California HealthCare Foundation

"Consumer-Directed" Health Plans: Implications for Health Care Quality and Cost

RAND

June 2005

"Consumer-Directed" Health Plans: Implications for Health Care Quality and Cost

Prepared for
CALIFORNIA HEALTHCARE FOUNDATION

by
RAND:
Melinda Beeuwkes Buntin
Cheryl Damberg
Amelia Haviland
Nicole Lurie
Kanika Kapur
M. Susan Marquis

June 2005

Acknowledgments

The authors thank the insurers, employers, and experts from the health policy arena for providing us with information on the trends in health benefit design.

About the Author

RAND is a nonprofit institution that helps improve policy and decisionmaking through research and analysis. RAND research has contributed to the policy arena for over 50 years. Additional information about RAND research is available at www.rand.org.

About the Foundation

The **California HealthCare Foundation,** based in Oakland, is an 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. For more information about CHCF, visit us online at www.chcf.org.

This report 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/programs/ for more information about CHCF and its programs.

ISBN 1-932064-89-3

Contents

4 I. Introduction

6 II. High-Deductible Plans

10 III. Health Care Accounts

16 IV. Tiering in Consumer-Directed Health Plans

21 V. Consumer Information and Health Care Decision Support

26 VI. Conclusions and Future Research Needs

28 Endnotes

I. Introduction

Confronted with double-digit increases in health insurance costs and consumer dissatisfaction with managed care, employers are looking for new ways to contain health care costs. The solutions that are emerging increase consumers' financial responsibility and involvement in their own health care choices.

One new approach — "consumer-directed health plans" or CDHPs — involves increased incentives to make consumers financially responsible when they choose costly health care options.[1] CDHP designs are predicated on the assumption that consumers will seek and use information on the efficacy of treatment and provider performance if they have a sizeable financial stake in care decisions. To help them choose the best health care options, many employers are providing informational tools. Employers hope that these decision-making tools, combined with financial incentives, will contain costs by inducing consumers to eliminate unnecessary care and to seek lower-cost, higher-quality providers.

Raising consumer cost sharing, especially deductibles, is part of the CDHP strategy.[2] Often, the higher deductible is combined with a tax-free personal health care spending account. Health Reimbursement Accounts (HRAs) and Health Savings Accounts (HSAs) are the newest forms of these accounts. They can be used by the employee to pay for unreimbursed qualified medical expenditures and permit him or her to carry-over unused funds in the account from year to year. The carry-over provision benefits employees who use fewer and less-costly services.

Tiered-benefit designs, which require higher patient cost sharing when expensive options are selected, are also emerging. Insurers introduced tiered pharmacy benefits in the 1990s, with the level of cost sharing dependent on whether the consumer chooses generic drugs, preferred brand-name drugs, or nonpreferred drugs.[3] Some of the largest insurers now offer tiered-hospital networks, enabling lower cost sharing by consumers who choose the lower-cost hospital networks; other insurers are developing the tiered-benefit concept for medical groups.[4, 5, 6] Some argue that the greatest promise for promoting efficient use of resources lies in varying the benefits depending on the provider, site of service, and even type of service selected.[7, 8]

To make it easier for employees to choose their health care wisely, employers are providing them with a variety of tools including: comparative information about the costs of services and/or providers; comparative quality information on hospitals and physicians; and information on managing specific diseases.[9]

This report is an overview of the current state of knowledge on the effectiveness of these approaches and tools. Each of the next three sections addresses one of the three benefit-design approaches — high deductibles (section II), personal spending accounts (section III), and tiered-benefit designs (section IV). Section V examines point-of-use decision-support tools. Each section describes recent trends in adoption of the approach, as well as any evidence on its effectiveness in reducing health care use and spending while preserving and promoting access to appropriate care and health.

Because the employee health benefit arena is evolving rapidly, the authors do not attempt to quantify the prevalence of different approaches. Instead, they characterize the direction that benefit redesign is taking, based on a review of the research literature and trade literature, and from discussions with insurers, employers, and experts in employer benefit design. The final section summarizes the state of current research and offers recommendations for priority research questions.

II. High-Deductible Plans

Trends

Deductibles in employer group health insurance plans have risen substantially in recent years as employers look for ways to control their health benefit cost increases. In 2004, the average individual deductible for covered workers was $221 — a 50 percent increase in real dollars over the 2000 average deductible.[10]

Nevertheless, few employers offer plans that qualify as "high-deductible" plans eligible to pair with HSAs; in 2004, a qualified high-deductible plan must have a minimum deductible of $1,000 for an individual, and $2,000 for a family.[11] In 2004, only 10 percent of all businesses, and 20 percent of businesses with 5,000 or more employees, offered at least one plan with a $1,000 deductible.[12]

Although few employers have yet introduced high-deductible plans, the number of employers offering them doubled between 2003 and 2004, and an equal number say they are very likely to introduce them within the next two years. Because virtually all insurers are now launching new products that include or are compatible with HSAs, this trend is likely to continue.[13] In California, 18 percent of employers offered a high-deductible plan ($1,000 deductible or higher) in 2004; this could increase to more than a third of employers in two years if employers carry out their reported intentions to add a high-deductible plan.[14]

A high-deductible plan is generally offered as an alternative to more traditional PPO or HMO plans — one of several options for employees. The high-deductible plan designs typically specify a deductible for self-only coverage of $1,000 to $2,000 per year, with out-of-pocket maximums of $1,500 to $3,000 per year. Often these are accompanied by a personal spending account of about $600 to $1,000 for an individual, thus leaving workers exposed to a gap of about $400 to $1,000 after depleting the personal account and prior to satisfying the deductible.[15] In the 2004 open-enrollment season, federal employees could also elect a high-deductible plan that could be combined with an HSA or HRA. The deductibles for self-coverage in these high-deductible plans ranged from about $1,100 to $2,500, with out-of-pocket maximums of $2,200 to $4,500.[16]

Effects on Health Care Spending

Although higher deductibles do shift costs from employers to employees, some observers are skeptical that the plans currently being offered will do much to contain total health care costs. They argue that most spending is incurred by people who exceed the limits in these plans, and therefore the plans offer little incentive to control spending where it matters.[17] For example, 74 percent of health care spending in 2002 (for privately insured people under age 65) was for those with expenditures exceeding $3,000; and 83 percent of spending was incurred by those with bills of over $2,000.[18]

On the other hand, the trade press is replete with references to substantial savings for employers who have adopted high-deductible plans and HSAs. Large savings are reported even by employers who offer such a plan as one of multiple options. Nonetheless, reports of at least 10 percent savings relative to expected trends for employers introducing high-deductible plans are typical; savings of 20 to 25 percent have also been reported.[19, 20, 21] Some of these savings refer to employer savings, and some to reductions in total health care resources; it is not always clear which is being reported. In the former case, the savings may represent a shift in costs from employer to employee, rather than real reductions in spending.

It is important to note that these plans are new and have not been subjected to rigorous evaluation. Most of the information in this report about the effect of high deductibles on spending comes from the RAND Health Insurance Experiment (HIE). (An examination of how the presence of personal health savings accounts might mitigate the incentive effects of high-deductible plans is provided in the next section.) This was a randomized controlled trial of the effects of cost sharing on health care use conducted between 1974 and 1982.[22]

Table 1 summarizes the results of several studies that have used the HIE results to simulate the effect of moving employees from a typical plan to one with a high deductible.[23] The parameters of the plans examined in each study are inflated to 2003 dollars in the table using the medical care component of the Consumer Price Index. Studies by Keeler and his colleagues[24, 25] derive from a simulation model of health care episodes and their costs over the course of the year, taking into account the individual's response as his/her share of the cost changes when the deductible and/or the maximum limit are exceeded. The model was constructed based on analysis of the HIE. Ozanne[26] used an estimate of the overall price elasticity of demand from the HIE and computed the percentage change in expected price from a change in benefit design; it used the expected average price of care in the population given each benefit design and the distribution of medical spending for the population. The other two studies shown in Table 1 are based on actuarial pricing models that use a range of estimates of the elasticity of demand from the literature — including the HIE estimates. The studies shown in Table 1

Table 1. Estimates of Reduction in Health Care Spending from Moving to High-Deductible Insurance

SOURCE	BASE PLAN		HIGH-DEDUCTIBLE PLAN		REDUCTION IN TOTAL SPENDING
	Deductible	Out-of-Pocket Max	Deductible	Out-of-Pocket Max	
Keeler et al., 1988[27]	$300	$3,000	$1,000	$3,000	5%
Keeler et al., 1996[28]	335	2,000	2,000/4,000	2,000/4,000(a)	6%
Ozanne[29]	275	1,400	2,800	2,800	4–8%
Lee and Tollen[30]	270	1,600	1,070	3,210	13%
Nichols et al.[31]	350	1,825	3,000	3,000	15%

(a) Individual/family deductible and out-of-pocket maximum

Note: Deductibles and out-of-pocket maximums in 2003 dollars, adjusted from published studies using medical CPI. Studies assume coinsurance of 20% to 25% for spending from the deductible of out-of pocket maximum.

suggest that moving everyone from a typical plan to a high-deductible one would result in a one-time reduction in use of about 4 to 15 percent.

While the level of spending is likely to be somewhat lower if high-deductible plans gain sufficient penetration, this may not constrain the rate of growth in spending over time.[32] In fact, there is evidence that most of the growth in spending can be attributed to technological innovation[33, 34] and there is little evidence that greater cost sharing will slow the adoption of new technology. Health care spending growth in most developed countries is similar to that in the United States, despite large differences in health care financing.[35]

Several factors may cause somewhat different effects than would be predicted from the HIE, which is limited to high-deductible plans alone. The availability of personal spending accounts in the form of HRAs or HSAs, as is common when employers introduce high-deductible plans, may affect spending incentives that can offset some of these gains. For example, if consumers view the accounts as earmarked for current spending, they may feel there is no need to conserve on spending despite the deductible, at least until they have exhausted the account. The incentive effects of spending accounts will depend on how they are funded and rules about the use of funds; this is discussed in the next section.

Others argue that the HIE estimates understate what would happen if the entire population shifted to a high-deductible plan; this is because the HIE did not change physician practice norms since only a small fraction of any physician's patient population were enrolled in HIE plans. In the HIE, most of the effect of the cost sharing was on the patient decision to initiate care; the amount of spending per episode of care did not vary substantially with cost sharing. However, a change in the coverage for the entire population might affect practice norms and lead to greater reductions in health care utilization.[36] On the other hand, some economists believe that reductions in demand for visits by patients will lead to physician-induced demand for care in an effort to offset income losses.[37] Although empirical evidence suggests that physician actions do not fully offset a fall in demand,[38] changes in physician behavior in response to widespread reductions in patient demand for visits could somewhat offset the effects of deductibles estimated in the HIE. Thus, it remains uncertain whether large-scale changes in benefit design would lead to larger or smaller effects in total health care use than found in the HIE.

The HIE results found no difference between the poor and the non-poor in the effect of increased cost sharing on health care use. However, today's new plan designs may impose a greater burden on low-income families than was the case in the HIE and thus may augment disparities in access to care between low- and high-income families. For example, a recent analysis of the out-of-pocket cost burden of various prototypical new plan designs indicated that almost 50 percent of families with incomes below poverty would be responsible for out-of-pocket costs exceeding 10 percent of their income; one-third of families with incomes between poverty and 133 percent of poverty would face this level of burden.[39] In contrast, out-of-pocket expenses were limited to a 5, 10, or 15 percent share of income in the HIE. Some analysts of the experience in other countries that have implemented HSA-type designs report that they increase inequitable treatment of vulnerable groups.[40]

Effects on Quality of Care and Health

The goal of consumer-directed health care plans is to encourage patients to make better decisions about use of services. Proponents of high-deductible plans believe they will lead to selective reductions in inappropriate and unnecessary use rather than across-the-board cuts. While the HIE found that greater patient cost sharing does reduce use, it also concluded that this reduction generally was at the expense of care that is considered efficacious as well as less-effective services, including reductions in

both appropriate and inappropriate use of antibiotics.[41] There were a few exceptions. Cost sharing reduced use of the emergency room for less urgent problems to a greater extent than more urgent problems. And cost sharing did not reduce use of care regarded as highly effective for non-poor children.

