survey reported that 22 percent of firms that offer two plans offer a choice of HMOs and 34 percent of firms that offer three or more plans offer a choice of HMOs. This compares to 21 percent of employers who offer two plans that offer a choice of PPOs and 15 percent of firms that offer three or more plans that offer a choice of PPOs.[26]

Premium Contribution Strategy

The employer contribution strategy is one of the most important decisions in plan design. It influences employee "take-up," the proportion of employees who elect coverage, and, if multiple plans are offered, the employer contribution may mitigate or enhance the potential for selection effects. Survey information on contribution strategies is limited. Approximately one third of employers pay 100 percent of the single person premium for health benefits. Other options include a fixed defined dollar contribution, a fixed

percentage of premium, and methods that combine these approaches, such as an amount calculated as a proportion of an average of the cost of health plan options.

The majority of covered workers receive an employer contribution towards their monthly premium; this is most often between 75 percent and 100 percent towards single coverage and 50 percent to 100 percent towards family coverage. Workers in small firms are more likely to have the employer pay the full premium cost for single coverage.

Advocates of managed competition have promoted a defined dollar contribution strategy that covers most or all or the premium of the highest value plan, that is, the plan with the lowest premium cost that meets the employer benefit and quality criteria, while requiring the employee to pay more out of pocket for the higher cost plans. However, this fixed dollar contribution strategy has not been widely adopted beyond large employers, such as General Motors, the federal government, state employee programs such as the California Public Employees Retirement System (CalPERS), and those in Wisconsin, Washington, and Massachusetts and academic institutions such as the University of California and Stanford.. A survey of Fortune 500 companies found that only 4 percent of them offered a choice of health plans and provided a fixed dollar premium contribution.[27]

Numerous studies have documented employee price sensitivity to premium contribution. A study of the Federal Employee Health Benefits Program demonstrated that a 10 percent relative change in premium contribution can produce more than a 20 percent change in plan market share.[28] Employers that have adopted managed competition fixed dollar contribution strategy have shown it is effective in moving employees to the higher value "benchmark" plans. For example, Harvard experienced a 10 percent decline in its premiums when it first implemented a move to a fixed dollar contribution in the late 1990's.

General Motors has been considered among the leaders in value based and quality-based purchasing. Since the late 1990's, it has evaluated health plan using results from such standardized tools as the Health Plan Employer Data and Information Set (HEDIS®) and Consumer Assessment of Healthcare Providers and Systems (CAHPS). Plans are also rated on age-sex adjusted premium costs and the combined scores are used to assign the health plans to six ranked bands. The top 15 plans are benchmark plans. For salaried workers, the employer contribution is calculated to such that the largest contribution goes to the benchmark group. Enrollment in the lowest ranked plans has dropped in half and members have moved to HMOs and, among HMOs, to the higher rated plans.[29]

The more successful reported efforts to move employees toward high value plans, specifically those that are based on networks of cost effective and high value providers, have often been characterized by lower comparative premium or an employer contribution strategy that lowers the relative cost to the member. In other cases, health plans and employers have adopted a total replacement strategy. When Premera Blue Cross introduced its Dimensions tiered network product in 2003, the premium was

estimated to be 10 percent below the competition and Premera limited new small groups to that product line as part of its conversion strategy. Case studies of the introduction of high deductible and consumer directed health plans have reported greater enrollment when employers have substantially lowered the employee premium contribution, have added other incentives, or pursued a replacement strategy. Movement to these plans is greater, and reflects a more representative distribution of the workforce, when employers offset at least some of high deductible through employer funding of a health account. This is in contrast to case studies where plan selection is encouraged by a lower premium, and employees are provided with information about the higher quality provider network, but there are not other financial incentives. Surveys to date report limited employer interest in paying more for delivery systems that are designated as higher quality.

Although the concept of wage related employee premium contribution has been discussed in the literature, and employers have indicated increased interest, there are only a few publicly reported examples of employers adopting this contribution strategy. A national employer survey in 1999 reported that less than 1 percent of employees worked in a firm with an income related premium;[30] the percentage had increased to 10 percent by 2005.[31] This practice was more common in firms with more than 200 workers.

Issues surrounding income related premiums include higher administrative costs associated with differential income related premium contribution and the basis for determining income. While it is relatively straightforward to base the contribution on the wage paid by the employer, issues arise if total family income is considered, or circumstances where both spouses work for the same company.

The most recent KFF/HRET Employer Health Benefits Survey reported that 14.3 percent of the workers in the respondent firms had worker premium contributions that varied by wage level. This was driven by the large (1,000-4,999 workers) and jumbo (5,000 and more workers) employers that reported more than 15 percent of workers had income related premium contributions.[32] One such employer is the University of California. The university had already developed a premium contribution strategy that provided a defined contribution calculated against the lowest cost plan offered. In 2003, the Regents of the University adopted a policy of income related contributions such that those with the lowest tier of income, set at $40,000 or below, receive a higher employer contribution relative to those in higher income tiers. The contributions are also risk adjusted such that employee price differences are based on differences in plan design rather than the health status of enrollees; plans that enroll members with greater health care needs receive a greater contribution. For 2005, the University uses four income tiers: Less than $40,000 annual income, $40,000 to $80,000, $80,000 to $120,000, and Over $120,000.

In general, private sector employers have not adopted risk adjusted premium contribution as a benefits tactic. To some extent, large employers can obtain the objectives that are addressed by risk adjustment through self-insured health plans or experience rated offerings. There are some limited examples, such as the PacAdvantage small group

insurance pool in California and the joint "paired-choice" offerings of Kaiser and Health Net and Blue Shield, where risk assessment tools are used to determine the amount of premium to shift among health plans in order to maintain health plan choice. Verizon began experimenting with a risk adjusted premium contribution for its California employees in 2004, but results have not yet been reported.

More examples of risk adjusted premium are found in the public sector. The Centers for Medicare and Medicaid Services (CMS) has been phasing in a risk adjusted component of it premium payment for Medicare+Choice, now Medicare Advantage, plans and will risk adjust the premium contribution to plans for the new Medicare Part D prescription drug plans beginning in 2006. Numerous state Medicaid programs also risk adjust their contribution to health plans that participate in the state managed care programs.

State employee benefits programs in some states, including Massachusetts and Wisconsin, have risk adjusted premium contribution. This type of contribution strategy is considered important as part of the effort to maintain a health plan choice, and in particular, to maintain a multiple health plan benefit package that includes a combination of HMO, PPO, and possibly POS benefit design.

Table 3

Tactic Evidence Summary

Employer Options, Eligibility, and Contribution Strategy

Employer Objective: Encourage employee value purchasing

Intended Result: Employer Contribution Strategy Increases Selection of High Value Health Plan

Research Question	Type of Evidence	
	HSR	**AHBR**
Is there good evidence that the tactic will achieve the intended result?	Partial	Yes
Is there good evidence that the tactic may interfere with achievement of other benefit objectives?	No	No

Comments:

The required employee premium contribution remains the most important determination of employee choice of health plan, Employee selection among health plans is influenced by the relative position of a benefit as to cost and provider access.

2. Provider Selection and Performance Differentiation Tactics

Health plan benefit design tactics that focus on provider selection and performance differentiation have used at least two general approaches. The first tactic, provider selection, focuses on developing provider networks that select high performing providers that are "preferred" based upon defined criteria that emphasize cost, efficiency, quality of care, health outcomes, customer satisfaction, and other performance measures.[33] The second tactic, provider performance differentiation, which is linked to Pay-for-Performance (P4P), develops methods to measure and report on performance criteria, such as cost, efficiency, quality of care, health outcomes, customer satisfaction, and then rewards providers that meet these criteria either financially, or through public reporting that may lead to increased movement of members to those providers.

The remainder of this section describes the quality of the evidence that is currently reported on the effectiveness of these two provider focus areas.

Provider Selection

There is at least a twenty year history of developing provider networks that are subsets of the hospital, physicians and other providers that are available within a geographic area. The concept of contracting "in-network" and "preferred" providers has been a core organizational component of health maintenance organization (HMO) and preferred provider organization (PPO) benefit design. The early HMO and PPO networks were developed primarily by contracting with providers that would accept reduced or negotiated fee arrangements and agree to adhere to health plan administrative protocols in return for expected increases in patient volume. What is changing are the criteria that are used to select the in-network or preferred providers and specifically, an increased emphasis on criteria that are thought to be related to quality of care. Networks that are developed using cost and quality criteria have been called Value Based or High Performance Networks and the provider selection features include tiered[34] and narrow networks that have more generous coverage for services delivered by the selected providers.

Cost and cost-efficiency measures remain important selection criteria. Many health plans have adopted cost comparison models that more refined than earlier measures of total or average costs. This can include assessment of the cost of caring for complete episodes of care over time; case-mix adjustment of cost data; and more direct comparison of like providers, such as comparisons among tertiary hospitals, multi-specialty medical groups or single specialty providers.[35] The non-cost measures can include patient experience based on standardized surveys, such as the Consumer Assessment of Health Plans (CAHPS®), medical record audits, or analysis of encounter or claims and administrative data to calculate performance against clinical protocols and benchmarks for preventive care, such as treatment for diabetes or childhood immunization rates that may also be captured in the Health Plan Employer Data and Information Set (HEDIS®),

An overview of the academic and field literature on this topic finds that:

1. Network development selection criteria vary by type of provider, with criteria for selection of hospitals and physician groups being most common.

2. Criteria used for network development generally weight cost or case-mix adjusted cost measures most heavily.

3. Criteria for network development often use some national and other standardized measures, but are not consistent across health plans.

4. Developing tiered or narrow networks is most feasible in geographic areas with many competing providers; in order to maintain access in areas with multi-hospital ownership or sole community hospitals, regional and statewide networks often include a significant proportion of the total available providers.

5. Consumer selection of value-based networks is influenced by benefit design features related to employee contribution to premium levels and expected out-of pocket cost sharing.

6. "Centers of Excellence" or narrow networks which focus on specialist services related to a specific disease or category of conditions, can produce higher quality outcomes, and are often associated with greater efficiency and lower cost.

Tiered Provider Networks

There is at least a twenty year history of developing provider networks that are subsets of the hospitals, physicians, and other providers that are available within a service area. Health care "Centers of Excellence," where health plans contract with a limited number of facilities and providers for specialized and tertiary care also have a long history.

The concept of tiered networks has been in practice since the emergence of in- and out-of-network care and point-of-service systems from the 1990s, but reemerged in benefit design in 2000 and 2001, initially focusing on hospital networks. Providers are grouped into tiers based on cost and quality criteria. Benefit design, through lower premium or cost sharing, is used to direct members to use providers in the highest ranked tier. The initial application to hospitals has since expanded to tiering of physician multi specialty groups and other providers.

The evidence to date on the extent to which tiered networks can reduce cost and improve quality is limited, both in the academic literature and from the field. An increasing number of health plans are offering benefit designs based upon tiered networks that have lower premium costs than comparable benefits designs with broader networks. What is less clear is whether the growth in this type of benefit design is primarily driven by product "design" competition or whether the early reports of the lower premium and rate of growth in health care costs, as well as improved quality, can be demonstrated and maintained over time.

Health plans and employers report positive results, with premium savings of 10 percent to 15 percent for those who choose to enroll in the high performance network.[36] Aetna offers its Aexcel program that uses a narrow network of physicians in a twelve specialties in a limited number of markets.[37] Internal actuarial modeling by the program projects savings on the 30 percent of medical costs represented by these specialties, but actual results have not been publicly reported. CalPERS reduced the number of health plan offerings for 2005 and worked with one of the HMOs, Blue Shield, to reduce the number of hospitals in the network by ending contracts with 28 high cost hospitals within the health plan network.[38] During the CalPERS open enrollment, for members in the Sacramento area, 15 percent of the Blue Shield 2004 membership changed to higher premium plans that maintained provider relationships; 56 percent stayed with Blue Shield, and 17 percent moved to a lower premium plan without provider continuity, and another 6 percent moved to lower premium plans with provider continuity.[39] The savings from moving to a reduced provider network is estimated to be $36 million in 2005 and $45 million in 2006.[40] PacifiCare has reported that public provider report cards has helped to move an increasing number of members to the better performing providers; on a base increase of more than 30,000 members per year, there has been a 6 percent increase in members for the best practice providers. Their Quality Index Profiles® has also served as the basis for developing their value HMO product, SignatureValue[sm] Advantage. Large employers, such as Wells Fargo Bank, Lockheed Martin, and Xerox have purchased the plan. Costs are approximately 20 percent less and trend has been 14 percent less than projected.[41]

Academic and health policy research on this tactic have primarily documented the growth of such benefit designs and examined the criteria that have been used to develop the networks. Health plan presentations, press releases, and marketing materials report that narrow and tiered network designs can be priced lower and show savings in the introductory years. Details of the financial arrangement are typically not fully disclosed.

Early reports on the emergence of tiered hospital networks (describe examples of tiered hospital network benefit design and note that while quality criteria may be incorporated, measures of cost or cost effectiveness are the primary criteria for placing hospitals in the highest tier.[42] A review of tiered network health plans in twelve communities reported that the primary criteria for selection was price and payment level, increasingly measured as a diagnosis or risk adjusted measure of total cost and efficiency for an episode of care. Quality measures have included participation in quality improvement programs, such as public reporting of patient satisfaction data.[43]

Table 4

Tactic Evidence Summary **Provider Selection**		
Employer Objective: Offer health plans that encourages use of High Performing Providers through tiered networks and Centers of Excellence **Intended Result:** Reduce costs while maintaining or improving the quality of care		
Research Question	**Type of Evidence**	
	HSR	**AHBR**
Is there good evidence that the tactic will achieve the intended result?	Partial	Partial
Is there good evidence that the tactic may interfere with achievement of other benefit objectives?	No	No
Comments: Consumers are willing to trade lower cost sharing for less provider choice; There is greater willingness for low income to accept this trade-off; less willingness for those with chronic illness, but resistance within this population has decreased over time. There is no evidence that there are reductions in quality based in these changes...		

