The O-Ring of Trust: Aggregating Entity-Specific Trust and Preventive Care

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Abstract

Trust is widely viewed as central to health care, yet "trust in the health care system" is not a single relationship: patients rely on many distinct entities (doctors, nurses, pharmacists, hospitals, insurers, and public health and regulatory bodies), and trust in these entities can diverge sharply. We ask how trust in a system's constituent entities combines into overall trust, and what this composition implies for care-seeking. We develop an economic model in which overall system trust is produced from entity-specific trust through a nested CES "trust technology" that allows components to act as complements or substitutes, and we field a nationally representative U.S. survey to estimate it. In reduced form, higher trust is robustly associated with more preventive care and less avoidance, comparable in magnitude to education and income gradients. Structurally, trust is relatively substitutable across the system's broad domains (individual providers, institutional providers and payers, and broad institutions), so high trust in some components can partially offset low trust in others. Counterfactual simulations, which we interpret as descriptive implications of the estimated model, show that among individual entities, trust in doctors is the most consequential: reducing it produces the largest declines in preventive care and the largest increases in planning no care, while comparable losses for insurers and the CDC imply smaller changes. However, a simultaneous erosion of trust across federal health institutions (CDC, FDA, and Medicare/Medicaid) carries the largest behavioral implications, underscoring the systemic stakes when trust declines broadly rather than in any single entity.

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It is clear from everyday observation that the behavior expected of sellers of medical care is different from that of business men in general. (. . .) The customer cannot test the product before consuming it, and there is an element of trust in the relation. — Arrow (1963)

1 Introduction

A distinctive feature of health care markets, recognized by Arrow (1963), is that a physician, the supplier of medical services, is expected to act in the patient's best interest. The patient-physician relationship is especially complex given the uncertainty surrounding health, the pronounced asymmetry of information between patient and provider, the infrequent nature of many medical interactions, and the potentially very high stakes involved. These features make *trust* especially important in health care, where it can be conceptualized as the belief that those involved in a patient's care will act in ways that benefit the patient.[1]

Importantly, trust in health care is not a single relationship. In settings such as the United States, patients must place trust not only in physicians and nurses, but also in hospitals, insurers, pharmaceutical companies, and public health authorities. Trust in these entities can diverge sharply: individuals may have high trust in their clinicians while distrusting insurers or regulators, or vice versa. This raises a basic question that existing work rarely

[1]The Cambridge Dictionary defines trust as the belief that "someone is good and honest and will not harm you." Economists have adopted similar definitions and have long recognized the importance of trust as an enabler of mutually beneficial cooperation and exchange. According to Arrow (1972), "Virtually every commercial transaction has within itself an element of trust." Gambetta (2000) writes that "trusting a person means believing that when offered the chance, he or she is not likely to behave in a way that is damaging to us," Sobel (2002) states that "trust is the willingness to permit the decisions of others to influence your welfare," and Sapienza & Zingales (2012) define trust as "the expectation that another person (or institution) will perform actions that are beneficial, or at least not detrimental, to us regardless of our capacity to monitor those actions."

confronts directly: how does trust in the system's constituent entities combine to produce overall trust in the health care system, and what are the behavioral consequences for care-seeking? The answer matters because a breakdown in trust in one component may have very different implications depending on whether trust components act as complements, so that low trust in one entity disproportionately depresses overall trust, or as substitutes, so that trust in some entities can offset distrust in others.

In this paper, we study the relationship between trust and care-seeking behavior through the lens of system trust built from entity-specific trust. We develop an economic framework in which care-seeking depends on three mechanisms that trust may shape: beliefs about the usefulness of care, the expected disutility of interacting with the health care system, and expectations about realized prices, captured by perceived claim-denial risk and unexpectedly high out-of-pocket costs. We then model overall trust in the health care system as a function of trust in its constituent entities, allowing these components to be either complements or substitutes. Specifically, adapting Michael Kremer's O-Ring insight (Kremer, 1993), we model overall trust as a CES aggregation of entity-specific trust. This framework yields sharp hypotheses about how trust in different entities combines into overall system trust and how localized trust losses translate into care-seeking behavior.

Trust is inherently difficult to manipulate exogenously (Durlauf, 2002). Even when certain events might arguably affect trust, disentangling the role of trust from other concurrent changes remains challenging (Alsan & Wanamaker, 2018). Our approach follows a recent and growing strand in economics that leverages surveys to understand economically relevant behaviors (Stantcheva, 2023). Specifically, a central contribution of our paper is to pair this survey-based approach with an explicitly economic framework and estimation strategy: the

model informs what we measure, clarifies how trust enters preferences and beliefs, and yields testable implications about how trust in distinct health-care entities aggregates into overall system trust. To allow this aggregation to differ across substantively distinct domains of the health care system, we group trust components into three categories: individual-provider trust, provider and payer trust, and trust in broader health-system institutions. We then use the data not only descriptively, but to estimate the key parameters governing these interactions—in particular, whether trust components behave as complements or substitutes—and to quantify the resulting implications for care-seeking.

Guided by the theory, we field a nationally representative U.S. survey that measures overall trust; trust in physicians, nurses, hospitals, insurers, pharmaceutical companies, and public health and regulatory bodies; and both retrospective and prospective care-seeking behaviors. The survey also measures the model's three mechanism channels: beliefs about the usefulness of care, the expected disutility of interacting with the health care system, and expectations about claim denials and out-of-pocket costs. Consistent with this structure, we present the empirical evidence in three steps. We first document reduced-form associations between overall trust and care-seeking behavior, and between overall trust and the mechanism proxies. We then estimate the CES trust-aggregation technology linking entity-specific trust to overall system trust. Finally, we use the estimated technology to derive the behavioral implications of entity-specific trust shocks.

Our analysis yields two main sets of findings. First, higher overall trust is strongly associated with greater engagement in preventive and elective care and with lower care avoidance. Respondents with higher trust are more likely to report routine checkups and flu vaccination and less likely to report delaying care, avoiding care due to cost, or having

no health care encounters in the past year. These associations remain robust to a rich set of demographic, socioeconomic, health, political, and geographic controls. Moreover, the estimated trust gradients are comparable in magnitude to the associations between care-seeking and education and income—two determinants of health care utilization that have been extensively documented in the economics literature. This suggests that trust is not merely a secondary correlate of care-seeking, but an important factor whose association with behavior is on par with canonical socioeconomic gradients. The reduced-form evidence is also consistent with the mechanisms highlighted by our model. Higher trust is associated with greater confidence in the health care system's resources and expertise, a less unpleasant anticipated care experience, and more favorable expectations about claim denials and out-of-pocket costs. In this sense, the reduced-form evidence is also consistent with the mechanisms through which our model posits that trust affects care-seeking. These mechanism proxies, in turn, are associated with care-seeking in the expected directions, providing an economic interpretation for the trust gradients in preventive care and care avoidance documented in the data.

Second—and central to our approach—overall trust is well described as an aggregation of trust across the components of the health care system.[2] Our structural estimates imply that trust components are relatively substitutable in generating overall system trust. Within domains, however, trust components behave differently: they are more complementary among individual providers, and more substitutable among provider and payer organizations and broad health care entities. Counterfactual exercises indicate that the behavioral implications

[2]The model-implied distribution of overall trust is close to the distribution obtained from the overall system trust survey question, providing a useful validation of our framework.

of a localized trust loss depend both on which entity is affected and on how trust is aggregated within and across domains. Across simulated losses ranging from partial to complete, trust in doctors carries the largest predicted behavioral implications among the individual entities we consider: reducing it produces the largest declines in preventive care and the largest increases in planning no care, while comparable losses of trust in insurers and the CDC imply smaller changes. Formal pairwise tests confirm that these differences are statistically significant across the range of trust losses. We also simulate a simultaneous loss of trust in the components of HHS that we measure (Medicare/Medicaid, the CDC, and the FDA); because it removes trust in three entities at once, it produces the largest predicted changes of all, larger than those of any single entity including doctors, underscoring the stakes of a broad erosion of trust in federal health institutions. These implications also depend on the aggregation technology: when trust components are more complementary, the same loss generates larger declines in overall trust and larger predicted behavioral responses. Overall, the behavioral implications of a trust loss depend not simply on trust in a given entity, but on the trust-aggregation technology and the mechanism channels through which trust affects care-seeking.

Our paper contributes to three related literatures. First, it contributes to the economics of trust. Much of the economics literature on trust investigates the relationship between aggregate levels of trust (viewed as a component of "social capital") and economic activity,[3]

[3]Putnam & Helliwell (1995) showed that different levels of trust explained a large share of historical differences in economic development in Italy. Similarly, Fukuyama (1996) argued that differences in aggregate trust explain cross-country differences in economic success. Knack & Keefer (1997) and Zak & Knack (2001) find associations between trust and GDP growth rates, Guiso et al. (2008) find that greater trust correlates with the size of a country's stock market, and Guiso et al. (2009) find that bilateral trust correlates with cross-country trade patterns.

or studies the determinants of trusting behavior in the laboratory.[4] Our paper joins a much more limited stream that considers trust at the individual level and studies it outside of the laboratory.[5] However, economists have devoted relatively little attention to trust in the health care system. Exceptions include Alsan & Wanamaker (2018), who show that a negative shock to trust generated persistent reductions in health care utilization and worsened mortality among Black men in the U.S., and work connecting historical injustices to mistrust and care-seeking behaviors in developing health systems (Martinez-Bravo & Stegmann (2021), Lowes & Montero (2021), and León-Ciliotta et al. (2025)). By contrast, much more attention has been given to trust in financial institutions.[6] Yet, health care is at least as important a setting in which to study trust: as in the financial sector, virtually everyone participates, and trust has the potential to shape both individual behavior and system-wide outcomes.

Second, our paper contributes to the literature, mostly from medicine and public health, on trust in the health system. Although this literature focuses largely on patients' trust in physicians and nurses,[7] it already distinguishes trust in providers, insurers, and institutions (Hall et al., 2001; Dugan et al., 2005) and documents associations between trust in health-care professionals and health outcomes and behaviors (Birkhäuser et al., 2017). We innovate

[4]The experimental literature on trust received significant momentum from two foundational papers by Camerer & Weigelt (1988) and Berg et al. (1995). These works employed the "trust game" and the "investment game," respectively, setting the stage for a wealth of subsequent research. Comprehensive reviews of this extensive body of literature can be found in works by Bohnet (2010) and Camerer (2011).

[5]For example, Alesina & La Ferrara (2002) use individual-level data from the US to describe the correlates of individuals' overall level of trust in others, and Butler et al. (2016) study the relationship between individual trust and economic outcomes (income) using cross-country data from Europe.

[6]Research by Guiso, Sapienza, and Zingales has focused on trust in financial institutions (Guiso et al., 2008, 2013).

[7]See, e.g., Mechanic & Schlesinger (1996), Blendon et al. (2014), Khullar (2019). For a review of the literature on the determinants of patient trust in health care providers, see Murray & McCrone (2015). For a recent overview of current issues related to trust in health care in the United States, see Baker (2020) and the six Viewpoints published in the same issue of JAMA.

in at least two ways. First, we embed trust in an explicitly economic framework of demand for health care, beliefs, disutility, and price expectations, in the tradition of Grossman (1972), Gilleskie (1998), and Becker (2007). Second, rather than the multi-entity distinction itself, our innovation is to model overall system trust as an estimable aggregation of entity-specific trust, to estimate whether these trust components act as complements or substitutes in producing overall trust, and to use the estimated technology for counterfactuals. In this framing, we treat trust in the health care system as a system-level object produced from trust in distinct entities rather than as a single primitive. In doing so, we clarify how trust enters care-seeking through economic mechanisms, derive testable predictions about how trust in different entities combines into overall system trust, and quantify how shocks to trust in particular entities propagate through the broader system. These implications come from placing the multi-entity structure inside an economic framework, and are not available in frameworks that treat trust as a single undifferentiated object or focus on a single institution alone.

Finally, we contribute to the economics and public health literatures on the determinants of, and disparities in, health and health care-seeking behavior by showing that trust is strongly and robustly associated with care-seeking and that these associations are similar in magnitude to those of education and income.[8]

The paper proceeds as follows. Section 2 presents a simple theory of medical care demand incorporating trust and modeling overall trust as an aggregation of entity-specific

[8]An extensive body of research in the social sciences has explored the factors affecting health, especially health disparities (Marmot, 2005). In the field of economics, significant attention has been given to the impact of education, income, and race on health. Income and education have been found to be strong predictors of health outcomes (see, e.g., Deaton (2002), Chetty et al. (2016), Lleras-Muney (2022) and references therein); this occurs through several channels, including the influence of these factors on health care utilization.

trust. Section 3 describes the survey and empirical implementation. Section 4 presents the reduced-form evidence, the structural estimates of the trust-aggregation technology, and the counterfactual simulations. Section 5 concludes.

2 Seeking Care and Trust

We propose a theory of elective medical care demand in which an individual trades off both current consumption and the disutility associated with medical care for the potential, but uncertain, health transformation that medical care offers. Following standard models of care-seeking (Grossman, 1972; Becker, 2007), individuals seek care if the expected health benefits are greater than the contemporaneous costs. We extend this framework by incorporating trust as a potentially important state variable. We conceptualize overall trust in the health care system as a function of an individual's trust in the system's constituent institutions and actors, reflecting the belief that they will act competently and in the patient's interest, rather than in ways that are harmful or detrimental. In the model, individuals with high levels of trust are likely to form different expectations regarding the transformative properties of medical care on health relative to distrustful individuals.

Drawing on the O-Ring logic of complementarities across components in Kremer (1993), the model allows for complementarity across institutions such that a loss of trust in one institution (e.g., the CDC) may potentially have a multiplicative effect. Conversely, it also allows for substitutability, so that greater trust in one institution (e.g., doctors) may partially (or completely) offset low trust in another (e.g., the FDA). Trust potentially works through a variety of mechanisms, including expectations of the health benefits of care, the disutility

of care itself, and beliefs about the likelihood of high out-of-pocket costs and claim denials. The theory yields several implications that guide our survey and empirical work. Following the presentation of the basic two-period model, we formally describe how overall trust is produced in the model as a function of trust in the health care system's components, and how it fits into our model of care-seeking.

2.1 Basic Model

Consider a two-period model of care seeking in which an individual enters period one in health state $h_1 \in \mathbb{R}$, where higher h indicates better health. Based on h_1, an individual makes the binary medical care decision denoted $m_1 \in \{0, 1\}$. Medical care is costly both in a pecuniary sense through price p_m, but also in a disutility sense, which captures the potential for hassle, pain, discrimination, shame, and other non-monetary burdens possibly associated with visiting a provider. The disutility term may also capture the stress associated with uncertainty surrounding the experience.[9] The benefit of medical care is the transformative effect of care on health, which implies that the demand for medical care is in fact a derived demand for health (Arrow, 1963; Grossman, 1972). Let the state transition function between periods one and two be $f(h_2|h_1, m_1)$, where the evolution of health depends on the period one medical care decision. To make the optimal medical care decision, an individual must forecast the evolution of health conditional on medical care and current health h_1. Finally, for simplicity, we assume a static budget constraint and exogenous income I_t.

Let utility in period one be a function of composite consumption C_1 and health h_1.[10]

[9] However, it's important to note that both in our theoretical framework and in the survey, we also accommodate the possibility that individuals may derive utility, for example, experiencing comfort, reassurance, or other positive effects from their interactions with physicians.