The lower use of services among persons with greater cost sharing in the HIE did not generally translate into adverse health effects, suggesting that the new high-deductible plans would not lead to poorer health outcomes. However, negative consequences did occur for some low-income people in poor health. Cost sharing produced poorer health outcomes for low-income hypertensive patients, and more serious symptoms for low-income adults in poor health at the start of the experiment. Low-income children with cost sharing were more likely to have anemia.[42]

A recent literature review suggests that the lack of insurance has negative health consequences — at least for low-income populations who are uninsured.[43] Apparently there is some level of consumer cost sharing that imposes burdens on the low-income population and leads to deleterious effects on health. If plan designs place greater cost burdens on the low-income population than did the HIE plans, they may have broader health consequences than observed in the HIE.

On the other hand, changes have occurred since the HIE that might promote more cost-conscious and appropriate care choices among consumers who have financial incentives to choose wisely. First, there are efforts to couple new plan designs with tools to help consumers make better choices, and the Internet eases access to information about health care for many. Second, care management tools that have been introduced since the HIE may help improve consumer decision making.[44] For example, there is some evidence that increased cost sharing may have more selective effects on decisions now, at least in the use of drugs. Goldman[45] and his colleagues examined the effects of doubling cost sharing for prescription drugs for employees in 30 businesses from 1997 to 2000. Drug use decreased, but not indiscriminately; people with chronic diseases were less likely to reduce their disease-specific drug than other drugs.

Another concern is that high-deductible plans might lead consumers to skimp on preventive care that could reduce costs in the long run. The HIE showed that these plans do lead to less preventive service use, as well as less care generally. To circumvent this problem, many plans waive the deductible for preventive services. The legislation authorizing HSAs permits the deductible to be waived for preventive care and periodic evaluations. Anecdotal reports from employers who have introduced such plans are that preventive service has increased substantially, even while overall use declines in response to the high deductible.[46, 47]

However, research findings suggest the effects on preventive care are more complicated. Waiving the deductible would be expected to promote decisions to directly seek preventive care. However, some preventive services are provided or referred during non-preventive visits; a high deductible may thus indirectly lead to a reduction in such services. Analysis suggests that the relative importance of direct and indirect effects of cost sharing may depend on the type of preventive service.[48] For example, direct effects were most important for mammograms and pap smears, but indirect effects were predominant in obtaining blood pressure screening. The results suggest there is a need for further study of the effect of new plan designs on preventive care use.

III. Health Care Accounts

Types of Accounts

Personal health accounts — which place decisions about health care expenditures in the hands of the consumer — are a key component of the new generation of plans. There are different types of accounts, but they all share certain broad features. Employers and/or enrollees make deposits into a specially designated account that is then used to purchase health services. If enrollees spend all of the funds allocated to their accounts in a given year — and if this amount is less than the plan deductible — enrollees must then pay for any additional health services out-of-pocket until their deductible is met.

The gap between the annual account contribution and the deductible is often referred to as a "doughnut hole." Above the deductible, most costs are covered. The first personal health accounts, called flexible spending accounts (FSAs), did not permit enrollees to roll-over funds from year to year. Recently, however, legislation has created new kinds of tax-advantaged personal accounts that allow funds to be rolled over, which is expected to encourage employees to conserve the money in their accounts. The two main types of personal accounts are:

Health Reimbursement Accounts. HRAs are employer-funded and employer-owned accounts[49] that were authorized by the Treasury Department in 2002. Unused funds carry over from year to year for employees to use, but unused funds revert to employers when the employee retires or leaves the firm. Employers can fund them with "notional dollars" — the employer can reimburse an employee for medical expenses as they occur up to the specified amount. HRAs can be used with any type of insurance plan, but typically they are offered along with high-deductible insurance plans. Account funds can only be used for medical care.

Health Savings Accounts (HSAs).[50] HSAs, established in 2003 under the Medicare Prescription Drug, Improvement, and Modernization Act, are available to all individuals and employer groups. Unlike HRAs, HSAs must be combined with an insurance plan with a deductible of at least $1,000 for an individual, and $2,000 for a family.[51] The maximum account contribution is the lesser of 100 percent of the deductible or $2,600 for an

individual, $5,150 for a family. While contributions can be made by the employee, the employer, or by both parties; the employee owns the account, which is fully portable across jobs. Unused funds are rolled over from year to year. Accounts can earn investment income that is not taxed as earned, and funds can be withdrawn to pay for non-medical expenses, although they are then subject to taxes and to a penalty if the individual is under age 65. The portability and investment provisions of HSAs encourage consumers to conserve the funds and treat them as retirement accounts.

Trends

Insurers

Insurers' interest in HRAs and HSAs is widespread, and most insurers are introducing health-account-compatible plans. Today, at least 75 insurers offer account-compatible plans nationwide.[52, 53] Fifty-eight offer high-deductible account-compatible plans to large employers, 56 to small employers, and 47 to individuals. Most large insurers will also have full integration of HSAs and high-deductible plans by 2006; this means that the carrier has a relationship with a bank and can provide information about the account along with data on total claims.[54]

Several vendors dominated the early HRA market, including Aetna, Lumenos, Definity, and Anthem. There are ongoing mergers and buy-outs by established insurers of some of these early consumer-directed vendors (e.g., United Healthcare recently bought Definity). Some industry experts predict that large insurers that have been slow to move into the market will continue to acquire these early free-standing vendors.[55]

The Aetna HealthFund™ HRA, in operation since September 2001, is an example of an early account model. Aetna also introduced an HSA model for medium and large national employers in June 2003. Seeing them as successful, Aetna has actively promoted these products and is extending the HSA to all of its customer groups this year. Interestingly, Aetna reports that most of the HSA accounts were funded solely by employees; only 39 percent of employers contributed to employee HSAs.[56] These plans are offered with complete coverage of preventative care and complete coverage after the deductible is reached. Deductibles in 2004 ranged from $1,050 to $4,000 for single coverage, and $2,100 to $6,000 for family coverage. Aetna has also begun to offer HSAs to federal employees in 32 states and Washington, D.C., as part of a package that offers free preventive care from network physicians.[57]

Other major health insurers are moving into the market. The Blue Cross Blue Shield Association will offer HSAs in 49 states and D.C., by 2006; it is currently offering plans in 39 states.[58] Kaiser Permanente began offering HSAs in January and will expand this option across all its regions.[59]

Despite widespread interest in consumer-directed health products, some large insurers are entering the market in a more limited fashion. For example, two years ago PacifiCare introduced a new line of products that couple a self-directed reimbursement account funded by PacifiCare with a high-deductible insurance product. Unspent balances in the account roll over to the next policy year. PacifiCare launched this option only for the small group market in order to capture the entire group and help manage selection. This seems to have been a successful strategy: PacifiCare's small group market CDHP is now their fastest-growing product and is attracting new customers to the company.[60]

Employers

Although large businesses have historically led the way in adopting new approaches to cost containment, the major employers are generally introducing these products in a gradual way. Few large employers have chosen the "full replacement" route of abandoning traditional plans in favor of CDHPs.[61] Insurance industry officials report that employee take-up is low when CDHP plans are offered alongside traditional plans, as is customary. Insurers and

employers also report that employers' success in enrolling workers in these new plans depends on comprehensive education and communication efforts rather than waiting for employees to respond to premium differences.

With the introduction of HSAs, employer interest seems to be shifting from HRAs. Big HRA vendors are reporting that 10 percent of employer accounts are renewing into HSAs instead of HRAs.[62] A number of experts predict that both account types will continue to grow in 2005, but that HSAs will outstrip HRA growth.[63] For example, United HealthGroup reports about equal interest in HSAs and HRAs currently, but feels that the percentage might rise to as much as 75 percent in HSA policies in 2006.[64]

Nevertheless, HRAs will continue to play an important role. Because unused balances revert to employers when an employee leaves the business, employer-funded HRAs are less costly to employers than equally funded HSAs. Moreover, HRAs may be a way for the employer to provide incentives for employees to stay with the firm. Indeed, some employers are lobbying to be able to use a combination of HRAs and HSAs.[65]

A recent survey of 555 large employers by Watson Wyatt and the National Business Group on Health found that 8 percent of large employers currently offer some form of HSA and that the number will increase to 26 percent next year.[66] Late 2005 will be good time to begin gauging the strength of the trend. Because most large employers had already selected 2005 health plan choices before the Treasury Department issued its HSA regulations last summer, the first real test of HSA appeal will come later this year, with the coming round of plan review and selection.

There is some evidence that the newest HSA products may be more popular among small businesses and individuals than larger groups, at least initially. A survey of America's Health Insurance Plans (AHIP) member companies found that only 3 percent of enrollees in HSAs in 2004 were in large group plans.[67] Some smaller businesses that might not otherwise offer health insurance see them as a way to provide low-cost coverage. AHIP found that 16 percent of small group HSA policies were sold to businesses that previously did not offer insurance. This suggests that CDHPs have potential for expanding health care coverage to small business employees. This finding is supported by a simulation study conducted by Goldman et al.,[68] which found that similar plans could increase the proportion of small businesses offering health insurance.

Enrollees

Most observers believe the CDHP market is growing briskly and will continue to do so. By one estimate, 2.5 million people will be covered by HRAs and another 2.5 million will be enrolled in HSAs by end of 2005.[69] Forrester Research predicted that CDHP enrollment will skyrocket from 1 percent of people with health insurance in 2004 to 3 percent by 2006; then to 12 percent by 2008 and 24 percent by 2010. It also predicted that 40 percent of these enrollees will be previous PPO subscribers, and that 20 percent will be previous HMO subscribers.[70]

There is concern that enrollees in CDHP plans will differ from those opting for the traditional plans, namely that only high-income, healthy people will choose the CDHP option. This might increase the cost of the traditional plans, since there will be less risk-pooling in these plans. In principle, plans coupled with accounts should attract enrollees who expect to have low medical expenses and can thus accumulate funds in their accounts. However, those with large expected expenses can reduce their effective out-of-pocket maximum with an account because the payments are made in dollars that one does not pay taxes on.

Henry Aaron draws attention to another interesting aspect of HSAs: Neither contributions nor disbursements are taxed at all. Indeed, according to Aaron, "Tax treatment of future health care spending

financed out of HSA accumulations is more favorable than that afforded spending of any kind financed out of other forms of savings."[71] As a result, HSAs seem certain to appeal to high-income employees, who will view them as investment tools.[72]

Simulation analyses and experience to date have produced somewhat mixed results about the importance of selection. McNeill[73] found that people who were healthy and people who were very sick would save under consumer-directed plans. Moderately sick people would be less well-off and thus less likely to choose these plans. A simulation of plan choices by Keeler et al.[74] concluded that CDHPs with modest deductibles would not attract those who were much healthier than average, though selection becomes a greater concern with very high-deductible plans. The researchers also concluded that there would be only small differences in income between those selecting the CDHP and those staying with conventional plans.[75]

Some earlier experience also suggests that CDHPs do not attract more favorable risks than other plans. In fact, those purchasing HSA products through eHealthInsurance are older than those buying non-HSA products, suggesting that HSA enrollees may be in poorer health. These purchasers were not disproportionately high income; about 40 percent of those purchasing HSA products through eHealthInsurance had incomes below $50,000, and one-third were previously uninsured.[76] Similarly, according to the survey of AHIP member companies,[77] half of HSA individual policy purchasers were over age 40, and almost 30 percent were uninsured previously. In contrast, in a study of employees in a single large firm, Hibbard and others found that those enrolled in the CDHP were better educated and in better health with fewer chronic conditions than those selecting the traditional PPO.[78] Parente et al.[79] also reported that CDHP purchasers were in better health and were higher paid than other workers.

