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Fundamentals of Insurance: Implications for Health Coverage

As state and federal policymakers renew their efforts to increase health coverage among the uninsured, a major issue is what exactly that coverage should be. For instance, what would coverage have to include in order for participants to qualify for any available premium subsidies? What would be the minimum benefit package required to meet applicable coverage mandates for employers and/or individuals?

A discussion of key insurance principles can provide insight into these questions and the trade-offs that solutions may require. Understanding the ramifications of any compromise to these insurance principles is critical to evaluating the financial feasibility and sustainability of health reform proposals, especially those that involve private sector insurer participation.

To assist with those insights, the American Academy of Actuaries' Uninsured Work Group has developed this issue brief, which will discuss the fundamental principles of insurance, whether and how they apply to health coverage plans, and the implications of deviating from those fundamental principles.

INTRODUCTION

In general, insurance protects financial security. For instance, auto insurance protects against the financial losses associated with car accidents; life insurance protects against the financial losses associated with the death of a family member. Health insurance is somewhat different. It aims not only to protect against the financial losses associated with incurring medical costs, but also to protect health security. That is, it protects against the potential loss of health itself resulting from the inability to sufficiently access the health care system.

In order to provide for financial and health security, as well as the general demands of the U.S. population, the scope of what is covered by typical health coverage plans has expanded. As new medical technologies and treatments develop, health plans expand to cover these new options. In addition, health plans have expanded over the decades to include coverage of more routine and preventive services. The evolution of medical technologies and delivery combined with the expansion of medical benefits/services has redefined health coverage and insurance.

As policymakers grapple with the challenges associated with rising health care costs and large numbers of Americans without health insurance, it is important to understand some of the complications that can arise in an insurance program as well as the principles that have evolved to prevent those complications. It may not always be possible to design poli-

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cy initiatives that align completely with these principles due to competing societal goals and expectations. However, understanding these key principles and the consequences they guard against may assist policymakers in understanding the trade-offs implicit in the policies they are considering.

FUNDAMENTAL PRINCIPLES OF INSURABILITY[1]

Insurance is an arrangement that allows one party, the insured, to gain financial security by transferring the risk of loss to another party, the insurer. The insurer collects regular premium payments from many insureds so that if an insured has a loss, the insurer has a pool of money to cover the loss. Insurance is only possible when a sufficient number of insureds pool their risk such that the few who have a loss can be financed by the many who do not.

Traditionally, risk has been considered "insurable" if it meets certain fundamental principles.

- It is ***economically feasible*** to insure the risk:

The size of the loss should be sufficiently large such that the insured is willing to regularly pay a premium in order to be covered should a loss occur. The insured recognizes that there may never be a loss. Embedded in the insurance premium are the sales and administrative costs associated with the business of insurance—paying broker commissions, collecting premiums, paying claims, and so forth. The premium for homeowners insurance, for example, may seem a small price to pay when compared with the possibility of losing everything that one owns, even though the probability of such a devastating loss is low. While economic feasibility makes an insurance market possible, for many people it is not a compelling reason to purchase insurance. As a result, mortgage lenders require evidence of homeowners insurance as a loan condition, and states have mandated auto liability coverage.

In general, health coverage is economically feasible, particularly through its coverage of high cost medical services arising from catastrophic illness or injury. However, certain portions or aspects of the coverage would not be realistic to insure as a stand-alone risk in the absence of other economic benefits (e.g., tax preferences and network discounts). For example, if a health insurance policy covered only routine physical exams, it would not be economically feasible. This is because the cost of paying the physician directly would be less than the insurance premiums, which include administrative and other costs. Despite this principle, however, these types of low-cost items have become attractive components of many health coverage packages. In practice, including these low-cost items in benefit packages often provides access to certain financial advantages such as provider discounts and the tax deductibility of premiums.

- The loss is ***demonstrable:***

The loss should be clearly demonstrated, with respect both to the triggering event and the associated insurer liability. A demonstrable loss is one in which the occurrence is obvious. For example, death is inherently a demonstrable loss, one which the insured wishes to avoid. There is rarely ambiguity in determining whether the loss of life has occurred and life insurance policies are generally written to provide a specified amount when the death is confirmed.

Most other losses are not always as easy to ascertain. Disability claims, for example, involve more inherent ambiguity than life insurance claims because the definition of disability is more open to interpretation than the definition of death. Due to this ambiguity, the occurrence or amount of loss could be susceptible to manipulation by the insured, which is unfair to the rest of the pool of participants. Soft tissue injuries associated with auto liability coverage are an example of a loss that is less demonstrable by nature than a broken bone or loss of limb.

