MILLIMAN

Research Report

Managed Care Product Evolution and Hospital Scorecarding Strategy

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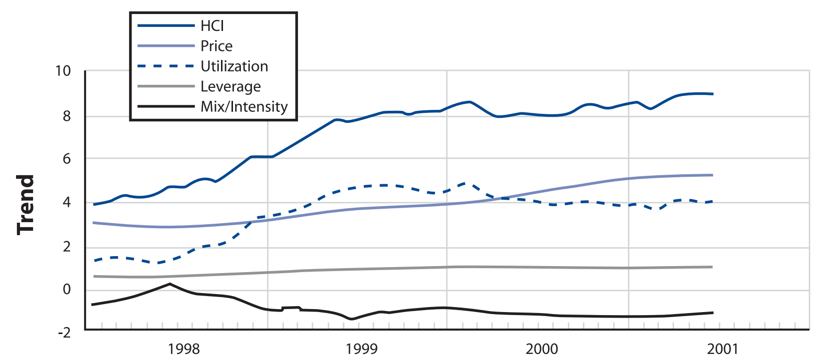
INTRODUCTION

As we entered the new millennium, benefit plan sponsors noted the end of a decade of success in controlling the relationship between corporate revenues and employee healthcare costs. Much of the credit for the success of the 1990s goes to the health insurance industry, given its dual initiatives to contain the escalation of healthcare costs via negotiation (off-retail price concessions from healthcare providers) and to reduce the medically unnecessary services in the healthcare system.

The economic reality of price and use-management initiatives is that the resultant reductions in healthcare cost trends were essentially "one time saves." Chart A clearly highlights the reality that healthcare cost trends have been driven upward by both increased unit prices and utilization of services since late 1998. In addition, the leverage component of the Index makes it clear that patient cost sharing has remained essentially flat (over time), despite escalating utilization rates and prices. As an offset to the referenced cost drivers, declining service mix and intensity levels have served to mitigate the overall trend rate. Given the aging of the US population, this result is unlikely to be sustainable going forward.

CHART A

HCI TREND COMPONENTS—12 MONTH MOVING AVERAGE



Despite Record Enrollment in Managed Care Products, Unit Prices and Utilization of Services Are Again Driving Cost Trends, While Patient Cost Remains Essentially Flat.

Given the unsustainable medical cost trends, this report is intended to outline a next-generation product strategy for health insurance organizations (Insurers). More specifically, this report will outline the business case and execution strategy associated with use of All Payer state discharge data, Med Par, and Medicare cost report data to provide Insurers with the ability to objectively assess hospital performance across three key value measures: quality, cost, and efficiency. With a robust look at hospital performance, Insurers will be well prepared to develop performance-based networks and differentiated patient out-of-pocket costs associated with hospital selection. We believe that this strategy will generate savings for Insurers and benefit plan sponsors as follows:

a. Reduced consumption levels as patients become "financially vested" in the costs of care.

b. Reduced costs resulting from patients being given an incentive to use high performing hospitals. These hospitals will reduce costs via lower complication rates, favorable cost and pricing structures, and reduced lengths of stay.

c. Reduced Insurer administration costs as a result of improved provider relations and more efficient negotiations.

In addition, this strategy will level the rate negotiation playing field (between Insurers and network hospitals), while also facilitating Insurer dialogue with public and private sector purchasers regarding hospital quality results.

Highlights of the report include:

A presentation of charts, statistics, and commentary outlining the environmental issues that are driving the need to revamp the hospital/payer relationship and negotiation strategy:

- Medical cost trends are unsustainable when viewed as a percentage of the US economy;
- While medical cost trends are high, hospital trends are even higher;
- Traditional managed care is not working in today's environment;
- Employer alternatives to mitigate premium costs are limited and cost sharing increases are supported; and
- Many hospitals are already using quality and efficiency incentives for their executives.

Presentation of a hospital performance scoring methodology:

- Use of differential cost sharing (tiered networks) as a means to manage hospital costs and improve the negotiation process;
- How to incorporate quality, efficiency, and cost measures; and
- Presentation of an example scorecard.