Provider Performance Differentiation

The second tactic, provider performance differentiation is associated with Pay-for-Performance (P4P) programs, and uses many of the same criteria and methods to as are used to select high performing provider networks. The goal of provider selection is to develop higher value networks and to direct members to those providers and the provider incentives are associated with potential changes in the number of patients.:P4P differs in that it incorporates more direct financial incentives for the providers to meet given levels within the criteria. Because most of the P4P programs that have been reported on have been in place less than five years, and components of programs vary, there is a limited, but a growing amount of evidence-based research on the effectiveness of these programs. The precursor to today's P4P programs have a long history, in particular, medical groups and hospitals have done physician profiling and linked their analysis to improvement programs and provider payment. But most of these have been managed internally and have not made results available to the public.

Given that there is overlap in methods to develop narrow networks and to reward improved performance, some of the findings regarding provider selection also apply to provider performance differentiation. An overview of the academic and field literature on this topic finds that:

1. Measurement and criteria vary by type of provider, and are most commonly applied to hospitals, primary care physicians, and physician groups.

2. Measurement and criteria are most often applied to HMO models; application to PPO and self-insured products is more recent.

3. Measurement and criteria often use some national and other standardized measures of clinical and patient experience, but are not consistent across health plans and incentive program sponsors.

4. Providers will respond to positive financial incentives. A number of programs have recently reported significant improvements by providers on measured criteria and distribution of substantial reward payments.

5. There is limited literature and evidence to compare the design of effective P4P programs. This includes such factors as measurement benchmarks, expected levels of improvement over time, use of positive and negative incentives, and the size of the incentive necessary to encourage improved performance.

6. Many of the current P4P programs are not designed to reduce costs. Most are designed to increase compliance with protocols, target underutilization, and encourage investment in information technologies.

Pay for Performance initiatives have been developed by individual health plans, by coalitions of health plans, by employer coalitions and other business groups, and the federal government. A recent survey of P4P programs found 78 programs in mid 2004 and predicted a doubling of such programs by 2006.[44] The survey summarizes characteristics of the programs and identifies changes and the evolution of the programs over time. Some well publicized initiatives include the California Medical Group P4P, a collaborative that includes seven major health plans, under the auspices of the Integrated Healthcare Association (IHA), efforts by many plans in the Blue Cross Blue Shield Association, PacifiCare and other health plans, the varied efforts under the Rewarding Results and Bridges to Excellence programs sponsored by large employers in targeted markets, and a hospital pilot in the Medicare program.

One review of the literature identified 37 incentive programs representing 31 separate payers and analyzed those programs to develop a taxonomy of design elements that include the market leverage of the sponsors, the magnitude of the reward, competitive vs. non-competitive models of assessment, the targeted dimensions for quality improvement, and whether benchmark and/or extent of quality improvement is included in the financial reward calculation.[45]

Despite the fact that many incentive programs have had less than five years of experience, both the survey and the literature review raise issues regarding the short and long term impacts of the incentive programs. For example, most programs use a mixture of process and structure measures and have smaller weights for patient experience measures. This may be due to the relative absence of widely collected patient experience data or to an assessment that less weighting is warranted. Almost all reward or give

greater weight to good performance rather than to the degree of improvement. As a result, where participation is voluntary, hospitals and providers that are ranked low may be less likely to participate in these programs. Those programs with target quality measures often use selected HEDIS measures or target conditions; this focuses hospital and medical group efforts on the items that are measured when it may be the case that other, less easily measured activities, may have greater potential impact on improved quality. There is also the issue that different sponsors or payers may adopt different measures, diluting the influence on a given hospital or provider. While this inquiry did not discover evidence that other activities suffered, there is some indication that hospitals and provider groups are more responsive if the health plan members or employer groups represent a greater share of total business. Recognizing this, coalitions such as the Leapfrog Group, Bridges to Excellence and the California IHA projects have standardized programs to measure and reward performance.

Current programs tend to target underutilization and improved adherence to protocols. As such, improvements may have the effect of increasing costs, at least in the short term. It has also been demonstrated that there is greater physician response to bonus and other reward programs that increase total reimbursement rather than to programs that withhold and restore or redistribute payments, or that include penalties. Financial rewards in P4P programs take many forms, including bonus payments based on an array of measures, awards for specific improvements or projects, fees schedules based on performance, at-risk contracting, and in conjunctions with tiered network design, cost differentials for consumers.[46] Such differences, as well as variation in the amount of the financial incentive, contribute to the difficulty in determining the most effective P4P program design features.

A recent review of the literature on the effect of physician financial incentives to improve quality of care identified nine randomized controlled trials. The general findings were that providers respond positively to financial incentives and to public release of performance data. However, some interventions were small and results were mixed in response to the specific P4P incentive plans. Of the five programs that used FFS incentives, four were positive and one was negative. Of the programs that used bonus incentives, two were positive and three were null/negative.[47] Five of the studies targeted only one clinical care factor, such as child immunization.

PacifiCare, a major national health plan that primarily offers HMO products, has monitored the performance of contracted medical groups on a variety of clinical and patient reported quality measures since 1993. For the first five years, the results were reported to the medical groups, but have been available to the public since 1998. This Quality Index Profiles®) used 55 measures for physician organizations. As already noted, these profiles were used to develop tiered network products and encourage members to move to better performing providers.

The quality program was modified in 2002 for physician contracts effective January 2003 to target ten quality measures, five that are ambulatory care indicators and five that are patient reported measures of service, and six hospital measures. Targets were set at the 75th percentile of values established by analysis of available 2002 encounter data. Providers were eligible for incentives paid from a $14 million dollar incentive pool. PacifiCare reports that 123 to 163 medical groups have qualified for incentive payments each quarter since 3Q 2003 and that 12 of the 16 measures showed an average improvement of over 30 percent.[48]

Researchers have recently reported on the results of a natural experiment that compares the performance of California medical groups that participated in the PacifiCare Quality Improvement Program with medical groups in Oregon and Washington that contract with the health plan but do not participate in a P4P program. Quality measurement focused on improvement in three areas, cervical cancer screening, mammography, and hemoglobin A_{1c} testing for diabetic patients, over a two and a half year period, based on services delivered between April 2001 and October 2003.[49] Both the California and the Pacific Northwest medical groups showed improvement over the time period, but only the results for cervical cancer screening, an increase of 5.3 percent for the California groups compared to an increase of 1.7 percent for the Pacific Northwest groups, was significant. Physician groups with the lowest compliance rate at the beginning of the period (at least 10 percent below the target) showed the greatest improvement. in this model, which was structured to reward achievement, as compared to improvement, the physician groups who were lowest at baseline received 5 percent of the bonus, while the highest performing groups, those which were already at or above the target, received 75 percent of the P4P incentive payments. Overall, $12.8 million in bonus payment was available based on achievement of targets for ten performance measures, but only 26 percent of that was distributed. A small number, 15 of the 172 eligible groups, achieved 5 or more of the ten targets.[50] This research demonstrates the recent attention to this area, but it also underscores the challenge of health services research. The study considered the PacifiCare experience a natural experiment because the P4P program was implemented in California, but not for its medical groups in Washington and Oregon. At the same time, Regence Blue Cross Blue Shield, a health plan with greater market share in Washington, instituted a P4P program with the same medical groups and did demonstrate improved performance.

Questions have also been raised as to how much of the improvement reflects better reporting.[51] Examination of the impact of public reports fostering hospital quality improvement has produced mixed results, but more recent controlled examination showed strong evidence of public reporting on hospital quality improvement.[52] These findings occurred without the added incentive of financial reward.

Initial results from the evaluations of the seven programs in the Rewarding Results initiative , indicate that P4P programs can effectively use financial incentives to produce

measurable improvements in care delivery. The seven programs are evaluating P4P in a variety of settings, including a Medicaid program, two state based coalitions, a commercial insurer, a managed care plan, a hospital program, and a branded employer project.

Lessons learned from the early Rewarding Results evaluation results include:

1. Financial incentives can motivate change, but they need to be large enough to make a difference.

2. Non-financial incentives that assist the provider (support staffing, technology) can also be important.

3. Public reporting can be effective in improving care. To be most effective, the measurement criteria must be understood, data must be accurately recorded and reported in a timely manner, and should be compared to benchmarks or peer group performance.

4. There is no clear evidence of positive return on investment. In part this is because there is not consensus on what costs should be measured, what benefits should be measured, and the time span for the ROI determination. .

5. It also appears that physician experience with managed care is associated with greater receptivity to P4P programs.

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Table 5

Tactic Evidence Summary

Provider Performance Differentiation

Employer Objective: Encourage providers to deliver high quality health care services

Intended Result: Increase adherence to clinical protocols and improve delivery of quality health care

Research Question	Type of Evidence	
	HSR	**AHBR**
Is there good evidence that the tactic will achieve the intended result?	Partial	Partial
Is there good evidence that the tactic may interfere with achievement of other benefit objectives?	Partial	Partial

Comments

Provider cooperation is necessary; Low performing providers may "opt-out". Programs to date have not established positive ROI.

3. Inpatient and Outpatient Benefit Design Tactics

Inpatient and outpatient benefit design tactics that have been adopted by employers and health plans focus on two elements of benefit design: (1) use of member cost sharing, through use of member deductibles and point of service copayments and coinsurance, and (2) use of tiered hospital and physician provider networks that incorporate different levels of member cost sharing.

The use of member cost sharing, through deductibles, copayments, and coinsurance, has been a feature of health insurance benefit design since the significant emergence of employer sponsored health coverage dating back to World War II. Annual surveys of employer sponsored insurance coverage consistently report on changes in levels of deductibles and copayments and indicate continued and increasing reliance on member cost sharing as part of the response to increasing health benefits costs. This employer response has been adopted in part because of the consumer backlash against rigorous managed care models and the movement to broader networks and less managed PPO benefit design.[53] The introduction of deductibles and copayments, and increases in existing levels of deductible and copayments, are expected to have multiple effects. These include a cost shift from the employer or health plan to the member, a decrease in the use of services, the utilization effect, because of the higher out-of pocket cost, and possibly an enrollment selection effect if the consumer has a choice of health options.

Actuarial pricing models routinely estimate the effect of different levels and changes in member cost sharing on unit costs, utilization and premium and monitor claims experience to determine whether such benefit "buy-backs" achieve the desired cost savings results. What is less clear, and what has not been subject to extensive recent research, other than for pharmacy benefits with the adoption of multiple tiered formularies, is the effect of changes in cost sharing on the member and the family for the broader range of health services.

The RAND Health Insurance Experiment (HIE), conducted in the 1970's, studied the effect of different levels of cost sharing, and remains the major research on this topic. The HIE assigned people to four plans, with no cost sharing ("free"), a 25 percent, 50 percent, and a 95 percent cost sharing high deductible plan. Overall, people in the high deductible plan used 20 percent to 30 percent fewer services than those in the free plan. This was true across service types, such as inpatient hospital and physician office visits, and for all income groups. The utilization reduction was primarily in the decision to initially seek care; once care was sought, the intensity and cost of services was similar. The concern was that people did not appear to effectively distinguish between necessary and unnecessary care or between effective and less effective treatments. Overall, the HIE did not find an impact on health status for the average person. However, the researchers did report that higher cost sharing had an adverse effect on the sick and low income.[54] More recent benefit design features, such as exempting preventive care from a deductible,

or incorporating chronic care and disease management programs in the benefit package, may mitigate the effects demonstrated in the HIE research.[55]

The emergence of high deductible health plans (HDHP), also referred to a defined contribution health plans, and as Consumer Directed Health Plans (CDHP), has refocused employers, health plans and policy analysts on the costs and potential health status effects of increasing use and higher levels of consumer deductibles and copayments.

These new high deductible health plans may or may not incorporate one of the varieties of tax favored accounts that can be established to offset the deductible and other cost sharing features. The most interest has been generated by the combination of HDHP and Health Savings Accounts (HSAs). Contributions to HSAs can only made by or on behalf of an individuals enrolled in an HDHP, are not taxable, can be rolled over from year to year and may be used at any time to pay for qualified medical expenses [56] Funding may be through the employer, employee, other individual, or a combination of sources.

Employers, health plans, and new health organizations have responded to these market and regulatory changes by introducing high deductible Consumer Directed Health Plans. For 2006, they must meet minimum deductible requirements of $1,050 for an individual and $2,100 for a family if they are to be offered in conjunction with an HSA.[57] Benefit design often includes full coverage for preventive care (not subject to the deductible), the deductible gap where payment for services is done through member out-of pocket or the funded account, and then through coinsurance up to an out-of pocket maximum. Most often, they are offered as an option with other health plan choices, but there are examples of full replacement programs.

These health plans are seen as a vehicle to not only slow employer spending on health benefits, but to encourage employees to take a greater role in managing their health care and its costs. In order to help the member understand the delivery system and make informed decisions regarding the use of health care services, these plans often incorporate consumer support features, such as wellness and disease management programs, extensive member education efforts, and internet based information tools.

The movement to high deductible plans and CDHP is relatively new. The most flexible of the tax favored accounts, the HSAs, was authorized in 2004. However, the American Health Insurance Plans, an industry group, reported that health plans that are eligible to be used in conjunction with an HSA doubled, to more than 1 million members between September 2004 and May 2005.[58] A recent update that surveyed health plans that offer plans in association with an HSA reported that enrollment reached three million by the end of 2005.[59] Details on the enrollees were not reported, but earlier reports indicated that a high proportion have purchased the high deductible health plans through the individual market. Among employers who offer health benefits, approximately four percent have moved to high deductible health plans. Many offer both funded accounts and first dollar

coverage for preventive care. However, more than one third of employers that offer an HDHP provide no funding for an HSA.[60]

To date, there is limited academic-based research on these plans and information is primarily from surveys, interviews, case studies of the early adopters, and information disseminated by the health plans and vendors that are offering these products.