Thus it appears that some selection into CDHP plans may be occurring, though it is not extreme. Its importance may differ between the large group market, where multiple choice is common, and the small group market in which employers typically offer only one policy. Moreover, the plans are drawing new customers into the health insurance market.

Effects on Health Care Spending

Expected Effects

The goal of health spending accounts is to couple the cost-containment effects of a high-deductible plan with an account to provide protection against cash-flow problems if high out-of-pocket expenses occur. Consumers have an incentive to spend dollars in the accounts wisely because they are limited and because funds can be rolled over from year to year. The strength of the incentives depends on who owns the accounts. With HRAs — employer-funded accounts — employees can use account balances only for current or future medical bills. If consumers realize that spending money from these accounts today reduces the amount available later, they have incentives to conserve. The effect on health spending by an enrollee in this circumstance should be the same as the effect of a high-deductible plan, considered in the previous section. However, if accounts build up and consumers perceive that they risk losing some or all of the value because of roll-over limits or job mobility, they may view spending from the account as costless, and spend more than they might otherwise.

When employees own the account, the current trade-off is between spending a dollar from the account on medical care and withdrawing the money to purchase other goods with the amount left after paying taxes and a penalty. This makes current consumption of medical care below the plan deductible somewhat less expensive than current consumption of other goods and services, and would mitigate to some extent the effects of a high-deductible plan. It is estimated that accounts might offset the decreased spending expected from a

high-deductible plan by about 50 percent.[80, 81] That is, rather than the 4 to 15 percent reduction in use expected from moving to a high-deductible plan alone, as shown in Table 1, high-deductible plans combined with personal accounts might reduce use by 2 to 7 percent.

However, in addition to tax-favored status of current contributions, the interest on HSAs is not taxed as earned, and the penalty for withdrawal for non-medical consumption is waived after age 65. This feature raises the cost of current medical consumption relative to saving for retirement and should boost the incentive effects of the HSA. However, experts believe that the reduction in spending by an individual with an HSA plan would still be less than the reduction with a high-deductible plan alone.[82]

Finally, reductions in system-wide spending from HSA plans will depend on the extent of take-up and patient selection into account-based plans when more than one plan is offered. Keeler et al.,[83] concluded that switching all people to high-deductible plans with personal accounts would be associated with moderate savings, but taking into account voluntary self-selection into account-based plans, national health spending would change by only 2 percent or less. Moreover, selection could mean that accounts are funded for individuals who would not have incurred any expenses, thus leading to higher outlays by employers.

Indeed, employers seem cognizant of this ambiguity about cost savings. According to a survey of employers that already have implemented a CDHP, "only 39 percent strongly believe that the plan will cause employees to become wiser health care consumers"; in addition, 21 percent of those not adopting thought it would be effective in managing costs.[84]

Ultimately, whether or not such benefit designs are associated with cost savings will also need to be disentangled from other changing plan attributes, such as consumer education and Internet-based tools to help consumers make better decisions. And widespread changes in insurance benefit design may have different effects than small-scale changes like the HIE (on which the estimates of expected effects are based) because of physician behavioral responses. But as discussed earlier, there are differing views as to whether increased patient cost sharing would lead to more conservative physician practice patterns or to physician-induced demand.

Empirical Evidence

Is there any evidence that personal account-based plans reduce spending? Emerging reports suggest that the answer is a cautious yes. An Aetna HealthFund™ study of first-year adopters found lower cost increases for people enrolled in CDHP versus PPO enrollees. It also found a reduction in facility-based services and increased reliance on generic drugs.[85]

Parente et al.[86] found that CDHP enrollees at one large employer had lower total expenditures than PPO enrollees and lower pharmaceutical costs (especially for brand-name pharmaceuticals). Expenditures by CDHP enrollees, however, were higher than those of HMO enrollees and increased more rapidly than other groups. Moreover, the CDHP benefit design did not discourage most enrollees from exceeding the deductible and using the personal account. Some 57 percent exceeded the deductible threshold in the second year. Only 40 percent had money left in their account in the first year and only 29 percent in the second year.

A case study of four employers offering HRA plans conducted by Lo Sasso et al.[87] suggested the potential for HRAs to contain cost increases. However, favorable selection was reported when CDHPs were offered alongside traditional plans. Nonetheless, one employer that completely replaced its traditional plan with an HRA also reported a substantial reduction of 18.7 percent in total medical cost after the switch in 2003.[88]

It is worth underscoring that all of these findings should be treated with caution. "Is there any indisputable data on CDH savings?" CDMR asked last year.[89] Their answer at that time was "no way." While recent studies have added somewhat to our base of knowledge, more work needs to be done before researchers or policymakers can speak confidently about the savings associated with the various products. In addition, research on how the effects of the new designs vary over time is needed to understand the implications for cost-containment over time. Do patient incentives to shop wisely change as account balances accrue? Do the designs promote one-time reductions in use or also reductions in cost growth?

Effects on Quality of Care and Health

The best source of information on the effects of cost sharing on health outcomes is the RAND HIE. But those results may not be directly applicable because of changes in the health care system addressed earlier and because cost sharing wasn't tied to a personal account.

The early evidence on health care use and outcomes with CDHP plans provides some reassuring evidence that consumers are not foregoing necessary care — especially preventive care — but findings are mixed. For example, Aetna found that enrollees in account-based plans increased their use of preventive services and that diabetics continued to seek clinically necessary care. Logan Aluminum reported that employee use of preventive health services and hospital days of care went up — indicating employees are getting needed health care — while numbers of office visits and ER visits dropped.[90] Parente et al.[91] found evidence of higher inpatient spending, and also found more diagnoses indicative of higher illness burden among CDHP enrollees than those remaining in an HMO or PPO. If this result is due to adverse health events, it would be a cause for concern. However, the authors caution that these diagnoses are directly associated with the higher rates of inpatient care use; further, they point out that preventive services were covered at 100 percent under the plan and CDHP enrollees also used more physicians' services.

Finally, it should be noted that all of these studies report only on the first year or two of experience. It may take longer for measurable changes in health outcomes to occur.

IV. Tiering in Consumer-Directed Health Plans

Tiered-benefit designs, which offer lower cost sharing for enrollees who select providers in preferred tiers, are emerging as a feature of consumer-directed health plans. These plans are a variation of the common practice of providing one level of benefits to individuals who use in-network providers and another level of benefits for using out-of-network providers.

Tiered-benefit plans fall into two categories: tiered-premium plans and tiered-provider plans. Consumers in tiered-premium plans are required to pay a higher premium if they select a less-restrictive network or more generous coverage. In tiered-provider plans — the focus of this review — the consumer pays lower costs when selecting a provider in a preferred tier. That is, in tiered-premium plans the consumer selects the provider group at the time of plan enrollment; in the tiered-provider plans the consumer can choose from different provider groups at each time of use.

Tiers are based on cost, quality, or satisfaction; thus, they differ from the usual preferred provider organization (PPO) or point-of-service (POS) product that bases the cost-sharing differential on whether the provider has agreed to accept a discounted rate. Tiered plans encourage consumers to select providers that offer high-quality care and low cost. In turn, it is hoped that providers will improve quality and lower cost. Thus, tiered networks will only work in markets where there is a sufficient supply of providers to permit patients to make real choices.

Tiered-provider plans may place hospitals or physicians, or both, in preferred and nonpreferred tiers. Tiered hospital and physician networks are based on the same concept. They allow patients to make choices between providers with different costs, rather than have the health plan make those choices. Tiered-provider networks include all or most available hospitals and health systems in their plan, placing them in different price tiers; this is in contrast to limited provider networks that are characteristic of tightly managed care.[92, 93]

Trends

A number of the largest insurers now offer tiered-hospital networks and tiered-medical-group networks, and they appear to be spreading.[94, 95, 96] According to a survey of commercial health plans by Mercer, only about 3 percent of plans offered a tiered-premium product and another 3 percent had a tiered-provider model as of January 1, 2003. The enrollment was greatest in tiered-provider plans, with 1.5 million enrollees, compared to just under a half million in tiered-premium plans.[97] However, Milliman's annual survey of HMOs and PPOs that serve the large group commercial market indicated a significant increase in tiered products. In particular, 17 percent of plans offered a tiered product in 2004, and 42 percent expected to offer a tiered-network plan in 2005.[98]

PacifiCare, Blue Cross, and Aetna are among the large insurers that offer tiered-network plans. Blue Shield of California introduced Network Choice in 2002 and it is now one of the largest hospital tiering programs in the country.[99] Blue Shield moved all of its small group business into this program.[100] Introducing tiered-physician plans in 2003 were Premera Blue Cross, based in Washington; PacifiCare, based in California; and HealthPartners, in Minnesota. Aetna introduced such a plan in 2004.[101, 102] Tufts Health Plans launched its tiered product in 2005 with two hospital tiers. It plans to add a third hospital tier and to phase in tiering of primary care physicians and specialists.[103]

According to the 2003 Community Tracking Study's indepth survey of 57 health plans in 12 geographic areas, ten plans had launched tiered-network products, and another two plans were pilot-testing tiered products.[104] Hospital tiering was more common than medical group tiering. Eleven plans had hospital tiers in place, and only four had medical group or physician tiers. While several plans used a simple two-tier structure (Blue Shield of California and Blue Cross and Blue Shield of Massachusetts), others had implemented three tiers in their plan design (Premera Blue Cross and Blue Cross and Blue Shield of Florida).[105]

Initially, insurers developed hospital tiers primarily by selecting low-cost providers; however, several insurers now use quality information and patient satisfaction in creating hospital and medical group tiers.[106] The 2003 Mercer survey of commercial health plans found that virtually all plans reported using cost and quality to set the provider tiers (97 percent), with only 3 percent reporting cost as the only criterion.[107] Among the Community Tracking Study plans, the primary criterion used to set tiers was cost, measured by prices, payment levels, or efficiency. An Orange County plan, for example, set tiers based on negotiated hospital payment rates. Other plans, such as Blue Cross and Blue Shield of Florida and Seattle's Premera Blue Cross, used hospital and physician claims data to estimate the average cost of care, controlling for case mix. Providers with significantly higher costs were assigned to the nonpreferred tier.

In establishing its tiers, Blue Shield of California uses costs adjusted for service mix and severity, as well as several quality indicators from Leapfrog, JCAHO (Joint Commission on Accreditation of Healthcare Organizations), the California Perinatal Quality Care Collaborative, and the Hospital Quality Alliance.[108] Tufts Health Plan worked with a committee of experts and the state hospital association to select quality measures based on indicators from JCAHO and Leapfrog.[109] HealthPartners uses 32 quality measures to tier physicians and hospitals, including patient satisfaction surveys, best practices, and Leapfrog and JCAHO indicators.[110]

Ideally, a consistent and transparent set of measures is used to establish hospital and medical group tiers, so that the role of tiering is clearly understood by providers and patients.[111] However, measuring the cost and efficiency of hospital and physician services is far more complex than assessing these dimensions for pharmaceuticals, where tiering is well established.[112] In addition, there is a much greater disparity in costs than in quality measures in most markets; therefore quality differences often make little difference in tier placement, especially

since plans currently place groups in a limited number of tiers.[113]

Despite widespread attention to tiered networks in health policy circles, employer interest in tiered products nationwide is still limited. Only 2 percent of all employers — large and small — in a national survey say they are very likely to offer a tiered-physician or tiered-hospital network in 2005, while 19 percent say they are "somewhat likely" to.[114] However, interest among large employers is somewhat greater. A 2004 survey of large employers by Hewitt indicated that over half of large employers were interested in tiered networks.[115]

The prognosis for tiered networks is mixed. A number of insurance industry experts interviewed for this report predict that future benefit design will include tiers based on type of provider and type of service, as well as cost and quality. Some observers expect consumer-driven health plans with tiered-provider networks to bring about the end of PPOs. This is because the unlimited choice provided by tiered networks linked to detailed consumer information may be more attractive than the PPO model with a more limited network.[116]

However, employers remain skeptical about the effectiveness of tiered-provider networks in controlling costs. Furthermore, many employers don't perceive the difference between the new tiered-provider structure and the older PPO and POS models.[117] In fact, most employers have indicated a preference for increased cost sharing rather than for incorporating a new product design.[118] Moreover, some industry experts believe that tiering is too complex for consumers, and instead the future will see a move to greater use of coinsurance rates, which implicitly require more consumer cost sharing when more expensive providers are selected.

