Indexing Health Insurance to Marginal Health Status: A Spoonful of Economics Helps the Premiums Go Down

Justin Hurwitz
INDEXING HEALTH INSURANCE TO MARGINAL HEALTH STATUS: A SPOONFUL OF ECONOMICS HELPS THE PREMIUMS GO DOWN

Justin (Gus) Hurwitz*

INTRODUCTION

Our nation faces a pendular debate about health insurance and how to allocate the scarce health care resources for which it pays. The apexes of this debate’s swing have probably been best defined as the solidarity principle and actuarial fairness. Under the solidarity principal, all are entitled to health insurance on equal terms, no matter their health status or ability to pay, with need based resource allocations. Actuarial fairness does not consider the social consequences of insurance or the allocation health care resources, instead turning to traditional market tools to set premiums today in proportion to expected future costs.

There is a powerful and destructive dynamic between these apexes. Solidarity provides no mechanism for allocation resources, and as such is unsustainably expensive. The natural response is to allocate or ration resources—a task that market mechanisms are well equipped to handle. But the market mechanisms for insuring risk rely on actuarial principles to assign higher premiums to higher risks. Facially, this is contrary to the solidarity principle—as market mechanisms refine the efficient allocation of insurance premiums, those who need insurance most are priced out of the market for adequate health insurance. This creates a large body of un- or under-insured. Naturally, such a result pushes the pendulum to swing back to a model of solidarity.

This Article suggests a new model of health insurance, one that embraces both solidarity and actuarial principles. The model is fundamentally very simple: index insurance premiums to the insured’s efforts to maintain his health—his Marginal Health Status—rather than his actual health status. This index, the Marginal Health Status Index (“MHSI”), would be based on data kept by health providers that contain information such as an individual’s general awareness of his health, the frequency of visits to primary care sources, communication

*Trial Attorney, US Department of Justice Antitrust Division; J.D., The University of Chicago Law School, 2007; M.A. candidate, Economics, George Mason University; B.A., St. John’s College, 2003. This work is entirely my own, and does not represent the views of the US Department of Justice. Comments are appreciated: ghurwitz@gmail.com.

with his doctors and understanding of his conditions, compliance with medical directions, and incremental changes in non-acute conditions. This data would not contain any information about specific conditions. Coarsely speaking, this data is a proxy for how responsible a consumer of health services the insured is.

This shift to a health insurance model based on Marginal Health Status would mark the fundamental change in the industry. Historically, health insurance premiums have been indexed to the expected cost of providing care to a person or pool of people of presumably typical "health responsibility," but with an assessed set of existing conditions. That is, premiums have been set as a function of preexisting conditions. Under the proposed model, premiums would be indexed to the expected costs of providing care to a person of a presumably typical set of existing conditions, and of an assessed level of "health responsibility."

Thus, the normative understanding of the proposed model is that under it two equally health-responsible individuals—people who take equally good care of themselves—ought to pay equal premiums and have equal access to health care, no matter their respective health statuses. Thus, the individual with chronic and expensive conditions, but who treats them well, would face the same insurance burden as the healthy individual who takes care of himself. Indeed, the well-treated but chronically ill individual might have lower premiums and greater access to care than a healthy individual who does not take an active role in maintaining this health.

Such an approach is compatible with the Solidarity Principle’s understanding that everyone should have reasonable access to health care no matter their ability to pay. At the same time, it is responsive to the actuarially fair idea that costs should be allocated to those expected to cause them. This approach minimizes the forces that cause the oscillation between current health insurance models.

This Article proceeds in three parts. The first part diagnoses the problem, considering how health insurance relates to other forms of insurance, the interplay between the Solidarity Principle and actuarial fairness, and identifying the factors that cause the oscillation between these two models of health insurance. The second part of this Article introduces the MHSI as a cure that is responsive to this diagnosis. This section explains the MHSI, how it is responsive to the problems identified in the first section, and considers some of the practical issues that it faces. The third section then looks to some of the side-effects appurtenant to an MHSI-based insurance model. These side-effects are
both potentially good, suggesting off-label uses beyond allocating health insurance costs, and some potentially adverse side-effects. A conclusion follows.

I. THE DIAGNOSIS

1. Health as an object of insurance

Health insurance is different from most any other form of insurance. Typically, insurance covers repair or replacement costs up to some pre-determined amount—typically the present replacement cost of the thing insured. This repair or replacement usually returns the insured item to its state prior to the occurrence of the harm against which the item is insured. Under these models, if the insured item is currently worth $10,000, and it incurs $3,000 worth of damage, an insured is allowed up to $3,000 in repairs; and if it incurs more than $10,000 worth of damage, the insured is allowed up to $10,000 to replace it.

Unlike typical insurance models, health insurance covers only the cost of treating health problems. When it comes to fixing health problems, treatment rarely means repair, and rarer still would it mean replacement. While there is some similarity between “treating” and “repairing” health, treatment is almost always imperfect. Importantly, the need for treatment often suggests future problems—and imperfect treatments may even cause future problems either because it fails to remedy the underlying condition or because it has harmful side-effects. This is perhaps most clearly seen in the case of chronic disease, where treatment can at best stabilize the insured’s health, and will require future treatments to maintain that stability. This can also be seen in less apparent contexts. To take one example, modern medicine has greatly reduced the mortality of heart disease—but with the effect of extending many people’s lives long enough that they will experience kidney disease, which requires expensive dialysis treatment.