In one research study of a large employer that offered both an HMO and PPO from 2000 to 2002 and introduced CDHP in 2001, there was an initial CDHP take-up rate of approximately 15 percent. Analysis was based on comparison of the cohorts of employees enrolled in the HMO, PPO, and CHDP for the two year period. The results indicated the CDHP enrollees had lower expenditures than PPO members but higher than the HMO members . This included lower pharmacy utilization and expense and physician visits, compared to both PPO and HMO members, but significantly higher elective and emergency hospital admissions and higher total physician expense.[61]

Major insurers that are offering CDHP products include Aetna, CIGNA, Humana, United Health Group, Wellpoint, and many Blue Cross and Blue Shield plans. Specialty vendors include Definity Health (purchased by United Health), Lumenos (purchased by Wellpoint), Choicelinx (purchased by CIGNA), and Vivius. The specialty vendors generally offer models that emphasize the consumer internet support tools and have developed provider networks by aligning themselves with health systems and health plans throughout the country. A similar strategy is increasingly used by many national and regional health plans.

Aetna, through its Aetna Health Fund product line, and Humana, with its Smart Suite/Coverage First product offering, have been among the most active in discussing benefit design and preliminary financial results. These have been discussed and distributed in conference proceedings, reported in the trade and business community, and includes some publications in academic and policy journals.[62] Among the early findings reported by the health plans and vendors are:

1. Introduction of a HDHP can produce lower claims trend relative to market or expected claims trend.

2. Lower claims costs appear to be explained by an overall reduction in utilization, as well as a shift to less expensive sources of care (outpatient vs. inpatient; primary care vs. specialist).

3. The demographic profile (age/sex) of those who select a HDHP does not appear to be substantially different from the larger employee population.

4. The early HDHP enrollees have higher income than the average for the employee pool.

5. HDHP/CDHP products may increase coverage for individuals and families who purchase insurance in the individual market, including those who were previously uninsured.

6. There is evidence of favorable health risk selection if a HDHP/CDHP is offered in conjunction with standard HMO and PPO benefit plans.

7. Use of premium subsidies, other financial incentives, employee education, and consumer tools can increase enrollment in the HDHP/CDHP options.[63]

Specific results that have been reported include:

Aetna Health Fund:

Aetna reported results based upon a comparison of seven employers with the company's high deductible product compared to the experience of Aetna members in its PPO products for 2003 and nine months of 2004. Two of the smaller employers introduced the Aetna Health Fund as a total replacement.

- Employers in their second year with Aetna HealthFund experienced cost increases of 8.7 percent, lower than the 10.3 percent increase for PPO members.

- For one plan sponsor who offered Aetna HealthFund as a full replacement, two year trend decreased an average of 2 percent, which was driven by a first-year medical cost decrease of 19 percent.

- For the five employers that maintained benefit options, the average age of AHF enrollees was 2 to 5.5 years younger and enrollees had lower initial health risk scores.

- Decreases were seen in inpatient admissions, emergency department visits, primary care visits, and laboratory services. There was an increase in specialist visits.

- Use of preventive services increased 23 percent. There was no significant change in use of services for members with diabetes.

Humana Smart Suite/Coverage First:[64]

- In a test with its own employees in Louisville that began in 2001, the first year resulted in a 4.9 percent claim trend compared to a projected trend of 19.2 percent, resulting in $2.1 million in savings. Inpatient admissions decreased; outpatient was unchanged, and there was an increase in physician office visits, due to an increase in primary care, preventive and well baby visits. Rollout to all Humana location in year two showed similar results. Results were measured for the entire employee group, not just for the subset who selected the high deductible Coverage First products.

- SmartSuite was offered to the commercial market in 2003 and the health plan has information on approximately 140,000 members who have been enrolled for a year or more. Utilization changes are similar to that observed in the Humana employee population—a -5.6 percent trend compared to a projected trend of 14.1 percent. The lower trend is primarily due to lower utilization.

- Healthier employees are the first to move to the high deductible products and selection effects varied with the product penetration. Groups with under 20 percent Coverage First penetration had cost of $77.90 PMPM while groups with 60 percent to 80 percent penetration had costs of $129.37 PMPM.

Wellpoint:[65]

- Experience is based upon 800 employers and 400,000 members enrolled across all size markets. Case studies show that penetration varies with benefit and premium strategy; with a reported range of 3 percent to 45 percent.

- Full replacement strategy with Lumenos accounts indicate behavior change, including increase in preventive care to 5 percent of claims, reduce outpatient visits 18 percent, and 15 percent reduction in pharmacy costs with 92 percent generic substitution rate.

Table 6

Tactic Evidence Summary

Inpatient and Outpatient Benefit Design: High Deductible and Consumer Directed Health Plans

Employer Objective: Introduce incentives for employees to effectively manage their use of health care services

Intended Result: Reduce the cost of health care benefits while maintaining or improving the quality of care

Research Question	Type of Evidence	
	HSR	AHBR
Is there good evidence that the tactic will achieve the intended result?	Partial	Partial
Is there good evidence that the tactic may interfere with achievement of other benefit objectives?	Partial	No

Comments:

Potential of negative health impacts appears to depend on product design.

4. Pharmacy Benefit Design Tactics

With the advent of point-of-sale (real time) pharmacy claims processing in the early 1990s, the variety of pharmacy benefit plan designs exploded. In 1993, one major national insurer administered 1,300 different pharmacy benefit plan designs for 800 employer groups.[66] This design flexibility led to an explosion of experimentation with diverse pharmacy benefit design that continues to this day.

One consequence of the huge variety of pharmacy benefit designs is that analysis of single plan design features is more difficult and this is reflected in the research literature described below. Most studies reviewed encompass multiple plan design features or comparison plan designs that differ from those found in randomized controlled trials (RCTs). Given the difficulty of teasing out the effects of specific plan design features, the findings are grouped into two broad categories:

1. The form of cost sharing used: coinsurance vs. copayment; and,

2. Cost sharing intended to increase value

As an overview, the studies reviewed for this paper found that increased cost sharing:

- Increases plan participants' share of pharmacy costs and reduces plan sponsors' costs;

- Decreases and redirects utilization of pharmacy benefits, but does not necessarily distinguish well between non-essential and essential drugs;

- Can lead to a reduction in the use of essential drugs, which can lead to an increase in adverse medical events (and associated medical and hospital costs), particularly among those with lower incomes or chronic illness; and,

- Can increase value by increasing the use of lower cost generic drugs.

Given the strong desire of plan sponsors to both save money and maintain or improve the quality of pharmacy benefits, this inquiry also searched for studies directed at countering the negative effects of cost sharing. Although the research in this area is quite limited, there was some encouraging evidence in this regard. A summary of principal findings are presented in Table 9, below, and is followed by the detailed findings.

Table 7

Tactic Evidence Summary

Cost-Sharing in Benefit Pharmacy Benefit Plan Design

Employer Objective: Encourage value purchasing of prescription drugs by enrollees

Intended Result: Reduce costs while maintaining or improving the quality of care

Research Question	Type of Evidence	
	HSR	**AHBR**
Is there good evidence that the tactic will achieve the intended result?	Partial*	Partial*
Is there good evidence that the tactic may interfere with achievement of other benefit objectives?	Yes	No

Comments:

*"Partial" evidence in this case means that there was evidence that increased cost sharing would reduce spending, but there was not evidence demonstrating "maintenance or improvement of quality" There is good HSR and AHBR evidence that reduced out-of-pocket costs for generic prescriptions relative to brands can encourage generic utilization and reduce costs with no negative effect on quality. There is also good HSR evidence that the impact of cost sharing varies by diagnosis, drug category, health status, and income and good AHBR evidence that the use of three-tiered plan to reduce relative cost of chronic medications and reference pricing may increase value purchasing by enrollees.

The Form of Cost Sharing Used: Coinsurance vs. Copayment

Employers are changing their pharmacy benefit plan cost-sharing provisions to include tiers[67] and to use coinsurance[68] instead of copayments.[69] Both of these plan design features are vehicles for using financial incentives to affect the insured's behavior. Use of tiers in pharmacy benefit plans has become the norm, with 90 percent of employers reporting that their plans include two-, three- or four-tier cost-sharing formulas.[70] The basic idea behind tiering of pharmacy benefits is similar to that behind other tiered health benefits (e.g., in- and out-of-network benefit payment differentials), namely to provide financial incentives for employees to use designated prescription drugs. A familiar example is a benefit plan design under which an employee incurs a lower copayment for generic drugs than they would for the brand equivalent.[71]

Coinsurance and copayments are types of cost sharing—plan design features that set the "effective price" of prescription drugs purchased by covered employees. The use of coinsurance instead of copayments offers two principal advantages to employers. Unlike copayment designs, coinsurance:

1. Automatically increases cost sharing as prescription drug costs increase; and,

2. Makes the price of prescriptions more transparent to employees.

Using coinsurance tiers instead of copayment tiers is a benefit design tactic intended to take advantage of these two differences. The price transparency feature of coinsurance in particular is very consistent with employers' growing interest in consumerism and the related goal of activating consumer involvement in health care purchasing decisions.

Our inquiry found no research on the specific question of whether the form of cost sharing makes a difference, i.e.:

> If a tiered pharmacy benefit plan design were to maintain the current level of cost sharing between the plan and the employee, but to change from copayment to coinsurance, would the increased price transparency influence employee behavior?
>
> Would price transparency in and of itself increase consumers' value purchasing?

Research regarding the level of cost sharing is presented below.

Cost Sharing Intended to Increase Value

Cost sharing intended to increase value encompasses a wide range of plan design provisions that are often implemented in combination with one another, for example:

- Increased cost sharing at the point of service (e.g., deductible, copayment, coinsurance);

- Cost-sharing intended to encourage changes in the use of prescription drugs, for example:
  - Tiered cost sharing, such as:
    - Two-tiers, for example, lower cost sharing for one tier of drugs (often generics) than for a second tier (often brands); or,
    - Three-tiers, for example, lower cost sharing for generics than for preferred brands and lower cost sharing for preferred brands than for non-preferred brands;
  - Step-therapy, a requirement, often subject to penalty if not followed, that lower cost prescriptions be tried prior to approval of higher cost drugs;
  - Prior authorization, a requirement to provide information and obtain approval prior to receiving benefits for selected prescription drugs; and,
- Lower relative cost sharing to encourage filling prescriptions through the mail.

Some of these cost-sharing designs are intended to increase value by saving money without reducing quality. For example, incentives to use mail order as a delivery mechanism are intended to take advantage of the higher discounts generally offered by highly automated mail order pharmacies when compared to retail discounts.

Incentives to use generics or preferred brands are intended to save money while providing a benefit for equivalent or virtually equivalent therapeutic results. Step-therapy is used in situations where the therapeutic equivalence of alternative prescription drugs is more variable; hence, the concern about quality causes the financial incentive to be applied more flexibly. Prior authorization is a benefit design tool used to validate the medical necessity for particularly expensive drugs, but also is often used as a safety control, for example, to help make sure that pregnant women do not use selected drugs.

There is strong HSR evidence that increasing prescription drug cost sharing can reduce an employer's costs, but there is also some evidence that some such tactics may reduce quality (and therefore, value) or interfere with other benefit objectives.

As discussed below, these findings depend on factors that make it difficult to generalize, such as:

- Prescription drug prices during the study period;
- The type and level of cost sharing before a change;
- The amount of increase in cost sharing;
- The impact of cost sharing on out-of-pocket costs for different tiers (e.g., generic, preferred brand, non-preferred brand) of drugs; and
- The socio-economic and health status of individuals in the covered population.

Cost Sharing Generally Reduces Spending on Prescription Drugs

One study (Joyce, 2002) found that the following benefit design changes reduce spending on prescription drugs:

- Increasing copayments;
- Adding higher copayments for non-preferred brand drugs; and,
- Mandatory generic substitution.

Use of cost sharing to encourage generic substitution has been common for many years. The first plan designs intended to encourage generic substitution typically set the copayment for generic drugs at 50 percent of the level for the branded versions of the same drug. Since generics can cost as much as 70 percent or 80 percent less than brands, reduced copayments for plan participants can reduce costs for employees and employers without affecting the quality of care. In 1990 the change from a flat $5 copayment plan (i.e., a $5 copayment for all drugs) to a split copayment ($5 generic/$10 brand) would have reduced projected claims expense by approximately 10 percent.[72]

In recent years, a number of factors have changed the landscape with respect to generic drugs, for example:

- The overall price levels of prescription drugs increased;
- Public acceptance of generics increased;
- The number of brands for which generics were available increased; and
- A number of new single-source drugs[73] with potentially superior effectiveness for conditions treatable by generics.

These factors make quantification of the impact of generic incentives somewhat of a moving target. For example, a change from a flat $5 copayment to a $5/$10 split copayment today would only reduce prescription drug costs by about 5 percent.[74] The Joyce study (2002) referenced above found that making generic substitution *mandatory* in a plan that already had a split (two-tier) copayment design saved 8 percent. More recent still are the early reports of Consumer Directed Health Plan which subject prescription drugs to high deductibles, often $1,000 or more, along with all other medical expenses. These reports uniformly have found that, when plan participants pay 100 percent of the cost of drugs out of their own pockets (either directly or from Health Savings Account (HSA) or Health Reimbursement Arrangement (HRA) funds), their rate of generic utilization is higher than comparable populations. Examples of such findings are:

- Aetna (2005) found that its Aetna Health Fund members (who had access to HRA funds) averaged 48.5 percent generic utilization compared to 44.7 percent for PPO members who did not;

- Galen Institute (2004) reported a 95 percent generic substitution rate[75] for enrollees in Definity's consumer directed products compared to a "norm" of 85 percent; and,

- Lumenos (2004) reported the results of a customer satisfaction survey indicating that 90 percent of its customers chose generic drugs over brand drugs.[76]

Another study of 96 employer groups found that cost sharing tended to increase the use of generic drugs and mail order delivery and that this generates savings for both employer and employee. The study also found that addition of a third tier of copayments can have the effect of reducing spending only for the employer.[77]

The question of "who saves?"—the plan and/or the employee—is largely a function of the specific facts, but, generally, as cost sharing increases, the greater the savings for the plan and the less for the employee.[78]. While the cost reductions that result from cost sharing are typically expressed as an average amount or percentage for a group of employees, there is also evidence that the impact of such changes affects individuals quite differently. For example, cost sharing affects the utilization of different drugs to varying degrees.[79] Doubling copayments had the greatest effect on non-steroidal anti-inflammatory drugs (NSAIDs), on drugs that were used intermittently or that were available over-the-counter, such as analgesics or antihistamines, and had the least effect on drugs used to treat chronic conditions such as hypertension or depression. Prior authorization programs, which use potential significant out-of-pocket cost as an incentive, have also been found to reduce Medicaid program spending on NSAIDs.[80]

Step therapy is another plan design tactic that uses financial incentives to encourage plan participants to try less costly alternatives before the plan pays for more expensive prescriptions. A study of a large employer-based plan (Motheral et al., 2004) also found that such tactics affect intermittently used drugs such as NSAIDs, or proton pump inhibitors (PPIs)—used for peptic acid disease) much more than chronic medications such as serotonin reuptake inhibitors (SSRIs) used to treat depression.