In some cases, the introduction of tiered networks has been problematic. In several markets, health plans faced some instability as hospitals and medical groups renegotiated contracts and lobbied for placement in the preferred tiers. Often, placement in the preferred tier reflected market power rather than cost or efficiency, raising concerns about how effective tiering may be in controlling costs. Hospitals with market power have refused to accept placement in the nonpreferred tier, leaving insurers with limited flexibility in setting tiers. Smaller markets often have too few providers to make meaningful tiered networks. Furthermore, tiered networks need to be constructed market-by-market, implying a relatively slow diffusion rate. Most tiered-network products to date have excluded relatively few providers from their preferred tiers, raising further concerns about the ability of this design to control costs.[119, 120]

Others have raised concerns that tiered-network designs may reduce access to high-quality, but costly, providers and may in fact reduce providers' incentives to invest in high-cost technology. It is unclear how consumers and providers will adjust to markets with tiering. Some providers may believe that placement in a high-cost tier will drive patients away. Other providers may view such placement as a signal of their high quality.

On the other hand, tiered networks have been readily accepted by providers and consumers in markets that have experience with public reporting of cost and quality data and with the use of quality incentives in setting payment. Minnesota is a good example.[121] Some insurers have also reported that tiered networks appear to give providers an incentive to improve quality and hold down costs.[122]

Effects on Health Care Spending

Employers and insurers are particularly interested in tiered networks to control spending on health care. From the consumer perspective, higher cost sharing should encourage patients to seek out efficient providers. This may pressure hospitals and physicians to control costs and make information about quality readily available. The degree of cost sharing required to elicit price-sensitive behavior from consumers is unclear. Some studies have found little effect of cost

sharing on patient choice of provider.[123, 124] The success of tiering in controlling costs will partly depend on how high-cost patients respond to the incentives, since the majority of costs stem from a small minority of the insured population who may be least positioned to make choices based on cost. Some observers fear that tiered networks may increase costs if consumers equate high cost with high quality and therefore choose the nonpreferred, high-cost tier.[125]

There is limited information about the effect of tiered health plans on controlling health costs, primarily because these plans are relatively new and have not been widely implemented. Based on interviews with industry representatives, it appears that some health plans have reported favorable cost trends. Premera estimates that employers can reduce premium costs by up to 10 percent, while PacifiCare calculates savings up to 15 percent.[126]

A study of Patient Choice, which implemented a tiered-provider network based on cost and quality in 2002, also suggested the potential for cost savings. Providers were assigned to one of three cost tiers based on risk-adjusted costs. Patient Choice's experience revealed that risk rating was important for setting tiers since providers differed in their risk pools. If premiums are adjusted for case-mix, Patient Choice experienced relatively lower-than-average premium increases, suggesting that provider tiers were effective in controlling costs.[127]

Tiered-benefit designs for prescription drugs have become quite common in the last few years. Studies of the experience with pharmacy tiers may have some relevance to hospital and medical group tiers. Several studies of the implementation of a three-tier benefit—compared to the earlier two-tier benefit—found slower growth in prescription utilization and expenditures, and considerably reduced net costs.[128, 129] However, the results from these studies should be applied with caution to tiered hospitals and medical groups. This is because pharmaceuticals are more homogenous than physician or inpatient care, and information about drug quality is far more easily available and interpretable.

As discussed earlier, tiered-provider networks bear some similarity to the structure of PPOs. Therefore, studies comparing PPOs to other organizational forms may hint at tiered-provider networks' effect on costs. Studies have compared traditional gatekeeper HMOs to more loosely managed PPOs that allow enrollees to access a wide network of providers at a higher cost-sharing level. In general, these studies found that loosening the network had little effect on health care utilization and expenditure.[130, 131, 132, 133] Other research found that PPOs had cost savings of approximately 12 to 14 percent above FFS plans with utilization controls.[134]

The results from these studies should also be applied with caution to tiered hospitals and medical groups. While the preferred tiers in PPOs were based mostly on negotiated provider discounts, the categories among tiered-provider networks are based on cost, quality, and performance. If this information is transmitted effectively to consumers, choice patterns may differ from those observed in PPOs. Furthermore, comparing FFS plans to PPO plans, or comparing HMO plans to PPO plans, differs from our desired comparison of all existing plan structures to tiered-provider network plans.

Effects on Quality of Care

Some observers fear that tiered networks may affect the quality of health care available to patients. Since most tiered-network designs are based primarily on cost, high-quality providers with higher costs may be placed in nonpreferred tiers, making them unaffordable for the poor. Tiered designs may also penalize hospitals and medical groups that undertake quality improvements or produce public goods such as charity care and medical education.[135] To address these concerns, some health plans have incorporated quality measures into their tiering criteria; however, reliable and consistent quality data are difficult to find. Tiering, in combination with an

effective transmission of quality information, may be an important mechanism to help consumers make informed choices among providers and also to encourage providers to offer efficient high-quality care.[136] Blue Shield of California, for example, reports that its tiered-network design encouraged hospitals to adopt new quality improvement programs.[137]

Studies of the effect of tiered-pharmacy benefits may provide some guidance on the potential effect of tiered-provider networks. Moving to a three-tier pharmacy benefit from a two-tier one produced no evidence of lower medication continuation rates or any other adverse outcomes in the year following implementation.[138, 139] In contrast, a switch from a one-tier formulary to a three-tier formulary did result in the discontinuation of certain drugs that are necessary in treating chronic illness.[140] As discussed in the previous section, caution should be used in extrapolating these results to tiered-provider networks.

Through tiered networks, managed care continues its move away from tightly managed care with gatekeepers. However, some research suggests that more tightly managed care results in better health outcomes. A study that compared PPO and HMO performance on the use of preventive care services and consumer satisfaction with preventive care found that PPO enrollees were less likely than those in HMOs to receive blood pressure and mammography screenings, or preventive counseling on gun safety, smoking, sexually transmitted disease, or HIV/AIDS prevention.

Individuals in PPOs were also less satisfied with preventive care than those in HMOs.[141] However, HMOs did worse than PPOs in terms of delays in getting needed care, not receiving the most appropriate or needed care, and being forced to change doctors.[142] In another study, Tye et al.[143] found higher mammography rates among plans with gatekeepers and in plans with defined provider networks. Similarly, Phillips et al.[144] found higher rates for several preventive procedures (mammography, cervical screening, breast exams) in plans with gatekeepers; however they did not find higher rates of prostrate screening.

These studies raise a concern about the possible effects on quality of moving from tightly managed care to consumer-directed health plans that offer greater choice. However, if the movement is coupled with easily accessible information on preventive health and quality, as well as incentives to use health care appropriately, these concerns may prove unfounded.

V. Consumer Information and Health Care Decision Support

Trends in Provision of Information

Providing consumers with comparative information to assist them in making health care decisions began in earnest in the 1990s, as purchasers increasingly shifted their employee populations into managed care plans. Early efforts to produce comparative performance information — for the purposes of both accountability and consumer choice — were focused primarily at the plan level among managed care plans (e.g., HEDIS and CAHPS measures through National Committee on Quality Assurance, (NCQA)). To a very limited degree, selected markets produced information on hospital performance (e.g., coronary artery bypass graft surgical mortality in New York, California, and Pennsylvania); patient experience with medical groups (e.g., Pacific Business Group on Health Physician Value Check Survey in 1996 and 1998); and performance data on other plan products (e.g., PPOs, POS). Measurement at other levels of the health system — medical group, practice site, individual doctor, hospital — has grown in recent years; however, these efforts are still relatively sparse and the information is limited in scope and/or is not made publicly available.

CDHPs increase the need for information and decision-support as consumers are asked to weigh trade-offs in selecting providers or treatment options — decisions that have both health and financial implications. Some observers are concerned that the new emphasis on individual decision making could move the industry away from evidence-based medicine, which is dependent on group experience. Morrison et al.[145] state that CDHPs have two principal consumer-communication tasks: enrollment and decision support. They note that CDHPs must activate, empower, and assist consumers as both decisionmakers and as patients.

A variety of tools and information are under consideration or are being made available — to varying degrees — by health plans in support of "more activated" consumers. Among the offerings:

- Health promotion (health risk appraisals/screening, general health education information);
- Risk reduction/lifestyle behavior change programs (classes, coaches, self-study materials);

- Consumer decision-support (comparative provider performance information, self-care information, shared decision-making information and support, coaches);
- Disease management;
- Provider and treatment options;
- Directory of providers;
- Pharmacy directory;
- Consumer Web platform;
- Information on insurance benefits and claims history;
- Online personal health account information including balances; and
- Online connection to physician (for appointment scheduling, medication refills, consults, test results).

The limited evidence available shows that health plans vary significantly in the extent to which they provide decision support. Using a recent Mercer Consulting survey of 986 health insurance products offered in the United States by 680 health plans, Rosenthal and Milstein[146] examined various types of consumer-directed health plans and mainstream health plan models (i.e., HMO, PPO, and POS) to assess ways in which these plans support "consumerism." The results showed that plans vary in their ability to support consumers in managing their health risks and selecting providers and treatment options. Along the spectrum of plan models, HRAs provided the most support and mainstream health plans provided the least. At this stage, the provision of consumer decision support remains quite limited in scope, and there is variability in the usability of information provided.

Do Consumers Use Information for Health Care Decisionmaking?

In 2004, the Kaiser Family Foundation (KFF), in collaboration with AHRQ and the Harvard School of Public Health, conducted a nationally representative survey of 2012 adults to assess the extent to which consumers are using information on health care quality to make decisions.[147, 148] Some 35 percent of interviewees said they had seen information comparing the quality of different health plans, hospitals, or doctors in the past year (up from 27 percent in 2000). Among the respondents, 28 percent said they saw health plan comparative information (up from 23 percent in 2000); 22 percent saw hospital comparative information (up from 15 percent in 2000); and 11 percent saw physician-level comparative information (up from 9 percent in 2000). About half of those who reported seeing comparative quality information (19 percent) said they had used this information to make a decision about their care. Extrapolating these results to the adult population in the United States, translates to approximately 38 million individuals purporting to use quality information to make health care decisions.

Empirical studies on the use of health plan and provider performance report cards found that most consumers are not using these tools in making health care decisions (e.g., choosing a health plan) and that frequently consumers cannot easily or correctly evaluate the content of the material.[149, 150, 151, 152, 153, 154] A summary of the literature in this area by Marshall et al.[155] found that consumers rarely searched out the information, often did not understand the information (e.g., indicators poorly understood, unsure whether low or high ratings meant a plan or provider was good), or did not trust the information. The review also found that the information had only a small impact on consumer decision making.

A substantial share of the population continues to report that they rely on friends, family members, or a referring physician to help guide them in making health care decisions.[156] Yet, there is evidence that consumers are interested in accessing information to help in decision making, particularly in the area of treatment. For example, in a study by Strull et al.,[157]

41 percent of 210 patients with hypertension wanted more information about their condition. Similarly, a focus group study of 38 cardiac patients[158] found that participants did not feel they received sufficient information from their doctors to make informed choices. A study by Gattellari et al.[159] found that cancer patients wanted feedback on the progression of their disease, information about their prognosis, and the risks and benefits associated with different treatment options and side effects.

The fact that consumers are interested in health care information is evidenced by a substantial and growing number of consumers/patients reporting they use the Internet as a source of information about health care and treatment options. A study on the use of online health resources found that some 52 million Americans — or 55 percent of those with Internet access — used the Web to get health or medical information.[160] Among those seeking health information, 47 percent said it influenced their decisions about treatment or care. In contrast, another survey of users of the Internet for health information found that only about a third said it affected their health care decisions; however, about half of them said the information improved their knowledge about health care conditions and treatment options.[161] Moreover, there is a strong correlation between education and use of the Internet for health information.[162] Thus the utility of decision tools may vary substantially among different subpopulations, which could produce disparities in access to care or quality of care.

