

IDEOLOGY MEETS REALITY: WHAT WORKS AND WHAT DOESN'T IN PATIENT EXPOSURE TO HEALTH CARE COSTS

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SUMMARY

U.S. policymakers, scholars, and advocates have long displayed an ideological commitment to exposing insured patients to substantial out-of-pocket expenses. These commitments derive from both overt political ideologies, which favor individual responsibility and oppose redistribution of wealth and risks, as well as more-subtle ideological commitments of academic economists, which link observed patterns of consumption to value-claims about welfare. In this symposium contribution, we document those ideological commitments and juxtapose them with a review of the scientific evidence about the actual effects of patient cost-sharing. We find, as economic theory predicts, that patients exposed to healthcare costs consume less healthcare. However, a fair review of the evidence—including the effects on health outcomes, access to care, and financial insecurity—makes it very hard to conclude that substantial and untailored cost-sharing exposure—as we have seen in actual application—is good social policy. We suggest directions for future study and reform.

I. AN INTRODUCTION TO COST-SHARING AND UNDERINSURANCE

One key piece of the Affordable Care Act (ACA) was its focus on getting more people covered by health insurance. Indeed, it succeeded in insuring more than 20 million additional people. But measuring the ACA by increases in the numbers of insured overlooks a problem that affects even more Americans: incomplete insurance or underinsurance. Even for those who enjoy coverage, health insurance in the United States is incomplete, leaving patients exposed to substantial out-of-pocket costs in the forms of deductibles, copays, coinsurance, and reference prices. As an introduction, we briefly review each of these mechanisms.

Deductible: A deductible is an aggregate, annual sum that must be spent by the patient before the insurance policy “kicks in” or pays its first dollar of benefit. The average annual deductible in 2016 was \$1,478, up from \$1,318 in the prior year.¹ Naturally there are exceptions. Depending on the policy, not all of a patient's out-of-pocket spending on healthcare may count towards the deductible. Also, under the ACA, some healthcare, such as preventive services, are covered at the first dollar and not subject to the deductible.²

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1. *Employer Health Benefits 2016 Annual Survey*, HENRY J. KAISER FAM. FOUND. & HEALTH RES. & EDUC. TR., 4 (Sep. 14, 2016), <http://files.kff.org/attachment/Report-Employer-Health-Benefits-2016-Annual-Survey> [<https://perma.cc/EJQ3-R6Y7>].

2. 42 U.S.C. § 300gg-13(a)(4) (2010).

Deductibles cause insurance contract payouts to be non-linear, in that a patient's exposure to costs will sharply change (decrease) after the annual deductible has been met. Anecdotally, physicians come to expect a flurry of appointment-making activity near the end of the calendar year as patients who have met their annual deductible seek care in the more favorable cost-sharing structure. Patients who are chronically sick almost always exceed their deductible in a given year. For these individuals who are predictably ill, the deductible is more like a second insurance premium they will inevitably pay, which rationally should have no effect on consumption behavior.

Coinsurance: The coinsurance rate is the percentage of medical costs for which a patient is responsible. This rate generally applies to expenses incurred after the deductible has been met, but before an annual cap on cost-sharing is met. Thus, the coinsurance rate before meeting the deductible is effectively 100%, and becomes generally much smaller—10% to 25% thereafter. The average in-network coinsurance rates in 2016 were 18% for primary care and 19% for specialty care.³

The coinsurance amount is commonly calculated from the reimbursement amount negotiated between health care providers and insurers, and is often billed to the patient after care is chosen and provided, making it less salient to a patient's in-the-moment medical decisions.

Co-payment: A co-payment is the amount a patient must pay out-of-pocket at the time of service. Because these payments are set prospectively, they do not reflect the actual cost of services delivered during that medical encounter. Average in-network co-payments in 2016 were \$24 for primary care office visits and \$38 for specialty care office visits.⁴ Co-payments serve as the chief cost sharing mechanism for prescription pharmaceuticals.

Out-of-pocket maximum: The out-of-pocket maximum limits the aggregate cost-sharing exposure faced by a policyholder over the year-long term of the policy. The ACA sets a cap on how high these out of pocket maximums may be. In 2016 that cap was \$13,700 for families. In application, however, most caps are much lower. Only 18% of workers had out-of-pocket limits over \$6,000, and about as many (14%) had limits less than \$2,000.⁵

Reference pricing: Reference pricing is a dollar-value of reimbursement set by the insurer for a specific medical service or good. One common application is for pharmaceuticals, where a payor will fully reimburse a generic version, but allows consumers to pay extra for a branded version of a drug if they prefer.⁶ In other domains, the reference price is generally derived by the insurer surveying prices in a locality and setting a reference price near the midpoint of the range. For example, an insurer may set a price for an orthoscopic knee surgery at

3. *Employer Health Benefits 2016 Annual Survey*, *supra* note 1, at 4.

4. *Id.* at 121.

5. *Id.* at 5.

6. See generally Joy Li-Yueh Lee, et al., *A Systematic Review of Reference Pricing: Implications for US Prescription Drug Spending*, 18 AM. J. MANAGED CARE e429 (2012).

\$18,000.⁷ If a covered patient opts for a provider that charges more than the reference price, that patient must pay the additional costs incurred above the reference price. If a covered patient selects a provider that delivers care at or below the reference price, the patient will receive coverage with minimal cost sharing. The reference price makes patients completely sensitive to the marginal prices charged above the reference point, and thus may cause competition by providers, driving down prices to capture market share.

Deductibles, coinsurance, copayments, and reference prices are the several different ways in which health insurance plans leave patients exposed to some of the costs of their healthcare. In this sense, people are not merely insured or uninsured. Even among the insured, people are more or less insured, depending on how much risk remains uncovered. Putting aside the risk frame, these payments can also be barriers to care: an individual who holds a policy with cost-sharing provisions will eventually be compelled to make additional payments to access his or her insurance benefit. As evidenced below, this payment structure predictably reduces the use of insurance and, by extension, the use of healthcare. But it is less clear whether such an exposure is good social policy.

This paper proceeds as follows. In Part II, we review ideological commitments among economists and politicians, in favor of incomplete insurance. In Part III, we briefly offer a comparative perspective, showing how other countries, without these ideological commitments, have taken other paths. In Part IV, we review the evidence about the effects of cost-sharing policies on consumption and, where available, on health outcomes. We then offer conclusions that suggest future directions for research and policy.

II. IDEOLOGY

In this Part, we document five decades of ideological commitments of academic economists and politicians, which have together caused U.S. health policy to embrace cost-sharing so systematically. In subsequent Parts, we evaluate these ideological commitments in the light of empirical evidence about how health insurance and cost sharing actually work in practice.

A. Academic Economic Ideology

In a seminal 1963 paper, Nobel Prize laureate Kenneth Arrow identified health insurance as a peculiarly-important need, one so imperative that it should (and would) be provided by public means in the event a private market failed to form.⁸ His advocacy for health insurance was driven by the significance of the risk involved, the unpredictability of a patient's need for healthcare, and the importance of healthcare services to wellbeing—hallmark traits of a landscape in

7. See James C. Robinson & Timothy T. Brown, *Increases in Consumer Cost Sharing Redirect Patient Volumes and Reduce Hospital Prices for Orthopedic Surgery*, 32 HEALTH AFF. 1392 (2013) (utilizing a natural experiment to assess the impact of reference prices).