As with most other insurance coverages,

[1]This section is based on discussions in Introduction to Ratemaking and Loss Reserving for Property and Casualty Insurance by Robert L. Brown and Leon Gottlieb (Chapter 1.4), 2001 and Principles of Risk Management and Insurance by George Rejda (Chapter 2), 4th edition.

the losses covered under health insurance are often less demonstrable than loss of life. The health insurance contract, however, defines the covered loss such that this principle can be upheld. In particular, health insurance policies usually require that care be "medically necessary" as defined by a licensed physician based on his or her judgment. For example, if an individual has a heart attack, the policyholder will receive financial assistance with the medical bills. Nevertheless, it is not always clear what specific treatments are medically necessary.

- The economic value of the insurance is ***calculable:***

The insurer should be able to accurately determine the expected loss in order to calculate the insurance premium. This entails calculation of the expected frequency and amount of each insurance claim, which requires sufficient claims data. By pooling many individual losses, the insurer benefits from the increased predictability afforded by the law of large numbers. Not only can the insurer calculate the expected loss of the pool, but it may also calculate the statistical variation anticipated in these losses and other risk characteristics that enable it to establish a fair and viable premium.

Most health insurance claim costs are highly calculable. They tend to have a high frequency and a defined loss (paid amount). The volume of claims also tends to be large enough to allow a fairly accurate prediction of expected claims. Catastrophic medical claims are less calculable because they occur less frequently; and their size is highly variable, ranging from $100,000 to a million dollars or more. Nevertheless, enough information is typically available for insurers to calculate expected claim costs.

- The loss is ***random:***

Similar to the requirement that the loss be demonstrable, the loss should be beyond the control of the insured. The loss should be uncertain for all members of the pool. It should be accidental and unintentional. It is the randomness of the loss that allows for pooling of risk to be effective. If a loss is expected, and the amount is known, then an individual may be able to budget for the loss. An annual physician check-up or semi-annual teeth-cleaning is not a random loss. For individuals who purchase insurance with the foreknowledge that they will use such services, this situation is no longer an insurance situation but a prepayment for future known services. The larger medical problems that may be detected during an annual physician visit on a covered individual, however, are random.

Health coverage does cover costs associated with many large and generally random events, such as heart attack, stroke, and the onset of a critical illness. However, this randomness principle is the one most widely compromised by public and private health coverage programs, which cover many non-random claims, such as office visits, routine lab tests, and prescription drugs for ongoing conditions. The randomness principle is also compromised when individuals who know that they are at a high risk of incurring high health costs, due to having conditions that will require upcoming surgeries or expensive ongoing care, are more likely to purchase insurance to cover these costs than individuals who are at lower risk of high health costs. This phenomenon, known as adverse selection, can contribute to high health insurance premiums and has been especially an issue for the individual and small group health insurance markets. Pre-existing condition exclusions can be used by insurers to limit their liability for the spending new enrollees already know they will incur. This is the health insurer's primary means for addressing those individuals who avoid purchasing coverage until they believe it will work to their economic advantage. Such exclusions, however, are often limited in their duration by state and federal regulations.

- The insured exposure units are ***independent*** in time and place:

If one insured has a loss, it should not lead to another insured having a loss. For example, if a property insurer provides homeowners coverage against fire loss, it would be more feasible to cover individual homes scattered all over the country, rather than a

single cluster of homes concentrated only in one small neighborhood of closely situated wooden houses.

While health risks are not all strictly independent, for example, the risk of epidemic or contagion or the genetic disposition of family members for a particular disease, most health risks are independent enough to be insurable. Insurers know that their costs typically rise somewhat during most flu seasons, for example, but this is generally predictable and calculable, except possibly in years of catastrophic pandemic.

DOES HEALTH COVERAGE IN THE UNITED STATES CONFORM TO INSURANCE PRINCIPLES?

The principles described above have significant implications for a stable and self-sufficient private marketplace for health coverage. Failing to consider these principles when developing coverage initiatives could lead to adverse consequences that undermine the system, such as the inability to set premiums accurately, consumer incentives that work against cost control goals, and in the worst case, the inability to provide insurance at a reasonable cost. There may be instances when societal goals necessitate design elements that do not follow one or more of the principles. Nevertheless, consideration of the principles and the negative consequences they are designed to avoid may suggest mechanisms for averting the negative consequence or, at a minimum, assist in fully articulating the trade-off being made.

Benefit Design Considerations

Most health coverage programs in use today cover a fairly comprehensive set of medical services. Employer-sponsored insurance (ESI) is provided as a tax-advantaged employee benefit and has evolved to cover most health care costs, including routine and preventive care. Medicaid and the State Children's Health Insurance Program (SCHIP) are public health insurance programs for the poor and near poor, who can least afford to share the cost of care; these programs pay for the vast majority of the covered individuals' medical costs. Medicare also provides a comprehensive set of medical services, recently enhanced with the addition of prescription drugs in 2006. Individuals who are not eligible for ESI or any of the public programs can purchase coverage through the private individual insurance market.