From a consumer or patient perspective, the Internet offers ease of access and material that is relevant to their specific health problem. The Fox and Rainie study[163] found that among those using online health resources, 70 percent reported that their last online search was for a specific condition. However, the quality of information on the Internet is not monitored and varies in its accuracy and completeness. A recent RAND-California HealthCare Foundation study reported that coverage of important clinical information was poor.[164]

At present we know little about the structure or the content of the information given to consumers in CDHPs and whether and how they use that information in their decision making. Only one study has been published on consumer use of information in the context of CDHPs;[165] it focused on understanding the enrollment decision of the consumer in a single employer setting. The study showed that employees in fair or poor health were more likely to have a difficult time with the electronic enrollment process and the timeframe within which to make a choice. This highlights the need for careful consideration on how to provide appropriate decision-making support for people with complex health needs.

Effects of Decision Aids

There is evidence that decision-making programs and decision aids can increase patient knowledge of their condition and its treatment. A study by Hersey et al.[166] found that in eight of nine randomized trials of interactive videodiscs, videotapes, or brochures/fact sheets, users of these aids reported greater knowledge. A review conducted by O'Connor et al.[167] showed that average knowledge scores improved by 9 to 28 points out of 100 (weighted mean difference: 19, 95% CI: 13, 25) when decision aids were used. The study also found that patients who received a detailed decision aid that included descriptions of probability estimates were more likely to have realistic expectations of treatment risks and benefits than those who were given usual care (pooled relative risk: 1.48, 95% CI: 1.3, 1.8). The O'Connor study recommended that more research be conducted on how patients' sociodemographic characteristics, literacy level, and personal predisposition affect the way patients access, use, and benefit from decision aids.

Several studies have shown that patients using decision-support tools are more likely to select non-surgical treatments; research has also found that information programs can increase patient compliance with treatment regimens and therefore

improve health outcomes.[168] These studies suggest the potential for information tools to help contain costs and promote better outcomes. However, much more research over a wide range of patient decisions is required.

Barriers to Patient Use of Information

Consumers' willingness and ability to use comparative performance information is affected by a variety of factors, including: awareness of the information; sufficient time to be able to use the information (i.e., urgency of treatment); ease of understanding the information; availability of information at the time of decision making; and the personal relevance of the information. Frequently these features have been absent in consumer information/decision-support tools.

There continues to be limited collection and transparency of performance information at all levels of the health care system, and in particular for those areas — providers and treatments — that are most critical to facilitating informed consumer decision making.

Another problem is the lack of standardization in measurement and reporting that would enable consumers to compare performance across providers and treatments. There is no comprehensive information for comparing organizations or providers across the six aims of a high-quality health care system outlined by the Institute of Medicine[169] — safe, effective, equitable, efficient, timely, and patient-centered.

At best, a consumer may have a patchwork of limited comparative performance information, with a heavy emphasis on information at the plan level and/or information that is not personally relevant to him. Studies by Hibbard et al.[170, 171, 172] and Vaiana and McGlynn[173] found that the information provided to consumers is not easily evaluable, and consequently may be confusing or create the potential for the consumer to make the wrong choice.

Hibbard reports that consumers frequently do not understand technical indicators of quality (e.g., clinical performance measures, such as rates of providing evidenced-based processes of care) and thus may not give them appropriate weight in the decision-making process. Similarly, consumers may be unsure about whether high or low rates of performance signal better quality performance. Additionally, inconsistency in the ratings of the same plans and providers across various reports may create confusion and raise concerns among consumers about the accuracy of these reports.[174]

Drawing from psychological research,[175, 176, 177, 178] Hibbard notes that preferences are unstable and sensitive to the way a choice is described or framed, and that "even very important attributes may not be used unless they can be translated into an effective frame of reference, giving them meaning as being something desirable or undesirable." Hibbard states that quality measures tend to be difficult to understand and that the diffuse terms used to report various performance measures may lower the evaluability of the measures.

Hibbard et al.[179] conducted a set of controlled experiments to test various presentation approaches of plan performance data (i.e., visual cues to help the user sort choices into better/worse options, ordering information from high to low, trend data, and summarizing measures) to assess how these design choices impact the evaluability. The results showed that: The presentation format influenced the information's weighting in choice; ordering of the information led to choices of higher quality plans; providing trend information led to participants giving more weight to the trend information and less weight to current levels of performance; and summarizing or disaggregating information in different ways influenced choices. In a separate study using a controlled experimental design, Hibbard and colleagues[180] found that framing a decision about choice of health plan in terms of "protecting oneself from possible risk versus obtaining a gain or benefit" had a significant positive

impact on how consumers understood, valued, and weighted the information. The study also found that additional explanations to help consumers use the data had a negative effect on comprehension.

The work by Hibbard and others demonstrates that the design of comparative performance reports and decision tools directly affects how consumers process the information. Studies that evaluate consumer use of performance information have been confined to traditional plan models with fewer and less-complex choices facing the consumer. With CDHPs, the evaluability of the information becomes critically important because there is more at stake; the choices are more complex; and the volume of information is likely to be greater, which may overwhelm the consumer.

A 2003 report issued by the American Association of Retired Persons[181] outlined the various types of difficult decisions consumers will face in these new consumer plan models, including: (1) understanding information about options; (2) identifying information relevant to one's personal situation; (3) knowing the factors to consider in a choice; (4) integrating that information into decision making, including differentially weighting factors and making trade-offs; and (5) understanding and weighing the implications for personal financial and health risks. The authors recommend that designers of information tools do several things: Lower the cognitive effort required to use the information; help consumers understand the implications of their choices; and highlight the meaning of information that is important. Future research should explore the extent to which existing information/decision-support tools provided in new consumer plan models have these characteristics and whether the information presented is evaluable by the consumer.

VI. Conclusions and Future Research Needs

Health insurance products in the United States are undergoing rapid change. Greater patient cost sharing — to restrain the demand for health care — is replacing managed care as a mechanism to control rising health care costs. Higher deductibles, tiered networks, and personal savings accounts (HSAs and HRAs) are emerging trends that are intended to make patients more conscious of the costs related to their health care choices. Although California has lagged in adopting consumer-directed health plans, many Californians have faced increased cost sharing in recent years.[182] These emerging plan models are designed to engage consumers in more fully understanding the cost of care. They are often coupled with tools to help consumers make better choices about the health care they use.

Little is known about the effect of these new plan designs on health care decisions. Because research has been limited to the few early adopters of consumer-driven plans, the experience is too new to draw definitive conclusions. However, this literature review produced the following conclusions with regard to consumer health care use decisions and health outcomes:

- High-deductible plans can be expected to reduce health care spending, but it is unclear that they will lower the rate of growth in costs over time.
- Early evidence suggests that the availability of a personal health spending accounts does not eliminate the incentive effects of higher cost sharing; but how consumers will respond as account balances accrue is unknown.
- The role of cost sharing on health outcomes is uncertain. The HIE suggests that modest cost sharing does not have deleterious effects for most people, but other research indicates there is some level of cost sharing that may lead to adverse outcomes, especially for the poor.
- Little is known about how tiered-network plans will affect consumer choice of provider, although some studies suggest that price is not a large factor in provider choice.
- There is mixed evidence on whether the financial incentives in the new plan designs will decrease use of necessary and desirable services as well as unnecessary care.

- It is not known whether decision-support tools can and do promote more appropriate health care use decisions or help consumers purchase value.

Useful research would address some of the unanswered questions by looking at: the effect of consumer-directed health benefit designs on health care use; the quality and appropriateness of care received; and on disparities in access and the use of information tools. The importance of these issues to the policy community is evident in the number of recent conferences on this topic and the dedication of a special issue of *Health Services Research* to the topic.[183] The key questions to address include:

- What is the effect of high-cost-sharing plans on use of services? On use of appropriate/necessary services? On use of preventive services? On the quality of health care received and on health care outcomes? How do the effects differ by income or health status or race/ethnicity? Are any changes one-time occurrences, or do they affect the rate of growth in spending?
- What role do personal accounts play in changing consumer behavior? Are funds earmarked for current use and offset the effect of increased plan cost sharing, or are they treated as savings? Does this vary with the ownership of the account? Does consumer behavior change as account balances grow?
- What is the effect of tiered-benefit designs on consumer selection of provider, choices about treatment, and the quality of care they receive?
- What role do information tools play in patient decisionmaking about health care use? Does information help the consumer understand the financial and health implications of their choices? Does this vary by socioeconomic status? Do patients with a financial stake in decisions make greater use of information tools in choosing which services and providers to use? Are some population groups unable to make effective use of information tools? Are information tools more valuable for the chronically ill?

In addition, there are many related questions about implementation that need to be addressed to assess the system-wide potential for these new approaches to contain costs and improve health care quality. These include:

- How do consumers choose among various plan designs when given a choice? What is the expected take-up of CDHPs in multiple-choice situations? What differentiates those who elect CDHPs and those who elect traditional plans? Do new plan designs lead to an expansion in health care coverage? What are the potential savings from moving all consumers to CDHPs versus allowing a choice of CDHP and traditional plans?
- What role does the employer communication strategy play when introducing new benefit designs? Do employers that actively promote new approaches reap greater benefits than passive participants?
- Can reliable quality information be obtained on specific care providers? How can quality and cost measures be combined to establish tiers that encourage "value" shopping by consumers and give incentives to providers to improve quality and contain cost?
- Who is using information tools and how can information be made more accessible to those who are not using it?
- What is the content of existing CDHP plan consumer decision-support tools and how can information tools be improved to facilitate their use? What information do consumers need and what is lacking? Does this vary among different CDHP designs? How can the presentation of information be improved for the population as a whole and for vulnerable populations?

Endnotes

1. Robinson, J.C. 2003. "Hospital Tiers in Health Insurance: Balancing Consumer Choice with Financial Motives." *Health Affairs* Web Exclusive: hlthaff.w3.135.

2. Gabel, J., L. Levitt, E. Holve, J. Pickreign, H. Whitmore, K. Dhont, S. Hawkins, and D. Rowland. 2002. "Job-Based Health Benefits in 2002: Some Important Trends." *Health Affairs* 21(5): 143–151.

3. Mays, G.P., R.E. Hurley, and J.M. Grossman. November 2001. *Consumers Face Higher Costs as Health Plans Seek to Control Drug Spending.* Center for Studying Health System Change, Issue Brief No. 45. www.hschange.org/CONTENT/389

4. Robinson, J.C. 2003. "Hospital Tiers in Health Insurance: Balancing Consumer Choice with Financial Motives." *Health Affairs* Web Exclusive: hlthaff.w3.135.

5. Yegian, J.M. 2003. "Tiered-Hospital Networks." *Health Affairs* Web Exclusive (March 19, 2003): hlthaff.w3.147.

6. Iglehart, J.K. 2002. "Changing Health Insurance Trends." *NEJM* 347(12): 956–962.

7. Trude, S. and J.M. Grossman. 2004. *Patient Cost Sharing Innovations: Promises and Pitfalls.* Center for Studying Health System Change, Issue Brief No. 75. www.hschange.org/CONTENT/643/643.pdf

8. Ginsburg, P. 2004. "Tax-Free but of Little Account: Without Changes, Health Savings Plans Unlikely to Achieve Lofty Goals." *Modern Healthcare* 34(7): 21.

9. Rosenthal, M. and A. Milstein. 2004. "Consumer-Driven Plans: What's Offered? Who Chooses? Awakening Consumer Stewardship of Health Benefits: Prevalence and Differentiation of New Health Plan Models." *Health Services Research* 39 (4-2): 1055–1070.

10. Based on Gabel, J., G. Claxton, I. Gil, J. Pickreign, H. Whitmore, E. Holve, B. Finder, S. Hawkins, and D. Rowland. 2004. "Health Benefits in 2004: Four Years of Double-Digit Premium Increases Take Their Toll on Coverage." *Health Affairs* 23(5): 200–209.