8. Kenneth J. Arrow, *Uncertainty and the Welfare Economics of Medical Care*, 53 AM. ECON. REV. 941 (1963).

need of insurance. In any given year, most people will have little or no healthcare costs, but others will have terrible years, where they may incur many thousands of dollars in medical bills, potentially devastating them financially. It follows that rational consumers would spend a comparatively small percentage of their income every year on insurance to avoid the risk of being wiped out financially if they are unlucky enough to be among the very few who are very sick. This economic point is known as the diminishing marginal utility of money: as income increases (in good years), each additional dollar becomes less important to retain. Those dollars have more value if reallocated to bad years, of high medical expenses. Contrast the nominal cost of protection with the risk of financial devastation and we start to understand why the payment of health insurance premiums is a worthy expenditure for those with something to lose.

Nonetheless, Arrow foreshadowed a core problem with health insurance in the fact that “the cost of medical care is not completely determined by the illness suffered by the individual but depends on the choice of a doctor and his willingness to use medical services.”⁹ Here Arrow hits upon a complexity that is particular to health insurance—the financial beneficiaries of health insurance are in a position to trigger a benefit on their own, in the absence of an external, verifiable event. In this sense, health-related risks are different from other exogenous risks for which we might rationally also buy insurance, such as a house burning down from a lightning strike. In health care, patients and doctors can largely choose what to consume and when to consume it, but the insurer pays. The derived concern—that such an arrangement would lead to inefficient overconsumption on the part of the beneficiaries—came to be known as “moral hazard.”¹⁰

Mark Pauly developed the problem further in terms of “elastic” demand—that is, how the quantity of healthcare that people demand changes with the price faced by those people.¹¹ As insurance drives down the price borne by the consumer (to zero for full insurance), insurance will also drive up the quantity demanded. Pauly advanced the economic doctrine by identifying a collective action problem. “Each individual may well recognize that ‘excess’ use of medical care makes the premium he must pay rise. No individual will be motivated to restrain his own use, however, since the incremental benefit to him for excess use is great, while the additional cost of his use is largely spread over other insurance holders, and so he bears only a tiny fraction of the cost of his use.”¹² Pauly warned that, in aggregate, the loss from excess consumption may eclipse the

9. *Id.* at 961.

10. See generally Tom Baker, *On the Genealogy of Moral Hazard*, 75 TEX. L. REV. 237 (1996) (describing the concept’s origination with nineteenth-century insurers, and its popularity in the 1900s to “signif[y] the perverse consequences of well-intentioned efforts to share the burdens of life, and it also helps deny that refusing to share those burdens is mean-spirited or self-interested”).

11. Mark V. Pauly, *The Economics of Moral Hazard: Comment*, 58 AM. ECON. REV. 3 (1968).

12. *Id.* at 534.

utility gain from protecting against uncertain expenses such that “the net change in utility from a compulsory purchase of this ‘insurance’ could well be negative”.¹³ That is, if not carefully crafted and deployed, health insurance could cause more harm than good to the society it was intended to support. Even in these early days of health economics, ideological momentum was gaining: one ought to be skeptical of fulsome insurance coverage.

Building on the work of Arrow and Pauly, Richard Zeckhauser posited that “no practicable market structure will simultaneously produce optimal risk-spreading and appropriate incentives for individual action.”¹⁴ Insurance will inevitably encourage a “perverse incentive toward overexpenditure” as it is confounded by the presence of two elements: (1) “the insureds have substantial influence on the amount that is spent on their own behalf in any particular medical circumstance”; and (2) “the level of reimbursement by the insurance plan is a positively associated function of the expenses incurred by its insureds.” In short, the more that insurance provides risk-protection the more it also induces wasteful spending. In addressing this concern, Zeckhauser set out to define parameters for an economic compromise that included “some risk-spreading and some incentive” under varying health conditions.¹⁵ This is the theory of cost-sharing, the imperative to make insurance incomplete, to give patients *some* skin-in-the-game.

In response to growing national expenditures on healthcare, Martin Feldstein offered a 1973 paper to demonstrate that “American families are in general overinsured against health expenses.”¹⁶ By this, Feldstein meant that the families could sustainably bear greater risks themselves, rather than redistributing them to the insurance pool. He contended that the insured society as a whole could increase welfare by increasing the coinsurance rate, and thereby exposing the individual insureds to a greater proportion of the cost.¹⁷ Feldstein succinctly highlighted an important feedback loop within health insurance: “there is mutually reinforcing behavior: more insurance increases the price of care, and a higher price of care increases the demand for insurance.”¹⁸ As prices rise, it becomes all the more foolish to go without insurance, because that would mean exposing oneself to greater risk of huge costs (and exposing oneself to the risk of not getting care at all).

As economic evidence grew, Feldman and Dowd revisited the notion of a welfare loss generated by excess health insurance. In their 1991 paper, the authors comment that “consumers are considerably more risk-averse than Feldstein assumed,” yet even when the gain from risk-bearing is considered, “this gain is

13. *Id.*

14. Richard Zeckhauser, *Medical Insurance: A Case Study of the Tradeoff between Risk Spreading and Appropriate Incentives*, 2 J. ECON. THEORY 10, 10 (1970).

15. *Id.*

16. Martin S. Feldstein, *The Welfare Loss of Excess Health Insurance*, 81 J. POL. ECON. 2, 251 (1973).

17. *Id.* at 251.

18. *Id.* at 276-77.

not large enough to outweigh the loss due to excess consumption of medical care.”¹⁹ The Feldman and Dowd thesis holds that health insurance may actually make people worse off overall, because it creates more wasteful spending than the value it delivers by protecting them from risk. On this view, society would want to reduce fulsome health insurance coverage, increasing cost-sharing wherever possible to maintain a working price signal -- which is precisely what health insurers have been doing for the last several decades.

Looking back, we see a generation of economists trained on this doctrine that health insurance creates moral hazard (defined as the rational choice to consume more when the observed cost is artificially low) and that moral hazard is simply wasteful health spending. But how do we know that the extra spending caused by insurance results in welfare loss? Economists are remarkably agnostic about value—they have no substantive doctrine that can specify whether a given health intervention (e.g., joint replacement) is worth a given price (e.g., \$45,000), and thus are unable to say whether or not such consumption is worthwhile. Their ideology does, however, depend on a heuristic for making such evaluations. If we simply adopt, as an Archimedian point, the behavior of an uninsured patient (i.e., one using his own wallet to fund all healthcare consumption) and assume that he considers the potential benefits of a treatment and weighs them against the price charged, then his behavior will reveal value.²⁰ If such an *uninsured* patient *declines* a given unit of healthcare at a given price, then we can infer that its benefits were outweighed by its price. We can thus infer that, for such a situated patient, that particular sort of healthcare would have been a waste. If a similarly situated *insured* person, on the other hand, *buys* this same unit of healthcare, it follows that the consumption was wasteful. The elimination of the price signal is what caused the marginal additional consumption, which apparently was not worth its price.

The analytic model is a powerful way to identify healthcare waste, as far as it goes. Notably, however, this theory depends on an idealized market transaction—the uninsured individual purchasing healthcare using his or her own wealth—as the normative baseline.

In the early 2000s, John A. Nyman suggested an alternative to the traditional theory of moral hazard and welfare loss.²¹ Where economic doctrine had for decades assumed that moral hazard was simple waste—entirely inefficient and welfare-degrading, Nyman argued that insurance enhances the purchasing power of the insured, specifically the sick insured, by redistributing from the healthy to the ill. Yes, insured people buy more healthcare than uninsured people, but some

19. Roger Feldman & Bryan Dowd, *A New Estimate of the Welfare Loss of Excess Health Insurance*, 81 AM. ECON. REV. 297, 300 (1991).