Cost Sharing Can Interfere with Other Benefits Objectives

As noted at the outset of this report, employers not only want to control health care costs, but also want to achieve other benefits objectives, such as attracting and retaining employees, increasing employee productivity and increasing job satisfaction. There is good evidence that increasing cost sharing can have a negative effect on these objectives. For example, the last study noted above (Motheral, et al., 2004) also found that step therapy programs tend to have a negative effect on member satisfaction and a survey of a

large managed care population in the Western United States determined that members in three-tier plans are less satisfied with their plan than two-tier plan members (Nair, 2002).

Another employer concern about cost sharing is that it may prompt employees to forego taking needed drugs and that this could have negative consequences on their health and their productivity at work and on other direct health care expenditures. For employers with lower income or older workers, there is good evidence that suggests that this should be a concern.

A large study performed in Quebec, for example, found that introduction of cost sharing where there had been little or none decreased utilization of both essential and non-essential drugs among the approximately 150,000 people studied. The researchers also found that reductions in essential drugs were associated with higher rates of serious adverse events and emergency room visits.[81] A study of seniors found that more aggressive levels of cost sharing caused poorer adherence to medications and higher occurrences of adverse health outcomes. They also found that these negative effects were more pronounced for lower income individuals.[82]

One study of a general US-based PPO population funded and conducted by a PBM found that increased cost sharing reduced growth in net cost to the plan and did not cause increased office visits, hospitalizations or emergency room visits, nor were there declines in prescription-filling for several selected chronic medications.[83] Due to limitations in the documentation of data sources and methods of analysis for that study, it is not possible to determine the effects of the cost sharing on lower income or older employees.

Tactics to Counter the Potential Negative Consequences of Cost Sharing

Current methods of improving medication adherence for chronic health problems are mostly complex, labor-intensive, and not predictably effective (McDonald, 2002). A widely publicized approach to cost sharing is that used by Pitney Bowes.[84] By eliminating mandatory generic substitution, mandatory mail order and step therapy and limiting prior authorization, Pitney Bowes redesigned its plan to reduce the negative effects of cost sharing. Specifically, the plan permitted covered individuals to pay at the generic coinsurance level (10 percent) for asthma, diabetes, and cardiac conditions (even when the condition required treatment with a brand-name drug) instead of the 20 percent level (for selected brands) or 50 percent (other). Preliminary results for this change were:

- Only a modest increase in prescription drug costs;
- Marked increases in utilization of medications for target conditions, including migration to combination[85] products that were previously 3rd tier drugs;
- Reduced total (medical + pharmacy) and pharmacy costs for the treatment of diabetes and asthma;
- Reduced use of "rescue" drugs and increased use of "controller" drugs for asthma; reduced hospitalization; and
- Increased hospitalization[86] for diabetics (but still below benchmark levels) and significant reduction in emergency room visits.

A final type of quality-based pharmacy benefit design is reference pricing. This tactic entails establishing a plan benefit for an effective prescription therapy and requiring the patient to pay the difference between the cost of the drug selected and the reference price. A study of elderly patients in Canada found that use of this approach for ACE inhibitors does not result in patients halting treatment for hypertension, nor does it increase health care cost and utilization.[87]

5. Health Promotion, Health Risk Reduction and Chronic Care Management Tactics

There is a growing consensus that behavior is perhaps the leading determinant of health status.[88] By 2000, most HMO medical directors in the United States agreed that health behavior is a key determinant of health[89] and today, so do most large employers. A 2005 PricewaterhouseCoopers survey found that 80 percent of senior corporate executives considered provision of financial incentives for employees to live healthier lifestyles was the most promising option for reducing corporate health care costs.[90] Another 2005 survey of large employers found 39 percent offer incentives to employees to complete a health risk appraisal and 36 percent offer incentives to employees to improve personal health (36 percent)[91], and a third reported that 95 percent of large companies surveyed had either implemented (62 percent) or were planning to implement (33 percent) programs to improve employee health.[92] Finally, in this era of global competition, it is noteworthy that the European Union recently reported that 600 million work days were lost due to illness-related absenteeism reduced GDP by 1 percent to 3 percent.[93]

This section focuses on health benefit design tactics intended to improve health behaviors to prevent chronic disease from materializing (primary prevention) and to better manage leading chronic disease when present in their employee populations (secondary prevention). A sample of the most prevalent target behaviors and chronic diseases is provided in Table 10.

Table 8

High Prevalence Preventive Health Behaviors and Chronic Diseases
Risk Reduction: Preventive Health Behaviors
Nutrition
Physical Activity
Alcohol and other drug misuse
Smoking
Risk Management: Chronic Diseases
Asthma
Cardiovascular disease
Depression
Diabetes
Low back pain
Source: Center for the Advancement of Health, *Health Behavior Change in Managed Care: A Status Report. Purchasers' Report*. (2000)

In a 2000 review of health behavior change in managed care settings, the Center for the Advancement of Health concluded:

> Approximately half the nation's premature deaths from the 10 leading causes of mortality are attributable to factors that can be controlled, many of which are behavioral: tobacco use, unhealthful diet, lack of exercise, alcohol and drug misuse, and risky sexual behavior. Behavioral health risks are also linked to higher ambulatory care and hospitalization costs, with preventable illness accounting for as much as 70 percent of all medical care spending.[94]

Below, this section presents the findings on benefit tactics that are intended to change these trends by changing the behavior of individuals and thereby to reduce risks and prevent the onset of chronic disease (Health Promotion)[95] and then to manage the course of chronic disease better when it occurs (Disease Management).[96].

Health Promotion Tactics

"Health Promotion" may be defined as activities or programs intended to reduce risk factors and improve the health status of individuals in a target population. It is essentially an effort to improve health by changing the behaviors associated with the development of chronic disease. There are myriad employment-based and community-based programs that fall under this definition. The general name may be "health promotion" or "wellness" and familiar specific program elements may include "smoking cessation" or "weight loss" or "exercise" or "healthy nutrition." What all of these programs have in common is a focus on behavior change as a core ingredient of success.

Table 11, below, summarizes the findings regarding the success of these programs. The literature is broadly consistent in finding that unhealthy behavior has a negative impact on health and there is increasing evidence that changing unhealthy behaviors can reduce health care utilization and cost and, by reducing absenteeism, can improve worker productivity.

The weakest link in the chain of evidence is the question of return on investment (ROI) and much of this has to do with timing. Just as chronic diseases take many years to develop, so can it take years for individuals to change behaviors and for the effects of those changes to translate into improved health. Given that voluntary employee turnover in the United States averages 20 percent per year,[97] one employer's investment may yield returns to a subsequent employer. Whether growing employer adoption of health promotion is due to recognition that they will benefit from other employers' programs or that such programs help achieve other benefits objectives, e.g., employee satisfaction, or some other reason(s) is a matter for future research.

Table 9

Tactic Evidence Summary **Health Promotion Programs**		
Employer Objective: Increase value of health benefits by encouraging participation by high-risk employees in health promotion programs **Intended Result**: Reduce the prevalence of unhealthy behavior among employees in order to reduce health care costs and increase workforce productivity		
Research Question	Type of Evidence	
	HSR	AHBR
Is there good evidence that the tactic will achieve the intended result?	Yes	Yes
Is there good evidence that the tactic may interfere with achievement of other benefit objectives?	No	No
Comments: Effectiveness of interventions varies based on behavior targeted and methods used to intervene. Also, the positive effects of health promotion activities often manifest themselves over many years whereas the costs of health promotion programs tend to be incurred "up front" -- the combination of long term returns and near term costs tend to dampen return on investment (ROI) ratios.		

Health Promotion Reduces Individuals' Health Risks, Health Costs and Absenteeism

There has been much written about the effects of health promotion in general and specific to the behaviors mentioned above (nutrition, physical activity, alcohol and other drug misuse, and smoking) and others (e.g., more recently, management of stress). It is beyond the scope of this study to delve into the research on each of these areas, but rather to identify the findings and themes that have emerged and that are of interest to employers. As an overview, the literature suggests that:

- Unhealthy behaviors are associated with higher health care costs;
- Health promotion programs can be effective in reducing risks for targeted populations;
- Reducing health risks can reduce health care costs and reduce absenteeism;
- The strength of the relationship between risky health behavior and health costs/absenteeism is greater for some behaviors than for others; and
- The effectiveness of programs designed to improve health behavior also varies, based on the types of behavior change sought and the methods used to effect that behavior change.

The Center for the Advancement on Health (CFAH), with funding from the Robert Wood Johnson Foundation, conducted an extensive study and literature review related to health promotion. Because of the breadth of this study and its target audience—health care purchasers—its findings should be of great interest to employers and other health care purchasers. (Complete text of the study and related evidence summaries are available at www.cfah.org). This study found that:

> …behavior change interventions delivered in health care settings yield positive outcomes. Studies measured the effectiveness of interventions on a wide variety of outcomes, ranging from sustained behavior change to physiological changes with clinical significance (for example, glycoslyated hemoglobin, peak flow rates, and blood pressure) to reductions in health services utilization. Generally, the effects are quite positive in the short term and taper off over time in the absence of effective maintenance efforts.[98]

That study and others also found that the impact of health promotion programs vary greatly based on the type of behavior targeted and the types of interventions employed. For example, a study describing the decision of the Pacific Business Group on Health to expand health benefits to cover pharmacotherapy and behavioral interventions to reduce smoking[99] cited evidence[100] that smoking cessation rates increased substantially when:

- Physicians participated instead of non-physicians;
- Two or more types of clinician participated instead of just one; and
- Three or more types of counseling (e.g., group, individual, telephone) were used instead of just one.

Similarly, worksite nutrition programs that entail screening, referral, and written materials have shown positive effects on cholesterol reduction, but not as great effect as with more intensive strategies such as classes or counseling.[101] Physical fitness programs that entail home-based physical fitness programs are more effective after 24 months than structured sessions at a community center.[102] A literature review on the relationship between health behaviors and health care costs and absenteeism reported that the health risks with the strongest relationship to health care costs and absenteeism were obesity, stress, and multiple risk factors.[103]

That same review also considered the evidence regarding the effectiveness of health promotion programs. Although there were limitations in the research design[104] of all but 4 of the 32 studies reviewed, the author concluded that health promotion programs can reduce absenteeism and health care costs: on average such programs can save approximately $3.50 in health care costs per dollar spent and an average of $4.30 when reduced absenteeism is included in the savings estimates.

Many employers prefer return on investment (ROI) projections, which take into account investments and returns over time, but data to support such projections for individual employers are limited. A survey of health plans, for example, concluded that cost and lack of return on investment information were the principal barriers to adoption of physical activity programs.[105] One study reported that General Motors estimated that health risk appraisals could save $350,000 per year in reduce absenteeism costs, but did not project ROI.[106] The same study also reported that Group Health Cooperative of Puget Sound estimated that there was a 25-30 percent quit rate in its smoking cessation program, but that program costs were not recouped in the short run.

As noted above, employee or, in the case of a health plan, member, turnover can reduce ROI when costs are incurred and an employee terminates employment or a member disenrolls. ROI can also be negatively affected when employees who take advantage of health promotion programs are healthy to begin with.[107] A potential solution to this latter problem is targeting, i.e., identifying employees at risk for chronic disease through health risk appraisals and encouraging those at high risk to participate in health promotion programs. Almost 40 percent of large employers recently surveyed offer incentives for their employees to complete health risk appraisals, a method of educating employees about their health risks and the first step of targeting.[108] This review did not find evidence of the effectiveness of this relatively recent trends, however.

Disease Management Tactics

Generally, disease management programs are efforts to treat individuals with chronic disease more effectively and efficiently. Disease management has received much attention in recent years because the populations it targets typically account for the vast majority of claims expense each year. The National Business Group on Health estimated that 10 percent of claimants account for 70 percent of health care costs during a year.[109] By 2004, 55 percent of employers had implemented disease management programs targeting one or more conditions, up from 42 percent in 2002.[110]

Since most chronic disease cannot be "cured," the purpose of much disease management is to better manage a condition to prevent condition from getting worse and to do this, disease management programs involve multiple components. The Disease Management Association of America defines disease management as:

> …a system of coordinated health care interventions and communications for populations with conditions in which patient self-care efforts are significant. Disease management supports the physician or practitioner/patient relationship and plan of care, emphasizes prevention of exacerbations and complications utilizing evidence-based practice guidelines and patient empowerment strategies, and evaluates clinical, humanistic, and economic outcomes on an ongoing basis with the goal of improving overall health. Disease management components include:

- Population identification processes;
- Evidence-based practice guidelines;
- Collaborative practice models to include physician and support-service providers;
- Patient self-management education (may include primary prevention, behavior modification programs, and compliances/surveillance);
- Process and outcomes measurement, evaluation, and management; and
- Routine reporting/feedback loop (may include communication with patient, physician, health plan and ancillary providers, and practice profiling).[111]

Even though disease management programs meeting this definition are diverse, there is a large volume of evidence that leads to the following summary observations:

- There is strong evidence that disease management programs improve the clinical outcomes of program participants, i.e., disease management improves the "quality" component of the health value equation;
- There is inconsistent evidence about the effect of disease management on health care costs; and
- The effectiveness of and potential cost-savings associated with disease management vary based on the programs' target conditions and the program designs and settings.