THE ENVIRONMENTAL ISSUES DRIVING THE NEED TO REVAMP HOSPITAL/PAYER RELATIONSHIP AND NEGOTIATION STRATEGY

Healthcare Costs Versus the US Economy

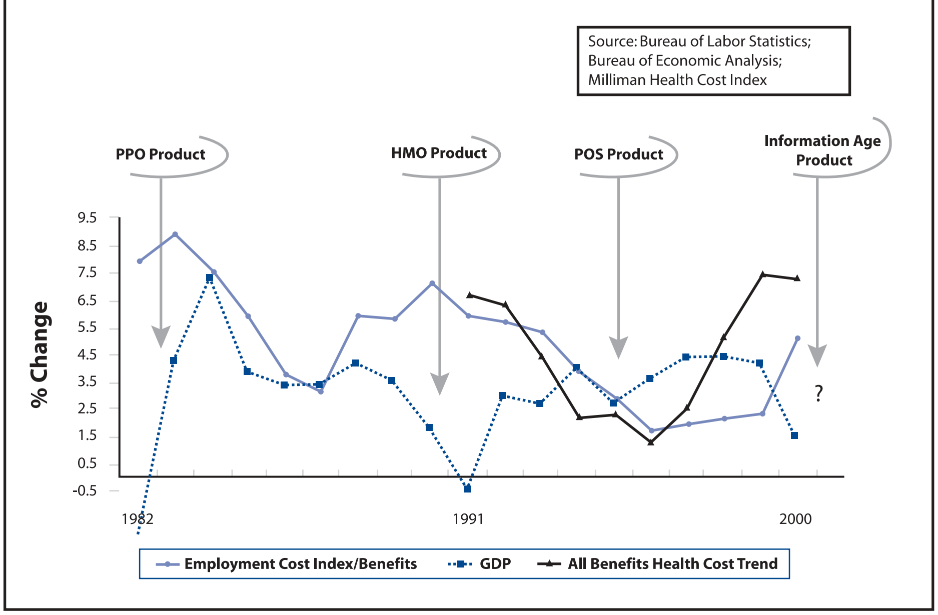
Chart B highlights an 18-year look at the relationship between GDP (a proxy for corporate revenues), the Employment Cost Index—Benefits, and Milliman's All Benefits health cost indicator. The chart makes it clear that the relationship between the economy's ability to pay for healthcare services and the rate of escalation in healthcare costs has resulted in significant product innovation by the health insurance industry (see Table 1).

TABLE 1

Timeframe	Product Strategy	Management Focus
Early 1980s	PPO	Negotiated Discounts
Early 1990s	HMO	Gated Networks Aggressive Use-Management Provider Capitation
Mid 1990s	POS	Non-Network Benefits Open Access Networks

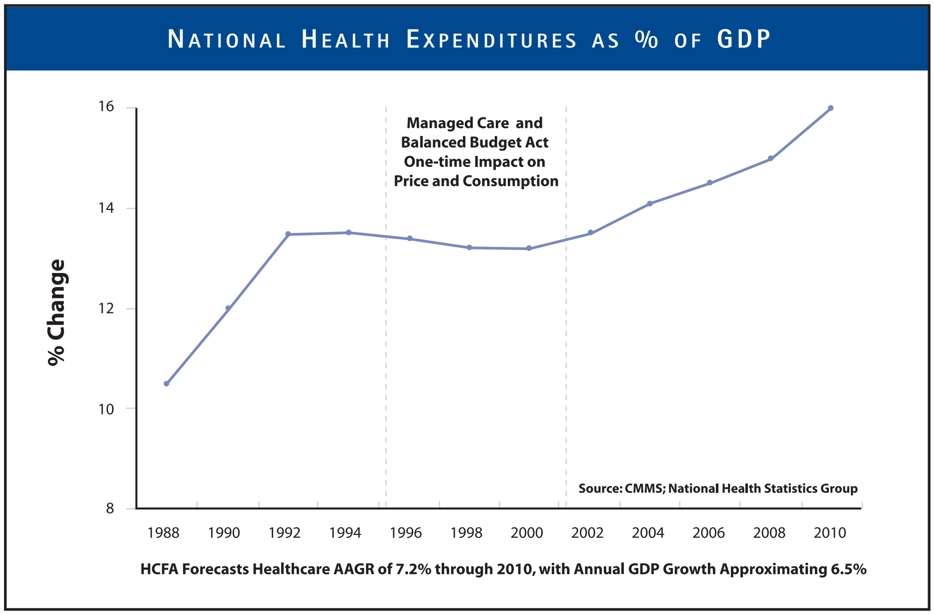
CHART B

Benefit Costs vs. GDP
A Trend Line Depiction of Managed Care Product Evolution



As we enter the 21st Century, it appears that we are again entering a period where the rate of health cost escalation is eclipsing the rate of growth in the overall economy. In that regard, Chart C outlines CMS's view that national health expenditures will indeed outpace the general economy through 2010. Additionally, it is likely that CMS's forecast of a 6.5% average annual growth rate for the US economy is overly optimistic.