20. See, e.g., Mark V. Pauly, *Medicare Drug Coverage and Moral Hazard*, 231 HEALTH AFF. 113 (2004) (making explicit that standard economic theory depends on the uninsured person as the counterfactual situation for making inferences about the value of healthcare interventions, and identifying marginal consumptions by insured persons as “waste”).

21. See generally JOHN A. NYMAN, *THE THEORY OF DEMAND FOR HEALTH INSURANCE* (2003).

of the uninsured people declined to purchase high-value healthcare simply because they lacked the cash or credit to do so. One cannot infer that spending on healthcare is wasteful just because the uninsured do not consume it.

On Nyman's view, the driving motivation (and benefit) for buying health insurance is not just to offset risk, but rather to allow the insured to afford costly medical care that would be otherwise unaffordable. Accordingly, a transfer of wealth for such purposes (from the collective insurance pool to the sick individual) may be in fact beneficial and efficient, even if it stimulates spending beyond that which uninsured individuals spend. Indeed, that stimulation of consumption is not an unwelcome side effect of insurance. That is a primary purpose of insurance in the first place.

To be sure, Nyman's theory does not repudiate moral hazard altogether, nor does it repudiate cost sharing as a policy mechanism. It remains true that insurance may cause some wasteful consumption by disrupting the price signal. However, Nyman's theory makes it much more difficult to identify waste; a simple economic comparison of uninsured behavior to insured behavior does not suffice. "Not all moral hazard is welfare decreasing. Some moral hazard purchases are efficient and some are inefficient, and the challenge for policy is to distinguish one from the other in order to apply cost sharing only to the inefficient moral hazard."²²

Nyman's work has failed to change the paradigm of health economics.²³ Young economists are still trained on health economics textbooks, which continue to equate moral hazard with welfare loss and "emphasize" that "only risk-averse individuals demand insurance."²⁴ In contrast, on Nyman's plausible view, a risk-neutral person with limited wealth may nonetheless rationally buy a health plan that creates access to care that he otherwise couldn't afford. In a recent review article, Kelman and Woodward conclude that Nyman's "major challenge" to economic thinking about moral hazard has been largely ignored by economists themselves.²⁵

Health economics may be slow to embrace Nyman's theory because the

22. *Id.* at 165.

23. See THOMAS KUHN, *THE STRUCTURE OF SCIENTIFIC REVOLUTIONS* (1962) (describing how scientific domains deal with anomalies, and only rarely change fundamental paradigms).

24. FRANK A. SLOAN & CHEE-RUEY HSIEH, *HEALTH ECON.* 143 (2012); see also *id.* at 512 (describing Nyman's theory in passing, but not in the chapter on demand for healthcare and moral hazard). For a standard description in the field, see Frank D. Gianfrancesco, *The Choice Among Medical Insurance Plans*, 78 *AM. ECON. REV.* 277, 278 (1988) ("The welfare loss from moral hazard has two components. The first is due to the excess consumption of medical care caused by the price effect inherent in [conventional insurance]. The second component of welfare loss is due to the cost sharing required to moderate this effect. While cost sharing reduces excess consumption, it also reduces the risk-absorbing benefits of insurance.").

25. Sander Kelman & Albert Woodward, *John Nyman and the Economics of Health Care Moral Hazard*, 2013 *ISRN ECON.* 1 (2013). See also AMY FINKELSTEIN ET AL., *MORAL HAZARD IN HEALTH INSURANCE* (2014) (providing an edited retrospective on Arrow's article and the debate that follows, but completely overlooking Nyman's intervention).

theory makes it much more difficult for economists to speak to policy-relevant questions. Simplistic observations that insurance increases consumption of health care tell us nothing about whether that is a good or a bad thing. Instead, to make smart policy we need experts (e.g., physicians) and richer datasets including real health outcomes to identify good and bad healthcare on its own merits. Economists are less likely to adopt a theory that effectively undermines their own central role as policy advisors.

Making matters more complicated, recent work by Katherine Baicker and colleagues propose a model for mis-utilization to layer atop moral hazard. Baicker's model includes "behavioral hazard," which can cause patients to fail to consume worthwhile healthcare.²⁶ Behavioral hazard accounts for patient biases rooted in overweighting salient symptoms (e.g., pain being more salient than hypertension), overweighting the immediate costs of care (e.g., co-payments and short-term effort investments), and making choices based on false beliefs (e.g., faulty mental models, incomplete information, or inattention to the available evidence). In short, behavioral hazard is why patients make choices that appear to go against their own best interests. The authors propose that while co-payments have been the principal moderator of moral hazard in health insurance, nudges—or non-financial instruments such as reminders or framing—can help to mitigate behavioral hazard driving market inefficiency.²⁷

B. Political Ideologies

The profession of economics has not been alone in its ideological commitments to cost-sharing as a means of reducing waste.²⁸ For more than 50 years, at the highest political levels, among both liberal and conservative U.S. Presidents, there has been a remarkable ideological consensus about the risk of moral hazard and the importance of cost-sharing in health insurance.

In a 1966 meeting with hospital leaders to prepare for the launching of Medicare, Democratic President Lyndon Johnson worried that the newly insured would "abuse" their insurance. "There will be some who will demand unnecessary treatment."²⁹ President Johnson appealed to those at the "grassroots" level, closest to the delivery of care, to "stand firm against these abuses."³⁰ In a statement on the inauguration of Medicare, President Johnson reiterated that

26. Katherine Baicker et al., *Behavioral Hazard in Health Insurance*, 131 Q.J. ECON. 1623 (2015).

27. See generally NUDGING HEALTH: HEALTH LAW AND BEHAVIORAL ECONOMICS (I. Glen Cohen et al. eds., Johns Hopkins Univ. Press 2016).

28. See generally Michael Drummond, *The Use of Economic Evidence by Healthcare Decision Makers*, 2 EUR. J. HEALTH ECON. 2 (2001) (discussing generally the use of economic theory worldwide by healthcare policy decision makers).

29. CTRS. FOR MEDICARE & MEDICAID SERVICES, CMS HISTORY PROJECT PRESIDENT'S SPEECHES 35, <https://www.cms.gov/About-CMS/Agency-Information/History/Downloads/CMSPresidentsSpeeches.pdf> [<https://perma.cc/CVU6-ZBGF>].

30. *Id.* at 36.