Table 10

Tactic Evidence Summary **Disease Management Programs**		
Employer Objective: Encourage patient participation in disease management programs **Intended Result:** Reduce costs of population's chronic disease while maintaining or improving the quality of care		
Research Question	**Type of Evidence**	
	HSR	**AHBR**
Is there good evidence that the tactic will achieve the intended result?	Partial — selected programs and conditions	Partial — selected programs and conditions
Is there good evidence that the tactic may interfere with achievement of other benefit objectives?	No	No
Comments: Program effectiveness varies based on targeted conditions and processes used.		

There have been many published reviews of the evidence concerning disease management in recent years, in both the HSR and Field literature. The widely reported Congressional Budget Office's analysis focused on cost savings and concluded that "there is insufficient evidence to conclude that disease management programs can generally reduce overall health spending".[112] Other reviews of the disease management literature have echoed this finding, but also found positive effects on quality.[113, 114, 115, 116] In one particularly large study, Kaiser studied 25,000 patient-years of data on a disease management program for individuals with coronary artery disease, heart failure, diabetes, or asthma and found favorable trends in most quality indicators, but did not find cost savings.[117]

The results of more focused research on the effectiveness of disease management have been consistent with these general findings, but also provide more texture. For example, a meta-analysis of the diabetes disease management literature concluded: 1) that such programs have improved provider adherence to some clinical practice guidelines but have had less effect on others; and, 2) there was insufficient evidence to judge whether disease management can help diabetics control body weight, blood pressure, and lipid concentrations.[118]

A review of disease management focused on coronary artery disease found numerous positive effects (e.g., patient risk factors, provider adherence to practice guidelines, quality of life, reduce hospital readmission), some evidence of reduced costs, and no effect on mortality or reinfarction rates.[119] Another literature review found that the type and number of interventions included in disease management programs varied greatly.[120]

A study of disease management programs among employers and health plans in 12 representative communities concluded that there was limited evidence of cost-effectiveness, but that employers and health plans are adopting these programs because of a belief that the programs will lead to savings.[121] And a more recent study sponsored by CIGNA Healthcare found that diabetes disease management led to lower costs for participating patients, significantly higher quality, and that the payer saved more than it spent.[122]

The actuarial review of disease management programs referenced above, which did not find that disease management programs in general have a positive ROI, did note studies of various programs that ranged from negative savings to savings of over $6.40 for each dollar spent.[123] The broad and enduring interest among employers and health plan in disease management may be an indicator that the evidence of disease management's effectiveness is improving. Some of the lack of cost savings evidence is due to complexities of measurement[124] and some may be due to the lack of study of rapidly improving program designs. Widespread use by most major health plans use of disease management for their insured business is one indication that they have determined that the investments are worthwhile.

6. Consumer Engagement: Tools and Incentives Tactics

Health care markets have long been known to function differently from traditional competitive markets, and two of the major reasons for this are: 1) the insulation of consumers from the costs of services because of third-party insurance; and, 2) the unavailability of information about the price and quality of the health care services consumers purchase.[125] The tactics discussed in this section represent recent efforts to counter these elements of market failure by: 1) providing consumers with information about the prices and quality of health care goods and services; and, 2) providing financial incentives to activate consumers.

Providing Information on Health Care Price and Quality to Health Care Consumers

There is substantial evidence that consumers seek information about their health and health care, particularly over the internet and that they are likely to find it. Over 100 million Americans have looked to the internet for health information.[126] By 2004, 35 percent of adults had seen information on the quality of health plans, doctors or hospitals, an increase from 27 percent in 2000 and approximately half of those who saw such information said that they used it in making their health care decisions.[127] (A recent survey documented 51 websites offering hospital clinical or patient satisfaction information that were generally available to the public.[128]

A 2005 study found that health care consumers most frequently by far sought information about available treatments (72 percent of information seekers), followed by 39 percent who sought information to compare treatments (39 percent) and 14 percent who sought information about costs.[129]. The relative disinterest among health care consumers in the cost of care is seen in a different light based on an insurer's survey. It found that the average respondent predicted the cost of a Honda within $300, but underestimated by $8,100 the cost of a four-day hospital stay.[130]

That only 14 percent of consumers sought information about health care costs compared to quality underscores the insulation of consumers from cost by third party payment mechanism. With the rapid growth of consumer-directed health plans, and high-deductible health plans in particular, this may change. In August of 2005, for example, Aetna became the first insurer to announce that it would publish the fees it negotiates with physicians in a Cincinnati pilot.[131]

Employers have recognized the role of information in health care purchasing and by 2005, 71 percent provided information to their employees about specific health conditions.[132] The nature of the information provided varies from printed health plan comparisons, to on-line decision aids regarding hospitals or prescription drugs to more "hands-on" telephonic coaching with health professionals.

The evidence on use of health care information by employers as a benefit tactic per se is generally not available (see Table 11), but there is also some relevant HSR that can inform benefit design. As an overview, this study found that:

- Consumers want health care information and increasingly seek it, particularly over the internet—but they have been more interested in information about treatment options than costs;

- Employers are increasingly providing access to health care information for their employees;

- Access to high quality internet-based health care information is lower for those with less education or who do not speak English;

- Information on health plans, providers, and treatment options is very complex, but can be made more comprehensible to individuals by the *way* it is presented; and

- There is virtually no HSR research on the effectiveness of health care information as a benefit tactic, but there is evidence that patient decision aids coupled with counseling can reduce the use of major surgery and otherwise assist consumers in making better health care decisions.

A summary of relevant findings from that literature is presented below.

Table 11

Tactic Evidence Summary **Provide Price and Quality Information to Health Care Consumers**		
Employer Objective: Encourage employees to consider health care cost and quality by providing relevant, timely information **Intended Result:** Reduce the cost of health care benefits while maintaining or improving the quality of care		
Research Question	**Type of Evidence**	
	HSR	**AHBR**
Is there good evidence that the tactic will achieve the intended result?	Partial	Partial
Is there good evidence that the tactic may interfere with achievement of other benefit objectives?	No	No
Comments: Patient Decision Aids with counseling can improve the quality of consumer decisions, reduce use invasive surgery and help with weight loss. One vendor of shared decision making services claims that its services reduce medical trend by 1 percent to 3 percent.		

A 2000 review of the literature confirmed that consumers want more information about their health care, but also found that the information has only "limited impact" on decision making;[133] however, a more recent survey of adults, found that one-third of adults seeking health care information on the internet reported that the information they found did influence their decision-making.[134] Both of these studies came with caveats. Marshall cautioned that publication of data could have unintended consequences, such as gaming, provider focus on what is measured and negative effect on public trust or professional morale. Baker noted that internet use is lower among those with less education and this population's access to useful information may be limited as a result. A study of the quality of health care information on English- vs. Spanish-language websites also suggested that non-English-speakers have less access to high quality health care information through that medium.[135]

Another 2000 controlled experiment sheds some light on how health care information can be made more useful to consumers. That study measured the impact of health plan comparison information (the Consumer Assessment Of Health Plans (CAHP)) on consumers and found that how information was presented was important: providing more explanations to help consumers use the comparative information actually reduced comprehension and perceived relative importance of the data..[136] A subsequent study concluded that three processes can help consumers use health care information: lowering

the cognitive effort needed to use the information, providing information in a manner that relates to consumers' daily lives; and, highlighting the most salient factors to make sure consumers do not miss them.[137] A simple example of the latter recommendation is ordering information on a bar chart from highest to lowest to make information easier to evaluate.

For all of the improvement that has been or may be made in the usefulness of health care information, two-thirds of consumers still report that the following decisions are "complex" or "extremely complex": selecting a health plan, choosing type of coverage (e.g., HMO vs. PPO), and choosing among treatment options.[138] There is good evidence that the human touch, generally a nurse, can greatly help consumers make better health care decisions.

A review of the literature on patient decision aids and shared decision-making concluded that patient decision aids used as "adjuncts to counseling have consistently superior effects relative to usual practices on…indicators of decision quality" (O'Connor, et al., 2004). Perhaps of greater interest to employers, that study also found that there were no negative effects on satisfaction and that there was "strong evidence" that patient decision aids reduced the use of invasive surgery by 21 percent to 44 percent.

There is also evidence that the "human touch" need not be done in person. A randomized trial of an internet weight loss program alone compared to the same program with behavioral counseling via e-mail showed that the latter yielded an average weight loss at 12 months that was double that of the program without e-mail counseling.[139]

We found no studies of the return on investment of providing health care information to consumers. There is some evidence from the field that major carriers view such information sources as an expense and not a major service differentiator: in a recent competitive bidding for a large (20,000+ employees) employer, all four respondents to the RFP used the same vendor to provide internet-based hospital quality and health care decision support tools. Cost is also a barrier to more extensive use of decision aids with counseling,[140] (however at least one provider of such services, Health Dialog, claims that its shared decision-making services reduce health care trend by 1 percent to 3 percent.[141]

Providing Incentives to Activate Health Care Consumers

Recognition of the important role behavior plays in health and health care, has generated great interest in using incentives to "activate" consumers in particular ways. For example, consumers' relatively low interest in seeking information about health care costs suggests that there is an opportunity to "activate" health care consumers so that they behave more like consumers of other goods and services. Economic theory would suggest that, were consumers more engaged in their own health and their health care, they would seek information to help them make better decisions.

Similarly, there is interest in using rewards and penalties to encourage or discourage specific types of behavior. Numerous reports from the field recount such programs, for example:

- Johnson & Johnson offered $500 in benefit credits to people who met goals related to smoking, exercising, controlling high blood pressure and cholesterol;[142]

- Destiny Health provides "points" to individuals who participate in exercise, nutrition or other health behavior program and the points can be redeemed for awards not unlike those of a frequent flyer program;[143]

- One county decided to use more of a "stick" than a "carrot": employees who refuse to complete a health questionnaire or fail to accumulate enough points will pay higher contributions to premium and higher deductibles and copayments;[144] and

- MGM Grand provides $120 to employees who enroll in Weight Watchers.[145]

Each of these reports from the field comes with evidence of favorable results:

- Johnson & Johnson reported that, in the eight years since their program began, employee participation grew from 26 percent to over 90 percent; high-blood pressure cases dropped from 10 percent to 1 percent; high cholesterol cases dropped from 66 percent to 43 percent; and, the company saves "nearly $225 per employee in avoided hospital stays and reduce doctor office visits";[146]

- Destiny Health reports that 79 percent of program participants say they have started an exercise or nutrition program compared to only 32 percent for non-participants;[147]

- The county assumes that 60 percent of their population will participate and that the county will save $32.8 million over three years starting in January, 2007;[148] and

- MGM Grand reported that 212 employees lost 1,561 pounds in one year.[149]

None of the reports is from a peer-reviewed journal article, and therefore the "evidence" of effectiveness should be taken in that context. The Johnson & Johnson report does not disclose the details of their evaluation, for example, were there other factors, such as new drug introductions, that might have affected results or how were savings measured? Destiny Health's report does not differentiate between program participants who would have started (or already were) exercising; and, MGM Grand's report does not tell us how many pounds "stayed off" or the impact on health care costs.

These limitations of the reports from the Field are not to say that the programs are of limited value. Rather, the growing prevalence of incentive-based programs is another signal of the importance employers are placing on health behavior. With the advent of Health Reimbursement Arrangements (HRAs) in 2002[150] and Health Savings Accounts (HSAs) in 2004, the adoption of incentive-based benefit plan designs accelerated. By September, 2005, over 2.4 million workers were covered by health plans that were accompanied by the possibility of having such arrangements or accounts.[151]

As previously discussed, HRAs and HSAs are typically accompanied by high-deductible health plans (HDHPs). HRAs are employer-funded health plans that can be designed quite flexibly whereas HSAs are individually owned accounts to which employer or employee contributions may be made if he or she is enrolled in a fairly inflexibly design HDHP.[152] The idea behind HDHPs and an HRA/HSA is that the high deductibles provide a strong incentive for individuals to pay attention to the cost and quality of health care services, while funds in their HRA or HSA provide money that can be used to lessen the impact of the high deductible.

In addition to the accounts' lessening the impact of high deductibles, HDHPs offered with accounts frequently cover preventive services at 100 percent to reduce the potential for individuals to forgo needed care. These arrangements are so new that only one example of peer-reviewed research on their effects could be found, and that study encompassed an assessment of only one large employer. That study found that after two years HDHP/HRA enrollees had lower expenditures than PPO members but higher than HMO members; had fewer physician visits than either PPO or HMO members; had significantly higher hospital admission rates and costs and total physician costs than PPO or HMO members.[153]

Among the health insurers, Aetna released perhaps the most comprehensive study of results from the Field. They found that high deductible health plans in conjunction with accounts have effectively lowered cost increases compared to people enrolled in PPO plans. Aetna has concluded that the lower rate of increases can be more dramatic with a full replacement product. For one plan sponsor who offered Aetna HealthFund as a full replacement, two year trend decreased an average of 2 percent, which was driven by a first-year medical cost decrease of 19 percent. In addition:

- Employers who offer Aetna HealthFund as an option, and are fully committed to investing in benefit design and contribution strategy changes, communication, education, and leadership engagement, show excellent financial results across all of their Aetna product offerings.

- Employers experience better enrollment when fully committed to benefit design and contribution strategy changes, communication, education, and leadership engagement. [154]

While the Aetna report discloses more about their study than most reports in the trade literature, their research was not peer-reviewed, and, like the Parente results, was based on relatively short-term experience. Notwithstanding the limited evidence about the effectiveness of such "activation" strategies, numerous surveys report that HDHPs with "accounts" will grow.[155] In addition to using such accounts to activate consumers facing high deductibles, there is also interest in using them as repositories for incentive payments, for example, an employer may deposit money in an employee's account if they participate in wellness or disease management programs. HSA "comparability" rules and HIPPA non-discrimination rules are regulatory constraints that limit the mechanisms employed, however. A summary of the limited research on incentives to encourage individuals to become better health care consumers is provided below in Table 14.