11. The amounts to qualify are indexed for inflation.

12. Gabel, J., G. Claxton, I. Gil, J. Pickreign, H. Whitmore, E. Holve, B. Finder, S. Hawkins, and D. Rowland. 2004. "Health Benefits in 2004: Four Years of Double-Digit Premium Increases Take Their Toll on Coverage." *Health Affairs* 23(5): 200–209.

13. Scandlen, G. 2004. "Health Savings Accounts: Evidence-Based Medicine Examined." *Consumer Choice Matters,* No. 85. www.galen.org/ccbdocs.asp?docID=752

14. California HealthCare Foundation. 2004. *California Employer Health Benefits Survey, 2004.* www.chcf.org/topics/healthinsurance/index.cfm?itemID=108023

15. Parameters for family coverage are usually twice the parameters of self-only coverage. For descriptions of various employer plan offerings see Lo Sasso, A.T., T. Rice, J.R. Gabel and H. Whitmore. 2004. "Tales from the New Frontier: Pioneers' Experiences with Consumer-Driven Health Care." *Health Services Research* 39(4-2): 1071–1090; Parente, S.T., R. Feldman and J.B. Christianson. 2004. "Evaluation of the Effect of a Consumer-Driven Health Plan on Medical Care Expenditures and Utilization." *Health Services Research* 39(4-2): 1189–1210; Tollen, L.A., M.N. Ross and S. Poor. 2004. "Evidence About Utilization and Expenditures Risk Segmentation Related to the Offering of a Consumer-Directed Health Plan: A Case Study of Humana Inc." *Health Services Research* 39(4-2): 1167–1188; Gonzalez, G., 2004. "Consumerism Brings Savings, Member Satisfaction." *Business Insurance,* June 28, 2004, p. T12; Gleckman, H. and L. Woellert, 2004. "Your New Health Plan; Health Savings Accounts, Like 401(K)s, Will Give Employees More Choices—but Also a Greater Share of the Costs." *Business Week,* November 8, 2004, p. 88; Wojcik, J. 2004. "Many Approaches, One Goal: Turning Users into Consumers." *Business Insurance* 38(26): T3.

16. Office of Personnel Management. www.opm.gov

17. Robinson, J.C. 2004. "Reinvention of Health Insurance in the Consumer Era." *JAMA* 291(15): 1880–1886.

18. Agency for Healthcare Research and Quality. 2004. 2002 Full Year Consolidated File (HC-070). Released December 2004. Medical Expenditure Panel Survey Household Component Data. Generated using MEPSnet/HC. www.meps.ahrq.gov/mepsnet/HC/MEPSnetHC.Asp

19. Turner, G.M. 2004. *New Studies Show Consumer-Directed Care Reduces Costs and Improves Access.* www.galen.org/ccbdocs.asp?docID=679

20. Gonzalez, G., 2004. "Consumerism Brings Savings, Member Satisfaction." *Business Insurance,* June 28, 2004, p. T12.

21. Prince, M. 2003. "Consumer-Driven Health Plans Seeing Some Initial Successes." *Business Insurance* 37(13): 3–4.

22. Newhouse, J.P. and The Insurance Experiment Group. 1993. *Free for All? Lessons from the Rand Health Insurance Experiment.* Cambridge, MA: Harvard University Press.

23. The average deductible for enrollees in group plans in 2004 was $221 (based on Gabel, J. and T. Rice. August 2003. *Insurance Markets: Understanding Consumer-Directed Health Care in California.* California Health Care Foundation (www.chcf.org/documents/insurance/ConsumerDirectedHealthCare.pdf). The average deductible in PPO plans was about $1,900 (based on Kaiser Family Foundation and Health Research and Educational Trust. 2002. *Employer Health Benefits 2002 Annual Survey* (www.kff.org/insurance/3251.pdf). Estimates for 2002 inflated to 2004 dollars.

24. Keeler, E.B., J.D. Malkin, D.P. Goldman and, J.L. Buchanan. 1996. "Can Medical Savings Accounts for the Nonelderly Reduce Health Care Costs?" *JAMA* 275(21): 1666–1671.

25. Keeler, E.B. and J.E. Rolph. 1988. "The Demand for Episodes of Treatment in the Health Insurance Experiment." *Journal of Health Economics* 7(4): 337–367.

26. Ozanne, L. 1996. "How Will Medical Savings Accounts Affect Medical Spending?" *Inquiry* 33(3): 225-236.

27. Keeler, E.B. and J.E. Rolph. 1988. "The Demand for Episodes of Treatment in the Health Insurance Experiment." *Journal of Health Economics* 7(4): 337–367.

28. Keeler, E.B., J.D. Malkin, D.P. Goldman, and J.L. Buchanan. 1996. "Can Medical Savings Accounts for the Nonelderly Reduce Health Care Costs?" *JAMA* 275(21): 1666–1671.

29. Ozanne, L. 1996. "How Will Medical Savings Accounts Affect Medical Spending?" *Inquiry* 33(3): 225–236.

30. Lee, J.S. and L. Tollen. 2002. "How Low Can You Go? The Impact of Reduced Benefits and Increased Cost-Sharing." *Journal of Health Economics*

31. Nichols, L.M., M. Moon, and S. Wall. 1996. *Tax-Preferred Medical Savings Accounts and Catastrophic Health Insurance Plans: A Numerical Analysis of Winners and Losers.* www.urban.org/UploadedPDF/winlose.pdf

32. Newhouse, J.P. 2004. "Consumer-Directed Health Plans and the Rand Health Insurance Experiment." *Health Affairs* 23(6): 107–113.

33. Newhouse, J.P. 1992. "Medical Care Costs: How Much Welfare Loss?" *The Journal of Economic Perspectives* 6(3): 3–21.

34. Cutler, D.M. and M. McClellan. 2001. "Is Technological Change in Medicine Worth It?" *Health Affairs* 20(5): 11–29.

35. Lowenstein, R. 2005. "The Quality Cure?" *New York Times Magazine,* March 13, 2005. New York, p. 4.

36. Feldstein, M. and J. Gruber, 1994. "A Major Risk Approach to Health Insurance Reform." Working Paper No. 4852. National Bureau of Economic Research. Cambridge, MA. papers.nber.org/papers/w4852.pdf

37. Barer, M. R. Evans, and G. Stoddart. 1979. *Direct Charges to Patients: Snare or Delusion?* Toronto: Ontario Economic Council.

38. Rossiter, L. and G. R. Wilensky. 1983. "A Re-examination of the Use of Physician Services: The Role of Physician-Initiated Demand." *Inquiry* 20:162–172.

39. Trude, S. 2003. *Patient Cost-sharing: How Much Is Too Much?* Center for Studying Health System Change, Issue Brief No. 72. www.hschange.com/CONTENT/630/630.pdf.

40. See, e.g., McNeill, D. 2004. "Do Consumer-Directed Health Benefits Favor the Young and Healthy?" *Health Affairs* 23(1): 186–193.

41. Newhouse, J.P. and The Insurance Experiment Group. 1993. *Free for All? Lessons from the Rand Health Insurance Experiment.* Cambridge, MA: Harvard University Press.

42. Ibid.

43. Hadley, J. 2003. "Sicker and Poorer — The Consequences of Being Uninsured: A Review of the Research on the Relationship Between Health Insurance, Medical Care Use, Health, Work, and Income." *Medical Care Research and Review* 60(2-S1): 3–75.

44. Newhouse, J.P. 2004. "Consumer-Directed Health Plans and the Rand Health Insurance Experiment." *Health Affairs* 23(6): 107–113.

45. Goldman, D.P., G.F. Joyce, J.J. Escarce, J.E. Pace, M.D. Solomon, M. Laouri, P.B. Landsman, and S.M. Teutsch. 2004. "Pharmacy Benefits and the Use of Drugs by the Chronically Ill." *JAMA* 291(19): 2344–2350.

46. Turner, G.M. 2004. *New Studies Show Consumer-Directed Care Reduces Costs and Improves Access.* www.galen.org/ccbdocs.asp?docID=679

47. Taggart, M. and H. Tarre. 2003. *A Promising Beginning: Consumer-Driven Benefit Design Shows Plan Sponsors Can Influence Behavior.* www.benefitnews.com/pfv.cfm?id=4232

48. Solanki, G., H.H. Schauffler, and L.S. Miller. 2000. "The Direct and Indirect Effects of Cost-sharing on the Use of Preventive Services." *Health Services Research* 34(6): 1331–1350.

49. The self-employed are not eligible to use HRAs.

50. Medical savings accounts were a precursor of HSAs authorized as a demonstration project in 1996 and were not reauthorized when the demonstration period was completed.

51. The amounts are indexed to inflation.

52. Kaiser Daily Health Policy Report. 2004b. *Blue Cross Blue Shield Announces Plans to Offer Health Savings Accounts Nationwide by 2006.* In kaisernetwork.org (Kaiser Family Foundation) November 19, 2004 online newsletter. www.kaisernetwork.org/daily_reports/rep_index.cfm?hint=3&DR_ID=26836

53. AHIP—America's Health Insurance Plans. 2005. *Health Savings Accounts Off to Fast Start, New AHIP Study Shows.* Press release, January 12, 2005. www.ahip.org/content/pressrelease.aspx?docid=7303

54. Consumer Driven Market Report. 2005b. *Full Integration of HSAs and HDHPs Coming.* March 23, 2005 Email news alert: Washington, D.C.

55. Managed Care Week. 2005. CDH Experts Predict New Entrants, More Competition in 2005. February 7, 2005. *Managed Care Week* 15(6):7.

56. Downey, R., 2004. The Changing Model of Consumer Directed Health Care: HRAs and HSAs. AETNA presentation given by Robin Downey on November 30, 2004.

57. Kaiser Daily Health Policy Report. 2004a. *Some Federal Workers Will Have Option of Purchasing High-Deductible Health Plans, Using HSAs.* In kaisernetwork.org (Kaiser Family Foundation) September 16, 2004, online newsletter. www.kaisernetwork.org/daily_reports/rep_index.cfm?hint=3&DR_ID=25779

58. Kaiser Daily Health Policy Report. 2004b. *Blue Cross Blue Shield Announces Plans to Offer Health Savings Accounts Nationwide by 2006.* In kaisernetwork.org (Kaiser Family Foundation) November 19, 2004 online newsletter. www.kaisernetwork.org/daily_reports/rep_index.cfm?hint=3&DR_ID=26836

59. Kaiser Daily Health Policy Report. 2004b. *Blue Cross Blue Shield Announces Plans to Offer Health Savings Accounts Nationwide by 2006.* In kaisernetwork.org (Kaiser Family Foundation) November 19, 2004 online newsletter. www.kaisernetwork.org/daily_reports/rep_index.cfm?hint=3&DR_ID=26836

60. Personal communication, Sam Ho 2/24/05.

61. Schieber, S.J. 2004. *Why Coordination of Health Care Spending and Savings Accounts Is Important.* WP-002 July 16, 2004. Washington D.C.: Watson Wyatt Worldwide.

62. Consumer Driven Market Report. 2004. *HRA Growth Slowdown Was a "Hiccup."* Consumer Driven Market Report (10): 1. Washington, D.C.

63. Managed Care Week. 2005. CDH Experts Predict New Entrants, More Competition in 2005. February 7, 2005. *Managed Care Week* 15(6):7.

64. Consumer Driven Market Report. 2005a. *United Seeing Mix of HRA-HSA Growth.* January 24, 2005 Email news alert: Washington, D.C.

65. Schieber, S.J. 2004. *Why Coordination of Health Care Spending and Savings Accounts Is Important.* WP-002 July 16, 2004. Washington D.C.: Watson Wyatt Worldwide.

