I'm as Mad as Hell and I'm Not Going to Take This Anymore: On Indignation and Health Care

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Abstract: This paper begins with the idea that patients become “indignant” when they are denied care at their preferred provider, even if the denial is justified under the patient’s insurance policy, and consequently take actions that impose costs upon their insurers or employers. I develop a simple model to explore the effects of such patient indignation on provider prices and profits, as well as on the number of uninsured, total social welfare, and consumer welfare.

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I. Introduction

In 2007, there were an estimated 46 million Americans without health insurance coverage.¹ And yet there is almost no such thing as “narrow” health insurance, by which I mean insurance plans that include only the least expensive providers in a given geographic area in its provider panel.² This is surprising, as there is a great deal of dispersion in health care provider prices,³ which means that a plan with a very narrow panel could be offered at a much lower price than could a “broad” plan that included most or all providers. One would think that such a plan would be attractive to a substantial number of consumers, particularly those who currently have no insurance at all.

Why do these narrow insurance plans not exist? This paper begins with the idea that patients with narrow insurance become “indignant” when their insurer denies them care at an excluded provider, and that this indignation causes them to take actions that are costly either to the insurer or to the employer providing the insurance.⁴ In other words, the starting point of this paper is that patients with narrow insurance cannot credibly commit ex-ante not to become indignant ex-post when they are held to the terms of their narrow plan. This has the effect of making narrow insurance more expensive. If indignation costs are high enough, then narrow insurance will be unat-

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¹ http://www.nchc.org/facts/coverage.shtml
² Ho (2006) finds that, for Health Maintenance Organization (HMO) and Point of Service (POS) plans, only 17% of plan/hospital pairs fail to arrange contracts. Her study excludes Preferred Provider Organization (PPO) plans, which are less restrictive than HMO/POS plans. The narrowest plans that are at all common are fully-integrated health systems such as Kaiser Permanente, in which patients get all their care within the system (Kaiser is included in the Ho study). But these are the exception, and in any case even Kaiser-style plans do not restrict themselves to the least expensive providers. In the remainder of the paper, I use the term “narrow” to describe hypothetical plans with very limited panels, not to describe ordinary contemporary HMOs, which are narrow only relative to PPOs.
³ Robinson (2003) finds that average price per day in 2001 for Blue Shield of California was $1,600 in the Los Angeles metropolitan area, $2,200 in the San Francisco area, and $3,200 in the Sacramento area. Within each area, prices varied from lowest to highest by 600% across community hospitals and by 150% across tertiary care hospitals. Zwanziger and Mooney (2005) find that the distribution of case-mix adjusted hospital price per case in New York State has a mean of $3,000 to $3,500 (depending on the year), and a standard deviation of about $1,000.
⁴ See Rotemberg (2008) for a related idea of consumers responding angrily to prices that they regard as unfair.
tractive to almost everyone, so that almost everyone will choose either broad insurance or no insurance at all.\footnote{In the case of hospitals, an alternative explanation for the lack of narrow plans is that insurers are obligated by law to pay for emergency treatment, even if that treatment is provided by an excluded hospital. If the insurer has no contract with that hospital, it will be forced to pay “billed charges” rates for those admissions, which are typically much higher than are contracted rates. This gives insurers an incentive to assemble inclusive hospital panels for reasons other than indignation. However, insurers are allowed to require that patients be transferred to covered facilities as soon as they are stabilized. So it would still be possible to offer a narrow plan with a strict requirement that transfer take place as soon as possible.}

Proceeding under the assumption that indignation costs are real and substantial,\footnote{In the case of hospitals, an alternative explanation for the lack of narrow plans is that insurers are obligated by law to pay for emergency treatment, even if that treatment is provided by an excluded hospital. If the insurer has no contract with that hospital, it will be forced to pay “billed charges” rates for those admissions, which are typically much higher than are contracted rates. This gives insurers an incentive to assemble inclusive hospital panels for reasons other than indignation. However, insurers are allowed to require that patients be transferred to covered facilities as soon as they are stabilized. So it would still be possible to offer a narrow plan with a strict requirement that transfer take place as soon as possible.} I develop a simple model to investigate the effect of changes in their magnitude. Specifically, the model generates comparative statics results regarding the effect of changes in indignation costs on equilibrium prices, quantities (such as the number of people who are uninsured), and welfare.