[10] In the canonical Grossman (1972) model, health has both a consumption and investment component. In

We make the simplifying assumption that the disutility of medical care term, $\phi(m_1) = \phi$, is additively separable from other utility and equal to zero in the event of no care (i.e., $\phi(m_1 = 0) = 0$). Under this structure, after substituting the budget constraint, the value of health state h_1 in period one is:

$$V(h_1) = \max_{m_1} \Big(u(I_1 - p_m m_1, h_1) - \phi(m_1) + \delta EV(h_2) \Big). \tag{1}$$

Assuming that the price of consumption is \$1, an individual receives utility from income net of the pecuniary medical care price, p_m, health, and direct (dis)utility from receiving care $\phi(m_1)$. The final term in Equation 1 is the discounted expected value of future utility taken over the distribution of health, where δ represents the discount factor. In this model, it is optimal to seek care if and only if:

$$\Delta(h_1) = \underbrace{\delta\Big(EV(h_2|m_1 = 1) - EV(h_2|m_1 = 0) \Big)}_{\text{Marginal Benefit of Care}} - \underbrace{\Big(u(I_1, h_1) - u(I_1 - p_m, h_1) + \phi \Big)}_{\text{Marginal Cost of Care}} > 0, \tag{2}$$

where Δ represents the net value of care. Medical care potentially improves health via the state transition function $f(.)$, and improved health is valuable via future utility. Thus, the marginal benefit of care is the change in discounted expected utility generated through $f(.)$, and the marginal cost of care is the loss of utility associated with a reduction in general consumption plus the disutility of receiving care ϕ.

our case, the consumption rationale is sufficient to generate the empirical predictions we take to the survey data. Halliday et al. (2019) suggest health is predominantly a consumption good after the age of 62 and that a consumption motive for health investment is needed to explain the increase in health care expenditures later in life.

2.2 Incorporating Trust

Define $T \in [0,1]$ as a continuous, scalar representation of an agent's level of overall trust in the health care system. Unlike health h_1, trust T is time invariant and fixed at the beginning of period 1.[11] Equation 2 highlights three economic mechanisms behind care-seeking behavior that we hypothesize relate to trust: beliefs about the expected benefits of care, the non-pecuniary burden of obtaining care, and the expected financial costs associated with care.

First, the marginal benefit of care depends on an individual's beliefs regarding future health conditional on medical care. To incorporate trust, we define:

$$\tilde{E}\Big(V(h_2|m_1,T)\Big) = \int \tilde{f}(h_2|h_1,m_1,T)V(h_2)dh_2,$$

where the discounted expected value of future utility is allowed to vary by trust through the subjective probability distribution of health conditional on medical care, $\tilde{f}(h_2|h_1,m_1,T)$. Trusting and/or non-trusting individuals may or may not have rational expectations regarding the distribution of future health conditional on medical care, and we emphasize that $\tilde{f}$ represents subjective beliefs. Because we define trust as the belief that those involved in a patient's care act competently and in the patient's interest, we hypothesize that trusting individuals hold beliefs on the distribution of health with medical care that stochastically dominate the beliefs held by non-trusting individuals. That is, for a given level of health h_1,

[11] This is a simplifying assumption of our static model of a single health care seeking decision. A separate and important issue is the production of trust, which requires a dynamic, life-cycle perspective and is beyond the scope of this paper. In a richer life-cycle model of health care demand, trust would likely evolve endogenously over time as a function of prior beliefs and updating based on interactions with the health care system, including one's own experiences as well as observations of others' experiences.

trusting individuals may subjectively feel that the transformative power of medical care is greater relative to non-trusting individuals. If so, then the expected marginal benefit of care is larger for trusting individuals and, all else equal, they are more likely to seek care.

The second mechanism deals with the direct (dis)utility of care. The patient-experience literature highlights that the experience of interacting with the health care system depends importantly on relational aspects of care, such as respect, communication, and empathy, which are closely related to trust.[12] In our model, the experience of a physician visit is captured through the disutility term, which we allow to vary by trust, $\phi(T)$. We hypothesize that trusting individuals may be more comfortable, and thus experience less disutility, as patients in clinical settings, which would imply that the marginal cost of care is smaller and that trusting individuals would be more likely to seek care.

The final mechanism relates to beliefs regarding insurance reimbursement. In our model p_m represents the out-of-pocket price associated with care. To the extent that a distrustful person does not believe that their insurer will reimburse (i.e., deny a claim), they may hold expectations regarding p_m that differ from a higher trust person.

Incorporating trust into our behavioral model, we rewrite the net value function $\Delta(h_1, T)$ as:

[12]See, among others, Beach & Inui (2006), Beach et al. (2006), Haywood et al. (2010), and Kim et al. (2004).

$$\Delta(h_1, T) = \underbrace{\delta\Big(EV(h_2|m_1 = 1, T) - EV(h_2|m_1 = 0, T)\Big)}_{\text{Marginal Benefit of Care}}$$
$$- \underbrace{\Big(u(I_1, h_1) - \big(u(I_1 - p_m(T), h_1) + \phi(T)\big)\Big)}_{\text{Marginal Cost of Care}}.$$

2.3 System Trust as an Aggregation of Entity-Specific Trust

Our model treats aggregate trust — trust in the entire health system — as the relevant factor that potentially drives decision-making. Indeed, because most elective care-seeking involves multiple actors (e.g., doctors, nurses, insurers, regulators, etc.), overall trust enters our model directly. A key feature of our approach is that trust in the overall system is a function of trust in each of these actors, and our interest is in understanding the functional relationship between these trust components, overall system trust, and behavior. To explore these relationships, we draw on the notion of complementarity found in economic development (Kremer, 1993). The idea is to allow for a flexible relationship between trust components and overall system trust that we can take to data.

We now specify overall system trust $T(\rho)$ to be bounded on the unit-interval and parameterized by a substitution parameter ρ. Trust is produced as a function of trust components $t_j \in [0, 1]$ that capture potentially differing levels of trust in doctors, nurses, hospitals, health insurers, public health authorities, and other health care actors. The nature of the function that aggregates these components has important implications for the production of trust

and, in the context of recent trends, the rebuilding of trust. Formally, let:

$$T(\rho) = \Big(\sum_{j=1}^{J} \omega_j t_j^{\rho} \Big)^{1/\rho}, \tag{3}$$

where ω_j represents the relative weight of trust component t_j such that $\omega_j > 0 \ \forall j$ and $\sum_j \omega_j = 1$. Equation 3 takes the constant elasticity of substitution (CES) form, in which $\rho \leq 1$ governs how trust components combine: higher values make components more substitutable, while lower values make them more complementary (the elasticity of substitution is $1/(1-\rho)$).

Our interest is in understanding how trust in generic components t_k and t_l for $k \neq l$ combine to produce overall trust T, and how T subsequently affects behavior m_1. The cross-partial derivative of net value with respect to t_k and t_l is given as:

$$\frac{\partial^2 \Delta}{\partial t_k \partial t_l} = \underbrace{\omega_k \omega_l t_k^{\rho-1} t_l^{\rho-1} \Big(\sum_j \omega_j t_j^{\rho} \Big)^{2/\rho-2}}_{\text{Positive Scale Factor}} \Big[\underbrace{\big(G''(T) + H''(T)\big)}_{\text{Curvature}} + \underbrace{(1-\rho)\frac{G'(T) + H'(T)}{T}}_{\text{CES Complementarity Term}} \Big], \tag{4}$$

where $G\Big(T(\rho)\Big) = MB(T(\rho)) - \phi(T(\rho))$ is the marginal benefit of care (as defined above) net of the disutility of care, and $H(T(\rho)) = \Big(u(I_1 - p_m(T(\rho)), h_1) - u(I_1, h_1)\Big) < 0$ is the utility cost from care associated with the decline in general consumption. Equation 4 makes clear that the net value of care is supermodular in trust components k and l iff:

$$\Big[\underbrace{\big(G''(T) + H''(T)\big)}_{\text{Curvature}} + \underbrace{(1-\rho)\frac{G'(T) + H'(T)}{T}}_{\text{CES Complementarity Term}} \Big] > 0.$$

Thus, supermodularity depends on the forms of functions G and H, and the value of the ρ.

In what follows, we discuss these terms, and we use Equation 4 to generate hypotheses that we take to data.

Function $G(T)$ reflects the marginal benefit of care net of its disutility. We assume that the marginal benefit of care increases in trust in the sense that higher trust individuals likely form expectations of better health conditional on care. Similarly, we assume that the disutility of care declines in trust. At high levels of trust, the marginal benefit of care likely increases in trust at a decreasing rate. This concave relationship may be true at lower levels of trust, or there may be an S-shaped relationship with important inflection points. For example, if at very low levels of trust, marginal improvements in trust do not change behavior, the marginal benefit may be convex in trust. Combining these terms, we predict that $G''(T) < 0$, especially when T is not very low, but we return to the possibility that G is convex in our empirical work.

Function $H(T)$ is negative and reflects the utility loss from a loss of general consumption due to the out-of-pocket expenses of care.[13] Trust affects H through its effects on perceptions of $p_m(T)$. There are two ways to think about $p_m(T)$. First, higher trust individuals may believe that p_m, the out-of-pocket price of care, will be lower because, conditional on their insurance status, the insurer will not dispute or deny their claim. In this case, $p'_m < 0$, $H'(T) > 0$, and $H''(T) < 0$. Second, higher trust individuals may hold more *precise* beliefs regarding p_m. That is, trust acts to reduce uncertainty about the financial liability associated with care. Under standard assumptions about expectations, such a model would also generate concavity in H.

Given the above discussion, curvature ($G''(T) + H''(T)$) is likely to be negative. Fur-

[13]The model assumes that health insurance is fixed.

thermore, the term $\frac{G'(T)+H'(T)}{T}$ is strictly positive. Thus, the supermodularity of t_k and t_l requires a value of ρ sufficient to ensure the absolute value of the CES term is larger than the absolute value of the curvature term. We consider several cases of ρ. In the case that $\rho = 1$, the index in Equation 3 is linear and additive. Trust in one component k only complements another component j if the curvature term is positive. In the case that $\rho = 0$, the function for overall trust is $T = exp\Big(\sum_j \omega_j ln(t_j)\Big)$. Here, trust is multiplicative in its components. Finding the weakest t_k and building trust in k may yield significant improvements in T. As $\rho \to -\infty$ the trust function is Leontief, and the function for overall trust is $T = min_{1...J} t_j$.

The theory generates several hypotheses that we can test in the data; we list them below:

1. $H_o : \rho = 1$ against $H_a : \rho < 1$. Rejecting the null implies that the trust components are not additive, but instead exhibit complementarity in the aggregation of overall trust.

2. $H_o : G'(T) = 0$ against $H_a : G'(T) > 0$. The net marginal benefit of care increases in trust.

3. $H_o : G''(T) = 0$ against $H_a : G''(T) < 0$. The net marginal benefit of care is concave in trust.

4. $H_o : H'(T) = 0$ against $H_a : H'(T) > 0$. Trust changes the utility loss associated with the consumption loss from care, implying perceptions of lower out-of-pocket prices.

5. $H_o : H''(T) = 0$ against $H_a : H''(T) < 0$. The utility loss is concave in trust.

To evaluate these hypotheses, we proceed in two steps. First, we describe our novel, nationally representative survey. We provide basic summary statistics, and we confirm a

strong, reduced-form relationship between trust, the model's mechanism proxies, and care-seeking behaviors. Next, we discuss estimation of our structural model, including how we group entity-specific trust measures t_j. We present model estimates of a system in which we jointly estimate the CES technology along with equations that capture mechanisms and behaviors. Finally, we present simulations of the estimated system under counterfactual losses of trust in specific entities.

3 Nationally Representative Trust Survey

In this section, we present our nationally representative survey, its mapping to the theoretical objects of Section 2, and evidence that trust is associated with care-seeking and plausibly operates through our hypothesized mechanisms.

3.1 Survey Design

We designed the survey instrument to map closely to the framework in Section 2. It measures (a) overall trust in the U.S. health-care system, (b) trust in the key entities that constitute it, and (c) the model's three mechanism channels (beliefs about the effectiveness of care, the disutility of interacting with the system, and expectations about the realized price of care, including out-of-pocket costs and insurance denial risk), alongside retrospective and prospective measures of care-seeking.

We first elicit a summary measure of overall system trust using a 0–10 scale for trust in "the health care system in the US as a whole." We then elicit entity-specific trust on the same 0–10 scale for a set of central health-sector actors: doctors, nurses, pharmacists,

hospitals, health insurance companies, Medicare/Medicaid, pharmaceutical companies, the CDC, and the FDA. Immediately after respondents report these trust ratings, we include an open-ended prompt asking respondents to briefly describe what factors shaped the trust ratings they provided across these entities; for web respondents this prompt appears on the same page as the trust grid to facilitate accurate recall.

Next, we measure the model's three mechanism channels. To capture beliefs about system effectiveness, we ask whether the health-care system in the respondent's local area has the "resources and expertise" to manage their health effectively, again on a 0–10 scale. To capture the non-monetary costs of care-seeking, we ask respondents to rate how pleasant or unpleasant they find going to see a doctor (Likert scale). To capture price expectations, we include items eliciting (i) respondents' expectations about how much they would pay out-of-pocket when seeking care for a health concern (categorical out-of-pocket amounts), and (ii) perceived likelihood that their health insurance would refuse to pay some of the bill or deny the claim (Likert scale).

We then measure care-seeking behavior across diverse contexts using both retrospective and prospective modules. The retrospective module asks which health-related actions the respondent undertook in the past year (e.g., flu shot, annual checkup, filling a prescription, specialist visit following referral, telemedicine use, second opinion, chronic-condition follow-ups, emergency/urgent care for injury, mental health care), and also includes items capturing avoidance or delay of care and cost-related avoidance. The prospective module asks analogous plans over the next year (e.g., planned flu shot, checkup, specialist visit if recommended, telemedicine, mental health care).

Finally, the instrument includes standard covariates used throughout the analysis. These

include self-reported general health, and indicators for major health conditions (e.g., diabetes, heart disease, cancer, high blood pressure/cholesterol, anxiety/depression, and others). Together, these measures allow us to characterize correlates of trust, to relate trust—both overall and entity-specific—to care-seeking behaviors, and to implement the model-based estimation of how trust components aggregate into overall system trust and how that aggregation maps into behavior. The full survey instrument is reported in Appendix A.

3.2 Sampling design and implementation

Our data come from a contract with Social Science Research Solutions (SSRS), a survey research firm that conducts national, probability-based surveys twice per month. Our survey ran from December 19th, 2025, through December 21st, 2025, among a sample of 1,252 respondents. SSRS recruited participants randomly based on a nationally representative address-based sampling design. The sample was representative with respect to age, gender, race and ethnicity, education, Census region, political party registration, and language. We also oversampled Blacks and Hispanics to ensure sufficient sample sizes of these groups. Of the 1,252 respondents, 96% completed the survey on the Internet, with the remainder by telephone. We use SSRS-provided survey weights throughout our analysis. We trimmed our final estimation sample to 1,172 respondents who provided complete surveys with no missing responses. Appendix Table 1 shows that survey-weighted means of selected demographic characteristics from this trimmed sample are very close to survey-weighted means from the 2024 American Community Survey.

3.3 Survey-Based Measures of Overall and Sector-Specific Trust

Our survey begins with an overall assessment of trust. Specifically, we ask: "*How much do you TRUST the US health care system as a whole?*". Figure 1 presents the weighted distribution of responses to the overall health care system trust question, measured on a scale from 0 (no trust) to 1 (complete trust).[14] Data are weighted by the frequency of observation, as calculated by the integer value of the probability weight (Heeringa et al., 2010). The overall mean of the overall trust measure is 0.568. To classify participants by their degree of trust in the health care system, we divide the distribution into quartiles. The quartiles correspond to trust levels [0, 0.4], [0.5, 0.6], [0.7], and [0.8, 1.0], where the last quartile represents the highest level of trust.

We then asked parallel trust questions for several distinct actors and institutions within the health care system. We uncover substantial variation in trust across these entities, which is summarized in Table 1. The distributions of the sector-specific trust measures are shown in Appendix Figures 1 through 3. We group the entity-specific trust measures into three domains: individuals (doctors, nurses, pharmacists), providers and payers (hospitals, health insurers, Medicare/Medicaid), and broad health system institutions (pharmaceutical companies, CDC, FDA), and we use these domains when we take the model in Section 2 to data. On average, individual providers are the most trusted: mean trust is 0.714 for nurses, 0.669 for doctors, and 0.722 for pharmacists. In contrast, organizations that function as financial or commercial intermediaries are trusted substantially less: mean trust is 0.384 for health insurance companies and 0.350 for pharmaceutical companies. Trust in hospitals

[14] In the survey, respondents reported trust on a 0–10 scale. We rescale this measure to the unit interval by dividing responses by 10.