“Medicare will succeed if older patients cooperate in scheduling treatment and do not demand unnecessary hospital and medical services,” closing his thought with: “I have confidence in the commonsense of our older Americans.”³¹ President Johnson acknowledged the problem of moral hazard, but thought that folksy common sense and moral exhortation might solve it. Nonetheless, Medicare also included several cost-sharing features.³²

Republican President Nixon sought to continue cost-sharing practices in his National Health Insurance Partnership Act of 1972.³³ President Nixon proposed a package that “would include certain deductibles and coinsurance features, which would help keep costs down by encouraging the use of more efficient health care procedures.”³⁴

Republican President Ford echoed these cost-sharing sentiments in a 1976 message to the Congress regarding Medicare, saying: “[a]dditional cost sharing provisions are also needed to encourage economical use of the hospital and medical services included under Medicare.”³⁵ He went on to recommend a 10% coinsurance rate for hospital and nursing home charges, and an increase in the existing annual deductible from \$60 to \$77.³⁶

Democrat President Carter, in outlining his 1979 National Health Plan to Congress, emphasized protecting all Americans from “catastrophic expenses,” stating that “no American should live in fear that a serious illness or accident will mean bankruptcy or a lifetime of debt.”³⁷ To this end, he proposed widespread caps on out-of-pocket spending with targeted cost-sharing curtailments to only those most vulnerable populations.³⁸ “Today, the elderly also face heavy financial burdens because physicians increasingly charge more than the Medicare fee,” President Carter continued, “Under the National Health Plan, physicians would be prohibited from charging elderly patients more than the allowable fee.”³⁹ President Carter also makes special note of cost sharing as it pertains to maternal and infant health, “[e]mployers will provide employees and their families with coverage for prenatal care, delivery, and infant care to age one, without any cost sharing.”⁴⁰ His approach to a variable application of cost sharing is a nod to his understanding of its significance in the lives of the poorer insured. His approach is also, arguably, a harbinger of the value-based insurance design of our present era in that it selectively applies the tools of cost sharing.

Republican President Reagan, in a 1983 address to Congress on health

31. *Id.* at 42.

32. Nancy De Lew, *Medicare: 35 Years of Service*, 22 *MEDICARE & MEDICAID RES. REV.* 75 (2001).

33. *CTRS. FOR MEDICARE & MEDICAID SERVICES*, *supra* note 29, at 73.

34. *Id.* at 60.

35. *Id.* at 82.

36. *Id.*

37. *Id.* at 97.

38. *Id.* at 98.

39. *Id.*

40. *Id.* at 99.

reforms, remarked that under the existing coinsurance format there is “no financial incentive for the [Medicare] beneficiary to leave a hospital as soon as it is medically advisable to do so.”⁴¹ He proposed changing that policy to include more cost sharing in the first 60 days of hospitalization to “encourage beneficiary cost consciousness and the efficient use of health resources.”⁴² In addition to coinsurance, President Reagan also saw increasing the Medicare Part B deductible as a way to curb spending:

[c]urrent law does not provide for future increases in the deductible. As a result, the initial beneficiary liability for medical services will decrease in real terms over time and these costs will be shifted to the Federal government. Furthermore, the value of the deductible as a deterrent to unnecessary utilization will again diminish.⁴³

He also touched upon the importance of copayments in Medicare, channeling academic economists:

[f]irst-dollar insurance coverage, such as that which Medicaid provides, leaves the consumer with virtually no financial incentive to question the need for services. Services that are totally free are likely to be over utilized. If patients share in some of the costs, they and their physicians will reduce unnecessary or marginal utilization.⁴⁴

From here, Democrats picked up the mantle. President Clinton made ‘responsibility’ one of the six principles of his 1993 Health Security Act:

Too many of us have not taken responsibility for our own health care and for our own relations to the health care system. Many of us who have had fully paid health care plans have used the system whether we needed it or not without thinking what the costs were.⁴⁵

President Clinton went on to suggest that cost sharing is an effective way to engender responsibility, perhaps as an intrinsic value.

There can’t be any something for nothing, and we have to demonstrate that to people. This is not a free system. Even small contributions, as small as the \$10 co-payment when you visit a doctor, illustrates that this is something of value. There is a cost to it. It is not free.⁴⁶

In his advocacy for the expansion of health savings accounts, Republican President George W. Bush emphasized the importance of healthcare consumers responding to financial incentives.

41. *Id.* at 120.

42. *Id.*

43. *Id.* at 124.

44. *Id.* at 125.

45. *Id.* at 153.

46. *Id.*

Under the system that currently exists, consumers really don't know how far their health care dollars are going. You pay the premium and then you just show up and collect the benefits. You have no idea what you're spending money on. They pay a flat rate for insurance, but they really don't know the true costs of medical services they receive . . . When consumers don't have the incentive to get better prices, costs go up.⁴⁷

In his September 2009 speech to Congress introducing his healthcare bill, Democrat President Barack Obama's proposals for cost sharing had the opposite valence. "We will place a limit on how much you can be charged for out-of-pocket expenses, because in the United States of America, no one should go broke because they get sick."⁴⁸ He also made specific mention of prescription drug copayments for Medicare beneficiaries. "We can use some of the savings to fill the gap in coverage that forces too many seniors to pay thousands of dollars a year out of their own pockets for prescription drugs."⁴⁹ In an address to the Nation on March 3, 2010, President Obama further appealed to the cost-sensitive healthcare consumer by explaining that if his legislation were to pass, "no longer would they be able to force you to pay unlimited amounts of money out of your own pocket."⁵⁰

President Donald Trump, who ran as a Republican, proposed in campaign policy documents to expand consumer cost-sharing through healthcare spending accounts (HSAs).⁵¹ Trump advocated for tax advantages: "contributions into HSAs should be tax-free and should be allowed to accumulate."⁵² He also proposed that, "these funds can be used by any member of a family without penalty, and passed down to heirs without penalty."⁵³ President Trump alludes to the future healthcare consumer's exposure to costs when he notes "individuals should be able to shop to find the best prices for procedures, exams or any other medical-related procedure."⁵⁴ President Trump also found political leverage in existing cost-sharing policy. His proposal to cut payments made by the Federal Government to insurers that reduce the cost-sharing burdens on low-income individuals—so called "cost-sharing subsidies"—would trigger greater out-of-pocket spending by those beneficiaries. As they stand today, these monthly

47. *Id.* at 305.

48. *Transcript: Obama's Health Care Speech*, CBSNEWS (Sep. 9, 2009, 8:14 PM), <http://www.cbsnews.com/news/transcript-obamas-health-care-speech/> [perma.cc/W5P8-SMWG].

49. *Id.*

50. *Remarks by the President on Health Care Reform*, THE WHITE HOUSE: OFFICE OF THE PRESS SECRETARY (Mar. 3, 2010, 1:50 PM), <https://obamawhitehouse.archives.gov/the-press-office/remarks-president-health-care-reform> [http://perma.cc/4P78-N652].

51. Donald J. Trump, *Healthcare Reform*, DONALD J. TRUMP FOR PRESIDENT 1, <https://assets.donaldjtrump.com/HCRReformPaper.pdf> [https://perma.cc/JJ45-DQJX] (last visited Oct. 14, 2017).

52. *Id.*

53. *Id.*

54. *Id.* at 2.

payments to insurance companies reduce the copayments and deductibles charged to the low-income insured. Such a willingness to discontinue these payments may be a signal of his receptiveness to increased cost sharing.⁵⁵ Paradoxically, however, President Trump also called for (unspecified) policies that would feature “much lower deductibles.”⁵⁶

A common ideological thread runs through many of these policy statements. Healthcare waste is driven by over-insured patients demanding more healthcare than they really need, since they lack proper incentives to decline wasteful healthcare. Thus, in order to moderate healthcare overuse and cost, the obvious solution has been to impose more costs on insured persons, creating such incentives.

Less frequent and more recent in this ideological history is the concern that cost-sharing may become so onerous that it impinges on access to care, and thus should be limited. No modern president has challenged the fundamental ideological premises that substantial health spending should be born individually rather than collectively.