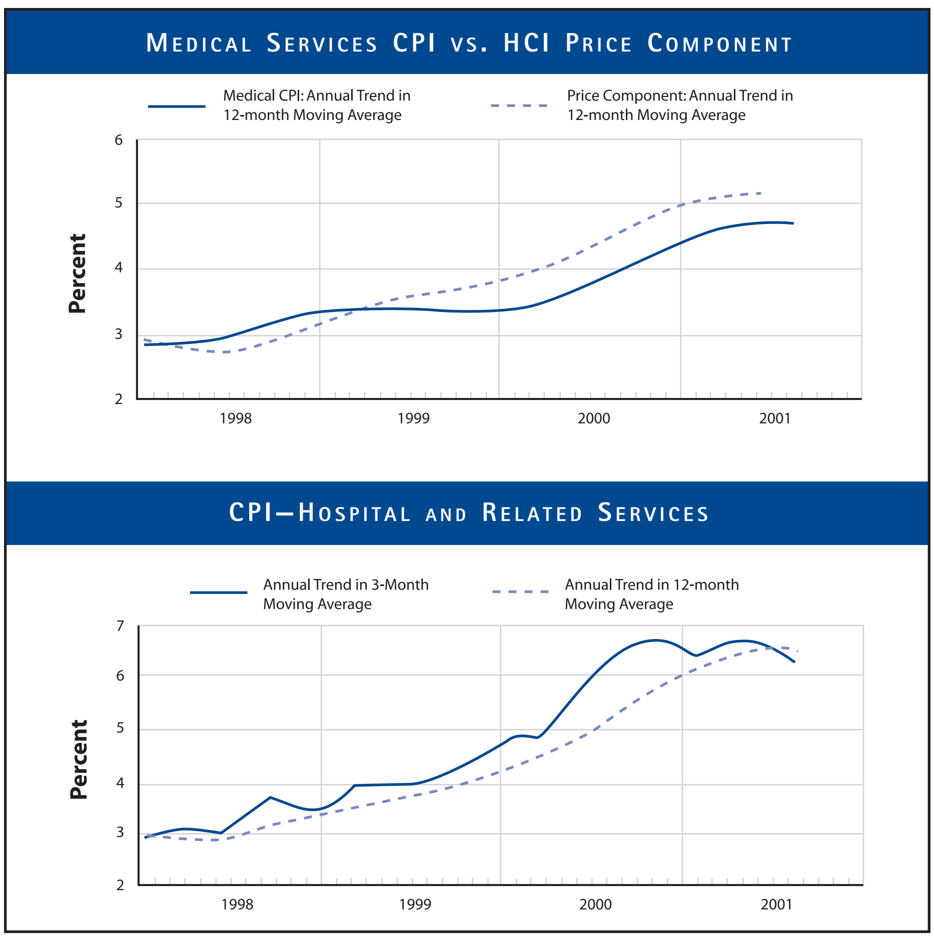
CHART C



Medical and Hospital Service CPI

Chart D chronicles the sustained escalation in medical and hospital CPI since mid-1998, with hospital cost escalation meaningfully outpacing the segment-level CPI.

CHART D



The POS product evolution in the mid-1990s produced a significant erosion in Insurer discount negotiation capability, due to dramatic expansion in network size and the creation of non-emergent out-of-network benefits for patients who chose not to use hospitals in the Insurer's network. As Insurer discounts are primarily a function of channeling volume to network hospitals, increased network size and out-of-network benefits significantly diminished many Insurers' value proposition to network hospitals.

Since the hospitals became aware that network access was critical to purchasers, there was no longer any leverage for the payers in negotiating competitive rates. Subsequently the hospitals have demanded and received significant rate increases.

Medical Management Success and Strategy

Since the rapid growth of the HMO product in the late 1980s, continuing through to the POS products of the late 1990s, Insurers have invested significant financial and human resources in an attempt to ensure appropriate consumption of inpatient hospital services. Insurer inpatient management tactics have covered the spectrum from admission pre-certification requirements, concurrent utilization review, discharge planning efforts, and disease state management programs.

To the credit of the health insurance industry, significant progress has been made in optimizing the use of inpatient hospital services. As evidence of this progress, typical inpatient days per thousand levels for an Insurer have declined roughly 50% over the course of the past 10 years (despite an aging population).

However, in an environment where both payer and purchaser stakeholders are facing significant new legal issues and exposures associated with utilization management oversight systems, we believe there is little choice but to substitute plan design strategies (that provide meaningful financial incentives to patients to become judicious consumers of healthcare services) for the historical inpatient utilization management tactics. In this environment, purchasers and consumers will need information by which to make provider selections based upon quality, cost, and efficiency data.