The basic setup of the model is as follows. Consumers choose between a “broad” insurance plan which allows the use of any provider; a “narrow” plan that only covers the least desirable providers, or no insurance at all. The fact that narrow plans are comprised of less desirable providers tends to make narrow insurance less expensive than broad insurance. On the other hand, patients with narrow insurance become indignant when actually required to use a less preferred provider. This causes them to impose costs on their insurers, which increases the cost of offering narrow insurance, and hence its price.

By increasing the cost, and hence the price, of narrow insurance, indignation costs increase the demand for broad insurance. This in turn increases demand for the more desirable providers, which increases those providers’ equilibrium prices and profits. Since in equilibrium higher indignation costs make both narrow and broad insurance more expensive, they lead to an increase in the number of people with no insurance. So a (negative) welfare consequence of increased indignation costs is that it prices some people out of having insurance who otherwise would have been willing to pay more for it than the social resource cost of providing it.
But the social welfare effects of higher indignation costs are not all negative. When indignation costs cause narrow insurance to become more expensive, it increases the number of patients with broad insurance as well as increasing the number of patients with no insurance. These patients are spared the need to use a less-desirable provider, which is an unambiguous welfare improvement: the use of a less-desirable provider, as required by narrow plans, represents a pure social waste, while the higher prices paid to the more desirable provider is merely a transfer. I show that the net effect of higher indignation costs on total social welfare is ambiguous. In contrast, the effect on aggregate consumer welfare is unambiguously negative; indignation makes both types of insurance more expensive, and so makes consumers worse off.

A more standard explanation for the absence of narrow insurance plans is that patients are characterized by high travel costs, meaning that they have a strong distaste for using a provider that is far distant, either in geographic space or in product space, from their preferred location. In what follows I refer to this as the "travel cost" assumption.

Travel costs, like indignation costs, make narrow insurance more expensive, and so the model produces similar comparative statics results for changes in travel costs as it does for changes in indignation costs. That is, the model has the advantage that it is applicable, and so represents a (modest) contribution, even if the indignation assumption that is so central to this paper is incorrect and the more conventional travel cost story is correct. On the other hand, the model has the disadvantage that it cannot serve as a basis for determining which story is correct, and so this determination must be made based on other evidence, such as that described in Section II below. It is crucial to note, however, that despite this it still matters which story is correct, as this will determine the appropriate policy response (if any), as discussed in Section V below.

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6 See Section II for justifications for this assumption.
II. The Indignation Assumption:

The key assumption in the paper is that patients become indignant when they are denied care at an excluded provider. The purpose of this section is to justify that assumption, and to contrast it with the alternative “travel cost” assumption.

A. Comparison between the “Indignation Cost” Assumption and the “Travel Cost” Assumption.

For travel costs (whether referring to travel in physical space or in product space) to adequately explain the absence of narrow plans, they would have to be high enough that few people would be willing to bear them, even in exchange for a much lower price. That is, it requires that almost everyone dislikes travel enough that they prefer either to pay a large premium to be allowed to use their preferred provider or to be uninsured.

The most obvious way to test this would be to examine whether any plausible estimate of travel costs is high enough to explain the lack of narrow insurance plans, given that such plans could be offered much more cheaply. Certainly travel costs cannot suffice as an explanation if they are to be calculated using something like the patient’s wages: the average wage plus transportation cost of traveling (say) an hour would be in the tens of dollars, which is tiny compared to the dispersion in provider prices within a one-hour radius (see footnote 3 above). Similarly, the travel cost explanation cannot suffice if the travel times that patients regard as acceptable for health care purposes are comparable to the travel times that people are willing to endure for other purposes: there is a great deal of price dispersion among hospitals that are separated by travel times no larger than common daily commutes.

Even if travel costs were high enough that relatively few people would choose narrow insurance, this does not explain why such plans do not exist at least to serve those people. A possible
explanation is that most employers only offer one or two plans, and that the fixed costs of offering an additional plan would not be justified if only a few people chose it. But one would expect narrow plans to be common at least among those employers who are on the borderline between offering insurance and not doing so. That is, the travel cost explanation suggests not only that the great majority of people regard travel as unacceptably burdensome, but that the same is true even of most of those people who are faced with the prospect of losing their insurance.