III. THE EVIDENCE ON COST-SHARING

To evaluate this ideology, we briefly examine the experience of other countries, comparing their use of cost-sharing with their aggregate health spending. There is also a wealth of data from a landmark randomized experiment, and subsequent econometric work. Finally, a range of studies from other scientific literatures shows that although cost-sharing does reduce some health spending it has onerous effects on poorer persons with chronic illnesses and has little or no effectiveness on the large-dollar care that drives most aggregate health spending.

A. Comparative Data

Cost-control mechanisms fall into two broad categories: (1) “demand-side” interventions intended to change the behaviors of patients, and (2) “supply-side” interventions intended to change the behaviors of physicians, hospitals, drug manufacturers, and alike. Countries generally exhibit a mix of demand-side and supply-side mechanisms, but the latter approach is more prominent outside the United States.⁵⁷

Although other developed countries do employ some patient-cost-sharing

55. Alison Kodjak, *Senate To Hold Bipartisan Hearings To Stabilize Insurance Markets*, NPR (Aug. 1, 2017, 5:00 AM), <http://www.npr.org/sections/health-shots/2017/08/01/540656651/trumps-tweets-threaten-to-destabilize-insurance-markets> [https://perma.cc/LV4T-5YCH].

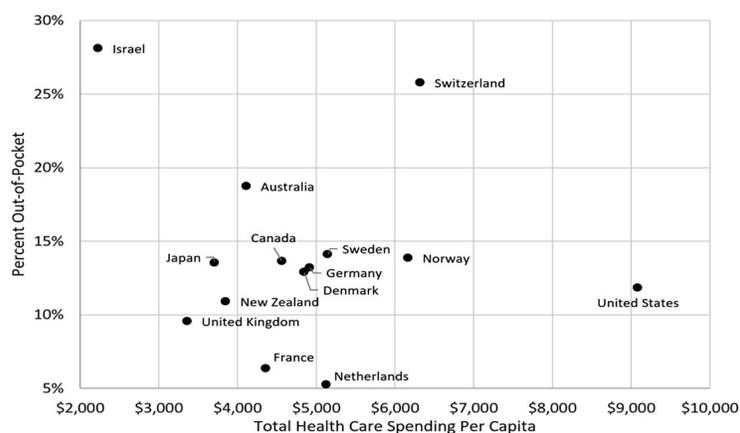
56. Phillip Bump, *This is Not the Healthcare Bill that Trump Promised*, WASH. POST (May 4, 2017), https://www.washingtonpost.com/news/politics/wp/2017/05/04/this-is-not-the-healthcare-bill-that-donald-trump-promised/?utm_term=.caf0668bc28f [https://perma.cc/SCK8-XF2M].

57. Randall P. Ellis et al., *Comparisons of Health Insurance Systems in Developed Countries*, ENCYCLOPEDIA OF HEALTH ECON. (2014), <http://www.bu.edu/law/files/2016/01/EllisPaper.pdf> [https://perma.cc/PY3X-W8N6].

features, they tend to have much lower spending overall and rarely deploy large and blunt cost-sharing mechanisms as are used in the United States. As one report summarizes, “Exemptions from cost-sharing, or subsidies to help pay for cost sharing, are typically provided to low-income insurance subscribers, the chronically ill, and children. There are also usually caps or limits on the total out-of-pocket expenses that different groups of subscribers can incur as a result of cost sharing.”⁵⁸ In this way, cost-sharing is limited and roughly tailored to ability to pay.

How effective are these comparative approaches to cost control? The Commonwealth Fund, using 2015 OECD data in conjunction with its own research, provides broad comparisons of the salient statistics and features of international health systems.⁵⁹ In Figure 1, we plot the total per capita healthcare spending for each country against the percentage of such costs that are borne out-of-pocket.⁶⁰ Figure 1 shows that there is no simple relationship between these two variables. The horizontal axis shows that the United States is an outlier in terms of its total spending, spending far more than even the second and third-place countries. The vertical axis shows that other countries use as much or more cost-sharing as a percentage of total health spending, but since their total spending is much smaller, patients outside the U.S. generally pay much less in absolute dollars out of pocket. The overall slope of the data points suggests that greater proportional reliance on out-of-pocket spending is associated with *higher* health spending overall. We review some of these details for several countries.

Figure 1: Out-of-Pocket Spending and Total Healthcare Spending



58. Steven Gliberman, *Select Cost Sharing in Universal Health Care Countries*, FRASER INST. (Jan. 21, 2016), <https://www.fraserinstitute.org/studies/select-cost-sharing-in-universal-health-care-countries> [<https://perma.cc/WG3Q-Z99Z>].

59. Elias Mossialos et al., *2015 International Profiles of Health Care Systems*, THE COMMONWEALTH FUND (Jan. 2016), http://www.commonwealthfund.org/~media/files/publications/fund-report/2016/jan/1857_mossialos_intl_profiles_2015_v7.pdf. [<https://perma.cc/M8K2-Q4B8>].

60. *Id.*

The United States covers approximately one third of residents via publicly-financed programs, leaving roughly two-thirds covered via private insurance. The United States spent 17.1% of its GDP on health care, \$9,086 per capita annually. As reviewed above, out-of-pocket spending in the United States takes many forms, generally manifested in deductibles, copayments, and coinsurance charges for both public and private insurance. Average annual out-of-pocket health expenditures in the United States were \$1,074 per person, or about 12% of the total.

Canada's system is publicly-financed with many citizens purchasing supplemental private insurance that pays for upgrades and other benefits excluded from public coverage. It has no cost sharing for publicly-insured services. Canada spent 10.7% of its GDP on health care, \$4,569 per capita annually; roughly half of the U.S. spend per person.⁶¹ Out-of-pocket spending in Canada is primarily attributed to prescription drugs and nonhospital facilities. Average annual out-of-pocket health expenditures in Canada were \$623 per person; about two-thirds of what the U.S. spends. As merely 14% of the total spending, the Canadian proportion is comparable to U.S. out-of-pocket exposure, in these relative terms.

Germany provides publicly-financed, universal coverage for all legal residents. Some choose to supplement or replace public coverage for private health insurance that offers access to more services. Germany spent 11.2% of its GDP on health care, \$4,920 per capita annually; slightly more than half of what the U.S. spends.⁶² Out-of-pocket spending in Germany is primarily for nursing facilities, pharmaceuticals, and home health. Nominal copayments are charged for drugs, devices, and visits. Average annual out-of-pocket health expenditures in Germany were \$649 per person; about two-thirds of the U.S. spending, but similar as a proportion (13% of the total spend).⁶³

France provides publicly-financed, universal health care that is compulsory. Private health insurance in France is generally purchased as a complement to the public program. France spent 11.6% of its GDP on health care, \$4,361 per capita annually; less than half of what the U.S. spends.⁶⁴ The insured are responsible for use charges from copayments, coinsurance, and balance billing. Coinsurance rates vary by how effective and beneficial the intervention is deemed to be. For example, insulin is not subject to coinsurance. Copayments are nominal. Average annual out-of-pocket health expenditures in France were \$277 per person; less than one-third the U.S. level.⁶⁵

Switzerland is an outlier in terms of cost-sharing, although it has universal, mandatory, publicly-financed health coverage.⁶⁶ The country spent 11.1% of its GDP on health care, \$6,325 per capita annually; similar to other developed

61. *Id.*

62. *Id.*

63. *Id.*

64. *Id.*

65. *Id.*

66. *Id.* Private supplementary policies are available to provide access and choice beyond the statutory coverage.