(0.594) and in public health/regulatory institutions is intermediate (0.504 for the CDC and 0.505 for the FDA, with Medicare/Medicaid at 0.536). These differences also vary sharply across overall-trust quartiles. For example, trust in doctors increases from 0.457 in the lowest overall-trust quartile to 0.859 in the highest, while trust in insurers rises from 0.165 to 0.614 and trust in pharmaceutical companies from 0.136 to 0.581, highlighting how overall trust co-moves with—yet is not reducible to—trust in any single component of the system.

3.4 Demographic and Socioeconomic Correlates of Trust

Table 2 presents summary statistics on demographic and socioeconomic characteristics, both overall and by quartiles of overall trust. Our goal in this subsection is to describe how the composition of the sample differs across the trust distribution. This is useful for the analysis that follows, because it helps identify which observable characteristics vary across low- and high-trust respondents and therefore should be accounted for when estimating the relationship between trust and care-seeking. To test how each characteristic varies by overall trust, we regress each variable on indicator variables for the highest three trust quartiles, and we report the p-value on the F-test that these three coefficients are jointly zero. For simplicity of exposition, we focus on comparisons between the two extreme quartiles of trust in the health system.

Respondents in the highest-trust quartile are about ten years older on average than those in the lowest quartile (53.35 vs. 43.84; $p<0.001$). Differences by gender are not statistically significant (female share 0.539 in the lowest quartile vs. 0.489 in the highest; $p=0.157$). The share identifying as White is modestly lower in the highest-trust quartile than in the lowest

(0.585 vs. 0.670; p=0.009). The fraction without health insurance does not differ significantly across trust quartiles (0.095 in the lowest quartile vs. 0.065 in the highest; p=0.565).

With respect to education, most categories do not differ significantly by trust; the main exception is the *Some College* category, which varies across quartiles (p=0.037). Income categories do not display statistically significant differences across trust quartiles (all p-values > 0.10). Political affiliation is broadly similar across trust quartiles for Democrats, Republicans, and Independents, while the share reporting "Other Political Party" is higher in the lowest-trust quartile (0.123) than in the highest (0.052; p=0.022).

Subjective health varies meaningfully with trust. The share reporting *Fair* health is lower in the highest-trust quartile (0.100) than in the lowest (0.176; p=0.039), and the share reporting *Poor* health is substantially lower in the highest-trust quartile (0.016) than in the lowest (0.054; p<0.001). Finally, respondents are more heavily represented in city centers in the highest-trust quartile (0.451) than in the lowest (0.352; p=0.047).

To the extent that the characteristics in Table 2 are predictive of care-seeking behavior, these patterns highlight the importance of controlling for demographic and socioeconomic characteristics when estimating associations between trust and care-seeking.

3.5 Mechanisms and Behaviors

Table 1 also reports both overall and trust-specific means of our measures of key behavioral mechanisms and behaviors. To capture the expected benefit of care, we asked respondents on a 0-10 scale: "*In your opinion, does your local health care system have the resources and expertise to manage your health effectively?*" The average value of this measure increases

significantly across the distribution of trust, increasing from 4.695 in the lowest trust quartile to 8.068 in the highest trust quartile. The p-value on the unadjusted Wald test that these means are the same is < 0.001.

Next, we used a Likert scale to capture the (dis)utility associated with seeking care:" *Please rate how pleasant or unpleasant you find going to see a doctor."* Here, higher trust is strongly associated with a more pleasant perceived experience. For example, the share who say that a doctor's visit is *Pleasant* is 0.454 in the highest trust quartile but only 0.165 in the lowest trust quartile.

Price expectations also vary systematically with trust. To capture this dimension, we included two survey questions. First, we asked: "*Suppose you have a health concern and seek care from a doctor. How much do you think you would personally pay out of pocket for this care?"* Response options were \$0, \$1 to \$25, \$26 to \$50, \$51 to \$100, and \$101 or more. Second, we asked: "*Suppose you have a health concern and seek care from a doctor. How likely do you think it is that your health insurance would refuse to pay some of your bill or outright deny your claim?"*, with response options ranging from *Very likely* to *Very unlikely.*

Respondents in the highest-trust quartile are notably less likely to expect paying \$101 or more out of pocket (0.249 vs. 0.363; p=0.008), while differences at the low end of the distribution are small and not statistically significant (e.g., the share expecting zero out-of-pocket payments is 0.193 vs. 0.171; p=0.149). Perceived insurance denial risk declines sharply with trust: the share reporting denials as *very likely* falls from 0.204 in the lowest-trust quartile to 0.087 in the highest (p<0.001), while the share reporting denials as *very unlikely* rises from 0.079 to 0.192 (p=0.005).

Taken together, these patterns are consistent with the model's central premise that trust

co-varies with perceived benefits of care, disutility, and expected realized prices in ways that can help account for observed gradients in care-seeking behavior. In what follows, we use the resources and expertise question on the 0 - 10 scale to measure the perceived benefit of care; and, for simplicity, we define binary variables that capture disutility and expected realized prices. Specifically, we define an unpleasantness binary variable that equals one if the person responds that a doctor's visit will be either unpleasant or very unpleasant; we define a binary variable (high OOP) that equals one if the person reports expecting to pay more than $50 out-of-pocket; and we define a binary variable that equals one if the person states that it is either likely or very likely that their claim will be denied by an insurer.

To measure behavior, we focus on *intended* behavior in the next year. We asked respondents whether they intend to seek any of the behaviors listed in Appendix A, and we focus on the intention to seek a flu shot, annual checkup, mental health visit, or, as a summary measure, no care in the next year. At the bottom of Table 1, we show that these behaviors are significantly increasing in overall trust. For example, the share of respondents who intend to seek a checkup is 0.726 in the lowest trust group and 0.898 in the highest trust group, and the share planning to get a flu shot rises from 0.357 to 0.624. In what follows, we describe conditional associations between overall system trust, as measured in our survey, and the behaviors and mechanisms described above.

3.6 Trust and Care-Seeking Behavior: Regression Analyses

To investigate whether these patterns reflect robust associations between trust and care-seeking, we estimate a series of regressions of the form:

$$y_i = \alpha_0 + \alpha_1 1[\text{Second Quartile}] + \alpha_2 1[\text{Third Quartile}] + \alpha_3 1[\text{Highest Quartile}] + X_i\theta + \epsilon_i, \quad (5)$$

where y_i represents a given anticipated behavior of individual i. The α coefficients capture how the mean behavior changes in each trust quartile relative to the lowest quartile. X_i is a vector of control variables including the characteristics listed in Table 2. All regressions include survey weights.

While we do not claim that trust is exogenous, Equation 5 can be interpreted as a reduced-form of our economic model because the economic mechanisms for behavior (i.e., beliefs, disutility, and price expectations) are omitted. Our goal in Equation 5 is twofold. First, we test whether the unconditional correlations in Table 1 continue to hold after controlling for the characteristics listed in Table 2. Second, we gauge the importance of trust relative to other characteristics that feature prominently in the economics literature on care-seeking, namely income and education.

Table 3 shows coefficients from Equation 5 alongside coefficients from the same regressions on education and income. Consistent with the patterns in Table 1, higher trust is associated with significantly greater engagement in intended preventive care. In particular, the coefficients increase across trust quartiles for both next-year checkups and next-year flu vaccination, with the largest differences observed in the upper trust quartiles. In contrast, outcomes reflecting *non-use* of care move in the opposite direction: higher trust is associated

with a lower probability of planning no next-year care. The relationship between trust and mental health visits shows no significant association with trust after conditioning on X_i.[15]

The magnitudes of the estimated trust coefficients are also notable relative to standard socioeconomic predictors of care-seeking. For checkups, the estimated associations for the third and fourth trust quartiles (0.149 and 0.137) are very similar to that for having a college degree or more (0.140), and larger than that for having household income above $100,000 (0.071). For flu vaccination, the trust coefficients for the third and fourth quartiles (0.241 and 0.218) are larger than those for both college education (0.117) and high income (0.131). For planning no care next year, the estimated reductions for the third and fourth trust quartiles (-0.140 and -0.114) are again similar to the estimate for college education (-0.107) and substantially larger than that for high income (-0.003). Overall, the estimates in Table 3 suggest that trust is associated with care-seeking behavior at magnitudes comparable to, and in some cases larger than, those of education and income.

We also estimate a series of regressions that trace how trust relates to the mechanisms developed above. In Appendix Table 2, we regress each mechanism on quartiles of overall trust and the individual characteristics listed in Table 2. Here, we demonstrate that the gradients between trust and our key behavioral mechanisms survive adjustment in a similar way to the behaviors in Table 3. For example, comparing the highest trust quartile to the lowest trust quartile, respondents indicated a 3.210 point higher benefit of care, as measured

[15]The associations are not strictly monotonic in trust: for checkups, flu shots, and planning no care, the point estimates are largest in absolute value in the third quartile and marginally smaller in the highest quartile. These third- versus fourth-quartile differences are not statistically distinguishable, however, so we do not read the non-monotonicity as substantively meaningful. Appendix Figure 4 plots these relationships, showing differences in care-seeking for trust quartiles two through four relative to the lowest quartile, with 95% confidence intervals. Appendix Figure 5 presents heterogeneity in these results by age, race, sex, and political affiliation.

by our resources and expertise question; they were 28.4 percentage points less likely to indicate that a health care visit would be unpleasant; they were 24.7 percentage points less likely to expect a claim denial; and they were 13.7 percentage points less likely to expect a higher out-of-pocket bill. Similarly, in Appendix Table 3, we regress each mechanisms on the full set of sector-specific trust entities. Trust in doctors, nurses, hospitals, insurers, and Medicare/Medicaid are all significantly predictive of expecting a higher benefit of care. Conversely, higher trust in insurers is negatively related to the likelihood of a denial and to a higher out-of-pocket cost of care. These results preview our structural results below, where we allow entity-specific effects on overall trust.

Our mechanisms are also predictive of anticipated behavior. In Appendix Table 4, we regress our behaviors on the mechanisms (omitting trust) and the individual characteristics, and we report these coefficients. With the exception of a mental health visit, our mechanisms are predictive of each behavior. The lone exception is the likelihood of claims denial. For example, the resources and expertise measure increases the likelihood of a checkup by 2.3 percentage points, a flu shot by 2.0 percentage points, and it reduces the likelihood of no care by 1.3 percentage points. Similarly, expecting an unpleasant experience reduces the likelihood of a checkup and flu shot by 6.6 percentage points and 7.1 percentage points, respectively, and it increases the likelihood of no care by 9.4 percentage points.

Taken together, our descriptive work shows that trust, as measured by our question about overall trust in the health care system, is robustly associated with care-seeking behavior with magnitudes similar to those of education and larger than those of income, and the mechanisms regarding the expected benefits of care, the experience of care, and the cost of

care are predictive of intended behavior. [16]

4 Estimating the Trust Technology

In this section, we return to our model and its associated hypotheses. In our framework, elective care-seeking is a function of the marginal benefit of care net of its disutility and the impact of out-of-pocket expenditures on medical care on utility. These objects are a function of trust. Rather than considering overall health care system trust as measured directly by our survey, we instead consider the nine health sector-specific entities listed in Table 1, which *produce* overall trust via a CES aggregator of the individual trust components. We estimate the CES function jointly with equations that dictate mechanisms and behavior. Then, we use the estimated trust technology to deliver the main contribution of our approach: implications of multi-entity trust for care-seeking, including non-additivity patterns, and counterfactual trust shocks to specific entities. We end this section with a discussion of robustness and extensions.

4.1 Trust Domains and Maximum Likelihood Estimation

As opposed to directly including each entity-specific trust measure in the CES aggregator, we augment our theory from Section 2 to allow for substitution both within and across trust

[16] While we maintain that these results represent associations, in the Appendix, we present two sensitivity analyses. First, Appendix Table 5 presents estimates of Equation 5 for each behavior and for progressively more controls. Second, Appendix Table 6 presents estimates of Equation 5 for each behavior while controlling for all individual characteristics and a measure of past behavior corresponding to the same outcome (for each behavior, we also asked respondents whether they had sought that care in the *past* year). The purpose of these "dynamic" regressions is to address the possibility that reverse causality is driving the associations documented in Table 3. In all cases, the results are attenuated, but the qualitative conclusions are similar to those in Table 3.

domains. We group entities by the nature of the trust relationship rather than by economic function. **Individual providers (doctors, nurses, pharmacists).** These are the objects of interpersonal, relational trust formed through direct, potentially repeated contact. **Providers and payers (hospitals, health insurers, Medicare/Medicaid).** These are impersonal organizations that patients experience primarily through administrative and financial channels—billing, claims adjudication, admissions, and coverage. From the patient perspective, a hospital is encountered as much through its billing and insurance interface as through clinical care, which is why we group it with payers. **Broad system entities (pharmaceutical companies, CDC, FDA).** These are remote institutions that patients rarely encounter directly, experiencing them instead through the therapies they develop and distribute and through their role in approving, regulating, and overseeing the broader health care system.

We emphasize that this partition is not unique and there is no canonical taxonomy of health-system entities. Identifying an "optimal" grouping is not our aim. Our goal is to show that a reasonable, theoretically motivated grouping reveals economically meaningful heterogeneity in substitution across domains. Following our main results, we return to the issue of groupings with an alternative specification that separately groups providers and payers.

Let overall trust be given as:

$$T(\rho) = \left(\omega_i Ind^\rho + \omega_{pp} PP^\rho + \omega_b B^\rho\right)^{1/\rho}, \tag{6}$$

where individual (Ind), provider and payer (PP), and broad health care institution (B) trust

are given as:

$$Ind = \Big(\sum_{j=1}^{J^i} \omega_{ij} t_{ij}^{\rho_i} \Big)^{1/\rho_i},$$

where J^i ={Doctors, Nurses, Pharmacists},

$$PP = \Big(\sum_{j=1}^{J^{pp}} \omega_{pp,j} t_{pp,j}^{\rho_{pp}} \Big)^{1/\rho_{pp}},$$

where J^{pp} ={Hospitals, Health Insurers, Medicare/Medicaid}, and

$$B = \Big(\sum_{j=1}^{J^b} \omega_{bj} t_{b,j}^{\rho_b} \Big)^{1/\rho_b},$$

where J^b ={Pharmaceutical Companies, FDA, CDC}. This structure embeds the O-ring intuition in specific domains for which substitution patterns may differ from those across domains, while also allowing us to distinguish trust in interpersonal providers from trust in providers and payers and broader system-level institutions in a way that keeps the aggregation problem empirically tractable. The resulting domain-specific trust values enter into the main CES-aggregator in Equation 6, and we estimate four values of $\{\rho, \rho^i, \rho^{pp}, \rho^b\}$. The resulting value of trust, $T(\rho)$, enters the rest of the model, and it remains an empirical question whether the distribution of aggregated trust overlaps with elicited trust in the "overall health care system," as we studied above.

The entities in Equation 6 are themselves composites. For example, "doctors" comprise providers who differ in practice style and in their alignment with institutions such as the CDC, and patients self-select into these providers. Selection makes these weights individual-specific and correlated with beliefs. A CDC-skeptic may concentrate exposure on CDC-

skeptical providers, so that a shock propagating from the CDC to CDC-aligned providers moves t_{ij} by an amount that depends on i's exposure and may be small precisely for those who have sorted away from aligned providers. The components we estimate are already the selection-relevant objects: respondents rate "doctors" through the lens of the providers they actually encounter, so the elicited t_{ij} integrates individual-specific weights and elicited trust. The aggregation is therefore internally consistent at the level at which trust is measured and experienced, and heterogeneity refines what a "component" represents. Furthermore, our counterfactuals shock a single component holding the others fixed, isolating the direct channel that is, in this sense, conservative with respect to correlated cross-entity propagation, and the estimated ordering across entities should be read as a statement about direct, own-component effects. Estimating the finer nest would require eliciting trust at the sub-type level, for which our survey is not powered.