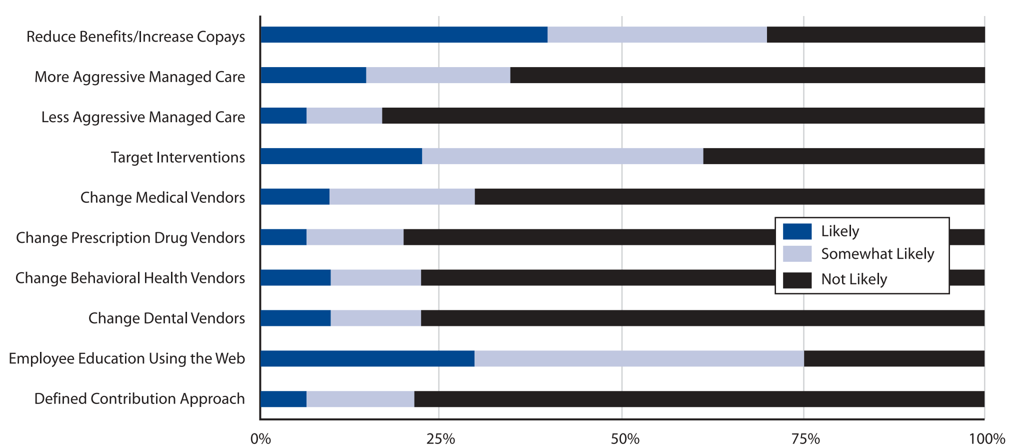
Purchaser Strategy and Procurement Criteria

Using GDP as a proxy for corporate revenues, Benefit Managers are currently operating in a flat-to-down revenue environment, while simultaneously facing double-digit growth in healthcare costs—an environment that is unsustainable.

Chart E makes it clear that purchasers view benefit reductions and increased employee out-of-pocket liability (for healthcare services) as the most effective strategy to mitigate future healthcare costs. Logically, purchasers are also actively engaged in employee education (regarding healthcare issues) in an attempt to empower employees with information to manage their increasing financial responsibilities for healthcare services.

CHART E

IN THE NEXT 12 MONTHS, WHICH ACTIONS DO YOU ANTICIPATE TAKING TO MANAGE HEALTH CARE COSTS?



Source: Watson Wyatt 2001 Purchasing Value Report

From a procurement perspective, Chart F makes it clear that purchasers are as concerned about quality of care as with costs. Insurers must be prepared to communicate (and bring about) a robust quality reporting and enhancement strategy.

Chart G shows that health insurance premiums are again growing at a rate significantly in excess of worker earnings and the overall inflation rate within the US economy. Contrary to the late 1980s (when this scenario last presented itself), Chart G also highlights that there is no meaningful cost trend differential in the various health insurance product lines. Purchasers can no longer solve their cost trend problem by inducing employees to take an HMO benefit offering.

CHART F

PURCHASER SOURCING/SATISFACTION CRITERIA

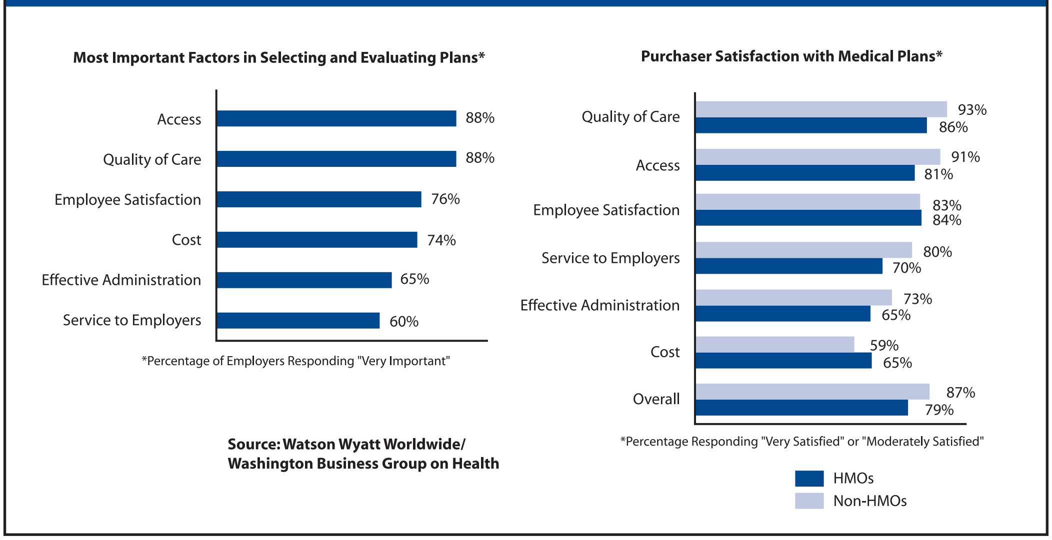
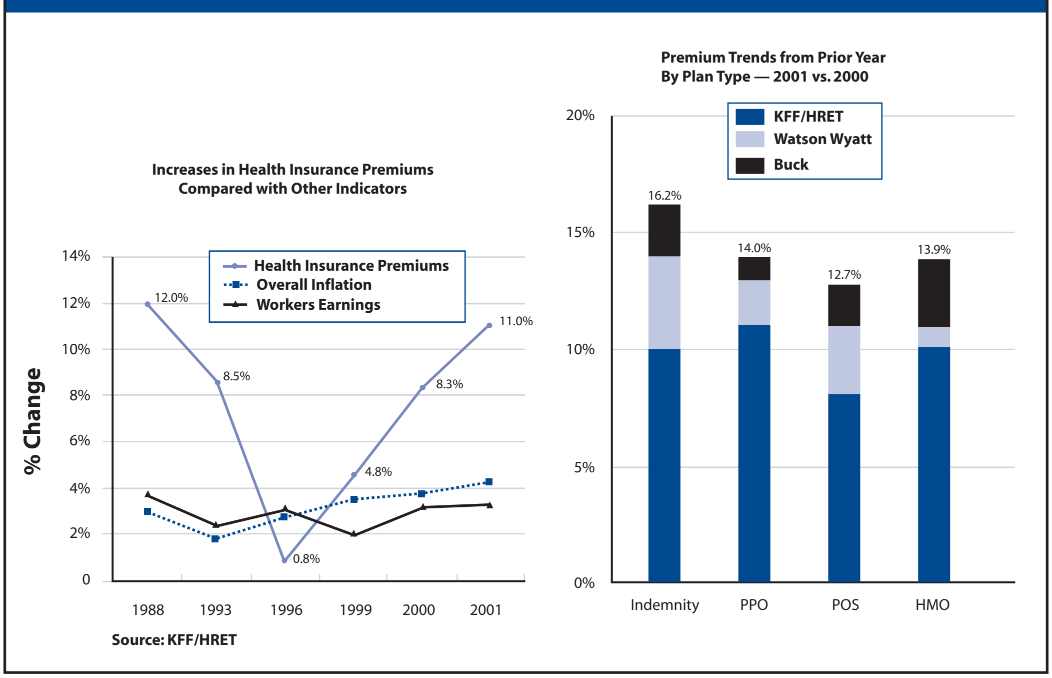