European countries and about two-thirds what the U.S. spends.⁶⁷ The Swiss can select between higher-deductible (lower-premium) plans and lower-deductible (higher-premium) plans. Coinsurance is charged for all services above the deductible and those insured who choose brand-name drugs when a generic alternative is available are subject to additional charges. Copayments are charged for hospital use. Unlike most European countries, average annual out-of-pocket health expenditures in Switzerland were very substantial, at \$1,630 per person; half-again-more than the U.S. spends, and more than double (26%) relative to total spending.⁶⁸

We also have data on how consumers respond to the varying cost-sharing profiles in these countries. One recent survey found that “adults in the U.S. are far more likely than those in [the ten] other countries to go without needed [health] care because of costs.”⁶⁹ More specifically, “[o]ne-third (33%) of U.S. adults went without recommended care, did not see a doctor when sick, or failed to fill a prescription because of costs.”⁷⁰ Other countries included in the survey, Canada and Germany as examples, reported markedly lower care avoidance rates—16% and 7% respectively.⁷¹ Switzerland was the United States’ nearest comparable case with 22% avoidance due to cost.⁷² This may come as no surprise given the Swiss commitment to cost sharing.

This brief comparative review suggests that, at the level of simply comparing total health spending between developed countries, the United States’ demand-side strategy of making health insurance incomplete has not been resoundingly successful as a strategy of overall cost-containment. Although in absolute dollars U.S. patients spend more out-of-pocket than twelve other countries (all but Switzerland), they also have the highest overall health spending per capita. Other countries, such as the Netherlands, use cost-sharing for only 5% of total costs, compared to the 12% spent by the U.S., but also spend roughly half as much overall. Although a much more granular analysis could examine differences in income and health outcomes,⁷³ this top-level analysis does not support the proposition that increasing patient exposure to costs is generally associated with reductions in health spending overall.

67. *Id.*

68. *Id.*

69. Robin Osborn et al., *In a New Survey of 11 Countries, U.S. Adults Still Struggle with Access to and Affordability of Health Care*, COMMONWEALTH FUND (Nov. 16, 2016), <http://www.commonwealthfund.org/publications/in-the-literature/2016/nov/2016-international-health-policy-survey-of-adults> [https://perma.cc/NKF6-SWV4].

70. *Id.*

71. *Id.*

72. *Id.*

73. See David Orentlicher, *Controlling Health Care Spending: More Patient “Skin in the Game?”*, 13 IND. HEALTHL. REV. 348, 350 (2016) (reviewing evidence that the United States trails comparable countries on these health indicators).

B. The RAND Health Insurance Experiment

The RAND Health Insurance Experiment (HIE) was a landmark field study in the 1970s that yielded great insight into how patients of that era responded to particular sorts of cost-sharing schemes.⁷⁴ It was a remarkable social science endeavor. Some patients were randomly assigned into a “free care” condition, with no cost-sharing burden.⁷⁵ Others were randomly assigned to one of several conditions with increasing levels of cost sharing up to a condition where the patient bore 95% of the cost-of-care out of pocket, though all were capped at 5% to 15% of household income.⁷⁶ While the results of this gold-standard study have been scrutinized and recapitulated in a number of different forms over the years, its principal findings have served as lodestar for much of the subsequent work on cost sharing in healthcare.

In a 2006 paper for the Kaiser Family Foundation, Gruber summarized the HIE as finding that, “higher co-insurance rates, with an out-of-pocket limit, can significantly reduce health care use without sacrificing health outcomes for the typical person.”⁷⁷ It is hard to overstate the impact of this headline finding on decades of health economics and health policy.

This conclusion weakens, however, when considering the welfare of the sick and the poor. Restating again that, “for individuals who were not already high-risk, there was little benefit to health from free care. For high-risk individuals, however, particularly if they were low income, there were important benefits to health from free care.”⁷⁸ In short, the imposition of cost-sharing causes poorer patients to not consume healthcare that would have been beneficial to them. Cost-sharing hurts sick and poor people.

Retrospective analyses have focused on the problem that some of the people recruited into the HIE refused to participate and others left early, which could potentially bias the results. While nearly 95% of the free-care plan participants completed the Experiment, only 84.6% of participants randomized to the highest cost-sharing arm remained in the study for the intended 3- to 5-year period.⁷⁹ This difference in attrition, with those exposed to comparatively higher cost sharing departing early, was statistically significant to the 1% level and driven by participants leaving the experiment voluntarily, not for other reasons such as death, joining the military, or becoming eligible for Medicare.⁸⁰ Refusal rates at

74. Aviva Aron-Dine et al., *The RAND Health Insurance Experiment, Three Decades Later*, 27 J. ECO. PERSP. 197 (2013).

75. *Id.*

76. *Id.* at 201.

77. JONATHAN GRUBER, THE ROLE OF CONSUMER COPAYMENTS FOR HEALTH CARE: LESSONS FROM THE RAND HEALTH INSURANCE EXPERIMENT AND BEYOND 8 (The Henry J. Kaiser Family Foundation, 2006) [<https://perma.cc/HZ4N-DZGP>].

78. *Id.* at 7.

79. Aron-Dine et al., *supra* note 74, at 202.

80. JOSEPH P. NEWHOUSE, FREE FOR ALL? LESSONS FROM THE RAND HEALTH INSURANCE EXPERIMENT, 19, 24 (Harvard Univ. Press 1996).

the outset were also higher in the plans with cost-sharing. When refusal rates are aggregated with in-study attrition, 88% of the free-care plan participants completed the study compared to 63% in the highest cost-sharing arm.⁸¹

In acknowledging this potential limitation, Newhouse explained that “the additional refusal and attrition appear to have been random with respect to the characteristics of the participants, and therefore free of bias,” meaning that post-hoc analyses were unable to discern the causes for the differential participation.⁸² Still, the fact that the refusal rates differed so severely across experimental conditions suggests a form of adverse selection, whereby patients acted rationally on their private information, such that those most likely to suffer bad outcomes from cost-sharing would be most likely to refuse or depart from conditions that exposed them to high cost-sharing. If that happened, then the cost-sharing conditions would have unrealistically low estimates of adverse outcomes. Other scholars, including John Nyman, have argued that the HIE was “biased by attrition and that the attrition accounts for the lack of a health effect from the reduction in health care use, especially hospitalizations, among the participants assigned to the cost-sharing arm.”⁸³

Also notable was the HIE's scaled cap-on-cost-sharing with a maximum dollar expenditure (MDE). Out-of-pocket costs ranged from 5, 10, and 15% of family income up to \$1,000 in a given 12-month period. Hence, no family would ever be responsible for more than \$1,000 per year, no matter the study arm, and lower-income individuals faced less exposure than higher-income individuals. This understandable feature, designed to ensure that the randomization would not hurt any study participants, makes it perilous to make inferences about how cost-sharing works and in particular whether it hurts patients in the real world, where there are *not* typically income-scaled caps on cost-sharing exposure.⁸⁴ This problem of external validity has not, however, prevented scholars and policymakers from basing policy recommendations on the HIE's headline finding that cost-sharing can reduce waste without harming median patients.

C. Subsequent Empirical Evidence

Since the HIE, there have been many other studies of cost-sharing, which show that it is much more complicated than economic theory might predict. We sample a few such studies here.