To test the hypotheses derived above, we allow the mechanisms that drive behavior to have quadratic functions of trust. We proxy for the marginal benefit of care with our question regarding resources and expertise, and we specify a quadratic regression to allow for curvature in the relationship between trust and the marginal benefit of care:

$$MB_i \sim N(a_0 + a_1 T_i + a_2 T_i^2, \sigma_{MB}) \tag{7}$$

Next, we capture the remaining mechanisms with binary variables for unpleasantness, high out-of-pocket costs, and claims denials. For each mechanism, we specify a logit estimator as

a quadratic function of trust:

$$ln\Big(\frac{P(\phi_i = 1)}{P(\phi_i = 0)}\Big) = b_0 + b_1 T_i + b_2 T_i^2, \tag{8}$$

$$ln\Big(\frac{P(OOP_i = 1)}{P(OOP_i = 0)}\Big) = c_0 + c_1 T_i + c_2 T_i^2, \tag{9}$$

$$ln\Big(\frac{P(DENY_i = 1)}{P(DENY_i = 0)}\Big) = d_0 + d_1 T_i + d_2 T_i^2. \tag{10}$$

We propose to estimate these mechanism equations jointly with the structural behavior equation such that the measurement parameters (e.g., a_1) scale the trust measure by each mechanism. Let behavior m_i be given as:

$$ln\Big(\frac{P(m_i = 1)}{P(m_i = 0)}\Big) = \Big(\beta_0 + \lambda_{MB} MB_i + \lambda_\phi \phi_i + \lambda_{OOP} OOP_i + \lambda_{DENY} DENY_i + X_i \beta\Big).$$

4.2 Identification

For each behavior, we estimate the model, including the CES trust function, the mechanisms, and the respective behavior, via maximum likelihood. Appendix Section C presents the formal likelihood function. The standard errors are derived from the robust (sandwich) parameter covariance matrix.[17] Identification of the model stems from differences in respondents' ratings across entities. Appendix Table 7 presents evidence of sufficient variation both across and within-respondents. Panel A reports survey-weighted correlations among the nine entity-trust ratings. All correlations are positive, and within-domain correlations generally exceed cross-domain correlations, supporting our domain grouping. Trust in individual providers is

[17] In the Appendix, we present an alternative person-level nonparametric bootstrap where we resample respondents with replacement and re-estimate the full model on each of $B = 500$ replicates.

the most tightly linked: the doctor–nurse, doctor–pharmacist, and nurse–pharmacist correlations range from 0.69 to 0.76, the highest average within any domain. The federal regulators move together especially strongly (CDC–FDA, 0.84). Importantly, no correlation approaches one, indicating that respondents distinguish meaningfully among entities and that overall trust is not reducible to a single factor. Panel B reports within-respondent dispersion. Consistent with panel A, respondents differentiate least among individual providers: the mean within-respondent standard deviation of ratings is 0.09 for the individual domain, versus 0.15–0.16 for the other domains. This pattern has a direct bearing on identification. From panel B, we should expect stronger within-individual complementarity in our individual domain because respondents treat trust in doctors, nurses, and pharmacists as a bundle. There is nonetheless identifying variation.

4.3 Parameter Estimates

In Table 4, we report the maximum-likelihood estimates of the CES aggregation parameter(s) governing how trust in specific entities combines into overall system trust. This subsection interprets the estimated degree of complementarity versus substitutability and summarizes how the estimated technology maps observed trust profiles into system trust. The table reports the structural estimates from four separate runs, corresponding to four behavioral outcomes (checkup, flu shot, mental health visit, and no care). Across all four runs, the estimated CES substitution parameters are positive. The nested structure lets us assess whether trust components are more complementary within some domains than others, and whether high trust in one domain can offset low trust in another in the production of overall

system trust. The estimated across-group substitution parameter is $\hat{\rho} = 0.909$ for checkups, 0.888 for flu shots, 0.868 for mental health visits, and 0.879 for no care. These values suggest substantial scope for trust in some broad components of the system to partially offset low trust in others when forming overall system trust.

We also estimate group-specific substitution parameters for individual providers, health care providers and payers, and broader health care institutions. For trust components corresponding to individual health-care professionals, the estimates are lower—$\hat{\rho} = 0.499$ (checkup), 0.474 (flu shot), 0.515 (mental health), and 0.469 (no care)—suggesting stronger complementarity within this set. In contrast, the estimates for the providers and payers and broad health care institution groups are higher. For the providers and payers group, $\hat{\rho} = 0.870$, 0.850, 0.807, and 0.840 across the four outcomes, while for the broad health care institutions group, $\hat{\rho} = 0.846$, 0.815, 0.778, and 0.818. Taken together, these results suggest that while overall system trust is relatively substitutable across broad institutional domains, trust within the set of individual providers behaves more like a complementary bundle. One possible interpretation is that trust in individual providers is shaped by a common interpersonal dimension of care, so that distrust in one type of provider may be harder to offset with trust in another. By contrast, trust in providers and payers and in broader health care institutions may be more compartmentalized, allowing respondents to distrust one component of the domain while maintaining trust in others.

Beyond the CES parameters, Table 4 reports the estimated mappings from overall trust into the model's mechanism channels. Consistent with the framework, higher trust is associated with (i) higher perceived marginal benefit of care (resources and expertise), with trust coefficients of 9.392 for checkup, 9.310 for flu shot, 9.461 for mental health, and 9.288

for no care; (ii) a more positive visit experience, with trust coefficients around -6.4 in the unpleasantness equation; and (iii) more favorable price expectations, with trust coefficients around -3.2 for denial and -2.5 for high out-of-pocket cost.

Estimates in Table 4 speak directly to our hypotheses in Section 2. Specifically, hypothesis one tests for additivity in the trust technology. We statistically reject additivity (i.e., that $\rho = 1$) within the individual group. We can also reject pure additivity within each group and across groups in the "no care" model. As we show below, whereas the qualitative differences in behavior and outcomes between pure additivity ($\rho = 1$) and near additivity ($\rho > 0.8$) are relatively minor, these differences between ($\rho > 0.8$) and $\rho \approx 0.5$ are statistically significant. Hypotheses two through four deal with the shapes of the net marginal benefit and net utility loss functions. In our results, the marginal benefit of care is strongly increasing in trust through the linear term; the quadratic term is negative but statistically insignificant across the four behaviors. We find similar results for the negative binary indicators: unpleasantness, insurance denial, and high out-of-pocket price. Higher trust reduces the likelihood of these mechanisms through the linear term, but the quadratic term is always smaller and statistically insignificant.

Thus, as an approximation of our results, we return to the question of supermodularity between trust *groups* (i.e., individuals, providers and payers, and broad health care institutions) while assuming away curvature in the respective functions (i.e., $G''(T), H''(T) \approx 0$). The relevant condition emphasizes that $\rho < 1$ is necessary for supermodularity between groups:

$$\Big[\underbrace{(1-\rho)\frac{G'(T)+H'(T)}{T}}_{\text{CES Complementarity Term}}\Big] > 0.$$

In the next section, we show how behavior and outcomes vary with group-specific values of ρ. We exploit estimates in Table 4 to quantify the behavioral implications of multi-entity trust, including counterfactual trust shocks to specific entities and the implied changes in care-seeking.

4.4 Model-implied trust and counterfactual trust shocks

Figure 2 provides a visual validation of our framework by comparing the distribution of overall trust measured through the survey question with the distribution of the structural trust measure implied by our estimated CES aggregation of component-specific trust. The ρ parameters are estimated from behavior, not fit to the elicited overall-trust question, yet the implied distribution closely tracks it. The two distributions are broadly similar: both place most of their mass in the middle-to-upper part of the trust scale, with relatively few respondents at the extremes. The structural trust measure is somewhat more concentrated and has a slightly lower mean than the trust measure from the overall system survey question (0.531 versus 0.568), but it tracks the overall shape of reported system trust reasonably well. The structural mean also lies slightly below the equal-weighted average of the nine entity means (0.553). This mean ordering is, however, mechanical: because the estimated substitution parameters lie below one, the power-mean inequality implies the CES aggregate is weakly below the equal-weighted average for every respondent, so a simple average necessarily matches the elicited mean more closely whenever the latter exceeds the component average. Closeness of the mean therefore cannot discriminate among aggregators. On criteria aligned with the model, the CES is preferred: it marginally improves behavioral

fit relative to the additive (simple-average) special case, and Appendix Table 8 compares the individual-level correspondence between each aggregator and the elicited overall-trust question.

4.5 Counterfactual trust shocks by entity

To illustrate the behavioral implications of multi-entity trust and the role of the trust-aggregation technology, we conduct counterfactual simulations in which we reduce trust in a given entity and trace the implied changes in predicted care-seeking. We interpret these as descriptive implications of the estimated model rather than causal effects, because we lack exogenous variation in trust. For individual i, the probability of behavior m is the expectation of the behavioral equation over the estimated distributions of the mechanisms. Because the three binary mechanisms have finite discrete support, this expectation is a closed-form weighted sum, assuming the marginal benefit is set to its expected value. We evaluate this expectation analytically rather than by Monte Carlo simulation of the mechanisms and the binary outcome. Consequently, the only source of variation in our reported confidence intervals is sampling uncertainty in the estimated parameters, which we propagate through bootstrapped draws from the weighted variance-covariance matrix.

Table 5 reports results for four anticipated behaviors (obtaining a checkup, getting a flu shot, seeking mental health care, and planning no care) at proportional trust reductions of 25%, 50%, and 75%, and at a complete loss. Estimates are percentage-point changes relative to a baseline simulation with no change in trust, and the 95% confidence intervals in brackets show the variability over the bootstrapped draws. We focus on one salient entity from each

of the three trust domains: doctors from the individual-provider domain, health insurers from the providers-and-payers domain, and the CDC from the broad-institutions domain. The final panel considers a joint loss of trust in the HHS components we measure (Medicare/Medicaid, the CDC, and the FDA). This lets us compare the behavioral implications of trust losses that arise in structurally different parts of the system.

Several patterns emerge. First, the implied changes grow steadily with the size of the trust loss, and for checkups, flu shots, and planning no care they are statistically distinguishable from zero even at a 25% reduction. Second, among the single-entity losses (i.e., excluding the HHS simulation), a complete loss of trust in doctors is associated with the largest changes: it lowers the probability of planning a checkup by 3.9 percentage points (corresponding to a 4.7% decline relative to baseline), lowers the probability of intending to get a flu shot by 5.9 percentage points (a 12.0% decline), lowers the probability of a mental health visit by 2 percentage points (10.2%) and raises the probability of planning no care by 3.4 percentage points (a 40.0% increase), with 95% confidence intervals excluding zero in each case. Losses of trust in health insurers and the CDC also imply statistically significant changes, though smaller than for doctors. A complete loss of trust in health insurers lowers checkup, flu-shot, and mental health intentions by 1.3, 2.1, and 0.8 percentage points, respectively and raises planning no care by 1.0 percentage point, while a complete loss of trust in the CDC lowers them by 1.8, 2.9, and 1.1 percentage points and raises planning no care by 1.4 percentage points.

The final panel simulates a joint loss of trust in the components of HHS that we measure (Medicare/Medicaid, the CDC, and the FDA). The effects on behavior are substantially larger. A complete loss of trust in all three institutions lowers checkup, flu-shot, and mental

health visit intentions by 6.0, 8.7, and 3.1 percentage points and raises planning no care by 5.2 percentage points.

To assess whether these entities differ significantly from one another, Appendix Table 9 reports pairwise differences in the simulated changes, with bootstrap p-values. The difference between doctors and health insurers is statistically significant at every shock size for checkups, flu shots, and planning no care, and the difference between doctors and the CDC is also significant at every shock size. This confirms that trust in doctors carries larger behavioral implications than trust in insurers or the CDC. Even in the case of mental health care-seeking, we find statistically significant differences at every shock size.

Overall, the simulations underscore two implications of the framework. First, trust losses in different parts of the health care system have quantitatively different behavioral consequences, and the doctor results suggest that trust in frontline providers plays an especially central role in sustaining care-seeking. Second, these differences need not align one-for-one with the average level of trust in each entity, because the effects operate through both the trust-aggregation technology and the mechanism channels.

We present several extensions and robustness exercises in the Appendix. First, Appendix Table 10 presents (complete loss) simulation results from an alternative grouping in which we group providers (physicians, nurses, pharmacists, and hospitals) separately from payers (health insurers, Medicare/Medicaid) and broad institutions (pharmaceutical companies, CDC, FDA). The results are largely similar.

Second, we examine the equal-weight restriction, which has a transparent consequence for the counterfactuals. The elasticity of overall trust with respect to entity j equals the product of its domain share and within-domain share. Under the assumption of equal weights, an

entity's simulated influence therefore depends on its trust level and on the estimated substitution parameters, but not on differential weights. Two features are thus assumption-driven (the equal weights and the observed trust levels) while the ρ parameters and the behavioral mapping are estimated. Importantly, the estimated technology reorders entities relative to a pure trust-level ranking (the within- and across-domain orderings differ). Appendix Table 11 presents (complete loss) simulation results where we re-estimate the model under an alternative specification in which weights are inversely proportional to average trust, deliberately offsetting the influence of entities' baseline trust levels. These results are similar to those in Table 5.

Finally, we assess sensitivity of our standard errors to an alternative nonparametric, person-level procedure in which we re-estimate the model 500 times, resampling respondents with replacement. Using these alternative parameter estimates, we then simulate the model under the same counterfactuals as in Table 5. Simulation results are presented in Appendix Table 12, and they are similar to results in Table 5. Effects on mental health care-seeking are no longer significant, but the remaining behaviors follow very similar patterns to Table 5.

5 Conclusion

Trust is widely viewed as central to the functioning of health care markets, yet in settings such as the United States, "trust in health care" is not a single relationship. Patients interact with multiple entities—providers, hospitals, insurers, pharmaceutical companies, and public health authorities—and trust in these components can diverge sharply. In this paper, we

develop and estimate a framework that makes this multi-entity structure central. We model care-seeking as depending on three mechanisms that trust may shape: beliefs about the usefulness of care, the expected disutility of interacting with the health care system, and expectations about realized prices, including out-of-pocket exposure and claim denials. We then model overall system trust as a CES aggregation of entity-specific trust, allowing trust components to act as complements or substitutes. Guided by the theory, we field a nationally representative U.S. survey that measures overall trust, trust in key health care entities, these mechanism channels, and both retrospective and prospective care-seeking behaviors.

We report two main sets of findings. First, higher overall trust is associated with more preventive and elective care-seeking and less care avoidance, even after controlling for a rich set of observed characteristics. These associations are similar in magnitude to those of education and income. The reduced-form evidence is also consistent with the mechanisms highlighted by the model: higher trust is associated with more favorable beliefs about the usefulness, experience, and financial consequences of care, and these mechanisms are in turn associated with care-seeking in the expected directions.

Second, we show that overall trust is well described as an aggregation of trust across multiple system components. Our structural estimates imply that trust components in broad institutional domains are relatively substitutable in generating overall system trust, while within domains they are more complementary among individual providers and more substitutable among providers and payers and broader health care entities.

The model-implied trust distribution closely matches the distribution from the overall system trust survey question. The estimates are behaviorally consequential: counterfactual exercises indicate that the behavioral implications of a trust loss depend on both the affected

entity and the aggregation technology, with trust in doctors the most consequential and analogous losses for insurers and the CDC implying smaller changes; pairwise tests confirm that the differences from insurers and the CDC are statistically significant over much of the range.

Some limitations temper these conclusions: our outcomes are stated intentions rather than realized behavior, elicited in the same survey as trust (trust first), so common-method effects cannot be ruled out; and because trust is not randomly assigned, we interpret our estimates, including the counterfactuals, as descriptive rather than causal.