CHART G

PURCHASER VIEW OF HEALTH INSURANCE COSTS



We believe the product line compression phenomenon is a byproduct of the following issues:

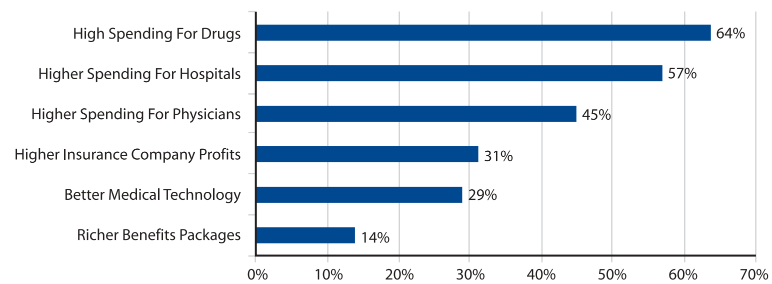
- Strong purchaser and consumer demand for unlimited provider access
- Significant consolidation within the hospital industry
- Failure of hospitals to adopt sustainable patient care efficiencies
- Evolving legal and public relations exposures associated with consumption management tactics

While the cost issues associated with pharmacy benefits have been well chronicled, Chart H highlights the fact that purchasers are recognizing that higher spending for hospital services is a major driver of increased health insurance premiums.

We believe the payer and purchaser community has little choice but to adopt consumption management tactics to control future escalation in hospital costs. This strategy will require differentiated (i.e., performance based) hospital networks and patient out-of-pocket costs, which are indexed to hospital performance. Patients would be allowed to use any hospital of their choosing, albeit at higher out-of-pocket costs.

CHART H

PERCENTAGE OF ALL FIRMS THAT REPORT THE FOLLOWING FACTORS CONTRIBUTE "A LOT" TO INCREASES IN HEALTH INSURANCE PREMIUMS, 2001



Source: Kaiser/HRET Survey of Employer Sponsored Health Benefits: 2001

HOSPITAL PERFORMANCE SCORING METHODOLOGY

Network Tiering Concepts and Strategies

In recent months, a number of Insurers have launched differential cost sharing and tiered network products. While product strategies differ in many respects, the common link centers on creation of financial incentives to motivate patients to use "most preferred providers," without restricting patient access to providers of their choice.

Based upon the employer strategy data in Chart I, the evolving products are clearly in synch with purchaser needs. Unfortunately, many of the Insurer network tiering strategies are premised exclusively upon cost—a methodology that large purchasers are unlikely to accept.

Chart J provides a high-level outline of the primary execution concepts (to date) relating to tiered networks and differential copayments.

Currently, most tiering strategies have only looked at negotiated costs. In the next two sections, we will discuss methods for incorporating quality and efficiency. We believe that this will result in a much more successful approach.