In practice, cost-sharing in the U.S. has been linked to complications of the tax law. In particular, high-deductible health plans (HDHPs) have been linked to “health savings accounts” (HSAs), which can receive pre-tax contributions from employers and employees, and thereby create a corpus to pay non-insured health

81. Aron-Dine et al., *supra* note 74, at 202.

82. NEWHOUSE, *supra* note 80, at 366.

83. Nyman, *supra* note 21, at 165.

84. See Christopher T. Robertson, *Scaling Cost-Sharing to Wages: How Employers Can Reduce Health Spending and Provide Greater Economic Security*, 14 YALE J. HEALTH POL'Y L. & ETHICS 239 (2015).

expenses. As scholars explain, “The tax advantaged account has the potential to buffer consumers from the increased financial liability, but it can undo the incentive to reduce unnecessary care (i.e., moral hazard).”⁸⁵ A 2010 study examined insurer data for 56,809 enrollees from 2,380 employers in the small-group market, to identify the effects of HDHPs and HSAs on health care spending.⁸⁶ The authors found that “the deductible has a predictable negative effect on total spending: each additional dollar increase in the deductible is associated with a 55-cent decrease in total spending, which corresponds to an elasticity of 0.23,” in the same ballpark as the RAND experiment.⁸⁷ On the other hand, “an additional dollar in the spending account is associated with a significant increase of \$1.20 of total spending,” and these are predominately spent on outpatient visits and pharmaceuticals.⁸⁸ When a plan makes equal increases “in the deductible and contribution to a spending account will increase total healthcare spending.”⁸⁹ The authors speculate that this observation is driven by healthy people spending more in the setting of a higher HSA balance, while sicker people, who anticipate exceeding their deductible and exhausting their HSA, are unaffected.⁹⁰

Most of the recent and compelling evidence on the effects of cost-sharing comes from natural experiments. One paper, followed the employees of a large, self-insured firm (with very highly-paid employees) as it changed from a free care model to a high-deductible health plan.⁹¹ Researchers found that when exposed to more out-of-pocket risk, employees reduced overall spending by about 12.5%. Interestingly, despite this cohort’s relatively high income, level of education, and access to a price-shopping tool, nearly all savings were derived from simple reductions in quantity—not substitution for a more appropriate product, and not via shopping for a more competitive price. Employees seemed to reduce their consumption indiscriminately, without consideration for the differences between care that could be described as valuable, such as preventive care, and care that may be wasteful, such as orthopedic (joint) MRI. This evidence bodes poorly for achieving dramatic cost savings by empowering patients with more information or the ability to shop.

In 2004, another employer, Alcoa, changed their healthcare coverage by eliminating cost sharing for preventive care while increasing cost sharing for other services.⁹² Specifically, for most of Alcoa’s non-union employees, the

85. Anthony T. Lo Sasso et al., *The Effects of Consumer-Directed Health Plans on Health Care Spending*, 77 J. OF RISK AND INSURANCE 85, 86 (2010).

86. *Id.* at 92.

87. *Id.* at 97.

88. *Id.*

89. *Id.* at 101.

90. *Id.*

91. Zarek C. Brot-Goldberg et al., *What Does a Deductible do? The Impact of Cost-sharing on Health Care Prices, Quantities, and Spending Dynamics*, 132 Q. J. OF ECON. 1261, 1272 (2017).

92. Susan H. Busch et al., *Effects Of a Cost-Sharing Exemption On Use Of Preventive Services At One Large Employer*, 25 HEALTH AFF. 1529 (2006).

company changed from a \$10-\$15 copayment to a 10% coinsurance rate, and from a zero deductible to a \$1,500 deductible. Susan Busch and colleagues studied the transformation and found “a 5 percent reduction in total costs among affected enrollees, compared with a 4 percent rise in total costs in the comparison group” [in the first year].⁹³ They also observed that the cost-sharing reduction for preventative care had “little impact on preventative care use,” suggesting the need for “greater health education campaigns or even stronger financial incentives” to increase the use of these services.⁹⁴ This study did not allow researchers to investigate whether cost-sharing caused patients to discriminate between high and low value care, nor did it allow observation of the effects on health outcomes.

Other studies have shown that cost-sharing has a significant impact on preventative care. An analysis of a 1994 survey of insured employees found that cost sharing resulted in lower utilization of clinical preventive services.⁹⁵ In another study, when an HMO introduced a nominal, \$5 copayment for office visits, primary care visits dropped by an estimated 10.9%.⁹⁶ These sorts of data were influential in causing the Affordable Care Act to mandate free coverage of preventative care services.

A 2014 Commonwealth Fund survey found that “nearly one-quarter of people with high deductibles cited them as the reason they had not gotten a preventative care test, even though by law these tests are excluded from deductibles.”⁹⁷ This survey also found that copayments and coinsurance had a significant effect on the care sought by the insured, particularly those with low incomes.

Nearly half (46%) of insured adults with incomes under 200 percent of poverty said that because of their copayments or coinsurance, they had either not filled a prescription, not gone to the doctor when they were sick, skipped a medical test or follow-up visit recommended by a doctor, or not seen a specialist when they or their doctor thought they needed one.⁹⁸

Cost-sharing has a disparate impact on patients with chronic conditions. A 2004 JAMA paper studied the effect of doubling copayments on the use of prescription drugs.⁹⁹ The authors found that many classes of medications were

93. *Id.* at 1531.

94. *Id.* at 1534.

95. Geetesh Solanki & Helen Halpin Schaffler, *Cost-Sharing and the Utilization of Clinical Preventive Services*, 17 AM. J. PREVENTIVE MED. 127 (1999).

96. Daniel C. Cherkin et al., *The Effect of Office Visit Copayments on Utilization in a Health Maintenance Organization*, 27 MED. CARE 1036, 1040 (1989).

97. Sara R. Collins et al., *Too High a Price: Out-of-Pocket Health Care Costs in the United States*, COMMONWEALTH FUND (Nov. 13, 2014), at 1, 8. *See also* Sara R. Collins et al., *The Problem of Underinsurance and How Rising Deductibles Will Make It Worse*, COMMONWEALTH FUND, May 20, 2015, at 1.

98. Collins, *Too High a Price: Out-of-Pocket Health Care Costs in the United States*, *supra* note 97, at 6.

99. Dana P. Goldman et al., *Pharmacy Benefits and the Use of Drugs by the Chronically Ill*,

sensitive to increases in out-of-pocket expenses.¹⁰⁰ Most notably, “the populations most sensitive to price changes were the patients taking long-term medications but who were not receiving ongoing care for the condition.”¹⁰¹ There was also evidence that “copayment increases led to increased use of emergency department visits and hospital days for the sentinel conditions of diabetes, asthma, and gastric acid disorder: predicted annual emergency department visits increased by 17% and hospital days by 10%.”¹⁰² The authors caution that the estimates for increased visits are not definitive as they rely on limited data.¹⁰³ In this study, the authors were not privy to the coverage and benefit plans faced by the participants and, as a result, unable to control for that variation.¹⁰⁴

An analysis by Kenneth Thorpe shows that cost-sharing for prescription drugs may be counterproductive for patients with chronic conditions.¹⁰⁵ He demonstrates that while higher copayments and coinsurance rates reliably reduce spending on the drugs themselves, the effect on overall spending was less reliable.¹⁰⁶ Thorpe found that in patients with multiple chronic conditions, increased cost sharing led to non-adherence and an overall greater level of spending when these patients eventually sought care in an emergency room, clinic, or hospital for exacerbations of their chronic illnesses.¹⁰⁷

In a similar vein, a 2010 cross-sectional study followed nearly 150,000 type-2 diabetic patients, examining both their cost-sharing exposure and their adherence to insulin and oral antidiabetic medicines.¹⁰⁸ In a second stage, the authors examined the association between lack of adherence and complications, including health outcomes such as neuropathy, as well as medical service utilization and workplace productivity.¹⁰⁹ The authors found that a \$10 increase in patient cost-sharing was associated with a 5-6% reduction in adherence, which then substantially worsened health outcomes and led to emergency room visits.¹¹⁰

Another recent study of individuals in high-deductible health plans focused on emergency room visits, and distinguished between appropriate utilization for high-severity incidents and inappropriate utilization for low-severity incidents. The study found that when patients are moved to high-deductible health plans, poorer patients, but not richer patients, dramatically reduce the amount of high-

291 JAMA 2344 (2004).

100. *Id.*

101. *Id.* at 2349.