While the specifics around covered services and cost-sharing requirements may vary significantly from plan to plan, the general comprehensiveness of the benefits threatens the insurance principles of *Random Loss* and *Economic Feasibility*. While other types of insurance products generally adhere fairly strictly to these principles, health insurance does not.

RANDOM LOSS — Individuals with health insurance coverage are much more likely to file a claim than are those with other types of insurance. Roughly 10 percent of auto insurance policyholders, 6 percent of homeowners' insurance policyholders, and less than 1 percent of life insurance and long-term disability policyholders could expect to file a claim in a given year.[2] In contrast, more than 80 percent of health insurance policyholders will receive covered services in a given year.[3]

ECONOMIC FEASIBILITY — Due to the comprehensive coverage of most health insurance products, many health insurance claims are relatively small. For example, among individuals covered by private insurance in 2005, 50 percent had annual claims paid between $1 and $999 (table 1), but this spending represented only 9 percent of all medical claims paid. These claims typically represent predictable, budgetable expenses, such as physician office visits and maintenance medications, and also add significant claims processing and other administrative expenses.

[2]Insurance Information Institute, http://www.iii.org/media/facts/, accessed Jan. 10, 2008, 2006 NAIC Annual Statements—Exhibits of Life Insurance.

[3]American Academy of Actuaries' Uninsured Work Group calculations based on the Medical Expenditure Panel Survey.

Table 1. Distribution of Total Health Spending Paid for by Private Insurance, Individuals Under Age 65 Covered by Private Health Insurance, 2005

Total Health Spending Paid for by Private Health Insurance	Proportion of Individuals	Proportion of Total Health Spending	Average Annual Expenditure
$0	18%	0%	$0
$1 – $999	50%	9%	$355
$1,000 – $1,499	8%	5%	$1,223
$1,500 – $9,999	21%	39%	$3,688
$10,000 and Over	4%	48%	$25,590
All	100%	100%	$1,980

Source: American Academy of Actuaries' Uninsured Work Group calculations based on the Medical Expenditure Panel Survey.

Two potential problems arise due to the comprehensiveness of the benefit packages common in the marketplace today and favored in many reform proposals. First, because comprehensive benefit coverage lowers the cost of care to the insured, many individuals use more services than they would if they were paying the full cost themselves. This is sometimes referred to as moral hazard. To some extent, this problem can be ameliorated through careful design of cost-sharing requirements. Insurance policies commonly employ cost sharing through deductibles, coinsurance, copayments, and maximum coverage limits that may vary by the type of service and where and by whom it is provided. Such cost sharing can reduce moral hazard and increase consistency with insurance principles. Individuals who have to pay at least part of the costs of their medical services have fewer incentives to use unnecessary care. Higher deductibles can result in more claim randomness and less cost associated with planned or at least predictable expenditures. High-deductible plans have been receiving more attention recently, as employers struggle with ways to lower their health care expenses. High deductible plans have been common for some time in the individual health insurance market, where individuals pay the entire premium.

However, any incentives to make insureds more sensitive to benefit costs should be balanced with the desire to avoid penalizing those individuals for whom certain services are non-discretionary and producing outcomes that are counter to other public policy goals. Studies have shown that higher cost sharing produces lower utilization not only of unnecessary care, but of necessary care and preventive services, as well.[4] In addition, the impact of cost sharing is relative to the wealth and income level of the person insured. A $25 office visit copay may be insignificant to a wealthy individual, but it can be a barrier to access for a low-income person or family struggling to make ends meet.

The second issue relates to the inclusion of smaller, predictable expenses such as annual physical exams and preventive dental services in comprehensive benefit packages. This encourages individuals to pay a premium to insurance companies for processing small claims they could have budgeted and paid for themselves. As a result, premiums are higher to reflect the direct costs of these services as well as their associated administrative costs. These services have become common in benefit packages for a variety of reasons, including the desire to encourage the utilization of preventive care. Increased prevention can lead to improved health outcomes, thus protecting health security. Sometimes the cost of preventive care

[4]See Gruber, Jonathan. "The Role of Consumer Copayments for Health Care: Lessons from the Rand Health Insurance Experiment and Beyond" Prepared for the Kaiser Family Foundation, October 2006.

is simply additive; other times, it may reduce overall cost by delaying or eliminating the need for more costly care, such as surgery for a disease that was not diagnosed until in an advanced stage.