Table 12

Tactic Evidence Summary

Provide Incentives For Individuals To Become Better Health Care Consumers

Employer Objective: Use incentives to encourage health care consumers to make better health and health care decisions, taking into account cost and quality

Intended Result: Reduce the cost of health care benefits while maintaining or improving the quality of care

Research Question	Type of Evidence	
	HSR	**The Field**
Is there good evidence that the tactic will achieve the intended result?	Partial	Partial
Is there good evidence that the tactic may interfere with achievement of other benefit objectives?	No	No

Comments:

Third party payment systems have long been recognized as diminishing the incentive for consumers to act as if they were spending their own money. "Re-alignment" of incentives to counter this influence has been a major area of interest among employers in recent years. While early results are directionally encouraging, there is much more research to be done.

V. Summary and Conclusions

Introduction

Rapidly rising health care costs are driving employers to seek new and innovative ways to improve the value of their health benefit plans. Because employers have other important benefits objectives such as attracting and retaining employees, many employers have adopted quality-based benefit design tactics to balance health care cost containment and those other objectives. Generally, quality-based benefit design tactics seek to increase the value of health care benefits by increasing the ratio of quality—quality of care or improved employee health status—to cost. The purpose of this study was to review the evidence that such tactics actually increase value.

Findings on Specific Quality-based Benefit Tactics

This study uncovered evidence regarding the effectiveness of selected quality-based benefit design tactics in six focus areas:

1. Health Plan Options, Eligibility and Contributions
2. Provider Selection and Performance Differentiation
3. Inpatient and Outpatient Benefit Design
4. Pharmacy Benefit Design
5. Health Promotion, Health Risk Reduction and Chronic Care Management
6. Consumer Engagement: Tools and Incentives

A tactic was judged to be "effective" if there was evidence that the tactic achieved the intended result, generally "to increase value." The major findings in each of these focus areas, with the exception of "return on investment (ROI)," which is discussed separately, are presented below.

Health Plan Options, Eligibility and Contributions

The majority of evidence on health plan options, eligibility, and contribution strategy is based upon the accumulated experience of health plan actuaries, benefits consultants, and large employers that have been supplemented by survey research, case studies, and some academic analysis of natural experiments when employers have modified their benefit offering.

The required premium contribution remains the most important consideration in employee health plan selection. Employers can effectively move employees to high value health plans with a contribution strategy that lowers the cost of that specific option relative to the cost of other health plans. In general, a cost differential of 10 percent or more is most effective. However, even such differential may not influence those with

higher health care needs or a preference for broader network delivery systems. While employers have worked with incentives in the specific benefit design, such as point of service cost sharing, there are fewer examples of use of variation in the contribution strategy, such as risk adjustment or income-related premium contributions to moderate the strong influence of actual lower dollar premium cost.

Case studies, both in the academic literature and from employers and health plans in the field, demonstrate that is the interaction of the type of health plan options, benefit design and contribution strategy that must be combined to influence employee choice of high value plans.

Provider Selection and Performance Differentiation

The dominant forms of employment-based health care benefit design in the United States today, PPO and HMO, provide higher benefits when services are provided by in-network providers. In the case of PPOs, benefits for out-of-network services are lower than those provided in-network, and, in the case of HMOs, there is generally no benefit for use of out-of-network providers. Financial incentives in the form of lower contributions toward premium are commonly used to encourage employees to select network-based plans and, once they have enrolled, higher benefits for in-network services encourage plan participants to seek services from in-network providers.

The Provider Selection and Performance Differentiation Area of Focus contains quality-based health care benefit design tactics that seek to increase the value of health care benefits based on how network providers are: a) selected; and, b) paid.

Provider Selection

Health plans have used quality and cost criteria to select network providers for many years. Examination of providers credentials and, in the case of "Centers of Excellence," selected outcomes measures, have accompanied consideration of the extent to which network hospitals, physicians and other health service providers were willing to accept financial terms such as discounts or capitation payments. In the early 2000s, health plans began to employ quality criteria more broadly in selecting "high performance" or tiered networks.

Health plans typically select a subset of network hospitals or physicians to be in the "most preferred" (third) tier and encourage their use by the same incentives noted above, namely lower premium costs for plans with tiered networks and higher plan benefits for use of providers in the third tier. The AHBR on tiered networks reviewed for this study generally did not disclose in detail how quality criteria are used[156] to select high performance providers, but did report short-term cost savings. A study by CALPERS identified $36 million savings in 2004 and $45 million in 2005 that resulted from offering fewer plan choices and including among the remaining choices a network that did not include 28 high-cost former network hospitals. None of the studies reviewed identified a

decrease in quality associated with the use of high performance networks, although there was mention of the disruption of patient-provider relationships that would accompany any network change. The studies reviewed also did not disclose the increase in health plans' administrative expense associated with offering tiered network products.

Provider Performance Differentiation

The development of provider performance metrics such as those used in provider selection have also led to new methods of encouraging higher quality provider performance, and, therefore, health care value. Examples of these new methods are public release of provider performance statistics and pay-for-performance (P4P) programs. P4P in particular, like high performance networks, have been used widely only recently, but are growing rapidly.

Although there is limited research on the effectiveness of tactics that utilize provider effectiveness differentiation to improve health care value, the evidence generally is favorable. One recent controlled study found that public reporting had a positive effect on hospital quality. A review of nine randomized controlled trials found that P4P generally had favorable effects on provider performance. Limitations of early program evaluations are the variations in the measures used and a concern that these programs emphasize what is measured, as opposed to potentially more important determinants of quality. No reports of the costs to implement these tactics were found.

In addition, there are concerns about early P4P programs, such as their tendency to:

1. reward good performance rather than improvement (and thereby discourage the providers who are ranked low from participating); and

2. increase costs because they:
    a. offer bonuses, but not penalties; and
    b. target underutilization and improved adherence to practice protocols.

Evaluations of more standardized programs such as Rewarding Results, Bridges to Excellence and the California IHA program are underway.

Inpatient and Outpatient Benefit Design

Employers have long designed in- and out-patient health care benefit plans to balance cost and quality. They have known that the scope and level of benefits have a major effect on the services plan participants utilized and this was proven by the landmark RAND study in the 1970s. That study demonstrated that increased cost sharing by plan participants reduced their utilization of health care services, and that, *on average* the reduced utilization had no effect on health status. However, the study also showed that health care consumers were unable to differentiate between necessary and unnecessary care and that higher cost sharing had an adverse effect on the sick and those with lower income.

Managed care plan designs, which became the dominant form of employer-sponsored health benefits during the 1980s and 1990s typically limited cost sharing for in-network services to modest fixed copayments and reduced reliance on deductibles and coinsurance. Recently, as employers began to turn their attention to Consumer Directed Health Plan (CDHP) designs, there has been a renewed interest in the high-deductible health plans (HDHPs) that are a common feature of CDHPs.

CDHPs that employ HDHPs typically include features intended to counter the negative effects of cost sharing identified by RAND. For example, they often cover preventive benefits without application of a deductible and include "accounts"—Health Reimbursement Arrangements (HRAs) or Health Savings Accounts (HSAs)—that can assist plan participants in paying for some of their increased out-of-pocket costs. CDHPs also typically provide information and tools to help plan participants make better health and health care choices and care management and coordination services to support plan participants in navigating the health care delivery system. (Note: Consumer tools and care management and coordination programs are discussed below.)

Early AHBR studies of CDHP have uniformly reported results that would be expected to be associated with high deductibles, for example:

- lower premiums than alternative plans with lower cost sharing;
- reductions in doctor's office visits;
- reduced prescription drug claim cost; and
- increased use of generic drugs.

These findings should be viewed with caution when judging the impact of CDHP on health care value for several reasons. First, CDHPs generally have been offered as an option and studies to date have not addressed systematically the potential for relatively younger, wealthier and/or healthier employees to select them. Second, employers offering CDHPs often provide funding for the HRAs or HSAs that accompany HDHPs, but insufficient time has elapsed to determine for how long employers are likely to sustain such funding. Finally, the negative effects of financial barriers to care may take years to manifest themselves, but CDHPs have been in place for but a few years. Employers

implementing quality-based benefit design should carefully weigh the early, favorable results of CDHPs reported by their sponsors against these cautionary notes.

Pharmacy Benefit Design

Highly automated pharmacy plan administration has enabled a broad range of quality-based benefit design tactics for pharmacy benefits. These tactics generally apply plan cost sharing provisions in targeted ways to encourage particular types of patient behavior. Examples reviewed for this study are:

- increased cost sharing to reduce the use of drugs and/or to reduce the share of drug costs born by the plan;
- higher cost sharing to encourage the use of some drugs instead of others (e.g., generics instead of brands, preferred brands instead of non-preferred brands);
- financial penalties if step therapy is not used;
- financial penalties if prior authorization for selected drugs is not received;
- reduced cost sharing to encourage the use of mail delivery of drugs; and
- reduced cost sharing to encourage the use of drugs associated with improved outcomes for selected conditions such as diabetes or asthma.

There is substantial evidence that increased cost sharing can reduce the use of prescription drugs and that higher cost sharing for selected drugs can decrease their use relative to alternative, lower cost prescriptions. These tactics can reduce plan sponsors' costs, but can have varying effects on plan participants. On the positive, side, plan design tactics that encourage the use of generic drugs clearly increase the overall value of health benefits by reducing plan sponsor and plan participant costs without having a negative effect on quality.

On the other hand, increased cost sharing across-the-board can reduce the use of necessary drugs and increase adverse medical events and associated hospital and medical costs. A more refined approach, recently detailed at Pitney Bowes,[157] uses targeted reductions in patient cost sharing to encourage use of certain drugs by diabetics—and this approach was found to reduce the overall cost of treating these patients.

One lesson from the pharmacy benefit literature is that the details of pharmacy benefit design can be as complex and extensive as the vast variety of prescription drugs. Innovations in prescription drug therapy, movement of drugs off patent to generic status and changes in prescription drug prices can alter the value of a prescription drug benefit plan almost overnight.

Health Promotion, Health Risk Reduction and Chronic Care Management

This Area of Focus includes quality-based health benefits tactics that seek to change behaviors that are associated with the development of chronic disease and to improve the treatment of chronic disease when present.

Health Promotion and Health Risk Reduction

There is widely accepted, strong evidence that unhealthy behaviors (e.g., smoking, poor diet, lack of physical exercise) are associated with the development of chronic disease, a principal source of the majority of health care spending today. There is also good evidence that health promotion programs can be effective in reducing risks for targeted populations and that risk reduction is associated with lower health care costs and reduced absenteeism.

Employers increasingly have included health promotion and risk reduction components in their health care benefit programs, perhaps more because of the strength of the evidence noted above than due to documented increases in value *per se*. The literature reviewed for this study uncovered wide variation in the extent to which specific behaviors are associated with health care costs and absenteeism and the effectiveness of specific programs in mitigating costs and absenteeism based on their design and the targeted behaviors or diseases.

Chronic Care Management

Growing recognition of the role of chronic disease in driving health care costs has increased attention to programs designed to better manage the care of chronic disease when it arises. Several recent reviews of the literature consistently concluded that disease management programs can improve clinical outcomes (i.e., "quality"), but there inconsistent evidence regarding the effect of such programs on health care costs. As in the case of interventions design to impede the development of chronic disease, disease management programs vary in their cost-effectiveness based on the conditions targeted and program design and setting.

Consumer Engagement: Tools and Incentives

One objective of Consumer-Directed Health Plans (CHDPs) is to engage employees in their own health and health care—to activate them so that they are more like consumers of other goods and services. Under this theory, activated consumers will in turn drive the health care market to function more like other markets, i.e., to increase quality and to become more efficient.

Of course, it is too early to determine whether CDHPs, which have yet to account for more than a percent or two of health care spending nationwide, will achieve these objectives. This study did review evidence regarding two key components of CDHPs: incentives used to activate consumers and the information and tools provided to assist them.

Providing Information to Consumers on Price and Quality

There is substantial evidence that consumers seek and find information about their health and health care, particularly on the internet. Unlike other consumers, health care consumers typically do not seek cost and quality information; rather, they tend to seek information about available treatments or to compare alternative treatments. "Decision aids" are one type of such information and there is good evidence that decision aids along with counseling (e.g., preference-sensitive decision-making or health coaching) can increase value, for example, by reducing the use of invasive surgery.

Relevant, easily accessible consumer information about cost is generally unavailable. Information about the quality of health plans, doctors or hospitals has been seen by a bit more than one-third of adults, and half or fewer of them use the information they see to make health care decisions. There is virtually no evidence about the effect of consumer information and tools on the cost and quality of health care.

The advent of CDHPs that entail High-deductible Health Plans (HDHPs) in particular, may change this state of affairs rapidly. Although early CDHP vendors often used the same subcontractors to provide certain types of information and tools (e.g., hospital quality comparisons), large employers are now driving vendors to differentiate their offerings based on the information and tools they offer. For example, whereas network fees generally have been considered proprietary, Aetna recently announced a pilot to make public its negotiated physician fees in Cincinnati.

Incentives to Activate Consumers

There is an increasing volume of AHBR evidence about incentives to activate health care consumers, but little such evidence has appeared in peer-reviewed journals. The reports reviewed for this study had several features in common:

- incentives were usually modest amounts of money or "points" that could be accumulated and used for rewards;
- the incentives typically rewards for participation in a program or, in fewer cases, achievement of certain health status metrics;
- positive rewards were reported upon much more frequently than penalties; and
- details of program design were not disclosed

Notwithstanding the lack of evidence one way or the other about consumer activation incentives, there is great interest among employers and health plans in using such incentives to increase health plan value.

Return on Investment (ROI) Calculations

Many companies consider the return on investment (ROI) of benefit tactics before deciding to implement them. The literature reviewed for this study found very little good evidence regarding ROI, and the lack of ROI evidence is often cited by corporate benefit

managers as a barrier to implementation of new benefit design tactics. There are two major reasons why this barrier exists: measurement challenges and timing.