102. *Id.*

103. *Id.*

104. *Id.*

105. Kenneth E. Thorpe et al., *Out-of-Pocket Prescription Costs Under a Typical Silver Plan are Twice as High as They are in the Average Employer Plan*, 34 HEALTH AFF. 1695 (2015).

106. *Id.*

107. *Id.*

108. Theresa B. Gibson et al., *Cost Sharing, Adherence, and Health Outcomes in Patients with Diabetes*, 8 AM. J. MANAGED CARE 589 (2010).

109. *Id.*

110. *Id.*

severity (appropriate) emergency care they consumed.¹¹¹

This evidence, which demonstrates negative effects of cost-sharing, especially among the poor and chronically ill, is consistent with the theory of “underinsurance.” When a person has so much exposure to the financial risk associated with medical problems, the core functions of health insurance are undermined. Access to care is denied, and financial distress looms for healthcare consumed.

Notwithstanding this conceptual framework, it is challenging to operationalize and test for underinsurance in the population. More than 30 years ago, Farley used strictly empirical criteria to propose three alternative definitions for underinsurance. If a person who makes \$60,000 a year has a 1% chance of spending \$6,000 on health services, that person would be considered underinsured by Farley's intermediate definition.¹¹² More recently, Schoen and colleagues offer strictly income-based financial inclusion criteria, tallying amongst the underinsured those with out-of-pocket expenses equal to at least 10% of income, low-income respondents (income below 200% of the federal poverty level) with medical expenses equal to at least 5% of income, and those with deductibles equal to at least 5% of income.¹¹³ Indicators of underinsurance with the most pronounced movement coming from the 10% of income and deductible indicators. These authors concluded that “insurance erosion has spread up the income distribution well into the middle-income range.”¹¹⁴

Scholars have raised an intriguing challenge to these definitions of underinsurance, which depend on observed out-of-pocket spending, arguing that they fail to incorporate the increased consumption that would be caused by more generous health insurance coverage, which allowed people to consume the healthcare they truly need.¹¹⁵ Accounting for this problem can dramatically increase estimates of underinsurance among populations that have less-generous health insurance policies. For example, although households with small group health plans tend to have less generous insurance compared to those in large group plans, in one dataset, they appeared to be 10% less likely to suffer from underinsurance. When the increased consumption is taken into account, the small-group households' underinsurance rate is actually 33% greater than large-group households, as we might expect.

There is also a growing empirical literature showing onerous effects of cost-sharing on personal finances, which may also impact health. David Himmelstein and colleagues studied debtors going through the process of bankruptcy, and

111. J. Frank Wharam et al., *Low-Socioeconomic-Status Enrollees In High-Deductible Plans Reduced High-Severity Emergency Care*, 32 HEALTH AFF. 1398 (2013).

112. Pamela J. Farley, *Who are the Underinsured?*, 63 MILBANK MEMORIAL FUND Q. HEALTH & SOC'Y. 476, 476 (Summer 1985).

113. Cathy Schoen et al., *How Many Are Underinsured? Trends Among U.S. Adults, 2003 and 2007*, 27 HEALTH AFF. 646, 647 (2008).

114. *Id.* at W301.

115. Jean Marie Abraham et al., *Moral Hazard Matters: Measuring Relative Rates of Underinsurance Using Threshold Measures*, 45 HEALTH SERVS. RES. 806 (2010).

found that 62% cited medical causes of their financial problems.¹¹⁶ This work evinces the negative feedback loops associated with illness – it is not uncommon for a medical problem to cause a loss of income in the household, because the sick person cannot work and/or another member of the family loses work while caring for them. Accordingly, of those medical debtors, over 92% had over \$5,000 in medical debt or medical debts exceeding 10% of income. Christina Cutshaw and colleagues surveyed people going through home foreclosure, and found similar rates of medical causes.¹¹⁷ They also found that the foreclosure process itself had negative impacts on health, as it caused stress, worsened unhealthy behaviors, and disrupted treatment relationships.¹¹⁸

IV. CONCLUSIONS

Consumer cost sharing is effectively the absence of insurance. Since the advent of Medicare, the importance of consumer cost sharing has been a recurring political theme, and was seen as a means for reducing the excess demand that comes along with an insured population. U.S. politicians were motivated by a sentiment that end-users of healthcare must share in the cost to understand there is a cost. These sentiments have pushed this agenda for decades, unlike their counterparts in other countries. This emphasis is understandable, given that academic economists have built contemporary health insurance theory around moral hazard and the alleged welfare loss that results from over-insurance, while largely overlooking the ways that health insurance expands access to high-value healthcare that would otherwise be unaffordable to individuals.

The evidence suggests that the classic models do hold some truth. Studies like the RAND HIE and others have shown that healthcare spending is sensitive to out-of-pocket costs. Notwithstanding its external validity and selection problems, designers of insurance contracts have keyed-in on consumers' RAND-proven sensitivity to cost and have increasingly sought to reduce health insurance coverage accordingly.

A broader literature has shown how greater exposure to cost erodes the value of the insurance contract and, depending on the extent of the cost sharing, can undermine its essential function, creating underinsurance. The data shows consistently that, in response to rises in out-of-pocket costs, consumers cut their spending indiscriminately, seemingly without the ability to discern whether a service or test is of high or low relative value. After all, that function of discernment is what physicians are for.

The future of scholarship and policymaking should focus on ways to better tailor this policy tool, so that it achieves its cost-reduction benefits without harming patients. The move towards value-based insurance design—reducing

116. David U. Himmelstein, *Medical Bankruptcy in the United States, 2007: Results of a National Study*, 122 AM. J. MED. 741 (2009).

117. Christina A. Cutshaw et al., *Medical Causes and Consequences of Home Foreclosures*, 46 INT'L. J. HEALTH SERVS. 36 (2015).

118. *Id.*

or eliminating copays for high-value care—tries to do exactly that.¹¹⁹ Cost-sharing must also respond to patient-heterogeneity, including differences in ability to pay between the rich and the poor, and differences in need for healthcare between those chronically ill versus others.

Ultimately, as the comparative perspective suggests, cost-sharing cannot be our only tool. Scholars and policymakers must do more to align incentives on the supply-side, recognizing that for the high-cost care that drives most health spending, patient cost-sharing can have limited impact. In precisely those domains, the producers have the greatest temptation to drive up costs and prices, unless policymakers do a better job of aligning their incentives with patient health and payor thrift.

119. Michael E. Chernew et al., *Value-Based Insurance Design*, in 3 *ENCYCLOPEDIA HEALTH ECON.* 446 (Anthony J. Cuyler et. al. eds., 2014).