Because health insurance works in terms of treating health problems, it has no replacement cost component. This lack of a “replacement cost” component is unsurprising. Facialy, placing value on lives strikes many as an unsavory business. While there is an ongoing debate about allocating health care resources based upon quality-adjusted life years (QALYs)—effectively an effort to balance the cost of treatments with
their expected benefits to individual patients—these efforts are not written into insurance contracts like a replacement clause. To take the form of a replacement cost cap on insurance payouts, the insurer would need to pay out the lesser of the treatment cost or the value of the insured’s health. Note that it is not clear whether the replacement value would be determined assuming the insured’s health is restored to the extent possible with existing medical techniques, or is perfectly restored. Compared to traditional insurance paradigms, it would be the latter, but this is a terribly ambiguous standard.

There is something more fundamental to be learned from the absence of a replacement cost cap in the case of health insurance. We typically use insurance to insure things that we don’t just own, but that we have purchased. This is not a profound statement: we own most things because we have purchased them. Thus, the value of things we insure is commensurate with our ability to afford the cost of insuring them, as the cost of insuring a thing is presumably a fraction of the cost of owning it.

Unlike the typical subjects of insurance, there is no implicit likelihood that any given person can afford to insure his health. Unlike other things that we own, we are born with our health, we don’t buy it. Thus, there is nothing inherent to anyone possessing good health that suggests he could afford to insure it to its typical repair costs, let alone its replacement cost. Some people, perhaps even many, can afford this—but some, likely most cannot.

2. The Solidarity Principle

This is the animating idea behind the solidarity principle. The solidarity principle “guarantee[s] that certain agreed-upon individual needs will be paid for by a community or group. . . . In the health area, the argument for financing medical care via social insurance rests on the prior assumption that medical care should be distributed according to medical need or the ability of the individual to benefit from medical care.”

But if we accept as priors both that medical care should be allocated by need and that many people cannot afford the costs of

---

2 See John La Puma and Edward F. Lawlor, Quality-Adjusted Life Years: Ethical Implications for Physicians and Policymakers, 263 JAMA 2917 (1990); L. Russel at al., The Role of Cost-Effectiveness Analysis in Health and Medicine, 276 JAMA 1172 (1996).

3 This would also blur the line between life insurance and health insurance.

4 Stone, supra n. 1, at 290.
insuring their health, it becomes necessary to disassociate need and cost. Thus, "Under a social insurance scheme, individuals are entitled to receive whatever care they need, and the amounts they pay to finance the scheme are totally unrelated to the amount or cost of care they actually use."5

Solidarity is, almost by definition, not a fair principle. It makes no effort to tie insurance premiums to consumption of health care resources. Unless need for health care happens to arise in proportion to however much people pay into the system, consumption will be disproportionate to insurance premiums. It also creates troublesome incentives. One such incentive is the moral hazard common to many insurance regimes: the fact that their health is insured can cause people to take risks that they otherwise would not, or to reduce the care that they would otherwise take to maintain their health.6 There is another complementary moral hazard that afflicts healthy people that are insured under the solidarity principle: anyone who is paying more into the system than they expect to take out might increase their consumption of health care resources.7

This second moral hazard doesn’t occur in non-mandatory insurance systems, because anyone paying more than his expected costs would opt out of the insurance system. But in the case of mandatory insurance systems, it takes the place of another common insurance misincentive: adverse selection. Adverse selection occurs where some of the insured can predict their expected costs more accurately than the premium-setters.8 As a result of this asymmetry, those with lower expected costs will exit the insurance pool, leaving only the “bad” risks in the pool, which results in increased costs and premiums. But in a mandatory insurance system, those with lower expected costs cannot

5 Id. at 291.
7 This effect is analogous to Milton Roemer’s famous observation that the use of hospital resources increases with the availability of those resources. See Milton I. Roemer, Bed Supply and Hospital Utilization: A Natural Experiment, 35 Hospitals 36 (Nov 1961); Milton I. Roemer and Max Shain, Hospital Utilization under Insurance (Amer. Hosp. Ass’n, 1959).
leave the pool, so they are encouraged to increase their consumption of the pool's resources.

The basic fact of solidarity-based health insurance is that it makes no effort to contain costs. This is an unsustainable model for insurance in a world of scarce health care resources. A purely solidarity-based insurance system allocates resources by need, which creates perverse incentives that encourage people of both above- and below-average need to increase their consumption of this scarce resource, while providing no counterbalancing incentives for people to decrease consumption.

3. Actuarial Fairness

The common alternative to solidarity is actuarial fairness. The problem with the Solidarity Principle is that it by definition doesn't allocate costs in proportion to risks. An actuarially fair insurance model does just this, allocating premiums based upon the expected cost of the insured's health risks. Thus, actuarial fairness responds directly to the problem that undermines the Solidarity Principle.

But actuarial fairness carries its own problems. Indeed, its very principle is its vice: in the context of health insurance, premiums can be so actuarially "fair," that they reflect the expected costs for individuals rather than for groups. Insurance is effective because it allows groups to pool risk. Implicit in this pooling of risk is that each person in the pool faces some probability of high or low actual costs. By factoring in preexisting conditions, actuarial models partially avoid this assumption. Factoring in preexisting conditions creates a bimodal distribution of those whose actual costs will certainly be high, and those whose actual costs may still be either high or low. The result is similar to that seen with the Solidarity Principle: those who least need health insurance can best afford it, but those who clearly need it either face significantly higher premiums or insufficient access (i.e., if preexisting conditions are excluded from coverage).