CHART I

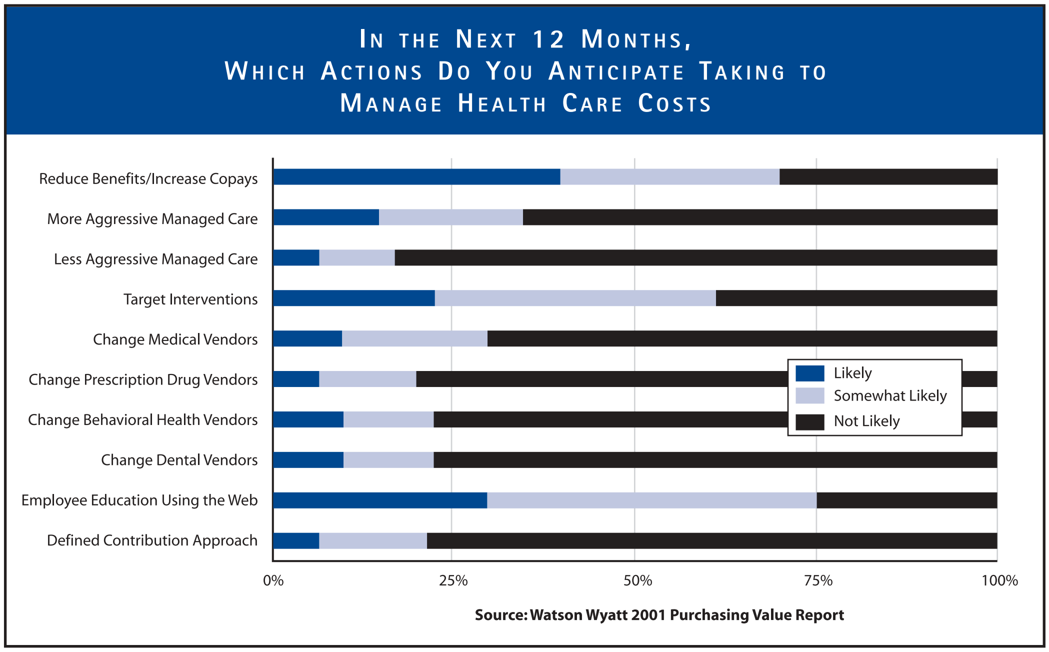
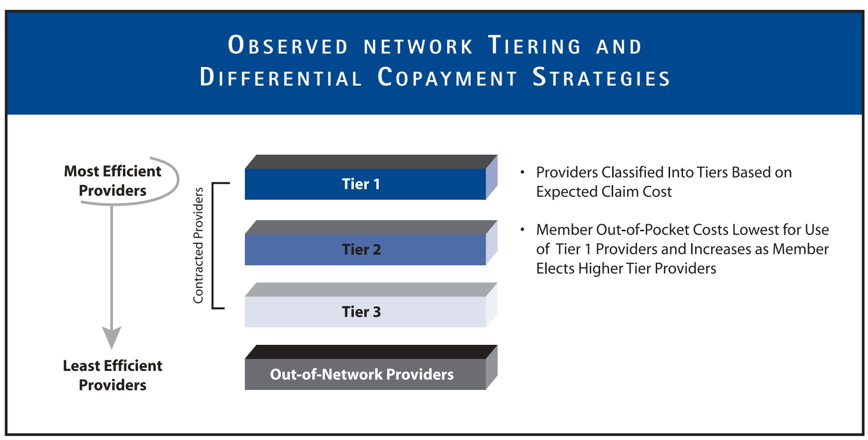