While neither investment nor return is easy to measure, costs, denominated in dollars, are relatively easier to measure than returns other than dollars, such as quality of care or improved productivity. This imbalance of metrics can cause over-emphasis of financial measures and under-emphasis on other metrics that also have tangible, financial effects. Timing is also an important barrier: while investments are typically made "today," the returns may accrue tomorrow and, if there is high workforce turnover, the returns may accrue to the next employer. Notwithstanding these challenges, the literature did yield some evidence of positive ROI as indicated below:

Short-term

- Provider Performance Differentiation (Partial—AHBR)
- High-deductible Health Plans (Partial—AHBR)
- Increased pharmacy benefit cost sharing (HSR, AHBR)
- Disease Management Programs (Partial—HSR and AHBR)
- Provision of price and quality information to health care consumers (Partial—AHBR)

Long-term

- Provider Performance Differentiation (Partial—AHBR)

Notwithstanding the measurement challenges, the quality-based benefit design tactics discussed in this report also are mostly very new. Because of this there has been insufficient time to evaluate their ROIs even were their measurement straightforward. In addition, as measurements emerge, they will typically address earlier versions of the tactics and will not reflect the lessons and improvements made as more and more employers adopt quality-based benefit tactics.

Implications for Employers

The evidence found during the course of this review comprised traditional Health Services Research (HSR) and Applied Health Benefits Research (AHBR). HSR evidence is typically of academic origin, peer-reviewed, fully described and conducted by independent third parties, but often is not timely or directly relevant to a specific employer's concern. AHBR typically is conducted by practitioners and is more likely to be current and relevant to employers, but is also often conducted by organizations with proprietary interests and is not fully described.

Implication: As a practical matter, employers considering new benefit design tactics must rely on AHBR, and, when doing so, should consider the source and continue to conduct the due diligence that has always been a part of leading companies' benefit design and implementation strategies. At the same time, employers can infer relevant lessons from HSR that inform their health benefits decision-making process.

There is substantial evidence that quality-based health benefit design tactics can increase the value of health benefit plans, but the evidence is not as good or accessible as it could be. As shown in Table 13, there is some published evidence of the effectiveness of all of the quality-based benefit design tactics reviewed for this study, but most of the evidence is incomplete. The most common reasons that the evidence was deemed "partial" are:

- Lack of evidence regarding the impact of a tactic on quality;
- Evidence that some versions of tactics are effective and others are not; or
- Evidence that tactics are effective under some circumstances, but not others.

Implication: Employers contemplating implementation of quality-based benefit design tactics should consider the evidence, but should also give careful consideration to the nature of their own specific employee population, core benefit plan design(s) and company values.

Table 13

Summary of Findings on Quality-based Health Benefit Design Tactics			
		Is there Evidence that the Tactic Will Achieve Intended Result?	
Tactic	**Example**	**HSR**	**AHBR**
Employer Options, Eligibility and Contribution Strategy	Contribution Strategy to Encourage Enrollment in High Value Plans	Partial	Yes
Provider Selection	Tiered Networks	Partial	Partial
Provider Performance Differentiation	Pay for Performance	Partial	Partial
Inpatient and Outpatient Benefit Design	Consumer Directed Health Plans with High Deductible Health Plans	Partial	Partial
Cost-Sharing in Pharmacy Benefit Plan Design	Differential Cost-sharing to Encourage Generic Substitution	Yes	Yes
	Across-the-board Cost Sharing Increase	Partial	Partial
Health Promotion Programs	Encourage Participation of High-risk Employees in Health Promotion Programs	Yes	Yes
Disease Management Programs	Implement Disease Management Programs	Partial	Partial
Provide Price and Quality Information to Health Care Consumers	Provide Health Care Price and Quality Information to Employees	Partial	Partial
Provide Incentives for Individuals to Become Better Health Care Consumers	Offer Incentives to Encourage Employees to Engage in Value Purchasing	Partial	Partial

The quality-based benefit design tactics reviewed in this study are innovations or new variants of familiar tactics. There is always some uncertainty about the effectiveness of innovations and there will be constant learning and modification as experience is gained. Importantly, all of the tactics discussed in this report are currently in use by very large companies and there have been no reports of negative surprises.

Implication: Employers considering implementing quality-based benefit design tactics should monitor the progress and reports made by innovators. Participation in a purchasing coalition such as the Pacific Business Group on Health is an effective way to obtain information and personal contacts that can help inform decision-making.

Quality-based benefit design tactics all have in common a consideration of quality. While the costs of benefit changes or related programs can usually be quantified to some extent, the impact of a tactic on quality typically is less well defined.

Implication: Employers should not fall prey to the bias inherent in widely available cost information and hard-to-get quality information. In the short term, anecdotal information from other, similar employers may be the best source of information about the impact of selected health benefit tactics on the quality of care received by employees or their health status. Unpublished information on employee satisfaction, absenteeism or productivity may be difficult to obtain, and lack the credibility of per-reviewed articles, but may be the best available

Opportunities for Additional Research

The cup of evidence on quality-based health benefit design tactics is half full. Practitioners of HSR and AHBR can improve the quality of evidence by considering the following steps:

1. Conduct more AHBR that is relevant to corporate health benefits practitioners. This means not only studying privately sponsored health benefit plans, but also becoming more familiar with the overall context of employee benefits and the administrative, technology, legal and regulatory constraints within which employers operate.

2. Develop and subscribe to standard nomenclatures and metrics so that researchers and practitioners may communicate more easily with one another and so that a body of relevant and accessible evidence can be built over time.

3. Conduct more research that quantifies the impact of benefit design tactics on cost and quality. Include not only quality proxies and claim costs, but also administrative and managerial costs when measuring return on investment. Include the effect of health benefits on corporate objectives by considering impact on productivity and absenteeism.

4. Submit more research to peer-reviewed journals and, if not published in such a venue, improve the disclosure of data sources, analytic methods and proprietary interests when AHBR is reported otherwise.

Appendix A — Criteria for Assessing the Quality of Evidence in a Study

Study Quality	Methodology	Comparability	Other Factors
Good Evidence	• Methodology likely to result in valid findings	• Findings can be extrapolated to issue under study • Research findings are based on a large sample • Research is recent	• Research methods, data sources and other necessary factors are disclosed in detail • Publication is accepted by formal peer review Research findings have been confirmed by other good evidence
Limited Quality Evidence	*Methodology appears likely to result in valid findings, but details needed to judge that likelihood are not provided*	*Some factors which may affect extrapolation of results to the issue under study cannot be controlled* *Research findings are based on a limited sample* *Research is relatively current, but some relevant factors that might affect study findings have changed*	*Research methods, data sources and other factors are disclosed in some detail* *Author(s) has a credible reputation for conducting objective research and has no conflict of interest*
Other Evidence	*Methodology appears reasonably likely to result in valid findings, but is not disclosed*	*Results cannot be extrapolated to issue under study or information needed to determine if they can be extrapolated is not provided* *Research findings are based on a small or undisclosed sample* *Significant factors may have changed since research was conducted*	*Data sources are not well documented* *Not accepted by formal peer review* *Research findings have not been confirmed by other good evidence* *Credible experts in the field generally agree with the findings*
**NOTE: the factors listed in this table are examples of the attributes considered in scoring the quality of evidence in a study from "3" (good) to "1" (other), i.e., there was no requirement that all factors listed in one cell be met.*			

Appendix B — Criteria for Assessing the Strength of Evidence

Strength of Evidence	Quality (See Exhibit 3)	Consistency	Quantity
Strong	*Good evidence*	*The vast majority of studies of the tactic or reasonably related to the tactic had consistent findings of favorable impact on value* *Studies had different findings, but differences were explainable* *Few, if any studies with inconsistent findings*	*3 or more studies*
Moderate	*Limited quality evidence*	*The majority of studies of the tactic or reasonably related to the tactic had consistent findings of favorable impact on value* *Some studies had different findings that could not be explained*	*2 studies*
Weak	*Other evidence*	*Considerable variation in findings across studies* *Differences across studies were not explainable*	*1 study*
***NOTE: the factors listed in this table are examples of the attributes considered in scoring the strength of evidence from "3" (strong) to "1" (weak), i.e., there was no requirement that all factors listed in one cell be met.*			

Appendix C — Benefits Design Tactics

Areas of Focus and Detailed Benefit Design Tactics	
1. Health Plan Options, Eligibility and Contributions	
	1.A *Employers use of explicit criteria (e.g. cost-effectiveness, quality, provider access and system capabilities, etc.) to select and offer "high value" plans*
	1.B *Health plan design structured to mitigate risk*
	1.C *Use and impact of risk-adjusted plan payments to reward efficiency and recognize population health status provides fair compensation of plans that manage higher risk populations*
	1.D *Contribution strategies that consider financial incentives and quality information encourage employee selection of high-value plans determined by performance benchmarking*
	1.E *Use and impact of coverage rules and contribution strategy to assure access to coverage among active employees, dependents, early retirees and retirees*
	1.F *Use and impact of adjusting premium contributions by employee income*
2. Provider Selection and Performance Differentiation	
2.A	*Use of plan options that promote use of "high performing" providers through narrow networks, tiered networks, and/or centers of excellence*
2.B	*Promote pay for performance to differentiate provider performance*
2.C	*Promote the provision of consumer tools that differentiate provider performance*
2.D	*Informing employees' choice of doctors and hospitals via standardized measurement and public reporting of provider performance*
2.E	*Other-issues in developing and maintaining preferred network*
3. Inpatient and Outpatient Benefit Design	
3.A	*Use and impact of changes to enrollee share of costs in copayments, coinsurance or deductibles (e.g., effect on preventive services, management of chronic conditions)*
3.B	*Benefit design incentives for optimal resource utilization, selection of optimal treatments based on efficacy and value, and understanding of health care costs, including but not limited to discretionary services*
3.C	*Benefit design incentives for optimal provider selection*
4. Pharmacy Benefit Design	
4.A	*Use and impact of changes to enrollee share of costs through changes in copayments, coinsurance, or deductibles for prescription drugs*
4.B	*Design of formulary and prescription drug benefit to support selection of treatments based on efficacy and value*
4.C	*Encourage compliance with maintenance programs for chronic illness and continuously monitor for any unintended consequences of cost sharing*
4.D	*Encourage value-based purchasing by employees (e.g. use of generic drugs, mail order, and/or step therapy).*

5. Health Promotion, Health Risk Reduction and Chronic Care Management	
5.A.	*Use and impact of promoting wellness and health promotion programs, including use of Health Risk Assessments and member tools*
5.B.	*Use and impact of care coordination, including use of RN support line, health advocate, or high risk case manager*
5.C.	*Use and impact of incentives for "active" participation in chronic care management and risk reduction*
5.D.	*Use of credible measures of direct and indirect ROI (via direct research or contractual requirements of plan/vendor) for targeted disease management and health promotion programs to build business case for sustained investment in such programs over the long-term*
6. Consumer Engagement: Tools and Incentives	
6.A.	*Use and impact of consumer engagement tools, resources and information to support employees' value-based decision-making (e.g., provider selection, prescription drug use, etc.); tools may consist of service support or be Internet-based*
6.B.	*Use and impact of application of principles of preference-sensitive decision making relative to plans, providers, and treatments (e.g., shared decision-making, treatment option support, etc.)*
6.C.	*Use and impact of "activation" of consumers through education of members about the cost of services and he total value of health benefits*

Appendix D — Comparison of Health Services Research to "Applied" Health Benefits Research

Comparison of Health Services Research to "Applied" Health Benefits Research					
	HSR	**Insurer/Actuarial**	**Large Employers-Internal**	**Large Employers-Published Case Studies**	**Vendors**
Research Focus	Contribute to knowledge about health care and health benefits; traditional emphasis on government programs and health policy; interest in employment-based plans relatively recent; often limited attention to administrative complexity and regulatory compliance issues.	Decision-making; Financial focus; analysis of historical impact of contribution strategies and plan design on claim cost; relatively recent interest in the impact of discounts, managed care techniques and consumerism. Benefit tactics reviewed also subject to detailed consideration of administrative complexity and regulatory compliance.	Decision-making; Employer-specific experience and comparisons of design and experience to industry benchmarks; significant scrutiny also given to administrative complexity and cost, regulatory compliance and employee communication challenges.	Innovative benefit program component outcomes; share experience with other practitioners	Marketing statements intended to promote the value of products and services offered

Comparison of Health Services Research to "Applied" Health Benefits Research					
	HSR	**Insurer/Actuarial**	**Large Employers-Internal**	**Large Employers-Published Case Studies**	**Vendors**
Sources of Data	Publicly available data sets; data collected for a specific study	Proprietary group- or block-of-business-specific administrative data	Confidential company administrative records	Confidential company administrative records; often vendor-supplied "results" studies	Company or customer administrative records
Study Design	Rigorous design intended to enable sophisticated statistical analysis and hypothesis testing; designs often limited to very narrow research objectives	Rigorous design intended to enable accurate pricing, calculation of reserves or other financial analysis; detailed mathematical analyses and limited or no statistical inference or hypothesis testing	Rigorous actuarial analyses as described immediately to the left; ad hoc and monitoring reports and analyses of varying degrees of rigor regarding attainment of a broad range of health benefit objectives; very limited or no statistical inference or hypothesis testing	Reports in media focus on results — typically very limited reporting of design	Not fully disclosed to the public audience
Peer Review	Required for publication in respected journals	Internal controls increase as financial exposure increases.	Internal controls increases as audience approaches senior management, board or public report.	Internal controls and publication editorial process.	Internal controls, including legal

Comparison of Health Services Research to "Applied" Health Benefits Research					
	HSR	**Insurer/Actuarial**	**Large Employers-Internal**	**Large Employers-Published Case Studies**	**Vendors**
Sponsorship	Government, foundation or proprietary grant; source disclosed	Insurer	Internal	Employer; often vendor seeking authorization to publish	Internal
Timeliness	Substantial lag between events studied and publication due to data collection, analysis, writing and peer review process; often 2 or more years delay (e.g., 2002 results published in 2004 or 2005)	Minimal lag between events studied and preparation of analysis with brief cover memo; completion factors used to overcome claim lag; not subject time needed for peer review or publication; often prepared within 30 days of the close of a reporting period	Similar to "actuarial" (to left); other studies vary based on focus; not subject time needed for peer review or publication	Subject to pre-publication review and approval; typically more current than HSR — reporting within 6-12 months of experience is common	Speed to market is highly valued, so public statements of "results" are often very timely
Applicability to the Details of a Specific Health Benefit Plan Design	Research typically seeks to identify fundamental relationships and factors that may affect validity for a specific circumstance	Analyses for individual employer or block of business are specific to that employer or block; analysis of multiple employers or blocks often used to develop rating or other factors used for prospective analysis when no experience is available	Employers are most interested in their own experience; often interested in benchmarks from their industry with which they compete for labor.	Published case studies reporting on results at credible companies are an important indicator of innovation for employers; case studies from competitors in the same industry are more so	High variability of employer health benefit program designs and underlying populations often makes specific findings difficult to extrapolate; case studies and other information about innovations are of great interest

Notes

[1] Gray research comprises studies, reports and presentations that are disseminated through conferences, trade journals and other news media and which are not subjected to peer review and other characteristics of academic Health Services Research.