66. Turner, G.M. 2005. *New Incentives—Health Policy Matters.* www.galen.org/pdrugs.asp?docID=780

67. AHIP—America's Health Insurance Plans. 2005. *Health Savings Accounts Off to Fast Start, New AHIP Study Shows.* Press release, January 12, 2005. www.ahip.org/content/pressrelease.aspx?docid=7303

68. Goldman, D.P., J.L. Buchanan, and E.B. Keeler. 2000. "Simulating the Impact of Medical Savings Accounts on Small Business." *Health Services Research* 35(1-1): 53–75.

69. Consumer-Driven Market Report. 2004. *HRA Growth Slowdown Was a "Hiccup."* Consumer-Driven Market Report (10): 1. Washington, D.C.

70. HRfocus. 2004. Periodic Checkup: Consumer Directed Health Plans. *HR Focus* 81(8): 13–15.

71. Aaron, H.J. 2004. HSAs—The "Sleeper" in the Drug Bill." *Tax Notes* Doc 2004-2689 (102 Tax Notes): 1025.

72. Hewitt Associates. 2004. *New Rules, New Opportunities for Consumer-Driven Health Plans" Executive Summary of Hewitt Teleconference August 25, 2004.* was4.hewitt.com/hewitt/resource/spkrsconf/subsp-krsconf/teleconferences/tapes/08-25-04exec.pdf

73. McNeill, D. 2004. "Do Consumer-Directed Health Benefits Favor the Young and Healthy?" *Health Affairs* 23(1): 186–193.

74. Keeler, E.B., J.D. Malkin, D.P. Goldman and J.L. Buchanan. 1996. "Can Medical Savings Accounts for the Nonelderly Reduce Health Care Costs?" *JAMA* 275(21): 1666–1671.

75. However, the simulation model did not allow account balances to accrue interest that is not subject to taxes.

76. eHealthInsurance. 2005. *Health Savings Accounts: The First Year in Review.* www.flinthills.org/Master%20Articles%20Library/Health/HSA%20First%20Year%20in%20Review%20o1.pdf

77. AHIP—America's Health Insurance Plans. 2005. *Health Savings Accounts Off to Fast Start, New AHIP Study Shows.* Press release, January 12, 2005. www.ahip.org/content/pressrelease.aspx?docid=7303

78. AcademyHealth. 2004. Consumer-Driven Health Plans: Potential, Pitfalls, and Policy Issues Cyber Seminar: Disseminating Research Results for Policymakers. Held September 10, 2004. www.hcfo.net/cyberseminar.htm

79. Parente, S.T., R. Feldman, and J.B. Christianson. 2004. "Evaluation of the Effect of a Consumer-Driven Health Plan on Medical Care Expenditures and Utilization." *Health Services Research* 39(4-2): 1189–1210.

80. Keeler, E.B., J.D. Malkin, D.P. Goldman, and J.L. Buchanan. 1996. "Can Medical Savings Accounts for the Nonelderly Reduce Health Care Costs?" *JAMA* 275(21): 1666–1671.

81. Ozanne, L. 1996. "How Will Medical Savings Accounts Affect Medical Spending?" *Inquiry* 33(3): 225–236.

82 Ibid.

83. Keeler, E.B., J.D. Malkin, D.P. Goldman, and J.L. Buchanan. 1996. "Can Medical Savings Accounts for the Nonelderly Reduce Health Care Costs?" *JAMA* 275(21): 1666–1671.

84. Watson Wyatt Worldwide. 2004. *Adopting Consumer-Directed Health Plans.* Research Brief No. W-755. www.watsonwyatt.com/research/resrender.asp?id=w-755&page=1

85. Downey, R., 2004. The Changing Model of Consumer Directed Health Care: HRAs and HSAs. AETNA presentation given by Robin Downey on November 30, 2004.

86. Parente, S.T., R. Feldman, and J.B. Christianson. 2004. "Evaluation of the Effect of a Consumer-Driven Health Plan on Medical Care Expenditures and Utilization." *Health Services Research* 39(4-2): 1189–1210.

87. Lo Sasso, A.T., T. Rice, J.R. Gabel, and H. Whitmore. 2004. "Tales from the New Frontier: Pioneers' Experiences with Consumer-Driven Health Care." *Health Services Research* 39(4-2): 1071–1090.

88. Leach, H. 2004. Consumer-Directed Health Plans: Testimony before the Joint Economic Committee of the U.S. Congress. February 25, 2004. Washington, D.C.

89. Consumer-Driven Market Report. 2004. *HRA Growth Slowdown Was a "Hiccup."* Consumer-Driven Market Report (10): 1. Washington, D.C.

90. Leach, H. 2004. Consumer-Directed Health Plans: Testimony before the Joint Economic Committee of the U.S. Congress. February 25, 2004. Washington, D.C.

91. Parente, S.T., R. Feldman, and J.B. Christianson. 2004. "Evaluation of the Effect of a Consumer-Driven Health Plan on Medical Care Expenditures and Utilization." *Health Services Research* 39(4-2): 1189–1210.

92. Mays, G.P., G. Claxton, and B.C. Strunk. November 2003. *Tiered Provider Networks: Patients Face Cost-Choice Trade-Offs.* Center for Studying Health System Change, Issue Brief No. 71. www.hschange.com/CONTENT/627/627.pdf

93. Lesser, C.S., P.B. Ginsburg, and K.J. Devers. 2003. "The End of an Era: What Became of the 'Managed Care Revolution' in 2001?" *Health Services Research* 38(1-2): 337–355.

94. Robinson, J.C. 2003. Hospital Tiers in Health Insurance: Balancing Consumer Choice with Financial Motives. *Health Affairs* Web Exclusive: hlthaff.w3.135.

95. Yegian, J.M. 2003. Tiered-hospital networks. *Health Affairs* Web Exclusive (March 19, 2003): hlthaff.w3.147.

96. Iglehart, J.K. 2002. Changing Health Insurance Trends. *NEJM* 347(12): 956–962.

97. Rosenthal, M. and A. Milstein. 2004. "Consumer-Driven Plans: What's Offered? Who Chooses? Awakening Consumer Stewardship of Health Benefits: Prevalence and Differentiation of New Health Plan Models." *Health Services Research* 39 (4-2): 1055–1070.

98. Milliman Consultants and Actuaries. 2004. *Milliman 2004 Group Health Insurance Survey Sees Surge in Consumer Driven Products.* Press Release. www.milliman.com/press_releases/2004%20CDH%20Press%20Release.pdf

99. Greene, J. 2005. "Using Tiered Provider Networks to Create Incentives for Quality Care." *AHIP Coverage* 46(1): 22–30.

100. Pacific Business Group on Health. 2005. *PBGH Member Benefit Strategies: Promoting Quality, Value and Access.* February, 2005. San Francisco, CA.

101. Sweeney, K., 2003. "Health Plans Embrace Tiered-Provider Networks." *Employee Benefit News.* Employee Benefit Research Institute: October 1, 2003.

102. Greene, J. 2005. "Using Tiered Provider Networks to Create Incentives for Quality Care." *AHIP Coverage* 46(1): 22–30.

103. Ibid.

104. The sites were part of the Community Tracking Study 2002–2003: Boston; Cleveland; Greenville, South Carolina.; Indianopolis; Lansing, Michigan.; Little Rock, Arkansas.; Miami; northern New Jersey; Orange County, California; Phoenix; Seattle; and Syracuse, New York.

105. Mays, G.P., G. Claxton, and B.C. Strunk. November 2003. *Tiered-Provider Networks: Patients Face Cost-Choice Trade-Offs.* Center for Studying Health System Change, Issue Brief No. 71. www.hschange.com/CONTENT/627/627.pdf

106. Informal communication with Emma Hoo at PBGH.

107. Rosenthal, M. and A. Milstein. 2004. "Consumer-Driven Plans: What's Offered? Who Chooses? Awakening Consumer Stewardship of Health Benefits: Prevalence and Differentiation of New Health Plan Models." *Health Services Research* 39 (4-2): 1055–1070.

108. Greene, J. 2005. "Using Tiered Provider Networks to Create Incentives for Quality Care." *AHIP Coverage* 46(1): 22–30.

109. Ibid.

110. Ibid.

111. Sweeney, K., 2003. "Health Plans Embrace Tiered-Provider Networks." *Employee Benefit News.* Employee Benefit Research Institute: October 1, 2003.

112. Robinson, J.C. 2003. Hospital Tiers in Health Insurance: Balancing Consumer Choice with Financial Motives. *Health Affairs* Web Exclusive: hlthaff.w3.135.

113. Greene, J. 2005. "Using Tiered Provider Networks to Create Incentives for Quality Care." *AHIP Coverage* 46(1): 22–30.

114. Kaiser Family Foundation and Health Research and Education Trust. 2004. *Employer Health Benefits 2004 Annual Survey.* www.kff.org/insurance/7148/index.cfm

115. Pacific Business Group on Health. 2005. *PBGH Member Benefit Strategies: Promoting Quality, Value and Access.* February, 2005. San Francisco, CA.

116. Boyles, W.R. 2005. *PPOs: Can They Survive the 21st Century?* Consumer-Driven Market Report. hmsresearch.net/docs/PPOs.pdf.

117. Trude, S. and L. Conwell. 2004. *Rhetoric Vs. Reality: Employer Views on Consumer-Driven Health Care.* Center for Studying Health System Change, Issue Brief No. 86. www.hschange.com/CONTENT/692/692.pdf

118. Ginsburg, P. 2004. "Tax-Free but of Little Account. Without Changes, Health Savings Plans Unlikely to Achieve Lofty Goals." *Modern Healthcare* 34(7): 21.

119. Mays, G.P., G. Claxton, and B.C. Strunk. November 2003. *Tiered-Provider Networks: Patients Face Cost-Choice Trade-Offs.* Center for Studying Health System Change,Issue Brief No. 71. www.hschange.com/CONTENT/627/627.pdf

120. Ginsburg, P. 2004. "Tax-Free but of Little Account. Without Changes, Health Savings Plans Unlikely to Achieve Lofty Goals." *Modern Healthcare* 34(7): 21.

121. Greene, J. 2005. "Using Tiered Provider Networks to Create Incentives for Quality Care." *AHIP Coverage* 46(1): 22–30.

122. Ibid.

123. Marquis, M.S. 1985. "Cost-sharing and Provider Choice." *Journal of Health Economics* 4:137–157.

124. Cooper, P.F., L.M. Nichols, and A. K. Taylor. 1996. "Patient Choice of Physician: Do Health Insurance and Physician Characteristics Matter?" *Inquiry* 33(3):237–246.

125. Trude, S. and L. Conwell. 2004. *Rhetoric Vs. Reality: Employer Views on Consumer-Driven Health Care.* Center for Studying Health System Change, Issue Brief No. 86. www.hschange.com/CONTENT/692/692.pdf

126. Sweeney, K., 2003. "Health Plans Embrace Tiered-Provider Networks." *Employee Benefit News.* Employee Benefit Research Institute: October 1, 2003.

127. Lo Sasso, A.T., T. Rice, J.R. Gabel, and H. Whitmore. 2004. "Tales from the New Frontier: Pioneers' Experiences with Consumer-Driven Health Care." *Health Services Research* 39(4-2): 1071–1090.

128. Motheral, B. and K.A. Fairman. 2001. "Effect of a Three-Tier Prescription Copay on Pharmaceutical and Other Medical Utilization." *Medical Care* 39(12): 1293–1304.

129. Fairman, K.A., B.R. Motheral, and R.R. Henderson. 2003. "Retrospective, Long-Term Follow-up Study of the Effect of a Three-Tier Prescription Drug Copayment System on Pharmaceutical and Other Medical Utilization and Costs." *Clinical Therapeutics* 25(12): 3147–3161.

130. Escarce, J.J., K. Kapur, G.F. Joyce ,and K.A. Van Vorst. 2001. "Medical Care Expenditures under Gatekeeper and Point-of-Service Arrangements." *Health Services Research* 36(6 Pt 1): 1037–1057.

131. Kapur, K., G.F. Joyce, K.A.Van Vorst, and J.J. Escarce. 2000. "Expenditures for Physician Services under Alternative Models of Managed Care." *Medical Care Research and Review* 57(2): 161–181.