Interestingly, as with the Solidarity Principle, actuarially fair insurance models create perverse incentives similar to, but not quite the

---

9 Stone, supra n. 1, at at 293 ("It holds that premium rates should be differentiated so that each insured person will pay in accordance with the quality of his risk." (quotations omitted)).

10 See Deborah L. Rogal, History of Risk Adjustment in the US, 6 Risk Adjustment in Health Care Purchasing (June 2002) (observing that health plans have an incentive to attract healthy enrollees and to exclude sicker and riskier enrollees)
same as, adverse selection. In order to maintain coverage and keep their premiums low, individuals are encouraged to avoid learning about potentially costly future conditions, or even to avoid seeking treatment for current conditions that could create a record of expected future healthcare costs. Like adverse selection, the insured in such a case has an informational advantage over the insurer. But unlike adverse selection, this advantage encourages him to stay in the pool—rather than opting out to avoid paying too-high premiums, he maintains too-low premiums by avoiding (or deferring) detection of hit condition. Unfortunately, in medicine early detection is often the key to effective treatment. Thus, the net effect of this incentive is to increase the ultimate cost of health care.

Actuarially fair models suffer from other problems as well. For instance, these policies are written to individual circumstances. As a result, policies are not directly portable between providers, because each provider needs to conduct its own actuarial assessment. And these assessments can require the compilation of comprehensive and costly medical histories. These are problems in their own right—but they also reduce competition between insurance providers, which only further limits the availability and raises the cost of insurance options. Under actuarial models, we also must place our trust in the judgment and ability of the actuaries. But this trust is not necessarily well placed, if for no reason other than because the objective gloss given to actuarial methods can mask what is in reality a subjective (if not outright biased) process.\footnote{See Brian J. Glenn, The Shifting Rhetoric of Insurance Denial, 34 L. & Soc’y. Rev. 779 (2000).}

violence, and many other actuarially relevant traits have all been excluded from actuarial consideration by law in various jurisdictions. Additionally, states regularly require policies to cover a minimum set of conditions and procedures—most frequently, the very ones that actuarially fair insurers would seek to omit from their policies. And states frequently require the creation of community-rated insurance pools, which anyone can join and insurers are prohibited from dividing into actuarially fair sub-pools.

All of these have the effect of returning actuarially fair policies to a foundation based upon the Solidarity Principle. Coverage and premiums will tend to converge across the board in the lowest end policies, until they face the same problems that caused the previous solidarity regime to fracture. And thus the circle of health insurance is complete.

4. The Diagnoses

The dynamic between solidarity and actuarial fairness described above is perhaps unsurprising if viewed from a step back. Solidarity says that everyone should receive health insurance on equal terms, but without giving guidance on how to allocate this finite resource. As such, because health care resources are finite it will necessarily allocate them in direct proportion to immediate need, which means allocating insurance premiums in inverse proportion to expected cost. This pushes those without immediate need out of the system, which increases premiums for those remaining and in turn pushes more people out of the system.

Actuarial fairness, on the other hand, goes to the other extreme. It allocates premiums in proportion to need and resources inversely in proportion to need. Under such a principle, those with the best health

---

15 See generally Leah Wortham, The Economics of Insurance Classification: The Sound of One Invisible Hand Clapping, 47 Ohio St. L.J. 835, 835 n.1 (citing references discussing or prohibiting use of, inter alia, gender, race, nationality, and religion in setting health insurance premiums).
16 See, for example, Amy B. Monahan, Federalism, Federal Regulation, or Free Market? An Examination of Mandated Health Benefit Reform, 2007 U. Ill. L. Rev. 1361, at 1365 (2007) (discussing state regulation of health insurance contracts).
17 Again, this is largely a result of HIPAA-imposed requirements.
status get the best access to health resources, while those with poorer health get more costly access to health resources, which on average will decrease their health even further until the only ones who can afford health insurance are those who do not need it.

II. THE CURE

1. The cause of the diagnosed problem: Health Status

The problem underlying the oscillation between solidarity and actuarial fairness almost seems trivial once identified as above. Both principles get something fundamentally right, but at the cost of getting something else fundamentally wrong. Solidarity means access to health care in proportion to need but with inversely proportionate premiums. Actuarial fairness means premiums in proportion to need but inversely proportionate access.

This captures the problem—but its cause is more nuanced. Both the solidarity principle and actuarial fairness traditionally define need in terms of present health status. Under the solidarity principle, those with the poorest health get the most access; and under actuarial fairness, those with the best health get the best premiums. So long as health status is a primary index used to determine either access to health care or to set premiums, neither principle will effectively avoid this problem. Health status is a very strong predictor of expected health costs, particularly in the case of chronic disease or other conditions that require ongoing care or create predispositions to future conditions. Treating it as under the Solidarity Principle—that is, not considering it at all—incentivizes people not to maintain their health status. But treating it as an actuarially fair model does naturally lead to the bimodal distribution of premiums discussed above, which creates a barrier to health care for those who need it most.

This observation that health status is a barrier to access to health care is not novel. HIPAA, for instance, was put in place to ensure portability of health insurance for employees moving between employers, in large part by prohibiting preexisting conditions antedating a current policy from being considered by a new policy. And COBRA ensures that, under certain circumstances, employees can maintain coverage under a prior employer’s health plan for a period of

\[ \text{See HIPAA, 29 U.S.C. § 1181.} \]
time and at their own expense.\textsuperscript{19} This helps mitigate the need to seek out individual insurance that might be prohibitively expensive when compared to group policies available through an employer, for instance due to the preexisting conditions of the former employee or a covered member of his family.