Many health policy experts argue for creating a basic benefit package that covers essential services only, but covers everyone. In practice however, it is difficult to define "essential" and separate such services from nonessential or less essential ones. In addition, it could be difficult to sell this type of coverage to a public that has come to enjoy a great variety of choice and more comprehensive coverage options.

Other Considerations

In addition to benefit-design elements, other features of a health plan also should be considered with respect to their adherence or deviation from insurance principles. Those features include eligibility, participation, and rating rules. Most of the rules commonly used in the commercial market today pertain to the insurance principle of *Random Loss,* and in particular attempt to minimize the potential for adverse selection. Careful design of these elements is key to maintaining a stable and predictable risk pool because of the potential for selection, which can destabilize the risk.

PARTICIPATION REQUIREMENTS IN GROUP HEALTH PLANS — The larger the proportion of eligible individuals enrolled in a health plan, the better the risk mix and the more stable and predictable the plan costs. For this reason, health insurers typically require minimum employee participation levels for group coverage (often 75 percent of eligible employees). For certain supplemental benefits that have a tendency to attract primarily heavy users (such as dental), plan sponsors may make the supplemental coverage mandatory for all enrollees of the medical plan. Voluntary programs without minimum participation requirements are vulnerable to adverse selection.

ENROLLEE CONTRIBUTION LEVELS — A major consideration in the decision to enroll in a health plan is the premium cost to the enrollee. Health coverage consumers are price sensitive, and thus participation rates are higher when employers or public sector sponsors contribute more toward premiums. The higher the individual's contribution level, the more likely that the individual choosing to enroll is at greater risk of high health costs and expects to use the covered services more heavily. For this reason and to ensure a stable risk mix, health insurance carriers often require minimum employer contribution levels as part of their underwriting regimen.

RATING RULES — Rules regarding how premiums are developed and risk is spread across a larger pool will also influence who chooses to enroll in a health plan. At one end of the spectrum is the community-rating approach, which charges the same premiums to everyone. At the other end of the spectrum is the medically underwritten approach; groups and individuals are classified according to their expected morbidity levels and their premiums are set accordingly. Under a community-rated approach, individuals or groups at lower risk of high health spending subsidize those at greater risk; while under a medically underwritten approach, risk is pooled over policyholders or groups with similar risk profiles. Community rating may provide more "affordable" coverage to high-risk individuals, but may not be perceived as providing sufficient value to low-risk individuals. As a result, community-rated programs have a tendency to attract a higher proportion of high-risk individuals, as lower risks seek lower cost options (including self-insurance), raising costs for those remaining in the pool. In contrast, more homogeneous risk classification leads to less cross-subsidization by health risk level, so that those expected to have higher costs pay more for coverage.

INDIVIDUAL MARKET ISSUES — These considerations are even more pronounced in the individual health insurance market, where individuals bear the entire premium cost and the potential for adverse selection is high. In this market, the group-based tools used to guard against adverse selection (e.g., minimum participation and employer con-

tribution requirements) are not available, so insurers use other mechanisms, such as medical underwriting and pre-existing condition exclusions where allowed by law.

CONCLUSION

A viable insurance market is built on fundamental principles of insurability. For various reasons, health care coverage in its current form may not be consistent with these insurance principles in every respect. The principles of *Random Loss* and *Economic Feasibility* are the most likely principles to be violated, generally increasing health insurance premium levels due to adverse selection, increased utilization of services, and the inclusion of small, budgetable expenses.

When designing health reform proposals, policymakers will want to consider these principles and the negative consequences they intend to guard against. This will provide insights into a reform's potential impact and may provide guidance for avoiding any potential unintended consequences. Understanding these insurance principles is especially important when considering changes that would directly affect the rules and regulations governing health insurers, as insurers consider program financial viability and sustainability when determining whether to participate in the market.

Different health reform proposals recommend different benefit-design criteria, ranging from limited benefit plans to minimum benefit structures to subsidized comprehensive plans. The fundamental insurance principles suggest that benefit levels should not be too rich, so as not to encourage moral hazard and adverse selection. On the other hand, they may also suggest that limited benefit plans may not provide adequate protection against random, catastrophic high costs.

Evaluating these issues must consider not only an insurance perspective, but also societal goals for health security, especially those with respect to individuals at lower income levels or with chronic conditions. While inclusion of small, budgetable medical expenses in a coverage plan may lead to adverse selection, moral hazard, and higher premiums, it may be appropriate to ensure that a low-income population has access to these services. Similarly, individuals with chronic conditions may be able to predict medical expenditures for an upcoming period fairly well, but still find budgeting for them unaffordable.

The challenge is to strike the appropriate balance between minimizing moral hazard and adverse selection while not sacrificing health security by failing to provide coverage for what people need.

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