[2] Covered individuals may be employees, retirees or spouses and dependents of employees and retirees. This report uses the terms "members" or "plan participants" to denote all of these individuals collectively.

[3] The "scope" of benefits is the list of covered goods and services.

[4] The "level" of benefits is the share of the cost of covered benefits paid by the benefit plan as opposed to the plan participant.

[5] The implications of the diversity of employment-based health benefit design are discussed at the end of this report under "needs for future research."

[6] Covered individuals may be employees, retirees or spouses and dependents of employees and retirees. This report uses the terms "members" or "plan participants" to denote all of these individuals collectively.

[7] National Institute of Medicine. Crossing the Quality Chasm: A New Health System for the 21st Century. National Academy Press March 1, 2001.

[8] The "scope" of benefits is the list of covered goods and services.

[9] The "level" of benefits is the share of the cost of covered benefits paid by the benefit plan as opposed to the plan participant.

[10] Benefits administration and communication issues, which are major concerns to benefits executives, were not a focus of this research. It is of note that very little of the research reviewed in the course of this project mentioned and none studied these issues in depth.

[11] See: Member Benefit Strategies: Promoting Quality, Value and Access, Pacific Business Group on Health, February, 2005.

[12] A large regional health plan estimated that it administered over 20,000 different group health benefit plan designs.

[13] The implications of the diversity of employment-based health benefit design are discussed at the end of this report under "needs for future research."

[14] See: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?DB=pubmed

[15] See, for example: Pacific Business Group on Health, *PBGH Member Benefit Strategies: Promoting Quality, Value and Access*, February, 2005.

[16] "Systems to rate the strength of scientific evidence: Summary, evidence report/technology assessment: number 47." AHRQ Publication No. 02-E015, March 2002. Agency for Healthcare Quality and Research, Rockville, MD. Accessed April 19, 2005 at http://www.ahrq.gov/clinic/epcsums/strengthsum.htm.

[17] Ebell, MH, J. Siwek, B. D. Weiss et al, Strength of Recommendation Taxonomy (SORT): A Patient-Centered Approach to Grading Evidence in the Medical Literature, *American Family Physician*, 69(3):548-556. (February 1, 2004)

[18] Ibid.

[19] Examples of such data are those provided by Medicare, Medicaid and the National Center for Health Statistics. It was not until the late 1980s that HSR began to focus more on privately insured populations. See, for example: Luft HS, Maerki SC, Trauner JB. "The competitive effects of health maintenance organizations: another look at the evidence from Hawaii, Rochester, and Minneapolis/St. Paul," *J Health Politics Policy and Law*.;10(4):625-658. (1986 Winter).

[20] See, for example: Society of Actuaries (www.soa.org), American Academy of Actuaries (www.actuary.org)

[21] Stanton MW and MK Rutherford. Employer Sponsored Health Insurance: Trends in Cost and Access. Agency for Healthcare Research and Quality, PHS, USDHHS. Research in Action Issue 17. AHRA No. 04-0085, September 2004. Analysis is based upon the Medical Expenditure Panel; Survey (MEPS) conducted in 2003.

[22] Kaiser Family Foundation/Health Research and Educational Trust. Survey of Employer Sponsored Health Benefits, 2005. and KFF/HRET Employer Health Benefits: 2005 Summary of Findings, both available at http://www.kff.org/insurance/7315/index.cfm and Gabel, J. et al. Health Benefits in 2005: Premium Increases Slow Down, Coverage Continues to Erode. *Health Affairs*,24.(5) 1273-1280. The 2005 survey reports that the percentage of small firms offering coverage has fallen from 68% in 2000 to 59% in 2005.

[23] These amounts are not adjusted for the actuarial value of any benefit changes

[24] Stanton MW and MK Rutherford. 2004. op cit.

[25] Gabel, J., G Claxton et al. Health Benefits in 2004: Four Years of Double Digit Premium Increases Take Their Toll on Coverage, *Health Affairs* 23(5):200-209. (September/October 2004)

[26] Kaiser Family Foundation/Health Research and Educational Trust. Survey of Employer Sponsored Health Benefits, 2005. op cit. Survey Section 4: Health Plan Choice.

[27] Maxwell, James "Managed Competition versus Industrial Purchasing of Health Care among the Fortune 500" *Journal of Health Politics, Policy and Law* - 27(1), , pp. 5-30, February 2002

[28] Florence, C.and Thorpe, K.. How Does the Employer Contribution for the Federal Employees Health Benefits Program Influence Plan Selection? *Health Affairs* 22(2): 211-218. (March/April 2005)

[29] Institute for Health Policy Solutions. Supplement C: Cost Management Strategies and Examples for the Pool. Challenges and Alternatives for Employer Pay-or Play Program Design. March 2005.

[30] Gabel, J et al. Embraceable You: How Employers Influence Health Plan Enrollment. *Health Affairs*, 20(4):196-208. (July/August 2001).

[31] Gabel. J et al. Health Benefits in 2005: Premium Increases Slow Down, Coverage Continues to Erode. *Health Affairs*, 24(5):1273-1280. (September/October 2005) These include the University of California, PepsiCo and US Sprint.

[32] KFF/HRET 2005 Employer Benefit Survey, Section 6. Employee Contributions and Benefits.

[33] The tactic is also sometimes defined to include incentives to encourage people to select health plans with benefit designs that are built upon preferred network providers. For purposes of this report, such premium, cost sharing and other incentives are considered under focus areas 1 and 3.

[34] A tiered network design offers a broad choice of providers, but includes financial incentives, such as lower consumer cost sharing, to encourage use of providers in the highest ranked tier.

[35] Examples of case mix adjustment tools include *Episodes of Care*, a case-mix adjusted analytic tool based on Episode Treatment Groups (ETGs) developed by Symmetry Health Data Systems and the *Health Care Cost Guidelines* and *Hospital Efficiency Index* from Milliman .

[36] Goff, V. High Performance Networks: Provider Excellence Translates to Higher Quality and Lower Costs. Institute of Health Care Costs and Solutions. *Issue Brief*. 2(#). (May/June 2004), and Premera Blue Cross. *Premera Unveils New Approach to Health Coverage* (January 14, 2003). Found at www.premera.com/stellent/groups/public/documents/xcpproject/newsroom_01_14_2003.asp

[37] Aexcel's specialties are cardiology, cardiothoracic surgery, gastroenterology, general surgery, obstetrics/gynecology, and orthopedics. They are estimated to account for 30 percent of expected costs.Aexcel network began in three markets in January 2004 expanded into another five markets in January 2005. It also added specialists in otolaryngology, neurology, neurosurgery, plastic surgery, vascular surgery and urology at that time. (Aetna Enhances Its Aexcel Specialist Network , Aetna Press Release June 29, 2004. http://www.aetna.com/news/2004/pr_20040629.htm .confirmed access September 12, 2005)

[38] CalPERS initially voted to drop 38 high cost hospitals.

[39] This represents 15,402 subscribers and 36,473 total lives. Overall, 21% moved to PPO plans that offered provider continuity. Because of a change to regional pricing the same year, some members were able to maintain provider relationships with a lower premium PPO plan.

[40] Westbrook, Terri. CalPERS.Health Benefits. Presentation at Healthcare Purchasers Toolbox: Strategies for Improving Quality and Affordability of Care. San Francisco, February 16, 2005. Ms. Westbrook is the Assistant Director of CalPERS.

[41] Ho, S. Productizing Quality. Presentation to the National Business Coalition on Health. San Francisco, CA. March 29, 2004. Dr. Ho is the medical director of PacifiCare. For 2004, PacifiCare reported the Signature Value Advantage network had and average cost of $41.09 PMPM and an average quality score of 1.34. The non-value network ha an average cost of $168.77 PMPM and a quality score of 1.13.

[42] Robinson, J. Hospital Tiers in Health Insurance: Balancing Consumer Choice with Financial Motives. *Health Affairs* Web Exclusive, March 19 2003

[43] Mays, G., G. Claxton and B Strunk. Tiered Provider Networks: Patients Face Trade-Offs. Issue Brief 71. Center for Studying Health System Change. November 2003.

[44] Baker, G. and B Carter. The Evolution of Pay for-Performance Models for Rewarding Providers in Case Studies in Health Plan Pay for Performance Programs. *Atlantic Information Services (AIS)*, Washington, D.C., 1-12. (2004)

[45] Rosenthal, MB, Fernandopulle, R, et al. Paying for Quality: Providers Incentives for Quality Improvement. *Health Affairs*. 23(2). (March/April 2004). Many of the programs identified overlap with the survey participants in Baker and Carter summary.

[46] The Lewin Group. Paying for Performance: Creating Incentives for Quality Improvement. AHA Trend Watch. 5(3), September 2003.

[47] Dudley, RA, Frolich, A., et al. Strategies to Support Quality based Purchasing: A Review of the Evidence, Summary Technical Review 10. AHRC Pub No 04-P024. Rockville, MD. Agency for Healthcare Research and Quality, 2004...

[48] Ho, S. Productizing Quality. Presentation to the National Business Coalition on Health. San Francisco, CA. March 29, 2004. Dr. Ho is the medical director of PacifiCare.

[49] The performance reports and bonuses were paid between October 2001 and April 2004. This study period predates the efforts of the Integrated Healthcare Association to coordinate a P4P across seven health plans in the state, including PacifiCare.

[50] Rosenthal, MR. et al. Early Experience with Pay for Performance: From Concept to Practice. *Journal of the American Medical Association*.294(14) :1788-1793. (October 12, 2005).

[51] Rosenthal, MR. Testimony before the House Subcommittee on Employer-Employee Relations, Hearing on Pay for Performance Measures and Other Trends in Employer Sponsored Health Care. May 17, 2005.

[52] Hibbard JH, J Stockard, M Tusler. Does Publicizing Hospital Performance Stimulate Quality Improvement Efforts? *Health Affairs.* 22(2):84-92, (March/April 2003).

[53] See for example, Kaiser Family Foundation/Health Research Education Trust, Employer Survey. Robinson, J. Renewed Emphasis on Consumer Cost Sharing in Health Insurance Benefit Design, Health Affairs, Web Exclusive, 2002, and Goff, V. Consumer Cost Sharing in Private Health Insurance: On the Threshold of Change. National Health Policy Forum. Issue Brief. No. 798, May 14, 2004.

[54] Newhouse, J et al. Free for All? Lessons from the RAND Health Insurance Experiment. Harvard University Press. Cambridge MA, 1993. and Lohr, K. et al. Use of Medical Care in the RAND Health Insurance Experiment: *Diagnosis and Service Specific Analysis in a Randomized Controlled Trial. Medical Care* 24: Supplement S1-87, (September 1986)..

[55] Newhouse, J. Consumer Directed Plans and the RAND Health Insurance Experiment. *Health Affairs.* 23(6) :107-113. (November/December 2004) Consumer incentive programs, such as gifts or payments to participate in disease management programs are discussed in the sections on Health Promotion and Consumer Tools and Incentives.

[56] Other IRS requirements apply, e.g., persons eligible to contribute to an HSA must also generally not have coverage under another medical plan

[57] The minimum deductible amounts are to be indexed for inflation. For 2006, the deductible must be at least $1,050 for individuals and $2,100 for family coverage; the maximum HSA annual contribution amounts are $2,700 for individuals and $5,450 for families.

[58] America's Health Insurance Plans. Center for Policy and Research. "Number of HSA Plans Exceeded One Million in March 2005." www.ahipresearch.org/pdfs/HSA/ ExceedMilion050405_full.pdf

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[66] This observation is based on the personal experience of one of the authors of this report documenting plan designs in connection with a system conversion for the pharmacy benefit program in question.

[67] A cost-sharing *tier* is a category of prescription drugs. Typical categories used for two-tier pharmacy benefit plan designs are "generic: and "brand;" for three-tier designs, "generic," "preferred brand" and "non-preferred brand."

[68] Coinsurance is a type of cost sharing in which the plan and covered employee each pay a percentage of the cost of a prescription drug. A typical "80/20" coinsurance design is one where the plan pays 80 percent of the cost of a prescription and the employee pays 20 percent.

[69] Copayment is a type of cost sharing in which the covered employee pays a fixed amount for each prescription filled. A typical two-tiered copayment design might provide that an employee pay $15 for each generic prescription claim and $25 for each brand.

[70] Kaiser/HRET, 2005, op cit.

[71] For some employers, converting generic copayments, even though substantially lower than those for brands, may represent *higher* cost sharing than typical coinsurance levels. Because of the very low costs of many generic drugs, a $10 copayment may be equivalent to a 50% or higher coinsurance level — an employee communication challenge many employers may wish to avoid.

[72] PwC actuarial estimate

[73] New branded drugs that have patent protection , i.e., no generics available.

[74] PwC actuarial estimate

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