B. Possible Direct Experimental Test of the Indignation Assumption.

Travel for health care is different from travel for other purposes; the patient is sick and so has less ability to endure travel, the patient feels more comfortable being treated in his/her own community, wants to receive visits from loved ones and perhaps from a personal physician, and so on. Moreover, providers may differ in quality or in other attributes. For this reason, it might be argued that total travel costs for health purposes, in both geographic space and in product space, really could be large enough to adequately explain the absence of narrow insurance plans. This objection could, in principle, be answered directly via experiment.

One possible experiment would be to measure how much money must be offered to people who already have broad insurance to instead use providers that are less preferred, but that are cheaper to the insurer. Since this offer will be made to people who already have the right to use their preferred provider, there is no element of coercion and so presumably no indignation, which means that what is being measured really are pure travel costs. The resulting “willingness-to-accept” an offer to use a less preferred provider would be a high estimate of the “willingness-to-pay” to avoid travel costs, as income effects and liquidity constraints will tend to make the

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7 See Bundorf (2002) for a discussion of the costs to employers of offering multiple plans.
amount that patients will be willing to accept for forego their right to their preferred provider higher than what they would be willing to pay to obtain that right. The resulting estimate of travel costs could then be checked against the price differences across providers to determine if they are large enough to explain the absence of narrow insurance plans.

C. Backlash.

Before the managed care era, most insurance placed few restrictions on provider choice or on the clinical prerogatives of physicians. The move to managed care brought some restrictions in these domains. This quickly produced an angry “backlash” that forced insurers to back away from some of the restrictions. The fact of this anger at managed care is not conclusive evidence that the indignation assumption is correct, as the backlash was due in part to features of managed care that had nothing to do with restrictions on provider choice, such as rules that severely limited length of hospital stay for certain procedures. It does seem, however, that at least some of the popular dissatisfaction with managed care had to do with provider restrictions; restrictions which are generally much milder than those that would be required in truly narrow insurance.

D. Willingness to Impose Costs in Response to a Perceived Wrong.

One possible objection to the indignation assumption is that it assumes that people are willing to impose costs on others for no direct gain to themselves. But the willingness of at least some people to take costly action to punish those who they believe have treated them unfairly is well

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8 It is worth noting that the recent rise of “hospitalist” physicians has meant that fewer patients are treated in the hospital by their personal physicians anyway.

9 See Blendon et al (1998), Enthoven (2002) and Enthoven, Schauffler, & McMenamin (2001). Also see Pauly & Nicholson (1999) for an alternative theoretical explanation of the origins of the backlash. Miller (2006) investigates whether the backlash, and the resulting unpopularity of plans which in which providers are integrated with insurers, was or was not welfare improving.
documented.\textsuperscript{11} The question is whether this phenomenon is at work to any meaningful extent in the context described in this paper. While I am aware of no direct evidence on this point, there are a number of factors which suggest that it is.

First, many consumers regard health care as a fundamental right, rather than as an ordinary consumer good, and so may regard any denial of care as a violation, rather than as a legitimate consequence of having chosen a narrow health plan. Second, health insurance plans are often chosen by the employer, rather than by the consumer, so consumers may feel that the narrow plan was imposed on them, rather than freely chosen in the way that one freely chooses, say, a lower quality car in order to obtain a lower price.\textsuperscript{12} Third, it is the nature of managed care for insurers to try to limit expenditures. This sometimes results in attempts to deny valid claims. A patient with experiences of having valid claims denied may be disposed to becoming indignant at the denial of any claim, including invalid ones. Forth, sick patients are already in a high-stress situation, and as such may be more likely be experiencing frustration.

III. The Model:

A. Setup.

There are two cities (\textit{A} and \textit{B}) that are one unit distance apart. There is a single health care provider in City \textit{A}, and there is perfect competition among providers in City \textit{B}. All providers have common marginal cost \(c\), and all providers are of equal quality; they are differentiated only by location. All else equal, people dislike travel and prefer to use a provider in their own city.