These findings have implications for both research and policy. For research, they suggest that treating trust as a single primitive object may obscure important interactions across system components and may limit what can be learned about how trust relates to behavior. For policy, the results highlight that trust-building efforts may depend on where in the system they are directed. Many forms of preventive and routine care remain underutilized, so understanding how trust shapes care-seeking is important in its own right. Our results suggest that, although public discussion often focuses heavily on institutions such as the CDC, trust in providers may be especially consequential for behavior. At the same time, a simultaneous erosion of trust across federal health institutions (the CDC, FDA, and Medicare/Medicaid) carries the largest behavioral implications of all, underscoring the systemic stakes when trust declines broadly rather than in any single entity. More broadly, the design of trust-building policies should depend on which component of the system is targeted and on how trust is aggregated across entities. When trust components are more complementary, improving trust in a weak-link part of the system may generate broader gains in overall trust and care-seeking; when they are more substitutable, improvements in one component may

be partly offset by low trust elsewhere.

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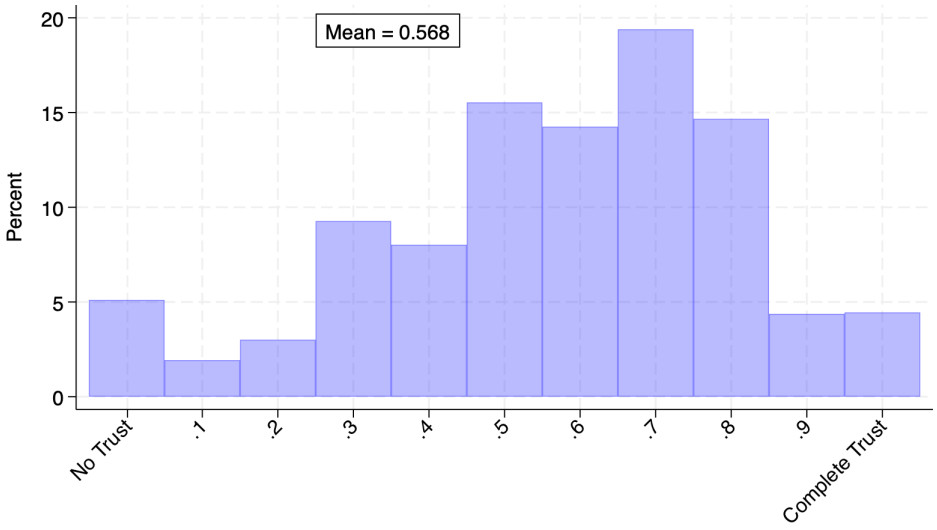
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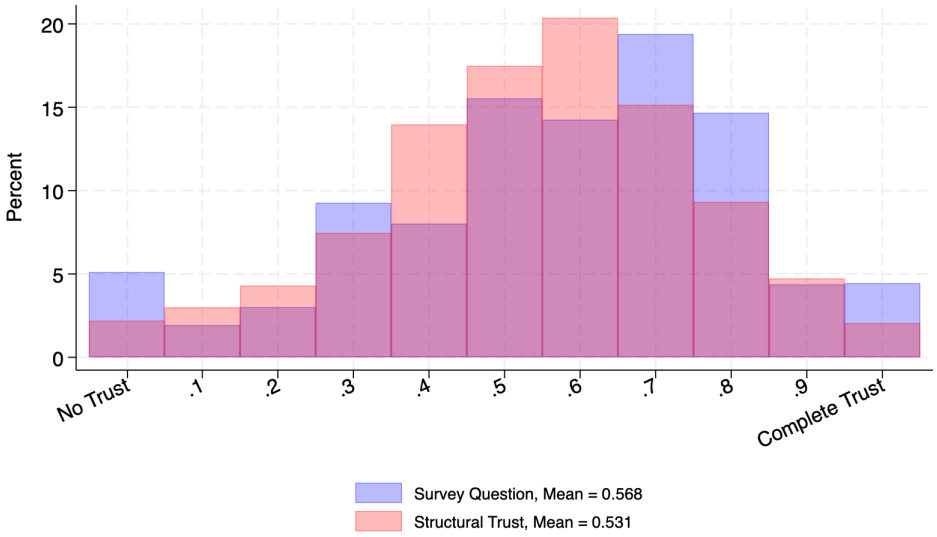
Figures

Figure 1: Overall Health Care System Trust



Notes: The distribution of trust in the overall health care system on a scale from 0 (no trust) to 1 (complete trust). Data are weighted by the frequency of observation, as calculated by the integer value of the probability weight Heeringa et al. (2010). $n = 1,172$

Figure 2: Empirical and Model Trust



Notes: The histogram presents two distributions of trust. Survey question replicates the distribution from Figure 1, which reflects survey weighted responses to the overall health care system question in our survey. Structural trust represents the survey weighted output from Equation 6 of our structural model. The structural trust measure represents the CES aggregation of trust measures of the sector-specific component questions. Both distributions are on a scale from 0 (no trust) to 1 (complete trust). $n = 1,172$

Tables

Table 1: Main Variables

	Quartiles of Overall Trust					
	Mean	Lowest	Second	Third	Highest	p-value
Individual Sector Trust						
Trust in Doctors	0.669	0.457	0.655	0.761	0.859	0.000
Trust in Nurses	0.714	0.562	0.698	0.774	0.862	0.000
Trust in Pharmacists	0.722	0.558	0.707	0.796	0.870	0.000
Provider and Payer Sector Trust						
Trust in Hospitals	0.594	0.357	0.585	0.689	0.801	0.000
Trust in Health Insurance Companies	0.384	0.165	0.357	0.457	0.614	0.000
Trust in Medicare/Medicaid	0.536	0.351	0.500	0.597	0.746	0.000
Broad Health Care Sector Trust						
Trust in Pharmaceutical Companies	0.350	0.136	0.322	0.416	0.581	0.000
Trust in CDC	0.504	0.307	0.482	0.611	0.670	0.000
Trust in FDA	0.505	0.312	0.470	0.597	0.698	0.000
Mechanisms						
Resources and Expertise	6.391	4.695	6.156	7.111	8.068	0.000
Doctor's Visit:						
Very Pleasant	0.103	0.029	0.071	0.096	0.236	0.000
Pleasant	0.305	0.165	0.285	0.353	0.454	0.000
Neither Pleasant nor Unpleasant	0.404	0.431	0.504	0.426	0.230	0.000
Unpleasant	0.140	0.253	0.123	0.091	0.069	0.000
Very Unpleasant	0.047	0.122	0.017	0.034	0.010	0.000
Expected OOP						
$0	0.154	0.171	0.126	0.129	0.193	0.149
$1 to $25	0.174	0.126	0.170	0.197	0.217	0.045
$26 to $50	0.237	0.166	0.288	0.290	0.211	0.001
$51 to $100	0.149	0.174	0.137	0.157	0.130	0.528
$101 or more	0.285	0.363	0.278	0.227	0.249	0.008
Insurance Denial						
Very Likely	0.121	0.204	0.106	0.066	0.087	0.000
Likely	0.272	0.333	0.295	0.258	0.183	0.002
Neither likely nor Unlikely	0.225	0.182	0.253	0.279	0.197	0.044
Unlikely	0.267	0.202	0.259	0.280	0.341	0.010
Very Unlikely	0.115	0.079	0.087	0.117	0.192	0.005
Anticipated Behavior						
Checkup	0.827	0.726	0.814	0.905	0.898	0.000
Flu Shot	0.491	0.357	0.415	0.637	0.624	0.000
Mental Health Visit	0.196	0.253	0.172	0.196	0.158	0.049
No Care	0.085	0.173	0.080	0.018	0.042	0.000

Notes: Table 1 presents the overall means and means within quartiles of the overall trust question for selected behaviors, sector-specific trust measures, and behavioral mechanisms. Trust quartiles correspond to the overall trust question presented in Figure 1 with cutoffs of [0,0.4], [0.5,0.6], [0.7], and [0.8,1], respectively. All statistics are weighted to reflect the United States population over the age of 18. The p-value reported in the last column is on the unadjusted Wald test that there is no statistical difference between means of each characteristic in the lowest quartile and other quartiles of the overall trust question distribution. $n = 1,172$

Table 2: Control Variables

	Quartiles of Overall Trust					
	Mean	Lowest	Second	Third	Highest	p-value
Age	48.124	43.841	46.661	50.089	53.348	0.000
Female	0.506	0.539	0.533	0.441	0.489	0.157
White	0.601	0.670	0.603	0.518	0.585	0.009
No Health Insurance	0.078	0.095	0.081	0.064	0.065	0.565
Education						
Less than High School	0.094	0.081	0.083	0.093	0.126	0.478
High School Graduate	0.281	0.289	0.276	0.280	0.278	0.986
Some College	0.253	0.260	0.308	0.197	0.219	0.037
College Graduate or More	0.372	0.369	0.333	0.430	0.377	0.231
Income						
Less than $50k/year	0.409	0.389	0.435	0.378	0.426	0.545
$50,000 to less than $75,000	0.146	0.159	0.139	0.123	0.159	0.669
$75,000 to less than $100,000	0.147	0.140	0.170	0.164	0.112	0.298
$100,000 and over	0.298	0.312	0.256	0.335	0.303	0.286
Political Affiliation						
Democrat	0.283	0.259	0.281	0.279	0.318	0.564
Republican	0.339	0.328	0.375	0.328	0.315	0.541
Independent	0.295	0.290	0.256	0.341	0.315	0.245
Other Political Party	0.082	0.123	0.088	0.053	0.052	0.022
Subjective Health						
Excellent	0.110	0.083	0.107	0.100	0.152	0.209
Very Good	0.331	0.305	0.308	0.350	0.373	0.349
Good	0.373	0.382	0.367	0.388	0.359	0.923
Fair	0.154	0.176	0.173	0.157	0.100	0.039
Poor	0.033	0.054	0.046	0.004	0.016	0.000
No Major Health Conditions	0.311	0.313	0.343	0.294	0.281	0.498
Center City	0.366	0.352	0.343	0.322	0.451	0.047

Notes: Table 2 presents the overall means and means within quartiles of the overall trust question for exogenous variables that serve as controls in all subsequent models. Trust quartiles correspond to the overall trust question presented in Figure 1 with cutoffs of [0,0.4], [0.5,0.6], [0.7], and [0.8,1], respectively. All statistics are weighted to reflect the United States population over the age of 18. The p-value reported in the last column is on the unadjusted Wald test that there is no statistical difference between means of each characteristic in the lowest quartile and other quartiles of the overall trust question distribution. $n = 1,172$

Table 3: Regression Results: Behavior and Trust

	Checkup	Flu Shot	Mental Health	No Care
Lowest Trust Mean	0.726	0.357	0.253	0.173
Trust Quartile				
Trust $\in [5, 6]$	0.080**	0.058	-0.057*	-0.089***
	(0.032)	(0.038)	(0.032)	(0.025)
Trust $\in [7]$	0.149***	0.241***	0.000	-0.140***
	(0.032)	(0.046)	(0.038)	(0.024)
Trust $\in [8, 10]$	0.137***	0.218***	-0.015	-0.114***
	(0.032)	(0.044)	(0.036)	(0.027)
Education				
High School Graduate	0.060	0.042	0.095**	-0.052
	(0.052)	(0.058)	(0.044)	(0.042)
Some College	0.125**	0.045	0.140***	-0.106**
	(0.053)	(0.062)	(0.049)	(0.043)
College Graduate +	0.140**	0.117*	0.149***	-0.107**
	(0.054)	(0.063)	(0.049)	(0.043)
Annual Income				
\$50k-\$75k	0.019	0.039	0.002	0.010
	(0.036)	(0.048)	(0.037)	(0.027)
\$75k-\$100k	0.042	0.002	0.063	-0.008
	(0.035)	(0.046)	(0.041)	(0.025)
$>$ \$100k	0.071**	0.131***	-0.024	-0.003
	(0.032)	(0.044)	(0.031)	(0.024)

Notes: Regression coefficients of each anticipated behavior on the trust quartiles indicated in Tables 1 and 2. Each column represents one regression. Dependent variables reflect anticipated future behavior over the next year. All regressions include controls for exogenous characteristics described in Table 2. All regressions are population-weighted. The mean reported in the first row for those in the lowest trust quartile. *** p<0.01, ** p<0.05, * p<0.1. $n = 1,172$.

Table 4: Structural Estimates

	Checkup		Flu Shot		Mental Health		No Care	
	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Behavioral Equation								
Constant	-1.116	0.551	-0.957	0.462	-0.198	0.685	-1.262	0.754
Marginal Benefit	0.247	0.063	0.221	0.047	0.170	0.064	-0.387	0.103
Unpleasant	-0.506	0.227	-0.310	0.190	0.231	0.242	1.061	0.288
Denial	0.036	0.213	0.128	0.149	-0.107	0.193	0.456	0.290
High OOP	-0.794	0.209	-0.235	0.151	0.014	0.190	0.634	0.298
Marginal Benefit: resources and expertise to manage your health effectively?								
Constant	-1.866	0.597	-2.263	0.628	-1.708	0.596	-2.340	0.641
Trust	9.392	1.392	9.310	1.226	9.461	1.387	9.288	1.222
Trust^2	-1.151	1.273	-1.140	1.106	-1.102	1.246	-1.154	1.090
Unpleasant: how pleasant or unpleasant you find going to see a doctor?								
Constant	4.384	0.843	4.515	0.877	4.455	0.817	4.633	0.856
Trust	-6.390	2.002	-6.402	2.328	-6.363	1.711	-6.343	1.842
Trust^2	0.884	2.137	0.859	2.349	0.903	1.866	0.892	1.945
Denial: your health insurance would outright deny your claim?								
Constant	2.824	0.618	2.852	0.625	2.860	0.671	3.011	0.666
Trust	-3.230	1.483	-3.255	1.491	-3.223	1.805	-3.178	1.740
Trust^2	0.286	1.417	0.266	1.403	0.291	1.712	0.308	1.650
High OOP: how much do you think you would pay out of pocket for this care?								
Constant	1.861	0.504	1.902	0.516	1.887	0.514	2.013	0.519
Trust	-2.475	1.441	-2.509	1.585	-2.488	1.602	-2.457	1.488
Trust^2	0.519	1.409	0.479	1.573	0.507	1.579	0.509	1.437
CES Parameters								
Individual Group ρ	0.499	0.086	0.474	0.079	0.515	0.083	0.469	0.080
Providers and Payers Group ρ	0.870	0.029	0.850	0.028	0.807	0.037	0.840	0.026
Broad Health Care Group ρ	0.846	0.074	0.815	0.072	0.778	0.073	0.818	0.048
Across Group ρ	0.909	0.013	0.888	0.016	0.868	0.018	0.879	0.016

Notes: Structural maximum-likelihood estimates, one column per behavior. Each mechanism equation (marginal benefit, unpleasantness, denial, high out-of-pocket) is a quadratic function of overall trust; the behavioral equation is a function of the estimated mechanisms. CES parameters are the within- and across-domain substitution parameters. All equations include the controls in Table 2 (not shown) and use survey weights. Standard errors are from the robust (sandwich) covariance matrix. $n = 1{,}172$.