While laws such as these help to reduce the problems of using health status with actuarial tools to set insurance premiums or access to care, they are limited in application to people who are already in the insurance system, and are in it through a group plan (usually through an employer). And even if they were broader, merely barring the use of health status doesn’t resolve the problem, because it can only be barred from use in making ex ante determinations. So long as we have some form of social health care access policy, health status will be a primary metric for allocating health care resources. That is, so long as any sick or injured person can go to an emergency room and not be turned away,\textsuperscript{20} or we have a backstop insurance system such as Medicare that guarantees everyone some level of insurance coverage,\textsuperscript{21} limiting the use of health status for making determinations ex ante will merely push excluded individuals to a system where they will be used ex post. Where resources are limited, and decisions about access to health care need to be made without ex ante knowledge about the pool of patients, the only reasonable allocation of resources is one in proportion to need—and thus to health status.\textsuperscript{22}

\textsuperscript{19} See 29 U.S.C. §§ 1161–68 (1996) ("The plan sponsor ... shall provide ... that each qualified beneficiary who would lose coverage ... is entitled ... to elect ... continuation coverage under the plan.").

\textsuperscript{20} As required by the Emergency Medical Treatment and Active Labor Act, 42 U.S.C. § 1395dd (2008) ("EMTALA"). EMTALA requires that hospitals receiving Medicare funding provide emergency room service for anyone seeking care that is sufficient to "screen" the patient to identify emergency medical conditions, and if such a condition exists that they provide care adequate to "stabilize" any such conditions.

\textsuperscript{21} For instance, through Medicaid. Under Medicaid, members of certain groups that are likely to need health insurance, and anyone who has insufficient income to afford medical coverage, is entitled to participate in a joint federal- and state-government sponsored insurance pool. For Medicaid’s eligibility requirements, see 42 U.S.C. § 1396d (2008).

\textsuperscript{22} See infra section III.A., discussing how MHSI can be incorporated into the Emergency Room environment.
2. Treating the cause: Marginal Health Status Index (MHSI)

It is not enough to limit the use of health status in making determinations about insurance premiums and the access that it provides. It must be affirmatively replaced by some alternative mechanism for determining premiums and access.\(^\text{23}\) As is often the case, a bit of microeconomics offers a lot of improvement: index premiums and access to the insured’s marginal health status, as opposed to his actual health status.

Under such a model, two people of equally stable health would face similar premiums for similar access, no matter whether one is actually healthier than the other. Indeed, someone with a well treated chronic condition could have cheaper access to more resources than a healthy individual who takes poor care of himself.

Strictly speaking, this conflicts with both the Solidarity Principle and with actuarial fairness. Understanding the conflict with the Solidarity Principle requires some further development of the MHSI model—the conflict is discussed below.\(^\text{24}\) In terms of actuarial fairness, an MHSI-based model is actuarially unfair: Someone with a well treated chronic disease, who has a higher expected cost of care than a healthy individual who takes poor care of himself, would pay less for insurance than that individual with lower expected cost of care. This is in direct conflict with actuarial fairness’s central idea that premiums should be allocated in proportion to expected future costs.

Although MHSI does not appear to be actuarially fair from the perspective of present knowledge of the insureds’ respective health status, it is actuarially fair from the perspective of marginal knowledge. Given two insureds, about whom we know only that one’s health is stable while the other’s is getting worse, the expected cost of the former’s care is less than that of the latter’s care. While the actuarial purist might argue that it violates basic actuarial principles to ignore certain information such as actual health status, at some point actuarial principles of fairness take second seat to the broader principles of social fairness: as behind a veil of ignorance, two healthy individuals entering

\(^\text{23}\) One alternative that follows from the previous discussion but not considered here is to limit the use of health status for allocating resources both when making ex ante determinations and where making determinations ex ante is not possible. This is not considered because it is not a realistic option. It would require denying emergency room access to patients based on information that is not available at the time the patients are admitted.

\(^\text{24}\) See infra section III.B., discussing whether MHSI could have the effect of excluding those most in need of insurance from the insurance system.
into insurance contracts today, upon being told that one of them will develop a chronic illness that would later affect his premiums and access to care, would probably prefer that their future premiums be determined on a MHSI basis instead of a pure actuarial basis.\textsuperscript{25}

Even if these arguments are unpersuasive, there is no reason that MHSI need be actuarially fair. Actuarial fairness is a well understood tool for ensuring that premiums accurately reflect risk. But this is not a sufficient condition to introduce it as a requirement for a health insurance model. A perfect model will ensure that premiums and access accurately reflect need. Given the peculiarities of health as an object of insurance, there is no reason to expect that a tool that is appropriate for traditional insurance models is an appropriate basis for health insurance. Most important, any model that gets closer to this mark than does a purely actuarially fair model—or a Solidarity-based model—should be preferred over a purely actuarial model.

The MHSI offers such an improvement over existing models. Underlying this improvement is the model’s use of marginal health status, which simultaneously recognizes both that individuals do exert some control over their consumption of health care resources, but that there is no inherent relationship between an individual’s need for insurance and his ability to afford insurance. By focusing on marginal health status, the insured is incentivized to avoid over-consumption of health care resources, at the same time as he is insulated from otherwise unbearable costs of necessary care.