\textsuperscript{10} I assume that patients cannot use expressions of indignation as a way to induce the narrow insurance provider to relent and permit them to use the local monopoly hospital, and that they know this.

\textsuperscript{11} For a small sample of the literature on this topic, see Kahneman, Knetsch, & Thaler (1986), Rabin (1993), and Rotemberg (2005, 2008). Also see Mocan (2008) for a discussion of vengeance.

\textsuperscript{12} This suggests that patients who are offered a choice of health plans may be less likely to become indignant. See Section V below for a discussion of this issue.
There are three insurance options available: (i) a “broad” plan that includes all providers; a “narrow” plan that only includes the providers in City B; and (iii) no insurance at all. Everyone who has insurance (whether broad or narrow) receives it as an employment benefit. Each person has a probability $\rho$ of becoming sick. The insurance market is perfectly competitive, so the price of any insurance plan is equal to the insurer’s marginal cost, which is equal to the expected provider bills of a patient in that plan.

Residents of City B prefer to use providers in City B, so they will all buy narrow insurance. All else equal, residents of City A prefer to use the local provider. The premium for broad insurance (which allows them to do so) is $\rho p_A$, where $p_A$ is the local provider’s price. If there were no indignation costs, the price of narrow insurance for residents of City A would be $\rho c$.

I introduce indignation costs by assuming that residents of City A who purchase narrow insurance become indignant when forced to travel to City B to receive care, and impose a real resource cost with an expected value of $\phi$ on either the insurer, in which case it is reflected in a higher premium; or on their employer, in which case it is reflected in a lower wage. Including this indignation cost, the price of narrow insurance rises to $\rho (c + \phi)$.\(^{13}\) To avoid notational clutter and without loss of generality, I henceforth will set the probability of illness $\rho$ equal to one.

If the patient’s indignation is directed at the insurer, the obvious way for an indignant patient to impose a cost would be to switch (or to encourage his/her employer to switch) to another insurer, depriving the original insurer of quasi-rents.\(^{14}\) Other possibilities include the cost to the insurer of using employee time to deal with indignant patients, or the costs of any regulatory burdens that indignant patients may have their elected representatives impose. If the indignation

\(^{13}\) For simplicity, I assume that patients do not bear any disutility from imposing this cost.

\(^{14}\) This is probably a relevant concern in reality, but it is not allowed in the model because the insurance market is assumed to be perfectly competitive.
is directed at the employer, the mechanisms for imposing costs are obvious.\textsuperscript{15} As far as the model is concerned, these two possibilities are equivalent, but for simplicity I will assume that indignation costs are imposed on the insurer.

The residents of City $A$ are of mass 1 and are characterized by their hourly wage $\omega$, which is uniformly distributed on $[\underline{\omega}, \bar{\omega}]$. The utility derived from the improved health associated with having health insurance is represented by $h$.\textsuperscript{16} The health benefit $h$ is greater than $c$: having health insurance is worth more than the resource cost of providing care, which means that it is efficient for everyone to have insurance.

I assume that the utility function is linear in money,\textsuperscript{17} and is additively separable in the utility from money, from health, and from travel. The utility of a resident of City $A$ with broad insurance is $N\omega + h - p_A$ where $N$ is the number of potential work hours and $p_A$ is the price of the local provider. That is, an individual with broad insurance earns wages for all $N$ potential work hours, pays a price $p_A$ for broad insurance, receives the health benefits of having insurance, and bears no travel costs. The utility of an individual with narrow insurance is $(N - n_t)\omega + h - (c + f) - t n_t^2$, where $t$ is the disutility of travel and $n_t$ is the number of hours of missed work from traveling to the provider.\textsuperscript{18} The $n_t$ parameter is squared in the utility function so that the marginal disutility of travel is increasing in distance. An individual with narrow insurance earns wages for $N - n_t$ hours, receives the health benefits of having insurance, and bears the disutility of having to travel. Finally, the utility of an individual with no insurance is $(N - n_h)\omega$, where $n_h$ is the number of work hours lost to illness from not having insurance. An individual with no insurance

\textsuperscript{15} See Bewley (1998) for a discussion of the importance to firms of high worker morale.