Table 5: Counterfactual Trust Losses

	Checkup	Flu Shot	Mental Health	No Care
	0.827	0.491	0.196	0.085
Panel A. Loss of trust in Doctors				
−25%	-0.005	-0.008	-0.003	0.004
	[-0.007, -0.004]	[-0.011, -0.005]	[-0.005, -0.001]	[0.003, 0.005]
−50%	-0.011	-0.018	-0.007	0.009
	[-0.015, -0.008]	[-0.024, -0.012]	[-0.012, -0.002]	[0.006, 0.011]
−75%	-0.019	-0.030	-0.011	0.016
	[-0.026, -0.013]	[-0.040, -0.019]	[-0.019, -0.003]	[0.011, 0.020]
Complete	-0.039	-0.059	-0.020	0.034
	[-0.057, -0.021]	[-0.082, -0.035]	[-0.035, -0.004]	[0.020, 0.048]
Panel B. Loss of trust in Health Insurers				
−25%	-0.003	-0.005	-0.002	0.002
	[-0.004, -0.002]	[-0.006, -0.003]	[-0.003, -0.000]	[0.002, 0.003]
−50%	-0.006	-0.009	-0.004	0.004
	[-0.007, -0.004]	[-0.013, -0.006]	[-0.006, -0.001]	[0.003, 0.005]
−75%	-0.009	-0.015	-0.006	0.007
	[-0.012, -0.006]	[-0.020, -0.009]	[-0.010, -0.001]	[0.005, 0.008]
Complete	-0.013	-0.021	-0.008	0.010
	[-0.017, -0.009]	[-0.029, -0.014]	[-0.015, -0.002]	[0.007, 0.013]
Panel C. Loss of trust in the CDC				
−25%	-0.004	-0.006	-0.002	0.003
	[-0.005, -0.002]	[-0.008, -0.004]	[-0.004, -0.001]	[0.002, 0.003]
−50%	-0.008	-0.012	-0.005	0.006
	[-0.010, -0.005]	[-0.016, -0.008]	[-0.009, -0.001]	[0.004, 0.007]
−75%	-0.012	-0.019	-0.008	0.009
	[-0.016, -0.008]	[-0.026, -0.012]	[-0.013, -0.002]	[0.007, 0.011]
Complete	-0.018	-0.029	-0.011	0.014
	[-0.025, -0.011]	[-0.040, -0.017]	[-0.020, -0.003]	[0.010, 0.018]
Panel D. Loss of trust in HHS (Medicare/Medicaid, CDC, and FDA jointly)				
−25%	-0.011	-0.018	-0.007	0.009
	[-0.015, -0.008]	[-0.024, -0.012]	[-0.012, -0.002]	[0.006, 0.011]
−50%	-0.024	-0.038	-0.014	0.019
	[-0.032, -0.016]	[-0.051, -0.024]	[-0.025, -0.003]	[0.014, 0.024]
−75%	-0.040	-0.059	-0.022	0.032
	[-0.053, -0.027]	[-0.080, -0.038]	[-0.038, -0.005]	[0.023, 0.042]
Complete	-0.060	-0.087	-0.031	0.052
	[-0.081, -0.039]	[-0.117, -0.056]	[-0.053, -0.008]	[0.036, 0.069]

Notes: Simulated percentage-point changes in the probability of each anticipated behavior, relative to a baseline simulation with no change in trust. Rows within each panel report proportional reductions in trust in the indicated entity; "Complete" sets trust to its observed minimum. Ninety-five percent confidence intervals in brackets are percentile intervals from a parametric bootstrap procedure ($B = 500$) that adjusts for the survey weighting; expected behavior is computed by integrating over the mechanism distributions, so simulations carry no Monte Carlo error. The HHS shock reduces trust in Medicare/Medicaid, the CDC, and the FDA jointly and is therefore not directly comparable to the single-entity shocks in Panels A–C. $n = 1{,}172$.

The O-Ring of Trust: Aggregating Entity-Specific Trust and Preventive Care
APPENDIX

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September 11, 2026

JEL Classification: I11; I12; I14; I18

Keywords: Trust; Health Care; Disparities

*Darden: Johns Hopkins University Carey Business School and NBER. Macis: Johns Hopkins University Carey Business School and NBER. This study was approved by the Johns Hopkins Homewood IRB (HIRB00017075). An earlier phase of this project was registered at the AEA RCT Registry (AEARCTR-0011214). The survey and structural framework in this paper are new, developed after that registration. We acknowledge funding from the Hopkins Business of Health Initiative (HBHI). We thank Luigi Guiso, Joanne Kenen, Jania Marshall and Daniel Polsky for their helpful comments. We are grateful to Paola Sapienza and Luigi Zingales for sharing their Financial Trust Index survey instrument. Special thanks to Theodore (Jack) Iwashyna for his extremely helpful feedback on the survey. We are grateful to the editor, Marcella Alsan, and two anonymous referees for their comments and suggestions, which substantially improved this study.

A Survey instrument

This appendix reproduces the full survey instrument fielded with SSRS for the Trust in Health Sector Study (December 19–21, 2025), in a reader-friendly format. Question wording is as shown to respondents (minor formatting edits only). Section headings and labels (e.g., "Mechanism measures") are added for exposition and were not shown to participants.

A.1 Intro and consent

Intro text. We have some questions for you for a research study on the opinion of Americans about the US health care system on behalf of Johns Hopkins University.

By completing this survey, you are consenting to be in this research study. Your participation is voluntary and you can stop at any time.

All responses will remain confidential, and findings will be reported in the aggregate. All data we collect will be de-identified and could be stored and distributed for future research. The information that we gather may help us to provide invaluable information on the US health system.

If there is a question you would rather not answer you may skip it.

A.2 Trust measures

Q1. Overall trust (0–10 scale). How much do you **TRUST** the health care system in the US as a whole? (0 = I do not trust it at all; 10 = I trust it completely)

Q2. Trust in specific entities (0–10 scale). How much do you **TRUST** each of the following? (0 = I do not trust them at all; 10 = I trust them completely)

1. Doctors
2. Nurses
3. Pharmacists
4. Hospitals
5. Health insurance companies
6. Medicare/Medicaid
7. Pharmaceutical companies
8. Centers for Disease Control and Prevention (CDC)
9. The Food and Drug Administration (FDA)

Q3. Open-ended explanation of trust ratings. Can you briefly describe what factors shaped the trust ratings you provided for: doctors, nurses, pharmacists, hospitals, health insurance companies, Medicare/Medicaid, pharmaceutical companies, the Centers for Disease Control and Prevention (CDC), and the Food and Drug Administration (FDA)?

A.3 Mechanism measures

Q4. Beliefs about system effectiveness (resources/expertise; 0–10 scale). In your opinion, does the health care system in your local area have the resources and expertise to

manage your health effectively? (0 = absolutely does not have resources or expertise; 10 = absolutely does have resources or expertise)

Q5. Disutility / unpleasantness of visits (Likert scale). In general, please rate how pleasant or unpleasant you find going to see a doctor.

1. Very pleasant
2. Pleasant
3. Neither pleasant nor unpleasant
4. Unpleasant
5. Very unpleasant

Q6. Expected out-of-pocket payments (categorical). Suppose you have a health concern and seek care from a doctor. How much do you think you would personally pay out of pocket for this care?

1. $0
2. $1 to $25
3. $26 to $50
4. $51 to $100
5. $101 or more

Q7. Expected claim denial / nonpayment (Likert scale). Suppose you have a health concern and seek care from a doctor. How likely do you think it is that your health insurance would refuse to pay some of your bill or outright deny your claim?

1. Very likely
2. Likely
3. Neither likely nor unlikely
4. Unlikely
5. Very unlikely

A.4 Health care seeking behavior

Q8. Past-year behaviors (select all that apply). Please read the following statements and select all that apply to you. Note that these questions refer to the **past year**.

1. In the past year, you received a flu shot
2. In the past year, you received a checkup/annual wellness exam/physical/etc. from a primary care physician or nurse practitioner
3. In the past year, you filled a prescription
4. In the past year, you visited a specialist (e.g., cardiologist, endocrinologist) after being referred by your primary care provider
5. In the past year, you have delayed or avoided following medical advice due to concerns about your healthcare provider or the healthcare system

6. In the past year, you have avoided seeking care because of concerns about cost (e.g., copayments, deductibles)

7. In the past year, you have used telemedicine services (e.g., video calls, online consultations)

8. In the past year, you have sought a second opinion after receiving a diagnosis or treatment recommendation from a healthcare provider

9. In the past year, you attended follow-up appointments or screenings to manage a chronic condition (e.g., diabetes, heart disease, asthma)

10. In the past year, you have gone to an emergency room or urgent care center for an injury such as a broken bone, deep cut, or sprain, or you have taken your child or another dependent for such an injury

11. In the past year, you have received mental health care (e.g., therapy, counseling, psychiatric services)

12. None of the above

Q9. Next-year behaviors (select all that apply). Please read the following statements and select all that apply to you. Note that these questions refer to the **next year**.

1. In the next year, you plan to get a flu shot

2. In the next year, you plan to go for a checkup/annual wellness exam/physical/etc. with a primary care physician or nurse practitioner

3. In the next year, you plan to visit a specialist if recommended by your primary care provider

4. In the next year, you plan to use telemedicine services

5. In the next year, you plan to seek mental health care services

6. In the future, you plan to volunteer for a health research study (e.g., survey, clinical trial, or biospecimen donation)

7. None of the above

A.5 Time preferences

Q10a. One-year time tradeoff (open numeric). Suppose you have won a prize of $1000, which you can claim immediately. However, you have the alternative of waiting one year to claim the prize. If you do wait, you will receive more than $1000. What is the smallest amount of money, in addition to the $1000, you would have to receive one year from now to convince you to wait rather than claim the prize now?

Answer: $_____

Q10b. One-month time tradeoff (open numeric). Suppose you have won a prize of $1000, which you can claim immediately. However, you can choose to wait one month to claim the prize. If you do wait, you will receive more than $1000. What is the smallest amount of money, in addition to the $1000, you would have to receive one month from now to convince you to wait rather than claim the prize now?

Answer: $_____

A.6 Health status

Q11. Self-rated health. In general, how would you rate your health?

1. Excellent
2. Very good
3. Good
4. Fair
5. Poor

Q12. Diagnosed conditions (select all that apply). Have you been told by a doctor or other clinician that you have any of the following medical conditions? Select all answers that apply.

1. Asthma, chronic bronchitis, or COPD
2. Cancer
3. Diabetes or pre-diabetes
4. Heart attack, heart disease, or other heart condition
5. High blood pressure or cholesterol
6. Kidney disease
7. Stroke
8. Anxiety and/or depression

9. Other physical or mental health condition not included above (specify)

10. None of these

B Sample Composition and Statistics

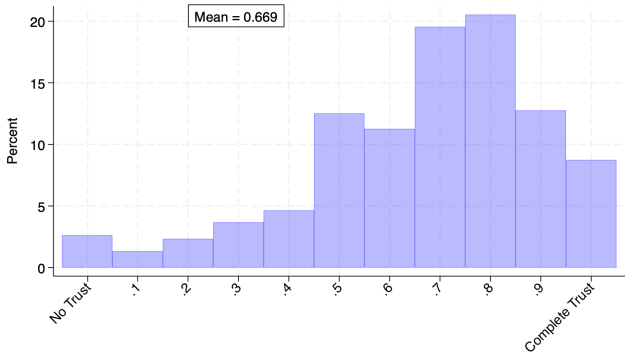
Table 1: Sample Comparison

	2024 ACS n=3,422,888	2025 SSRS Survey n=1,172
Age	48.247	48.130
Female	0.510	0.506
White	0.621	0.601
High School Graduate	0.270	0.281
College Graduate or More	0.342	0.372
Uninsured	0.091	0.078

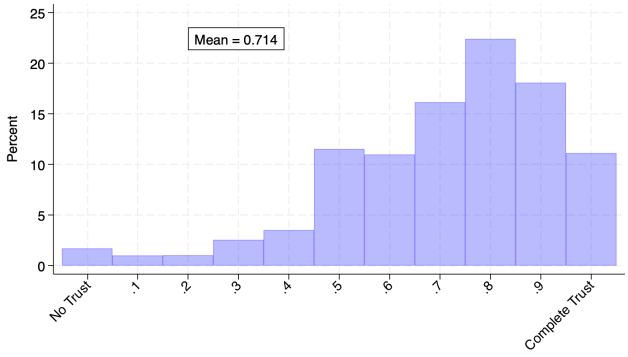
Notes: The table presents selected weighted means from the 2024 American Community Survey (Ruggles et al., 2024) and our SSRS-generated estimation sample.

Figure 1: Individual Sector-Specific Trust

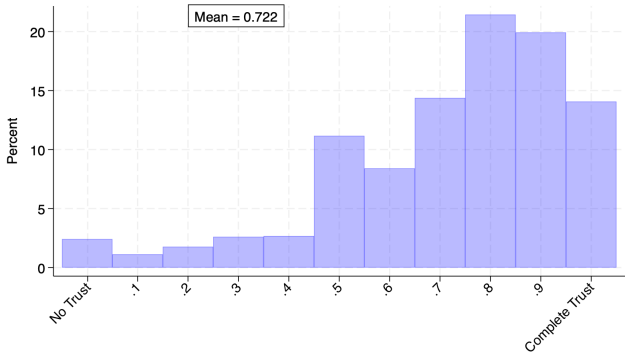
a. Doctors



b. Nurses



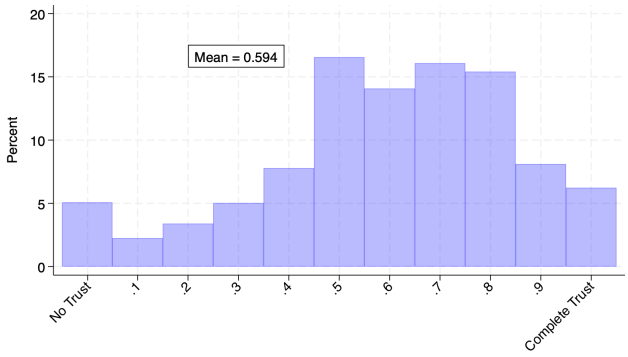
c. Pharmacists



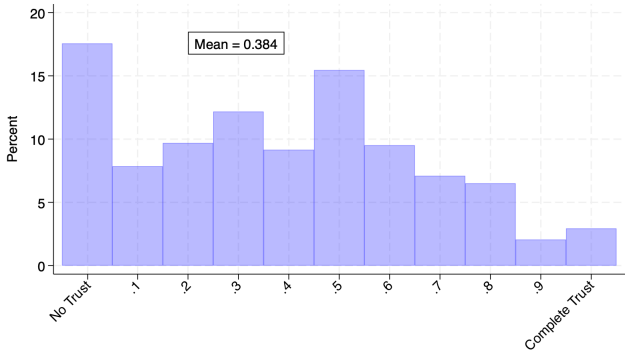
Notes: The distribution of trust in each respective institution on a scale from 0 (no trust) to 10 (complete trust). We divide the scale by 10 such that trust is measured from 0 to 1. Data are weighted by the frequency of observation, as calculated by the integer value of the probability weight Heeringa et al. (2010). $n = 1,172$

Figure 2: Provider and Payer Sector-Specific Trust

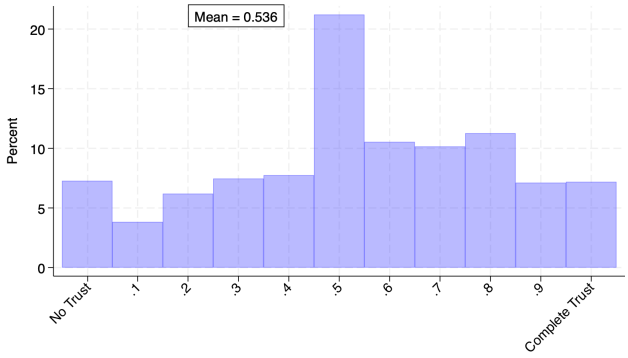
a. Hospitals



b. Health Insurers



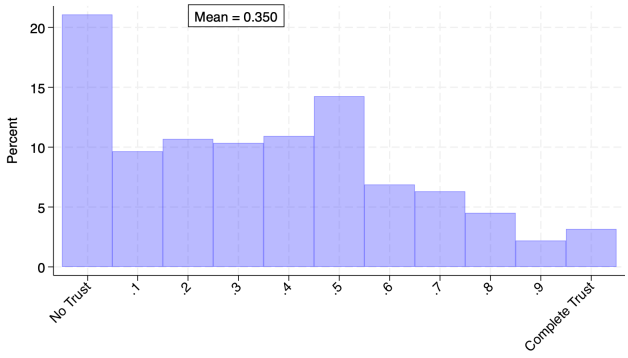
c. Medicare and Medicaid



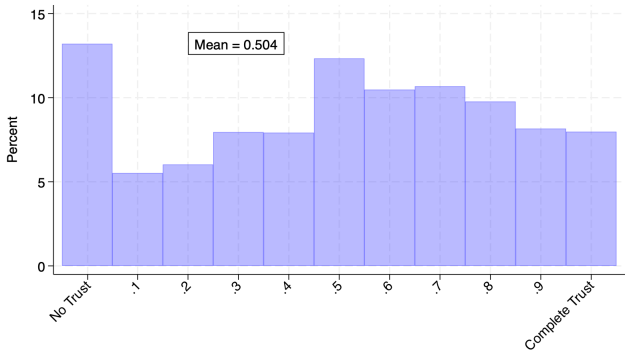
Notes: The distribution of trust in each respective institution on a scale from 0 (no trust) to 10 (complete trust). We divide the scale by 10 such that trust is measured from 0 to 1. Data are weighted by the frequency of observation, as calculated by the integer value of the probability weight Heeringa et al. (2010). $n = 1,172$