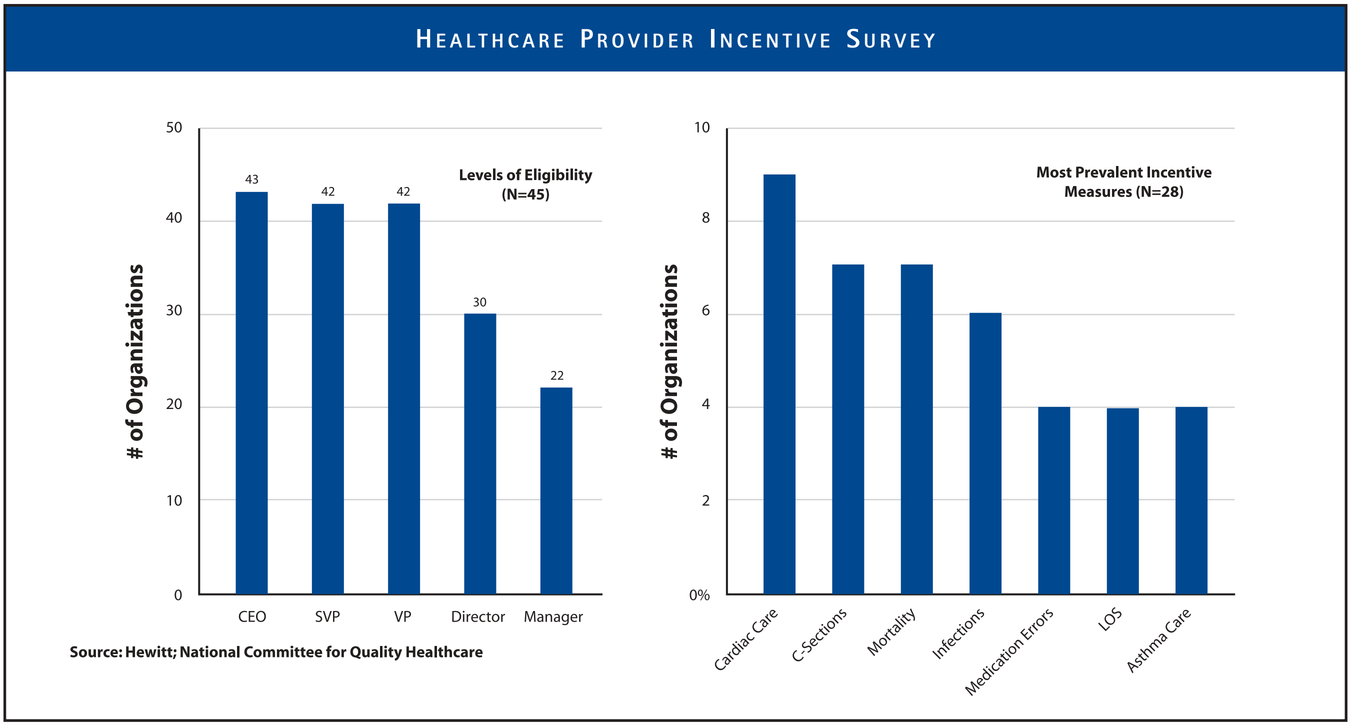
CHART J



Using Quality Incentives

Chart K highlights the reality that many hospital executives are presently subject to incentive compensation arrangements based upon a number of key purchaser quality of care issues. Regrettably, it appears that actual hospital results (on the incentive compensation measures) may be primarily internally reported, with results generally unavailable to healthcare purchasers and consumers.

CHART K



Given the well-documented public and private sector desire to purchase hospital services based upon quality results, it only seems logical for Insurers to begin measuring hospital performance in a similar fashion to that which hospital managers are currently being given the incentive to achieve.

Hospital Scorecard Concepts and Strategies

Chart L outlines a scorecard strawman whereby Insurers would measure network hospital performance in terms of overall value, with "value" comprising quality performance, financial measures, and patient care efficiency. The scorecard would be based upon a 100-point performance scale, and Insurers would be allowed to designate the total number of available performance points by category and individual measure.

CHART L

HOSPITAL SCORECARD STRAWMAN

Quality Measures (33 Available Points)

MedPar Mortality Measures

Evaluated the following case types:

Hysterectomy
Laminectomy
Cholecystectomy
Transurethral Prostatectomy
Hip Replacement
Knee Replacement

MedPar Complication Measures

Evaluated the following case types:

Wound Infection
Pulmonary Compromise
AMI Post Surgery
Pneumonia Post Surgery
Urinary Tract Infection
GI Hemorrhage

Financial Measures (34 Available Points)

Total Patient Billed Charges Per Admission

Net Patient Revenue Per Admission

Expense Per Admission

Inpatient to Cost Charge

Laboratory Cost Per Admit

Radiology Cost Per Admit

RX Drug Cost Per Admit

Efficiency Measures (33 Available Points)

MDC	MDC Description	% Avoidable Days
1	Nervous System	7.0%
2	Eye	34.3%
3	Ear, Nose, Throat, Mouth	18.7%
4	Respiratory & Pancreas	18.7%
5	Circulatory System	28.4%
6	Digestive System	25.7%
7	Hepatobiliary & Pancreas	31.1%
8	Musculoskeletal & Connective Tissue	32.7%
9	Skin, Subcutaneous Tissue and Breast	47.7%
10	Endocrince, Nutritional & Metabolic	20.7%
11	Kidney & Urinary Tract	30.5%
12	Male Reproductive	27.7%
13	Female Reproductive	38.1%
14	Pregnancy, Childbirth, and Puerperium	31.3%
15	Newborns & Neonates	31.3%
16	Blood, Blood-Forming Immunological	31.3%
17	Myleproliferative & Poorly Differential Neoplasms	31.3%
18	Infectious & Parasitic Diseases	31.3%
19	Mental	31.3%
20	Substance Abuse	31.3%
21	Injury, Poisoning & Toxic Drug Effects	31.3%
22	Burns	31.3%
23	Health Status Factors	31.3%
24	Multiple Significant Trauma	31.3%
25	HIV	51.2%

The quality category is designed to track hospital specific mortality and complication rates at a DRG or procedure level (consistent with the Agency for Healthcare Research and Quality HCUP protocols). Once the measurement categories are designated, Milliman can document hospital-specific results using a mix of Medicare (Med Par) and/or Insurer book of business data.