\textsuperscript{16} If the uninsured receive no care at all, then $h$ is interpreted as the health benefit of receiving care. If the uninsured do receive care but that care is of inferior quality, then $h$ is interpreted as the health benefit of receiving better care.

\textsuperscript{17} This assumption may appear incongruous in a model with an insurance market. But most health insurance in the U.S. is really just the provision of health care as an employment benefit, rather than genuine insurance against risk. In any case, the assumption is made for simplicity; nothing about the model hinges on the risk neutrality assumption.
earns wages for \((N - n_h)\) hours, does not receive the health benefits of having insurance, and also
does not travel. I assume that \(n_h > n_i\); being sick from lack of insurance causes more missed work
hours than does travel to distant providers.

The wage at which an individual is indifferent between broad insurance and narrow insurance
is denoted by \(\omega^{BN}\) and is equal to:

\[
\begin{align*}
N\omega + h - p_A = (N - n_i)\omega + h - (c + \phi) - tn_i^2 & \Rightarrow \omega^{BN} = \frac{p_A - (c + \phi) - tn_i^2}{n_i}
\end{align*}
\]

Any individual with a wage above \(\omega^{BN}\) prefers broad insurance to narrow insurance and vice-
versa. The wage at which an individual is indifferent between narrow insurance and being uninsured
is denoted by \(\omega^{NU}\) and is equal to:

\[
\begin{align*}
(N - n_i)\omega + h - (c + \phi) - tn_i^2 = (N - n_h)\omega & \Rightarrow \omega^{NU} = \frac{(c + \phi) - h + tn_i^2}{n_h - n_i}
\end{align*}
\]

It is intuitive that people with the lowest wages will be uninsured, people with intermediate
wages will buy narrow insurance,\(^{19}\) and people with the highest wages will buy broad insurance.

Given that all three utility functions are linear in wages, sufficient conditions for this to be true
are: (i) at \(\omega = \omega^A\), no insurance is the most preferred option, followed by narrow insurance, fol-
lowed by broad insurance; (ii) at \(\omega = \omega^B\), broad insurance is the most preferred option, followed
by narrow insurance, followed by no insurance; and (iii) the derivative of the utility function

\(^{18}\) \(n_i\) can also be interpreted as the disutility of lost leisure if leisure time is valued at the wage rate.

\(^{19}\) In this setup, higher wage people choose better coverage not because of diminishing marginal utility of income (as
would be the case if utility were assumed to be concave in income), but rather because high wage people value their
time more highly. At a wage above \(\omega^{NU}\), the additional earnings that can be had from buying narrow insurance and
working \((N - n_i)\) hours instead of buying no insurance and working \((N - n_i)\) is large enough that it is worth paying
the (monetary and travel) cost of, and receiving the health benefits of, narrow insurance. Similarly, at a wage above
\(\omega^{BN}\), the additional earnings that can be had from buying broad insurance and working \(N\) hours instead of buying
narrow insurance and working \((N - n_i)\) hours is large enough that it is worth paying the higher price and avoiding
travel costs. Another way of modeling this would have been to assume a utility function that was concave in money.
I chose the present formulation because it proved more tractable; nothing essential depends upon it.

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with respect to the wage is highest for broad insurance, second highest for narrow insurance, and smallest for no insurance. These conditions imply that $\bar{\omega} > \omega^{BN} > \omega^{NU} > \omega$.

The fraction of the population that buys broad insurance is denoted by $q_A(x; p_A)$, where $x$ is a vector of the model parameters $\omega, \bar{\omega}, n_t, n_h, h, c, \phi$; and $p_A$ is the monopoly provider’s price. For the remainder of the paper, the parentheses on $q_A$ and on other similar functions will be suppressed. This fraction is equal to:

$$q_A = \int_{p_A-(c+\phi)-n_i^2}^{n} \frac{1}{\bar{\omega} - \omega} d\omega = \frac{n_i(\bar{\omega} + m_t) + (c + \phi) - p_A}{n_i(\bar{\omega} - \omega)}$$

The fraction of the population that buys narrow insurance is denoted by $q_B$ and is equal to:

$$q_B = \int_{p_A-(c+\phi)-n_i^2}^{(c+\phi)-h+m_t^2} \frac{1}{\bar{\omega} - \omega} d\omega = \frac{(c + \phi - p_A)n_h + n_i(p_A - h + m_t n_h)}{n_i(n_h - n_i)(\bar{\omega} - \omega)}$$