Figure 3: Broad Health Care Institution Sector-Specific Trust

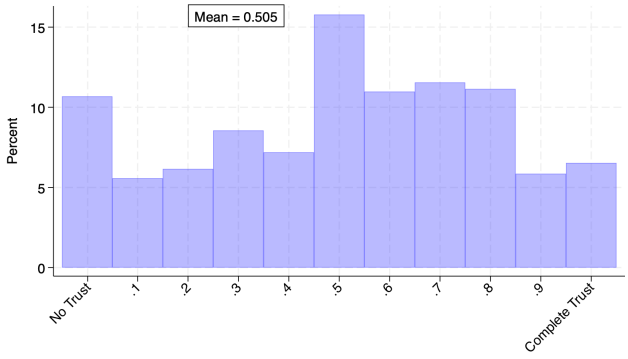
a. Pharmaceutical Companies



b. CDC

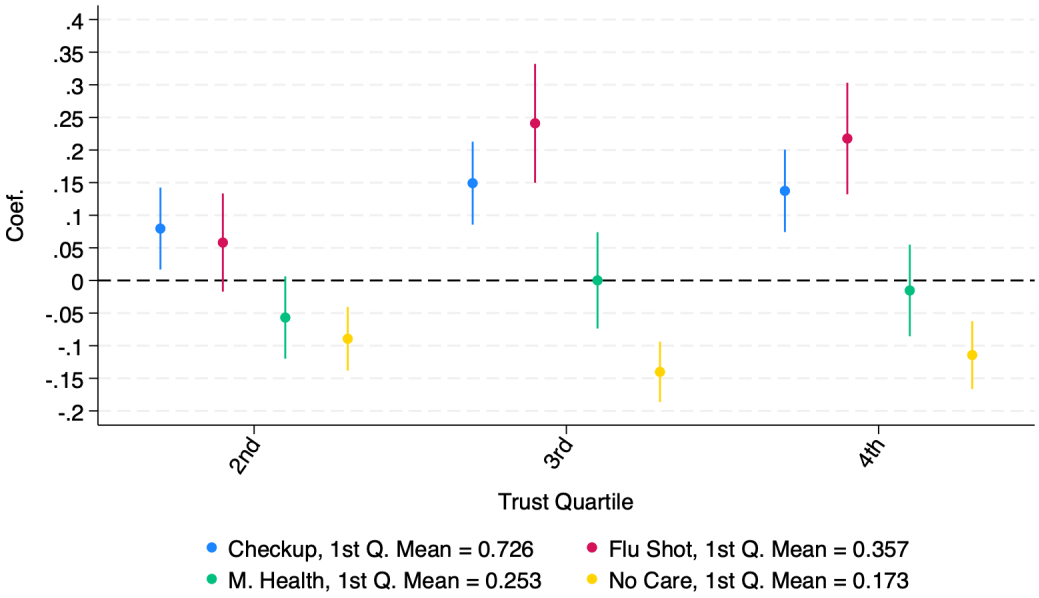


c. FDA



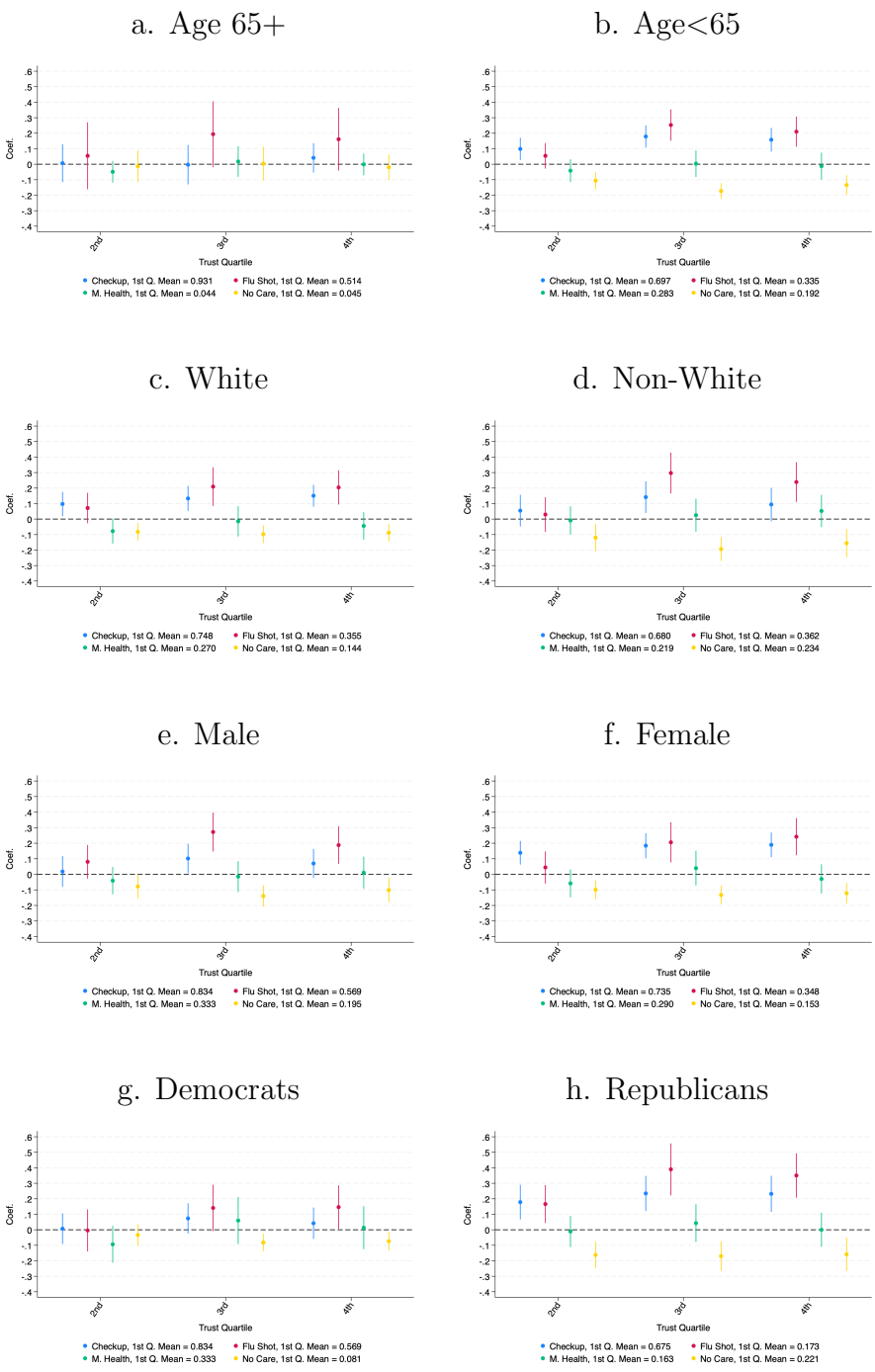
Notes: The distribution of trust in each respective institution on a scale from 0 (no trust) to 10 (complete trust). We divide the scale by 10 such that trust is measured from 0 to 1. Data are weighted by the frequency of observation, as calculated by the integer value of the probability weight Heeringa et al. (2010). $n = 1,172$

Figure 4: Care-Seeking and Trust



Notes: Graph presents the regression-adjusted differences in care-seeking by trust quartiles two through four, relative to the lowest trust quartile. Trust is overall health care system trust from Figure 1 of the main text. Controls include age, sex, race, education, income, political affiliation, health insurance status, subjective and objective health, and local area characteristics. Each behavior is measured as intention to seek the behavior (or no care-seeking) over the next year. $n = 1,172$

Figure 5: Heterogeneity by Exogenous Characteristics



Notes: Graph presents the regression-adjusted differences in care-seeking by trust quartiles two through four, relative to the lowest trust quartile, and by age, race, sex, and political affiliation. Trust is overall health care system trust from Figure 1 of the main text. Controls include age, sex, race, education, income, political affiliation, health insurance status, subjective and objective health, and local area characteristics. Each behavior is measured as intention to seek the behavior (or no care-seeking) over the next year. $n = 1,172$

Table 2: Regression Results: Mechanisms and Trust

	Resources & Experience [0,10]	Unpleasant Visit {0,1}	Likelihood of Denial {0,1}	High Out-of-Pocket Price {0,1}
Lowest Trust Mean	4.695	0.375	0.537	0.537
Trust Quartile				
Trust $\in [5, 6]$	1.510***	-0.230***	-0.126***	-0.111***
	(0.199)	(0.035)	(0.042)	(0.042)
Trust $\in [7]$	2.278***	-0.232***	-0.220***	-0.150***
	(0.204)	(0.039)	(0.046)	(0.047)
Trust $\in [8, 10]$	3.210***	-0.284***	-0.247***	-0.137***
	(0.215)	(0.037)	(0.045)	(0.046)

Notes: Regression coefficients of each behavioral mechanism on the trust quartiles indicated in Tables 1 and 2 of the main text. Each column represents one regression. All regressions include controls for exogenous characteristics described in Table 2 of the main text. All regressions are population-weighted. The dependent variable scale is reported below its name, and the mean reported in the first row for those in the lowest trust quartile. *** p<0.01, ** p<0.05, * p<0.1. $n = 1,172$.

Table 3: Mechanisms and Entity-Specific Trust

	Marg. benefit	Unpleasant	Denial	High OOP
Individual providers				
Doctors	2.067***	-0.466***	0.024	0.150
	(0.540)	(0.108)	(0.147)	(0.128)
Nurses	1.803***	0.097	-0.144	-0.185
	(0.557)	(0.100)	(0.124)	(0.128)
Pharmacists	0.242	-0.042	0.038	-0.051
	(0.520)	(0.095)	(0.111)	(0.114)
Providers and payers				
Hospitals	2.269***	-0.117	-0.106	-0.158
	(0.479)	(0.089)	(0.118)	(0.113)
Insurers	0.851**	-0.111*	-0.445***	-0.196**
	(0.416)	(0.067)	(0.091)	(0.094)
Medicare/Medicaid	0.637*	-0.039	-0.084	-0.028
	(0.370)	(0.060)	(0.081)	(0.085)
Broad institutions				
Pharma	-0.105	-0.049	0.086	0.112
	(0.387)	(0.067)	(0.090)	(0.092)
CDC	0.528	-0.025	-0.057	-0.010
	(0.411)	(0.068)	(0.102)	(0.095)
FDA	-0.385	0.102	0.125	-0.044
	(0.467)	(0.082)	(0.116)	(0.108)
Observations	1172	1172	1172	1172
R-squared	0.430	0.140	0.083	0.034

Notes: Standard errors in parentheses. Survey-weighted linear regressions (LPM for binary outcomes). Marginal benefit (resources/expertise) is 0–10; unpleasant, denial,and high OOP are 0/1. Controls included. * p<.10, ** p<.05, *** p<.01. $n = 1,172$.

Table 4: Regression Results: Behavior and Mechanisms

	Checkup	Flu Shot	Mental Health	No Care
Lowest Trust Mean	0.726	0.357	0.253	0.173
Behavioral Mechanism				
Resources and Expertise	0.023***	0.020***	0.008	-0.013***
	(0.005)	(0.007)	(0.005)	(0.004)
Unpleasant	-0.066**	-0.071*	0.042	0.094***
	(0.032)	(0.040)	(0.034)	(0.026)
Likely to Deny Claim	0.012	0.015	-0.006	0.020
	(0.024)	(0.032)	(0.025)	(0.018)
High OOP Price	-0.092***	-0.038	-0.000	0.043**
	(0.024)	(0.032)	(0.025)	(0.018)

Notes: Regression coefficients of each anticipated behavior on behavioral mechanisms developed in main text. Each column represents one regression. Dependent variables reflect anticipated future behavior over the next year. All regressions include controls for exogenous characteristics described in Table 2 of the main text. All regressions are population-weighted. The mean reported in the first row for those in the lowest trust quartile. *** p<0.01, ** p<0.05, * p<0.1. $n = 1,172$.

Table 5: Regression Results: Behavior and Trust by Controls

	(1)	(2)	(3)	(4)	(5)	(6)
Checkup						
Trust $\in [0.5, 0.6]$	0.088**	0.078**	0.078**	0.076**	0.072**	0.080**
	(0.036)	(0.035)	(0.034)	(0.032)	(0.032)	(0.032)
Trust $\in [0.7]$	0.179***	0.163***	0.157***	0.150***	0.142***	0.149***
	(0.034)	(0.034)	(0.033)	(0.033)	(0.033)	(0.032)
Trust $\in [0.8, 1]$	0.172***	0.134***	0.137***	0.132***	0.124***	0.137***
	(0.035)	(0.034)	(0.033)	(0.033)	(0.033)	(0.032)
Flu Shot						
Trust $\in [0.5, 0.6]$	0.057	0.042	0.045	0.051	0.052	0.058
	(0.042)	(0.042)	(0.040)	(0.040)	(0.039)	(0.038)
Trust $\in [0.7]$	0.280***	0.244***	0.232***	0.232***	0.232***	0.241***
	(0.046)	(0.047)	(0.048)	(0.048)	(0.046)	(0.046)
Trust $\in [0.8, 1]$	0.267***	0.220***	0.219***	0.212***	0.204***	0.218***
	(0.045)	(0.046)	(0.045)	(0.045)	(0.043)	(0.044)
Mental Health						
Trust $\in [0.5, 0.6]$	-0.081**	-0.067**	-0.068**	-0.074**	-0.073**	-0.057*
	(0.035)	(0.034)	(0.034)	(0.034)	(0.033)	(0.032)
Trust $\in [0.7]$	-0.057	-0.020	-0.021	-0.025	-0.024	0.000
	(0.039)	(0.039)	(0.039)	(0.039)	(0.039)	(0.038)
Trust $\in [0.8, 1]$	-0.095**	-0.047	-0.044	-0.047	-0.050	-0.015
	(0.037)	(0.037)	(0.037)	(0.037)	(0.037)	(0.036)
No Care						
Trust $\in [0.5, 0.6]$	-0.094***	-0.088***	-0.087***	-0.083***	-0.080***	-0.089***
	(0.028)	(0.028)	(0.027)	(0.026)	(0.026)	(0.025)
Trust $\in [0.7]$	-0.155***	-0.146***	-0.143***	-0.137***	-0.131***	-0.140***
	(0.025)	(0.025)	(0.024)	(0.024)	(0.024)	(0.024)
Trust $\in [0.8, 1]$	-0.132***	-0.112***	-0.115***	-0.107***	-0.101***	-0.114***
	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)
Demographics		✓	✓	✓	✓	✓
Education			✓	✓	✓	✓
Income/HI/Geo				✓	✓	✓
Political Aff.					✓	✓
Health						✓

Notes: Regression coefficients of each retrospective or anticipated behavior on the trust quartiles indicated in Tables 1 and 2 of the main text. Each column represents one regression. All regressions are population-weighted. Column 6 reflects estimates in Figure 2 and Table 3 of the main text. *** p<0.01, ** p<0.05, * p<0.1. $n = 1,172$.