The mechanism by which an MHSI-based insurance model achieves these ends is familiar to economists: it is the price mechanism. Under an MHSI-based model, someone with a poor MHSI—that is, someone who imposes undue costs on the health-care system—would face either increased premiums or decreased access to resources; and conversely for someone with a good MHSI. That is, supply could increase or decrease in response to demand. At the same time, because insurers could offer these policies indexed to MHSIs, instead of negotiated on an individual or group basis, insurance consumers would face much lower transaction costs when comparing and switching between policies. This allows for demand to be responsive to supply, and competition to push the price of insuring various marginal health statuses to the marginal cost of insuring those statuses.

No such price mechanism can operate under either the Solidarity Principle or actuarially fair insurance models. This is trivial

to see in the case of the Solidarity principle, which pushes everyone into uniformly-priced group policies. The failure of the price mechanism under actuarially fair models is more nuanced. On the demand side, actuarially-fair models have high transaction costs, requiring individuals to go through time-consuming and expensive physical examinations and evaluations of medical histories to compare and switch between insurers. On the supply side, insurers rely on coarse adjustments to cost (premiums) or access (preexisting condition and exclusion clauses) to match their offerings to consumer demand. Shifts in price and access of this magnitude more closely result in a supply curve with only two price points: an actuarially-determined affordable price for the healthy, and an actuarially-determined unaffordable price for the unhealthy. Neither the supply nor the demand curves offer insurers or insureds the sort of differentiated pricing for various price-quantity pairs that is needed to establish a market.

By allowing for a functioning price mechanism, this MHSI-based shift to marginal pricing also has the effect of allowing the insured to make ex ante decisions about health care consumption that are unprecedented by current insurance standards. The MHSI could give insurers information about how responsible a consumer of health care resources an insured is—for instance, whether a given insured is prone to needlessly seek care, is able to follow complex medical instructions and understand complex procedures, or complete intensive treatment regimens. This information would allow insurers to offer differentiated prices to consumers based upon their MHSIs. But it would also allow them to offer differentiated policies based upon levels of coverage. Two individuals with different MHSIs might be able to get insurance at the same price, for instance, but the individual with the better MHSI might receive coverage for experimental, riskier, or just more expensive treatments. While this surely would not resolve the difficult bedside rationing decisions that haunt doctors today—and just as surely would not eliminate the related litigation—it would provide more guidance for resolving these questions as they arise. It is difficult, for instance, to argue that an insured agreed to have certain procedures excluded when the only plans he is offered contain the exclusions. But when he actively selects the “basic” plan at one price over the “experimental-treatments” plan at a higher price, he has indicated an ex ante willingness to forego more expensive procedures for more affordable coverage.
3. Visiting the Formulary: Calculating a Marginal Health Status Index

Though the mathematical precision of microeconomics was invoked in announcing the term “Marginal Health Status,” the contours of this term are far from clearly defined. The sort of comprehensive physical examinations needed to have an accurate picture of someone’s health are too expensive and time consuming to be had with the regularity needed to determine a marginal rate of health. And even if they were quick and cheap, modern medicine is still too imprecise a science to give a quantifiable measurement of a single individual’s health status—let alone to allow meaningful comparisons between most individuals.

Any effort to quantify an individual’s health status also needs to measure the influence of numerous exogenous factors. Lifestyle, the amount of exercise that someone gets, the frequency and appropriateness of doctor visits, ability to take medical advice and directions, and overall awareness of health-related issues are just some things that can affect a person’s health in ways that cannot be measured through a physical examination alone. They are nonetheless factors that weigh in heavily on a person’s marginal health status—oftentimes more than readily quantifiable factors such as cholesterol levels or blood sugar.\(^{26}\)

Such exogenous factors are also more important to a MHSI than most acute medical conditions. The MHSI is interested in the trend in an individual’s health over time, as a way to predict long term costs. While many acute conditions can be quite dangerous, they often have little effect on long-term health. In such cases, the MHSI should be more sensitive to how a patient deals with an acute condition, or the lifestyle factors that led to it, for instance, than by the simple fact that the condition occurred. The patient who broke his leg slipping on ice will probably incur lower health care costs than an otherwise identical skydiver who has yet to suffer a broken limb.

An important factor to the MHSI is the propriety of care sought by the insured. By definition, overconsumption imposes an inefficient burden on our health care system—and without incentives to correct such behavior, overconsumers are likely to continue to overconsume. Current insurance models attempt to internalize these costs with their insureds through a variety of means, such as copayments and deductibles. But while these do help deter some overconsumption, they do not help chronic offenders. For these health care consumers, the

\(^{26}\) And in fact, doctors are trained to be aware of such factors.
copay is facially insufficient to deter needless consumption; and the situation is worse with deductibles, where the consumer might quickly spend his way through the deductible and enter a realm of relatively unfettered health care access. Compare this to an MHSI model, where each incident of overconsumption would further lower the MHSI, and thus increase the insured's premium. Under such a model, the greater the offense, the greater the cost.

Less obvious, underconsumption imposes a similar burden. Those who do not have regular medical checkups, for instance, are less likely to benefit from early diagnoses of serious conditions. And those who do not have a relationship with a regular doctor are more likely to seek out basic care from an emergency room, or to defer treatment of minor conditions until they have become major. Here, the tools used by existing insurance models can have perverse, and even tragic, incentives. Deductibles and even copayments can encourage the insured to avoid basic and routine medical treatment, particularly for those with lower income—those for whom affordable insurance is the greatest problem. Under an MHSI model, their incentives are reversed and brought back in line with the preferred outcome: those properly seeking care, including regular treatments, would see an improvement in their MHSI, and thus a reduction in their insurance costs.