132. Clancy, C. and P. Franks. 1997. "Utilization of Specialty and Primary Care: The Impact of HMO Insurance and Patient-Related Factors." *Journal of Family Practice* 45(6): 500–508.

133. Draper, D.A., R.E. Hurley, C.S. Lesser, and B.C. Strunk. 2002. "The Changing Face of Managed Care." *Health Affairs* 21(1): 11–23.

134. Smith, D.G. 1997. "The Effects of Preferred Provider Organizations on Health Care Use and Costs." *Inquiry — Blue Cross Blue Shield Association* 34(4): 278–287.

135. Mays, G.P., G. Claxton, and B.C. Strunk. November 2003. *Tiered-Provider Networks: Patients Face Cost-Choice Trade-Offs.* Center for Studying Health System Change, Issue Brief No. 71. www.hschange.com/CONTENT/627/627.pdf

136. Ginsburg, P. 2004. "Tax-Free but of Little Account. Without Changes, Health Savings Plans Unlikely to Achieve Lofty Goals." *Modern Healthcare* 34(7): 21.

137. Greene, J. 2005. "Using Tiered Provider Networks to Create Incentives for Quality Care." *AHIP Coverage* 46(1): 22–30.

138. Motheral, B. and K.A. Fairman. 2001. "Effect of a Three-Tier Prescription Copay on Pharmaceutical and Other Medical Utilization." *Medical Care* 39(12): 1293–1304.

139. Fairman, K.A., B.R. Motheral, and R.R. Henderson. 2003. "Retrospective, Long-Term Follow-up Study of the Effect of a Three-Tier Prescription Drug Copayment System on Pharmaceutical and Other Medical Utilization and Costs." *Clinical Therapeutics* 25(12): 3147–3161.

140. Huskamp, H.A., P.A. Deverka, A.M. Epstein, R.S. Epstein, K.A. McGuigan, and R.G. Frank. 2003. "The Effect of Incentive-Based Formularies on Prescription-Drug Utilization and Spending." *NEJM* 349(23): 2224–2232.

141. Schauffler, H.H. and S. McMenamin. 2001. "Assessing PPO Performance on Prevention and Population Health." *Medical Care Research and Review* 58(4-1): 112–136.

142. Schauffler, H.H., S. McMenamin, J. Cubanski, and H.S. Hanley. 2001. "Differences in the Kinds of Problems Consumers Report in Staff/Group Health Maintenance Organizations, Independent Practice Association/Network Health Maintenance Organizations, and Preferred Provider Organizations in California." *Medical Care* 39(1): 15–25.

143. Tye, S., K.D. Phillips, S.Y. Liang, and J.S. Hass. 2003. "Moving Beyond the Typologies of Managed Care: The Example of Health Plan Predictors of Screening Mammography." *Health Services Research* 39(1): 179–206.

144. Phillips, K.A., J.S. Haas, S.Y. Liang, L.C. Baker, S. Tye, K. Kerlikowske, J. Sakowski, and J. Spetz. 2004. "Are Gatekeeper Requirements Associated with Cancer Screening Utilization?" *Health Services Research* 39(1): 153–178.

145. Morrison, J., L. Kirsch, P. Mattingly, M. Rider, and J. Dubow, 2004. "Consumer-Directed Health Care Plans: Prospects for Reshaping the Organization, Delivery, and Responsibility of Health Care." 50th Annual Conference of the American Council on Consumer Interests. *Consumer Interests Annual,* Washington D.C. www.consumerinterests.org/i4a/pages/Index.cfm?pageid=3913

146. Rosenthal, M. and A. Milstein. 2004. "Consumer-Driven Plans: What's Offered? Who Chooses? Awakening Consumer Stewardship of Health Benefits: Prevalence and Differentiation of New Health Plan Models." *Health Services Research* 39 (4-2): 1055–1070.

147. Kaiser Family Foundation, Agency for Healthcare Research and Quality and Harvard School of Public Health. 2004. *National Survey on Consumers' Experiences with Patient Safety and Quality Information.* www.kff.org/kaiserpolls/pomr111704pkg.cfm

148. The KFF consumer survey was also conducted in 1996 and 2000. Data from the 2000 survey are used to compare trends in consumer awareness and use of quality information.

149. Chernew, M. and D.P. Scanlon. 1998. "Health Plan Report Cards and Insurance Choice." *Inquiry* 35(1): 9–22.

150. Hibbard, J.H. and J.J. Jewett. 1997. "Will Quality Report Cards Help Consumers?" *Health Affairs* 16(3): 218–228.

151. Epstein, A. 2000. "Public Release of Performance Data: A Progress Report from the Front." *JAMA* 283(14): 1884–1886.

152. Hibbard, J.H., P. Slovic, E. Peters, and M.L. Finucane. 2002. "Strategies for Reporting Health Plan Performance Information to Consumers: Evidence from Controlled Studies." *Health Services Research* 37(2): 291–313.

153. Schneider, E.C. and A.M. Epstein. 1998. "Use of Public Performance Reports: A Survey of Patients Undergoing Cardiac Surgery." *JAMA* 279(20): 1638–1642.

154. Hibbard, J.H. and E. Peters. 2003. "Supporting Informed Consumer Health Care Decisions: Data Presentation Approaches that Facilitate the Use of Information in Choice." *Annual Review of Public Health* 24(1): 413–433.

155. Marshall, M.N., P.G. Shekelle, S. Leatherman, and R.H. Brook. 2000. "The Public Release of Performance Data: What Do We Expect to Gain? A Review of the Evidence." *JAMA* 283(14): 1866–1874.

156. Kaiser Family Foundation, Agency for Healthcare Research and Quality and Harvard School of Public Health. 2004. *National Survey on Consumers' Experiences with Patient Safety and Quality Information.* www.kff.org/kaiserpolls/pomr111704pkg.cfm

157. Strull, W.M., B. Lo, and G. Charles. 1984. "Do Patients Want to Participate in Medical Decision Making?" *JAMA* 252(21): 2990–2994.

158. Kennelly, C. and A. Bowling. 2001. "Suffering in Deference: A Focus Group Study of Older Cardiac Patients' Preferences for Treatment and Perceptions of Risk." *Quality in Health Care* September 10(1): i23–i28.

159. Gattellari, M., P.N. Butow, and M.H. N.Tattersall. 2001. "Sharing Decisions in Cancer Care." *Social Science and Medicine* 52(12): 1865–1878.

160. Fox, S and Rainie L. 2000. *The Online Health Care Revolution: How the Web Helps Americans Take Better Care of Themselves.* Washington, D.C., Pew Charitable Trusts. www.pewinternet.org/pdfs/PIP_Health_Report.pdf

161. Baker, L., T.H. Wagner, S.M. Singer, and M.K. Bundorf. 2003. "Use of the Internet and E-mail for Health Care Information: Results from a National Survey." *JAMA* 289(18): 2400–2406.

162. Ibid.

163. Fox, S and Rainie L. 2000. *The Online Health Care Revolution: How the Web Helps Americans Take Better Care of Themselves.* Washington, D.C., Pew Charitable Trusts. www.pewinternet.org/pdfs/PIP_Health_Report.pdf

164. Berland, G.K., M.N. Elliott, L.S. Morales, J.I. Algazy, R.L. Kravitz, M.S. Broder, D.E. Kanouse, J.A. Munoz, J.A. Puyol, M. Lara, K. Watkins, H. Yang, and E.A. McGlynn. 2001. "Health Information on the Internet: Accessibility, Quality, and Readability in English and Spanish." *JAMA* 285(20): 2612–2621.

165. Fowles, J.B., E.A. Kind, B.L. Braun, and J. Bertko. 2004. "Early Experience with Employee Choice of Consumer-Directed Health Plans and Satisfaction with Enrollment." *Health Services Research* 39(4): 1141–1158.

166. Hersey, J., J. Matheson, and K. Lohr. 1997. *Consumer Health Informatics and Patient Decisionmaking: Final Report.* AHCPR Publication No. 98-N001. Rockville, MD: Agency for Healthcare Research and Quality.

167. O'Conner, A., D. Stacey, D. Rovner, M. Holmes-Rovner, J. Tetroe, H. Llewellyn-Thomas, V. Entwistle, A. Rostom, V. Fiset, M. Barry, and J. Jones. 2003. "Decision Aids for People Facing Health Treatment or Screening Decisions." *Cochrane Database System Review* 2(CD001431). Update of Cochrane Database Syst Rev. 2001;(3):CD001431.

168. Hersey, J., J. Matheson and K. Lohr. 1997. *Consumer Health Informatics and Patient Decisionmaking: Final Report.* AHCPR Publication No. 98-N001. Rockville, MD: Agency for Healthcare Research and Quality.

169. Institute of Medicine. 2001. *Crossing the Quality Chasm: A New Health System for the 21st Century.* Washington, D.C.: National Academy of Sciences. www.nap.edu/books/0309072808/html

170. Hibbard, J.H. and J.J. Jewett. 1996. "What Type of Quality Information Do Consumers Want in a Health Care Report Card?" *Medical Care Research and Review* 53(1): 28–47.

171. Hibbard, J.H., J.J. Jewett, M.W. Legnini, and M. Tusler. 1997. "Choosing a Health Plan: Do Large Employers Use the Data?" *Health Affairs* 16(6): 172–180.

172. Hibbard, J.H., P. Slovic, E. Peters, and M.L. Finucane. 2002. "Strategies for Reporting Health Plan Performance Information to Consumers: Evidence from Controlled Studies." *Health Services Research* 37(2): 291–313.

173. Vaiana, M.E. and E.A. McGlynn. 2002. "What Cognitive Science Tells Us About the Design of Reports for Consumers." *Medical Care Research and Review* 59(1): 3–35.

174. Scanlon, D., M. Chernew, S. Sheffler, and A. Fendrick. 1998. Health Plan Report Cards: Exploring Differences in Plan Ratings. *The Joint Commission Journal on Quality Improvement* 24(1): 5–20.

175. Slovic, P. 1995. "The Construction of Preference." *American Psychologist* 50(5): 364–371.

176. Hsee, C.K. 1995. "Elastic Justification: How Tempting but Task-Irrelevant Factors Influence Decisions." *Organizational Behavior and Human Decision Processes* 62(3): 330–337.

177. Hsee, C.K. 1996. "The Evaluability Hypothesis: An Explanation for Preference Reversals between Joint and Separate Evaluations of Alternatives." *Organizational Behavior and Human Decision Processes* 67(3): 247–257.

178. Hsee, C.K. 1998. "Less Is Better: When Low-Value Options Are Valued More Highly Than High-Value Options." *Journal of Behavioral Decision Making* 11(2): 107–121.

179. Hibbard, J.H., P. Slovic, E. Peters, and M.L. Finucane. 2002. "Strategies for Reporting Health Plan Performance Information to Consumers: Evidence from Controlled Studies." *Health Services Research* 37(2): 291–313.

180. Hibbard, J.H., L. Harris-Kojetin, P. Mullin, J. Lubalin, and S. Garfinkel. 2000. "Increasing the Impact of Health Plan Report Cards by Addressing Consumers' Concerns." *Health Affairs* 19(5): 138–143.

181. Dubow, J. 2003. *In Brief: Decision Making in Consumer-Directed Health Plans.* Issue paper #2003–05 (May 2003): AARP Public Policy Institute.

182. Gabel, J. and T. Rice. August 2003. Insurance Markets: Understanding Consumer-Directed Health Care in California. California HealthCare Foundation. www.chcf.org/documents/insurance/ConsumerDirectedHealthCare.pdf

183. Consumer-Driven Health Care: Beyond Rhetoric and Research and Experience. 2004. [A special volume of articles dedicated to Consumer-Driven Health Care] *Health Services Research* 39(4-II).

CALIFORNIA
HEALTHCARE
FOUNDATION

476 Ninth Street
Oakland, California 94607
Tel: 510.238.1040
Fax: 510.238.1388
www.chcf.org