Table 6: Dynamic Regression Results

	Checkup	Flu Shot	Mental Health	No Care
Lowest Trust Mean	0.726	0.357	0.253	0.173
Trust Quartile				
Trust $\in [0.5, 0.6]$	0.074**	0.026	-0.037	-0.082***
	(0.029)	(0.024)	(0.027)	(0.024)
Trust $\in [0.7]$	0.117***	0.106***	-0.004	-0.122***
	(0.030)	(0.028)	(0.030)	(0.023)
Trust $\in [0.8, 1]$	0.099***	0.055*	-0.003	-0.093***
	(0.030)	(0.029)	(0.028)	(0.025)

Notes: Regression coefficients of each anticipated behavior on the trust quartiles indicated in Tables 1 and 2. Each column represents one regression. Dependent variables reflect anticipated future behavior over the next year. All regressions control for the respective behavior over the previous year. All regressions include controls for control characteristics described in Table 2. All regressions are population-weighted. The mean reported in the first row for those in the lowest trust quartile. *** p<0.01, ** p<0.05, * p<0.1. $n = 1,172$.

C Structural Estimation: Identification, Results, and Robustness

We estimate the model separately for each behavior. For behavior m, the likelihood function contribution from individual i is given as:

$$
\begin{aligned}
L_i(\Theta) &= f_{\text{MB}}(\text{MB}_i \mid T_i) \times f_{\phi}(\phi_i \mid T_i) \times f_{\text{OOP}}(\text{OOP}_i \mid T_i) \times f_{\text{DENY}}(\text{DENY}_i \mid T_i) \times f_m(m_i \mid T_i) \\
&= \left[\frac{1}{\sqrt{2\pi}\,\sigma_{\text{MB}}} \exp\left(-\frac{\left(\text{MB}_i - \mu_i^{\text{MB}}\right)^2}{2\sigma_{\text{MB}}^2} \right) \right] \\
&\quad \times \left[P(\phi_i = 1)^{\phi_i} (1 - P(\phi_i = 1))^{1-\phi_i} \right] \\
&\quad \times \left[P(OOP_i = 1)^{OOP_i} (1 - P(OOP_i = 1))^{1-OOP_i} \right] \\
&\quad \times \left[P(DENY_i = 1)^{DENY_i} (1 - P(DENY_i = 1))^{1-DENY_i} \right] \\
&\quad \times \left[P(m_i = 1)^{m_i} (1 - P(m_i = 1))^{1-m_i} \right],
\end{aligned}
$$

where overall trust T_i is given by the CES trust technology. We estimate measurement (e.g., a_1) parameters, behavioral parameters (e.g., λ_{MB}), and ρ parameters by maximizing the likelihood function. Identification stems from variation in entity-specific trust within group and across groups. For example, individuals who rate trust in doctors differently from trust in nurses help to identify ρ^i, whereas individuals who rate trust in doctors differently from trust in CDC help to identify the across-group parameter ρ. For simplicity, and because we lack variation that would identify these parameters, we fix the ω weights to be equal across measures within each group and across groups. Estimation of the likelihood function uses survey weights, and standard errors are calculated from a parametric bootstrap

that draws from the sandwich covariance matrix (B=500). Alternatively, we present results from a person-level non-parametric bootstrap, resampling respondents with replacement (see below).

Table 7: Cross-Entity Trust Correlations and Within-Respondent Dispersion

Panel A. Weighted cross-entity correlations

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) Doctors	1.00								
(2) Nurses	0.76	1.00							
(3) Pharmacists	0.71	0.69	1.00						
(4) Hospitals	0.75	0.68	0.65	1.00					
(5) Insurers	0.47	0.39	0.43	0.63	1.00				
(6) Medicare/Medicaid	0.57	0.48	0.52	0.59	0.67	1.00			
(7) Pharma	0.49	0.36	0.41	0.59	0.73	0.62	1.00		
(8) CDC	0.49	0.42	0.44	0.50	0.43	0.46	0.55	1.00	
(9) FDA	0.53	0.43	0.45	0.53	0.50	0.52	0.61	0.84	1.00

Panel B. Within-respondent dispersion (SD across ratings)

	Mean	SD
All nine entities	0.20	0.10
Individual providers	0.09	0.09
Providers & payers	0.16	0.11
Broad institutions	0.15	0.13

Notes: Panel A reports survey-weighted Pearson correlations among the nine entity-trust ratings; Panel B reports the mean and standard deviation of each respondent's within-respondent standard deviation of ratings, overall and within each domain. Column/row key: (1) Doctors, (2) Nurses, (3) Pharmacists, (4) Hospitals, (5) Insurers, (6) Medicare/Medicaid, (7) Pharma, (8) CDC, (9) FDA. Individual = (1)–(3); Providers & payers = (4)–(6); Broad institutions = (7)–(9). Trust is on a 0–1 scale. $n = 1{,}172$.

Table 8: Aggregator Comparison: Fit to Elicited Overall Trust

	Correlation	R^2	RMSE	Mean
CES	0.743	0.552	0.167	0.542
Average	0.740	0.547	0.166	0.553
Trust Share Weighted	0.739	0.545	0.166	0.582

Notes: Comparison of the person-level correspondence between overall trust in the data and model-aggregated trust across different aggregators. $n = 1{,}172$.

Table 9: Cross-Entity Counterfactual Differences

Entity Comp.	Checkup	Flu shot	Mental health	No Care
Shock: −25%				
Doctors − Insurers	−0.0025 (<0.001)	−0.0036 (<0.001)	−0.0013 (0.012)	0.0020 (<0.001)
Doctors − CDC	−0.0016 (<0.001)	−0.0024 (<0.001)	−0.0007 (0.012)	0.0014 (<0.001)
Doctors − HHS	0.0062 (<0.001)	0.0098 (<0.001)	0.0039 (0.008)	−0.0046 (<0.001)
Insurers − CDC	0.0009 (<0.001)	0.0012 (<0.001)	0.0006 (0.012)	−0.0006 (<0.001)
Insurers − HHS	0.0087 (<0.001)	0.0135 (<0.001)	0.0052 (0.008)	−0.0066 (<0.001)
CDC − HHS	0.0078 (<0.001)	0.0122 (<0.001)	0.0047 (0.008)	−0.0060 (<0.001)
Shock: −50%				
Doctors − Insurers	−0.0058 (<0.001)	−0.0083 (<0.001)	−0.0029 (0.012)	0.0048 (<0.001)
Doctors − CDC	−0.0038 (<0.001)	−0.0057 (<0.001)	−0.0017 (0.012)	0.0034 (<0.001)
Doctors − HHS	0.0130 (<0.001)	0.0197 (<0.001)	0.0076 (0.008)	−0.0101 (<0.001)
Insurers − CDC	0.0019 (<0.001)	0.0026 (<0.001)	0.0012 (0.012)	−0.0014 (<0.001)
Insurers − HHS	0.0188 (<0.001)	0.0281 (<0.001)	0.0105 (0.012)	−0.0149 (<0.001)
CDC − HHS	0.0169 (<0.001)	0.0254 (<0.001)	0.0093 (0.012)	−0.0135 (<0.001)
Shock: −75%				
Doctors − Insurers	−0.0106 (<0.001)	−0.0152 (<0.001)	−0.0051 (0.012)	0.0089 (<0.001)
Doctors − CDC	−0.0074 (<0.001)	−0.0109 (<0.001)	−0.0032 (0.012)	0.0066 (<0.001)
Doctors − HHS	0.0202 (<0.001)	0.0291 (<0.001)	0.0107 (0.012)	−0.0167 (<0.001)
Insurers − CDC	0.0032 (<0.001)	0.0043 (<0.001)	0.0019 (0.012)	−0.0023 (<0.001)
Insurers − HHS	0.0308 (<0.001)	0.0443 (<0.001)	0.0158 (0.012)	−0.0256 (<0.001)
CDC − HHS	0.0276 (<0.001)	0.0400 (<0.001)	0.0139 (0.012)	−0.0233 (<0.001)
Shock: Complete				
Doctors − Insurers	−0.0262 (<0.001)	−0.0375 (<0.001)	−0.0112 (0.012)	0.0237 (<0.001)
Doctors − CDC	−0.0210 (<0.001)	−0.0304 (<0.001)	−0.0081 (0.012)	0.0199 (<0.001)
Doctors − HHS	0.0210 (0.020)	0.0278 (<0.001)	0.0112 (0.016)	−0.0184 (0.024)
Insurers − CDC	0.0051 (<0.001)	0.0071 (<0.001)	0.0030 (0.012)	−0.0038 (<0.001)
Insurers − HHS	0.0472 (<0.001)	0.0654 (<0.001)	0.0223 (0.012)	−0.0421 (<0.001)
CDC − HHS	0.0421 (<0.001)	0.0583 (<0.001)	0.0193 (0.012)	−0.0383 (<0.001)

Notes: Pairwise differences in counterfactual effects across entities. Each cell is the within-replicate difference (A − B) in the simulated change in mean behavior, with the bootstrap p-value in parentheses ($B = 500$).

Table 10: Simulation Results: Alternative Grouping

	Loss of Trust in:							
	Doctors		Health Insurers		CDC		HHS	
	Effect	%	Effect	%	Effect	%	Effect	%
Checkup	-0.04	-4.36	-0.02	-3.04	-0.02	-2.64	-0.08	-10.40
	(-0.06, -0.01)		(-0.03, -0.01)		(-0.03, -0.01)		(-0.11, -0.06)	
Flu Shot	-0.05	-9.28	-0.04	-7.14	-0.03	-6.18	-0.11	-21.55
	(-0.07, -0.02)		(-0.05, -0.02)		(-0.04, -0.02)		(-0.14, -0.08)	
Mental Health	0.00	1.54	0.00	1.00	0.00	0.94	0.01	3.74
	(-0.01, 0.01)		(-0.01, 0.01)		(-0.01, 0.01)		(-0.02, 0.03)	
No Care	0.02	16.86	0.01	12.50	0.01	11.10	0.04	45.09
	(0.00, 0.03)		(0.00, 0.02)		(0.00, 0.02)		(0.02, 0.06)	

Notes: The provider group includes doctors, nurses, pharmacists, and hospitals; the payer group includes private health insurers and Medicare/Medicaid; the broad health care group includes FDA, CDC, and pharmaceutical companies. Simulated effects of a complete loss of trust in each entity on the likelihood of the four anticipated behaviors. Effects are percentage-point changes relative to a baseline with no change in trust; the % columns scale these by baseline prevalence. Confidence intervals in parentheses are from 500 parametric-bootstrap draws from the robust (sandwich) parameter covariance matrix. $n = 1{,}172$.

Table 11: Simulation Results: Inverse Weighting

	Loss of Trust in:							
	Doctors		Health Insurers		CDC		HHS	
	Effect	%	Effect	%	Effect	%	Effect	%
Checkup	-0.03	-3.22	-0.03	-3.35	-0.02	-2.27	-0.07	-8.98
	(-0.05, -0.01)		(-0.04, -0.02)		(-0.02, -0.01)		(-0.10, -0.05)	
Flu Shot	-0.04	-7.18	-0.04	-7.67	-0.03	-5.19	-0.09	-18.16
	(-0.07, -0.00)		(-0.05, -0.02)		(-0.04, -0.01)		(-0.12, -0.06)	
Mental Health	-0.01	-4.50	-0.01	-4.94	-0.01	-3.50	-0.02	-10.82
	(-0.02, 0.00)		(-0.02, -0.00)		(-0.01, -0.00)		(-0.04, -0.00)	
No Care	0.02	19.52	0.02	19.24	0.01	13.11	0.05	57.27
	(0.00, 0.03)		(0.01, 0.02)		(0.01, 0.02)		(0.03, 0.06)	

Notes: We re-estimate the model under an alternative specification in which weights are inversely proportional to average trust. This deliberately offsets the influence of entities' baseline trust levels. The table presents simulation results that are analogous to those in Table 5 of the revised paper. Simulated effects of a complete loss of trust in each entity on the likelihood of the four anticipated behaviors. Effects are percentage-point changes relative to a baseline with no change in trust; the % columns scale these by baseline prevalence. Confidence intervals in parentheses are from 500 parametric-bootstrap draws from the robust (sandwich) parameter covariance matrix. $n = 1{,}172$.

Table 12: Person-Level Bootstrapping: Counterfactual Trust Losses

	Checkup	Flu Shot	Mental Health	No Care
	0.827	0.491	0.196	0.085
Panel A. Loss of trust in Doctors				
−25%	-0.006	-0.011	-0.001	0.004
	[-0.009, -0.004]	[-0.016, -0.008]	[-0.004, 0.001]	[0.003, 0.005]
−50%	-0.013	-0.023	-0.003	0.008
	[-0.024, -0.010]	[-0.043, -0.018]	[-0.009, 0.002]	[0.006, 0.015]
−75%	-0.021	-0.038	-0.005	0.014
	[-0.052, -0.016]	[-0.085, -0.029]	[-0.018, 0.004]	[0.010, 0.033]
Complete	-0.038	-0.065	-0.008	0.027
	[-0.097, -0.026]	[-0.142, -0.046]	[-0.029, 0.006]	[0.016, 0.067]
Panel B. Loss of trust in Health Insurers				
−25%	-0.003	-0.006	-0.001	0.002
	[-0.004, -0.002]	[-0.007, -0.004]	[-0.002, 0.000]	[0.001, 0.002]
−50%	-0.006	-0.012	-0.001	0.004
	[-0.007, -0.005]	[-0.015, -0.009]	[-0.004, 0.001]	[0.003, 0.004]
−75%	-0.009	-0.019	-0.002	0.005
	[-0.012, -0.007]	[-0.023, -0.014]	[-0.006, 0.001]	[0.004, 0.007]
Complete	-0.013	-0.026	-0.003	0.008
	[-0.016, -0.010]	[-0.032, -0.019]	[-0.008, 0.002]	[0.006, 0.010]
Panel C. Loss of trust in the CDC				
−25%	-0.004	-0.008	-0.001	0.002
	[-0.005, -0.003]	[-0.009, -0.005]	[-0.003, 0.001]	[0.002, 0.003]
−50%	-0.008	-0.016	-0.002	0.005
	[-0.010, -0.006]	[-0.020, -0.012]	[-0.005, 0.001]	[0.004, 0.006]
−75%	-0.013	-0.025	-0.003	0.008
	[-0.017, -0.010]	[-0.033, -0.019]	[-0.008, 0.002]	[0.006, 0.010]
Complete	-0.020	-0.038	-0.005	0.013
	[-0.040, -0.015]	[-0.078, -0.029]	[-0.015, 0.004]	[0.009, 0.024]
Panel D. Loss of trust in HHS (Medicare/Medicaid, CDC, and FDA jointly)				
−25%	-0.013	-0.024	-0.003	0.007
	[-0.016, -0.009]	[-0.029, -0.017]	[-0.008, 0.002]	[0.005, 0.009]
−50%	-0.027	-0.050	-0.006	0.016
	[-0.034, -0.020]	[-0.061, -0.036]	[-0.015, 0.004]	[0.012, 0.021]
−75%	-0.044	-0.078	-0.009	0.028
	[-0.056, -0.033]	[-0.096, -0.057]	[-0.023, 0.006]	[0.020, 0.036]
Complete	-0.066	-0.112	-0.013	0.044
	[-0.092, -0.052]	[-0.147, -0.085]	[-0.033, 0.010]	[0.031, 0.061]

Notes: Simulated percentage-point changes in the probability of each anticipated behavior, relative to a baseline simulation with no change in trust. Rows within each panel report proportional reductions in trust in the indicated entity; "Complete" sets trust to its observed minimum. Ninety-five percent confidence intervals in brackets are percentile intervals from a person-level nonparametric bootstrap ($B = 500$) that resamples respondents with replacement and re-estimates the full model on each replicate; expected behavior is computed by integrating over the mechanism distributions, so simulations carry no Monte Carlo error. The HHS shock reduces trust in Medicare/Medicaid, the CDC, and the FDA jointly and is therefore not directly comparable to the single-entity shocks in Panels A–C. $n = 1{,}172$.

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