4. The Prognosis

This discussion has begun to suggest the contents of the MHSI. It would comprise information about an individual's general health status—but not about specific conditions—and other exogenous factors that influence long-term health. It need not be considered beyond that at present. The form that this index takes is secondary to how it can transform the solidarity principle and actuarial fairness into complementary parts of a single insurance model. The more important questions are how an MHSI-based insurance model would work and what it might look like.

Implementing an MHSI-based insurance model would not require substantial change from existing health insurance models. It would require two things. First, and most important, it requires some centralized repository of information about patients' health statuses. This centralized repository is the subject of the remainder of this section. Second, and once this information is available to insurers, policies need to be developed around it—an exercise that can largely be
left to market forces. The development of such policies is taken up in section III, below.

The most basic requirement of an MHSI-based insurance model is a mechanism for calculating individuals’ MHSIs. What relevant information is collected at present is collected on an ad hoc basis, and by individual doctors and insurers. It is possible that insurers and doctors could implement mechanisms to collect and compute these indexes through a decentralized process. It is even possible that an insurer could offer an MHSI-based insurance product in today’s market, putting this model in direct competition with existing insurance products.

While this system could be implemented by individual insurers acting independently, such an implementation would likely fail—and would certainly be less effective than one based upon a centralized MHSI process. Such a failure can be predicted based upon the same market failures that afflict today’s insurance models. As a result of adverse selection and moral hazards, individuals would self-select into either traditional or MHSI-based insurance models in ways that would undermine the viability of the MHSI pool. We would expect patients with chronic but stable conditions to opt in to an MHSI-based pool, while those who are healthy would opt into an actuarially fair pool. This might capture some of the benefits of the MHSI model, but would lose many others.27

The preferable MHSI implementation would use a centralized repository of relevant health information, maintained by one or more indexing agencies. This information would be collected and reported by health care providers—perhaps as a requirement for accepting patients’ MHSI-based insurance—and made available to insurers. The agency or agencies that collect this information could be government run, like a DMV keeps driving records, or private, like credit reporting agencies, or a combination of both. And insurers could be provided with a copy of the collected information, like a driving record or credit report, or they could only be provided with a computed index, like a driving or credit score.

27 For instance, those with chronic conditions would be more encouraged and able to maintain their health than they are under actuarially-fair systems today, because their premiums would remain relatively low so long as they did. Conversely, those who are healthy despite their poor lifestyle would remain in the actuarially-fair system, and would face the same lack of incentives to improve their lifestyle that they do today. Specific benefits of the MHSI-based model are discussed in section III, below.
Implementing MHSI-based insurance on a centralized level necessarily ties this discussion into the ongoing debate about electronic medical records, privacy, and portability.\textsuperscript{28} To the extent that such issues relate to the present topic, they are best addressed as part of that literature. Two points are appropriate to make at present. First, there would be fewer concerns in a model in which the indexing agencies only share computed indexes, rather than the underlying data. This avoids any obvious privacy concerns, because underlying data need not be shared. And it increases the portability and transparency of insurance policies, by limiting the factors used in writing the policies. These are both good results on their own—but they also work to increase competition between both insurers, and possibly between the MHSI-reporting agencies (assuming that they develop in a model similar to credit reporting bureaus). And second, to the extent that the healthcare system is converging towards a centralized medical-records system the information relevant to computing the MHSI could be included in these centralized records, which further increases the viability of the MHSI insurance model.

Creating a repository of information necessary for computing MHSIs does not require any novel developments in industry structure or information management systems. Similar systems have been created by government and the private sector, and used by insurers, for many years. While privacy and portability issues are implicated in the context of health records, efforts to address these issues are actively underway as part of a transition in the health care system that dwarfs the issue of health insurance. The only uniquely difficult obstacle in creating such a system for information relevant to the MHSI is getting health care providers on board—a task that ought not be prohibitively difficult when made a requirement for accepting MHSI-based insurance.

III. THE SIDE EFFECTS

Up to this point, this Article has argued that an MHSI-based health insurance model overcomes problems that undermine existing insurance models, and that such a model could be implemented. But this model does not just fix problems inherent to the Solidarity

Principle and actuarial fairness. It has benefits that the existing models simply cannot support. This Section considers some of these benefits.

1. Off-label Uses

A major objective of insurance reform efforts over the past two decades has been to increase insurance portability. An MFSI-based insurance model is far more portable than the existing health insurance models. By eliminating the use of pre-existing conditions, individuals can transition between insurers, and even into and out of the health insurance system, without risking penalty. Under existing models, an insured individual can face increased premiums if he develops a condition while not covered, but is not likely to face increased premiums if he maintains coverage before and after developing the condition. Under an MHSI-based model, the question is not when an individual develops a condition or whether he was insured at the time—the question is how his lifestyle contributed to the development of the condition and how well he understands and responds to the condition. Thus, MHSI-based insurance creates incentives to maintain one's health, as opposed to existing models, which create incentives to maintain one's health insurance.

This difference in incentives is also in part a consequence of the portability that results naturally from the MHSI's reliance on a centralized repository of information. Insurers need not write their policies on an individual basis, assessing preexisting conditions and other actuarially appropriate information. Instead, and particularly if insurers only have access to the computed MHSI and not the underlying data, their policies can be written to MSHIs, and need not require examinations or evaluation of medical histories. As a result, there would be a reduction in transaction costs when switching between insurance providers and greater transparency between their products. This would make it easier for the insured to switch policies, and it would likely result in policies that are easier to compare. This in turn could yield greater competition between insurance providers, lowering prices, producing better qualities of service, and a wider range of differentiated policy options.