The financial category is designed to allow Insurers to objectively assess network hospital pricing and cost infrastructure on a relative basis. Milliman can utilize Medicare Cost Report data to populate this performance category. Insurers would be allowed to choose from an array of roughly 200 financial performance measures submitted by hospitals annually to the CMS.

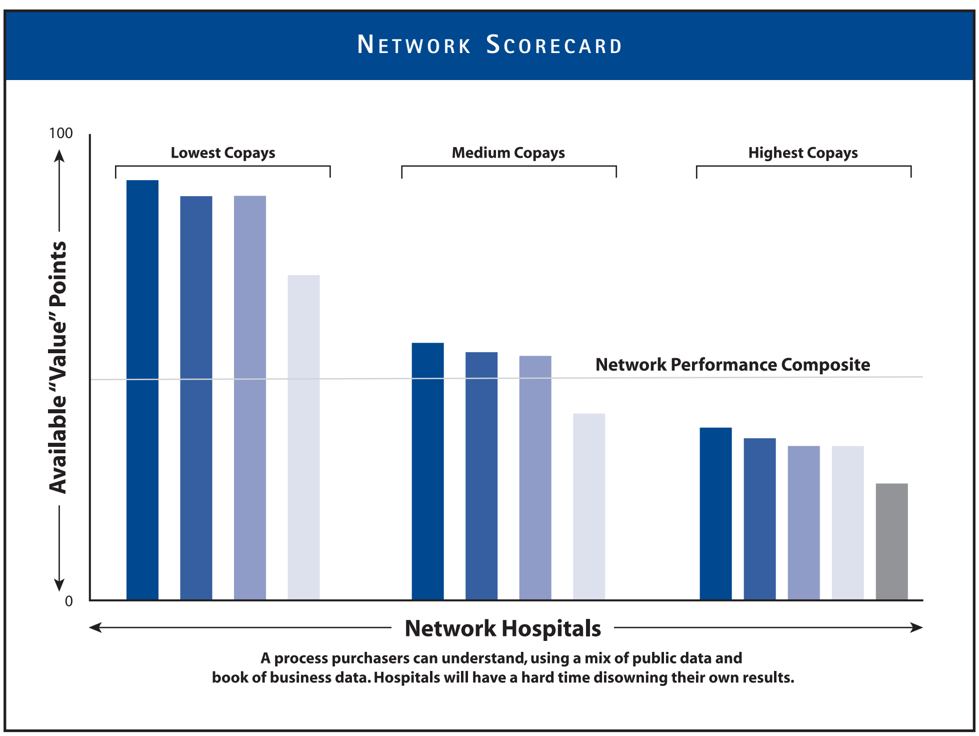
The efficiency category is designed to document relative hospital efficiency in managing admissions and lengths of stay on a MDC basis. At the Insurer's choosing, Milliman will score hospital efficiency via Medicare and/or Book of Business claims data (using our Hospital Efficiency Index Methodology).

Where possible, scorecard performance results would be case-mix and severity adjusted to allow for effective comparison of hospital results.

Chart M is a network performance scoring strawman, whereby network hospitals would be arrayed by score. Once complete, Insurers could then structure performance based network tiers, with patient out-of-pocket costs determined based upon a hospital's given scorecard ranking. Patients would pay the least out-of-pocket costs in choosing "high-scoring facilities," but would retain complete freedom of choice to use any hospital (albeit at potentially higher out-of-pocket costs).

Upon completion of an Insurer's network performance scoring methodology and hospital scorecards, Milliman actuaries can provide guidance as to subsequent network costing, underwriting, and pricing strategies.

CHART M



DISCUSSION

We believe the scorecard strategy presents several significant advantages to Insurers.

- The robust nature of the scorecard database, along with case-mix and severity adjustment of most performance measures, will make it difficult for network hospitals to attempt to disown their scorecard results.

- Scorecard measures focus upon the total hospital value proposition, not just upon costs. We believe this strategy will pass the inevitable "newspaper test" that Insurers (and plan sponsors) will face regarding tiered networks and differential copayment plan designs.

- Scorecards level the negotiations playing field between Insurers and network hospitals. Hospitals demanding excessive rate increases face the risk of lowering their competitive scoring position. Lower scores result in patients being faced with additional out-of-pocket costs associated with use of a given facility.

- We believe Insurers who adopt cost only based network tiering strategies may face significant legal and public relations exposures. The Milliman scorecarding strategy is specifically designed to mitigate those risks.

- Scorecards allow Insurers to assume a leadership position with both public and private sector purchasers on the hospital quality and value agenda.

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