The fraction of the population that buys no insurance is denoted by $q_C$ and is equal to:

$$q_C = \int_{(c+\phi)-h+m_t^2}^{n_h-n_i} \frac{1}{\bar{\omega} - \omega} d\omega = \frac{(c + \phi) - h - n_h \omega + n_i(\omega + m_t)}{(n_h - n_i)(\omega - \omega)}$$

Note that $p_A$ does not appear in (5). The reason is that, as long $p_A$ is large enough that the restriction that $\omega^{BN} > \omega^{NU}$ is satisfied, then an individual who is nearly indifferent between narrow insurance and no insurance will not care about the price of broad insurance.

**B. Equilibrium**

As discussed above, the assumption that the insurance market is perfectly competitive means that the price of narrow insurance must be $(c + \phi)$; an increase in $\phi$ directly increases the price of
narrow insurance. Given this and given consumer behavior described above, the only thing to be solved is the City A provider’s pricing problem.

\[
\max_{p_A} (p_A - c)q_A \Rightarrow p_A^* = \frac{2c + \phi + n_t(\bar{\omega} + n_t)}{2}
\]

It is straightforward to show that the second-order condition is satisfied.

**IV. Comparative Statics Results:**

**A. Effect of Increased Indignation Costs on Equilibrium Prices and Profits.**

Increasing the indignation cost \( \phi \) shifts out the demand curve facing the local provider, which in turn increases \( p_A^* \); it is easy to see from (6) that \( dp_A^*/d\phi = \frac{1}{2} > 0 \). The equilibrium profit \( \pi^* \) can be calculated by plugging \( p_A^* \) into (3) and (6). Differentiating this with respect to \( \phi \) gives:

\[
\frac{d\pi^*}{d\phi} = \frac{n_t(\bar{\omega} + n_t) + \phi}{2n_t(\bar{\omega} - \omega)} > 0
\]

This result suggests that it is in the interest of the monopoly provider to encourage patient indignation. For example, staff at the monopoly provider, when turning away a patient, might encourage the patient to complain to the insurance company.

**B. Effect of Increased Indignation Costs on Equilibrium Quantities.**

Substituting \( p_A^* \) into (3) and (4) gives the equilibrium quantities for broad and narrow insurance (\( q_A^* \) and \( q_B^* \)) respectively (\( p_A \) has no effect on \( q_C \)). The effect of increasing \( \phi \) on \( q_B^* \) is:

\[
\frac{dq_B^*}{d\phi} = -\frac{n_h + n_t}{2(n_h - n_t)n_t(\bar{\omega} - \omega)} < 0
\]

Higher indignation costs mechanically raise the price of narrow insurance, so this is what we would expect. The effect of increasing \( \phi \) on \( q_A^* \) is:
The higher price of narrow insurance causes the demand for broad insurance to shift out, which increases \( q_A^* \). The effect of increasing \( \phi \) on \( q_C^* \) is:

\[
\frac{dq_C^*}{d\phi} = \frac{1}{(n_h - n_t)(\bar{\omega} - \omega)} > 0
\]

Higher indignation costs cause both broad and narrow insurance to be more expensive, so they must increase the number of uninsured (as long as \( n_h > n_t \), which is true by assumption).

### C. Total Welfare Effects.

I now turn to the welfare effects of indignation. Equilibrium total social welfare \( TW^* \) is:

\[
TW^* = \int \frac{(N\omega + h - p_A^* \omega + (p_A^* - c) - m \omega)}{\omega - \omega} d\omega + \int \frac{(N - n_t)\omega + h - (c + \phi) - m \omega}{\omega - \omega} d\omega + \int \frac{(N - n_t)\omega}{\omega - \omega} d\omega
\]