One differentiation in policy options that has been implicit throughout this Article is a distinction between cost and access. The MHSI need not be limited to reporting along a single dimension. In

---

29 As discussed immediately below, this is especially true if the MHSI is implemented using a centralized reporting system.
specific, it could provide information about an individual’s responsiveness to treatments in addition to his expected health costs. For instance, if the insured has demonstrated that he is able to follow complex medical instructions and to successfully complete difficult or protracted medical treatments, an insurer could use this information to allow the insured access to a wider range of procedures. Under an MHSI-based insurance model, marginal health status could be used to set both premiums and the level of access to health care resources.

The centralization of MHSI information would have other results. Patients need not be insured for health care providers to report information about their marginal health status to reporting agencies. Thus, individuals could seamlessly transition in and out of the insurance system. It might be the case that uninsured individuals’ MHSIs would be hurt by not having insurance—there is some truth to the contemporary perception that the uninsured don’t receive adequate health care—but this is not necessarily the case. To the contrary, the individual who self-insures or otherwise maintains a good health care regimen despite not having insurance has likely demonstrated a health-awareness that would improve his MHSI.

One of the most useful effects of an MHSI-based system, assuming that the MHSI is kept centrally, would be seen in the emergency room context with the uninsured. The emergency room is one of the busiest and most expensive sources of care in the US health care system. There has been an unfortunate and increasing reliance over the past decades. In many cases, the emergency room has become a preferred primary care provider for the insureds who make infrequent use of medical services or who do not have regular primary care physicians. And, perhaps as a result of EMTALA’s requirement that they screen and stabilize any patient regardless of his ability to pay, they have become a primary care resource for the uninsured.

The MHSI model could fundamentally alter the current emergency room model. A strong (or non-weak) MHSI score could serve as a presumptive screen, indicating that the patient seeking emergency services is likely facing a true emergency situation. Given the scarcity and cost of emergency room resources, inappropriate reliance on them could substantially lower an MHSI score, which would create a strong incentive for those with insurance to seek care through more appropriate means.

Perhaps most beneficial, in a system where the MHSI is independent of insurance (i.e., where it is centrally kept), it could be used to substantially lower the cost of access to emergency health care
resources for those without insurance. Just as insurers would index premiums to the insured’s MHSI, emergency rooms could index their prices to patients’ MHSIs, such that the uninsured with a strong MHSI would face lower costs for emergency treatments. This idea is complicated, due in large part to Medicaid compensation structure and cost shifting between paying (typically insured) and non-paying (typically defaulting) consumers of health care resources. But there is a likely nexus between responsible consumption of emergency resources and the likelihood that a given patient will at least try to pay for the care received. While this assertion requires exploration beyond what is possible in this discussion, it is possible if not likely that decreasing the costs allocated to these patients would yield a net increase in revenue generated from them.

A final benefit of the MHSI-based insurance model is that it could allow a nearly seamless transition from today’s employer- and group-policy-centric insurance models. It is even possible that insurers could transition employer-funded group plans to employer-funded individual plans. As above, this is based on the fact that MHSI-based insurance avoids reference to preexisting conditions or other factors that would result in sudden shocks to an individual’s health insurance premiums in a group policy relative to an individual policy. MHSI indexing agencies could begin collecting information today, perhaps gathering it primarily from existing efforts to transition to centralized electronic medical records. As enough information is collected to generate MHSIs, and insurers learn how to translate these indexes into actuarially-fair policies, they could compete with group-based policies to draw individual customers to individual plans. In the alternative, insurers could convert all members of a group-policy’s risk pool to individual policies, with all members starting with equal MHSIs and premiums. These would change over time as each individual’s marginal health traits were revealed.

2. Adverse Side Effects May Include...

This last point brings out two final “side effects” of MHSI-based insurance, which are less clearly identifiable as benefits. First, it is not clear how an MHSI-based insurance model would affect doctor-patient relations. The doctor is effectively put in the position of reporting facts about his patients to a central agency. Some doctors

---

30 The requirement that doctors report on their patients could create complicated gaming dynamics, which are not considered here. For instance, doctors might submit
might see this as a breach of confidentiality, though this would likely be answered by voluntary waiver as a condition of the insurance policy. A greater concern is that patients will be less willing to confide in their doctors, knowing that their doctors will be reporting something to their insurer. In application, this ought not to be a concern, both because the MHSI should not factor in specific conditions, and because good communication with health care providers should benefit the MHSI, no matter the content of the communication. Thus, a patient that admits to his doctor that he has a drug problem has demonstrated a trust and ability to communicate with his doctor, and an awareness of a drug problem (an important step towards solving it), all of which would likely suggest an improvement in marginal health status.

Despite how this situation plays out with patients who are not deterred from open communications with their health care providers, some patients likely would be more reluctant to communicate with their doctors knowing that their doctors would be reporting something to their insurer. The MHSI-based response is that these patients would be demonstrating something detrimental to their marginal health, and their MHSI would be lowered as a result. But this does not address the underlying problem that some patients would not communicate openly with their doctors as a result of the MHSI. In such cases, the MHSI would be causing harm to these patients, which is undeniably an objectionable result.

There is no formulaic resolution to this problem—it is simply one that needs to be acknowledged and weighed against the potential gains of an MHSI-based system. Responsibility for limiting its harm would likely fall on health care providers, who would have the best opportunity to explain to patients how the MHSI works and earn their trust. Importantly, it is the health care providers that are in the best position to interact with individual patients and determine who is most likely reluctant to communicate—and thus efforts to overcome this problem are best put in their hands.

The second dubious “side effect” is the MHSI’s own invocation of solidarity concerns. The MHSI would likely disfavor the socially ill: individuals who have less access to health care, are less able to hold to healthy life styles, and are less educated about health. Poignantly, and with perhaps too much generalization: the poor, the disadvantaged, and overly positive reports about patients who are less able to afford premium increases. And invariably some doctors will on average be more positive than other doctors. Such issues are best addressed by reporting rules, self-regulation amongst peers, and normalization of reports by the indexing agencies.
the obese. An MHSI-based insurance model could very well push these people—some of the people who most need health care—further out of the health care system.

One response is that this is precisely what the MHSI is supposed to do. Unlike an actuarially-fair model, which would likely exclude this group from insurance from the outset, the MHSI starts with them in the system. We all start with equal marginal health. Where we go from there is determined on an individual basis. Thus, an MHSI-based system is ostensibly fair in how it excludes people from insurance coverage. The other part of this response is that the underlying problems that the socially ill face are social problems, not health care problems. Thus, the solution to ensuring the poor have access to health care is to bring them out of poverty, not to give them discounted health insurance.

This response is unsatisfactory—albeit more satisfactory than that given by an actuarially-fair approach. Fortunately, it is not the only one. It is possible, and somewhat likely, that the MHSI could be “softened” to include social factors. Importantly, this could be done without compromising its underlying principles. Unlike an actuarially-fair model, which unravels to a point that it can only be repaired by replacing it with a model based upon the Solidarity Principle, an MHSI-based model can incorporate some amount of socially-relevant information into the MHSI without simply becoming based in the Solidarity Principle.

Two ways of accomplishing this have already been discussed. First, health care providers could “pad” their reports, in ways sanctioned by the indexing agencies, to improve the indexes of those who are socially predisposed to being pushed out of the system. Anyone socially predisposed to a negative marginal health status would not be guaranteed a good MHSI. Rather, their MHSI would factor into their predisposition towards a negative marginal health status, and adjust the index calculation to be less sensitive to negative adjustments and more sensitive to positive adjustments.

The second possibility is that the MHSI could be used to limit access to health care resources, while keeping premiums low. Thus, those who are socially predisposed to lower MHSIs would still have low-cost access to basic health care resources. However, they would not have access to more advanced resources—be they more risky, requiring greater patient involvement in the treatment, or perhaps even more expensive relative to their expected returns. Importantly, this means that such individuals would also have a way to improve their
MHSI. Not only could some level of access to health care resources be maintained, but the level of access could be improved.

It is even possible that access and rates for non-insurance-based health care resources could be indexed to the MHSI. Emergency room visits, for instance, could be reported to indexing agencies, and the cost of services tied to the MHSI. In this way, someone without insurance who goes to the emergency room only when appropriate, could show a positive MHSI, and as a result be able to get into the insurance system—or at least pay reduced rates for their use of the emergency room resources.

The issue of the socially ill is a difficult one for the health system to address. All that can be said with any certainty is that no health insurance model can solve it. However, an MHSI-based insurance model has much more flexibility in how to address it than allowed by either the Solidarity Principle or an actuarially fair model. Neither of the approaches above is necessarily better than the other—but both demonstrate that this model is more resilient to these challenges than any model currently in use.

CONCLUSION

The two principles underlying current health insurance models—Solidarity and actuarial fairness—both yield insurance models that rely on the insured’s actual health status. The Solidarity Principle uses health status to determine access to health care resources; and actuarially fair insurance uses health status to set premiums or exclude coverage. In each case, this reliance on actual health status results in an insurance system that is unsustainably expensive and under-inclusive. Perhaps most tragically, both models result in perverse incentives that not only increase health care costs, but that can be detrimental to health.

This Article has suggested indexing health insurance to marginal health status rather than actual health status. The animating idea behind insurance models following this approach is that it creates an incentive for the insured to maintain and improve his health, no matter his health status. This creates a balance between Solidarity and actuarial fairness. It embraces the Solidarity Principle’s goal of providing everyone with access to health care no matter their health status by removing actual health status as a basis for determining the cost of access. At the same time, it is actuarially fair insofar as it allows
costs to be allocated in proportion to marginal health status, which as behind a veil of ignorance is an actuarially fair index.

Such an insurance model would use a Marginal Health Status Index, or MHSI, that comprises data collected from various health care providers. This index, which is somewhat akin to a score derived from a credit report or driving record, allows insurers to directly create insurance policies that allow for different levels of access to health care resources at different prices; and it allows consumers to directly compare such policies to one another and to purchase the policy that best fits their needs.

This increases both transparency and portability, better allowing consumers to understand and internalize their health care costs, and increasing competition between insurance providers. It would reduce these costs, and offer easier access to health care resources for more people. Relative to existing insurance models, it is insulated from the risks of moral hazard and adverse selection. Such a model also could likely be incrementally put into practice from where health insurance stands today. The increased level of portability would allow for transition into and out of insurance coverage, and would also allow for a gradual but deliberate movement of the insureds from group to individual policies.

Without doubt, these ideas are not a cure-all for what ails (or is perceived to ail) our health care system. And, from a practical standpoint, given the complexity and political importance of health insurance and health care more generally it is unlikely that these ideas will become the basis of our health insurance system. But the goal of this Article has not been to reform this system—it is goal is more modestly to identify some flaws in this system and propose some solutions. And while it is unlikely that these ideas alone form a whole solution, they do have a place in the ongoing discussion—and perhaps, too, as part of whatever future models our insurance system adopts.