The first term in (11) represents the sum of the welfare of the purchasers of broad insurance plus the producer surplus of the City \( A \) provider. The second term represents the welfare of the purchasers of narrow insurance (they use providers in the perfectly competitive City \( B \), so there is no producer surplus), and the third term represents the welfare of the people who buy no insurance at all (again, no producer surplus). The effect of increasing \( \phi \) on total welfare is equal to:

\[
\frac{dTW^*}{d\phi} = \frac{n_t[(4h - 4c) + \bar{\omega}(n_h - n_t) - tn_t(3n_h + n_t)] - \phi(3n_h + n_t)}{4(n_h - n_t)n_t(\omega - \bar{\omega})}
\]

It is straightforward to show that this expression can be of either sign, even when all of the relevant parameter restrictions are satisfied.\(^{20}\)

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\(^{20}\) For example, (11) is positive for \( N = 3, n_t = 1, t = 1/8, n_h = 2, h = 535/256, \omega = 5/4, \bar{\omega} = 1/32, c = 1, \) and \( \phi = 1; \) and is negative for \( N = 3, n_t = 1, t = 1/8, n_h = 3/2, h = 271/128, \omega = 7/2, \bar{\omega} = 1/128, c = 1, \) and \( \phi = 1. \)
There are three ways that indignation costs affect total social welfare. First is the welfare effect associated with the change in the number of uninsured. The sign of this effect is unambiguously negative: as long as health care is valued more highly than the real resource cost of providing it (i.e., as long as \( h > c \), which is assumed to be the case), total welfare is maximized when everyone has insurance, and any increase in the number of uninsured represents a decrease in total welfare. Second is the welfare effect associated with the change in the number of people who buy broad insurance. This sign of this effect is also unambiguous but in the opposite direction: travel costs represent a pure social loss, so total welfare is maximized when everyone has broad insurance. Higher \( \phi \) causes switching from narrow to broad insurance, reducing aggregate travel costs and increasing total welfare (though also transferring wealth from consumers to producers). Third is the effect of an increase in \( \phi \) (which represents per-person indignation costs) on aggregate indignation costs. The net effect of a change in \( \phi \) on total social welfare is ambiguous, as is shown in the example in footnote 20.

**D. Consumer Welfare Effects.**

Aggregate consumer welfare \( CW^* \) is:

\[
CW^* = \int_{p_i^*}^{\overline{p}_i} \left( \frac{(N \omega + h - p_i^*)}{\omega - \omega} \right) d\omega + \int_{(c + \phi) - \omega h_i^2}^{(c + \phi) - m_i^2} \left( \frac{(N - n_i) \omega + h - (c + \phi) - m_i^2}{\omega - \omega} \right) d\omega + \int_{\omega}^{n_i - n_h} \left( \frac{(N - n_h) \omega}{\omega - \omega} \right) d\omega
\]

The only difference between \( CW^* \) in (13) and \( TW^* \) in (11) is that in (13) the profits received by the City A provider are absent. The effect of increasing \( \phi \) on aggregate consumer welfare is:

\[
\frac{dCW^*}{d\phi} = -n_i \left[ 4c - 4h - 3\omega(n_h - n_i) - tn_i(3n_i + n_h) \right] + \phi(3n_i + n_h) < 0
\]
It is straightforward to show that (14) is negative when all of the parameter restrictions of the model are satisfied. The intuition is that higher $\phi$ mechanically increases the price of narrow insurance, and it indirectly increases the price of broad insurance. Since the prices of both kinds of insurance are higher, aggregate consumer welfare must be lower.

V. Comparison to Comparative Statics Results on Travel Costs:

These comparative statics results on $\phi$ are all driven by the fact that an increase in indignation costs makes narrow insurance more expensive and hence less attractive. But of course increases in travel costs (whether increases in the actual travel time $n_t$ or in the taste parameter $t$) also make narrow insurance less attractive. And indeed, it is straightforward to show that analogous comparative statics exercises on $n_t$ and $t$ produce similar results. This means that the results of the model would hold even if the “travel cost” story were correct after all. That is, the model represents a (modest) contribution even if the indignation assumption turns out to be wrong.

The flip side of this positive feature (the model is applicable whichever story is correct) is a negative feature (the model itself cannot clarify which story is correct). In Section II above I discussed several other possible means of distinguishing between the two stories. In this section, I make the further point that it matters that the two stories be distinguished, because the identity of the correct story has a bearing on the appropriate policy response (if any).

Suppose that one’s principal concern was reducing the number of uninsured and so one favored a policy of making narrow insurance less expensive. If the travel cost story were correct, this could only be accomplished by reducing travel costs, or by reducing the disutility experienced by those who do travel. It is not clear that either of these is possible, except through changes in traffic and transit policies (which are unlikely to be implemented solely to reduce

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21 The proof is trivial and so is omitted, but is available from the author upon request.
travel costs in health care) or by reducing the perceived differences between care among different providers (which is not obviously possible or desirable).

Indignation costs, in contrast, might be amenable to being positively influenced by incremental public policy. Enthoven, Schauffler, and McMenamin (2001), have suggested that patients would be more satisfied with their insurance plans if their employers offered them a choice of insurance plans, even if they had to pay the difference between narrow and broad insurance premiums. The idea is that the source of dissatisfaction with narrow insurance plans (see the “backlash” discussion in Section II C above) is not the narrow provider panels themselves, but rather the fact that some people were forced into them despite a preference for a more expensive broad plan. These authors find that patient satisfaction with their health plan is strongly increasing in the amount of meaningful plan choice that patients have. Gawande et al (1998) find a similar result.

While these authors are talking about general satisfaction with one’s insurance plan, rather than about indignation as I describe it, the idea may be the same; people who freely chose narrow plans may be less likely to become indignant when forced to live up to the terms that go with them. This suggests that policies that encourage greater plan choice may serve the purpose of reducing indignation, and so increasing the popularity of narrow insurance plans and so reducing the number of uninsured. On the other hand, it may be that the nature of managed care makes it

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22 Fundamental health reform would, of course, change the situation in many ways. However, any contemplated reform might benefit from taking the idea of indignation seriously into account.
23 Another way in which indignation might be reduced (either with or without encouragement from public policy) is through innovations in insurance plan design. The key assumption of this paper is that people will become indignant if they are forced to forego the use of their preferred provider, even if this is a specified feature of their plan. But suppose that instead there was a plan that did not prohibit the use of the preferred provider, but instead permitted the use of that provider, but on terms that required that the patient bear a higher out-of-pocket cost (i.e., a “tiering” plan such as those discussed in Robinson (2003)). Such plans are not presently popular, but it may someday be possible to find a plan design such that the disincentives for using the more expensive providers are strong enough that few patients actually use them, but weak enough that they do not feel that they are being forced to forego their preferred provider. That is, it may be the case that private sector innovations will someday reduce the cost of narrow
impossible to reduce patient indignation substantially; it may be that the essentially adversarial relationship between insurers and patients will continue to make patients unwilling to accept provider restrictions without protest.

VI. Conclusion

In this paper I argue that a substantial impediment to the existence of “narrow” insurance plans, which would allow patients to use only the cheapest providers, is that patients become indignant when they are forced to live up to the terms of such plans and use cheaper providers rather than their most preferred ones. I develop a simple model showing the effects of these indignation costs on equilibrium prices, quantities, and total and consumer welfare. The main findings are that higher indignation costs: (i) increase the cost of both narrow and broad insurance; (ii) increase the number of uninsured; (iii) decrease aggregate travel costs; (iv) have an ambiguous effect on total social welfare; and (v) unambiguously decrease consumer welfare.

This “indignation cost” story is in contrast to the more traditional “travel cost” story, in which narrow plans are unpopular because patients are characterized by high travel costs and so place a high value on being able to use their preferred providers. Unlike the travel cost story, however, the indignation story does not require the (in my view unrealistic) assumption that patients, including patients who are at risk of being without insurance altogether, are so averse to travel that they all choose to forego much cheaper narrow insurance. Rather, in the indignation story narrow insurance is not that much cheaper, despite its being composed of much cheaper providers; the

insurance of their own accord. Yet another possible way that insurance companies might reduce indignation is by providing their customers with more information about clinical quality. While a truly narrow plan may be largely comprised of lower-quality hospitals, this need not always be the case. In any event, easy availability of quality information may assuage patient concerns that the insurance company is forcing them into a situation of truly terrible care as opposed to slightly worse care, and this might also reduce indignation.
price of the narrow insurance plan is inflated by the indignation cost, so narrow insurance can be offered only at the (higher) break-even price that reflects these costs, and so may be unattractive.
References:


