USC Schaeffer

Leonard D. Schaeffer Center
for Health Policy & Economics

Annual Report 2022

Improving Value in Health for All

Annual Report 2022

"The Schaeffer Center is focused on developing evidence-based solutions that will enable the healthcare system to deliver quality care—at the right time and in the right setting—at a cost that is affordable for families and our nation. The Center is committed to informing policymakers, healthcare stakeholders and the public about its research and recommendations in order to move our nation toward value in health for all."

Leonard D. Schaeffer, Advisory Board Chair

Message from the Co-Directors

Research That Informs Health Policy Decision Making

The past few years have brought unprecedented challenges—of course COVID-19, but also the ongoing addiction crisis, a rapidly aging society, fiscal pressures, new drug-pricing challenges and disparities in care exacerbated by the pandemic. The next few years will test policymakers in new ways as the nation implements the Inflation Reduction Act.

For more than a decade, policymakers and stakeholders have relied on the Schaeffer Center for evidence-based research and analysis that informs the debate. Congress, the Centers for Medicare & Medicaid Services, the Government Accountability Office, the White House, the National Institutes of Health and other government entities all rely on Schaeffer Center research.

In this year's annual report, we frame our strategic approach using our policy impact cycle. Four interconnected steps guide us: identifying problems in the healthcare system, shaping the debate, designing policy solutions, and evaluating the effectiveness and consequences of reforms. At all steps, the Schaeffer Center is a vital and trusted resource for policymakers.

For example, our investigators have developed a portfolio of research illuminating the role of intermediaries in the pharmaceutical supply chain over the past seven years. Through research, white papers, events and op-eds, we examined the pharmaceutical distribution system's inefficiencies and have shaped the debate surrounding potential reforms. Policymakers have taken notice, seeking testimony from our experts and citing our findings in their policy discussions.

Our research aims to foster medical progress while democratizing access. Biomedical innovation has brought new technologies and breakthrough cures for disease, helping many patients live higher quality lives. But the knowledge such progress requires has been skewed because of a lack of diversity in clinical trials. We are developing solutions to expand clinical trial recruitment, including through our partnership with the Alzheimer's Therapeutic Research Institute to include historically underrepresented patient populations.

"Through research, white papers, events and op-eds, we examined the pharmaceutical distribution system's inefficiencies and have shaped the debate surrounding potential reforms. Policymakers have taken notice, seeking testimony from our experts and citing our findings in their policy discussions."

Erin Trish and Dana Goldman

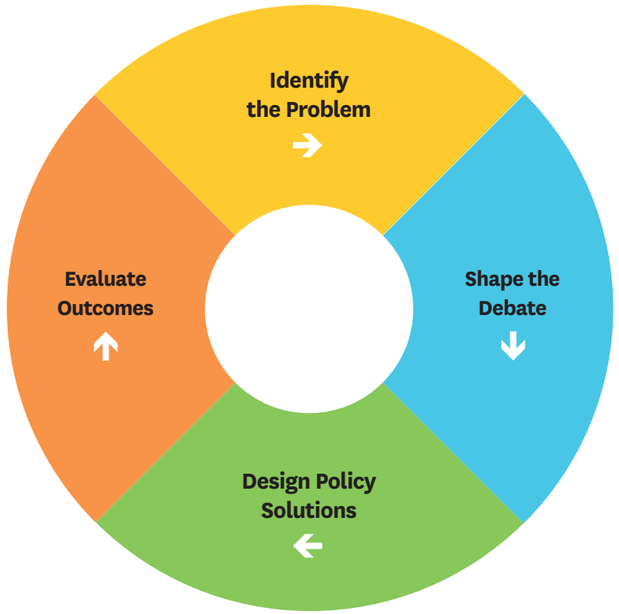
Schaeffer Center expertise also informs cannabis policies. This past year, two more states legalized recreational marijuana, making it legal for almost 50% of the U.S. population. But little attention is brought to the public health impacts of this trend. Schaeffer experts are evaluating these consequences—and national and international leaders are turning to them to help develop public health-minded regulation.

We are fortunate to have so many supporters of our mission. We are grateful to Leonard Schaeffer and his wife, Pamela, our Advisory Board, and the partnership with USC's Price School of Public Policy and Mann School of Pharmacy and Pharmaceutical Sciences. Their support, and the excellence of our fellows, ensure that the Schaeffer Center is a beacon guiding policymakers toward better value in health and healthcare delivery.

Dana Goldman
Erin Trish
Co-Directors,
USC Schaeffer Center

Erin Trish and Dana Goldman

Schaeffer Center
Policy Impact Cycle



1

We identify opportunities to improve the performance of the healthcare system.

Our research assesses how well healthcare markets, financing and delivery are functioning and identifies areas where the system is not meeting society's needs.

2

We amplify the conversation by disseminating evidence to drive solutions.

Our experts generate interest in and understanding of an issue by broadly sharing evidence-based research and analysis that fosters new approaches.

3

We design policy and provide evidence for decision making.

Our scholars develop recommendations that inform policymaking, from statehouses to the federal level and across the healthcare industry.

4

We evaluate outcomes and analyze consequences of policies.

Our studies assess the cost, efficiency and distributional impact of reforms to analyze likely outcomes of policies and areas for improvement.

The Schaeffer Center policy impact cycle illustrates four pathways that we leverage to inform policy discussions: identifying the problem, shaping the debate, designing policy solutions and evaluating outcomes.

The following sections feature examples of our research and impact in different stages of the cycle. Whether Schaeffer experts are putting new ideas into the public discourse or evaluating the outcomes of policy, through this cycle we can effectively transform the system and improve value in health.

1 Identify the Problem: Assess How Well the Healthcare System Functions

400+

media mentions of Schaeffer research analyzing the pharmaceutical distribution system

Quantifying Failures in the Pharmaceutical Distribution System

Schaeffer Center scholars expose practices by intermediaries in the pharmaceutical distribution system that force patients to overpay for vital medications. Built over the past five years, this body of work has reordered priorities in the public debate.

While generic medicines are usually considered a bargain, a white paper co-authored by Erin Trish and Karen Van Nuys shows that patients are often overpaying for these inexpensive drugs. The researchers reveal how pharmacy benefit managers (PBMs), insurers and other intermediaries are costing patients, employers and the government 20% more than necessary.

These tactics include co-pay clawbacks, which pocket the difference when a patient's co-payments exceed the drug's cost to the insurer; spread pricing, when PBMs charge higher prices to health plans than the amount reimbursed to pharmacies; and formulary designs that favor branded drugs over generics.

The researchers estimate that such practices add up to billions in overpayment. Another study found that Medicare Part D plans paid $2.6 billion more in 2018 for 184 common generics compared with prices paid by cash-paying Costco members.

The generic market was jump-started as part of a federal deal granting branded drug manufacturers patent protection to incentivize new therapies. In exchange, once that patent expires, cheaper generic versions enter the marketplace. Therefore, such overcharges reflect a breakdown in the pharmaceutical innovation ecosystem.

"The same lack of transparency causing outrage over high and rising spending on branded drugs is also creating issues in the generic drug space," Trish notes.

In addition to increasing transparency in transactions, the authors suggest ways to deter anticompetitive practices. PBM fees should be fixed per transaction, while employers and government purchasers deserve stronger auditing rights.

"If patients are being cheated on what are supposed to be inexpensive generic drugs, one wonders what must be happening in other parts of the healthcare market where profit margins are much higher," Van Nuys says.

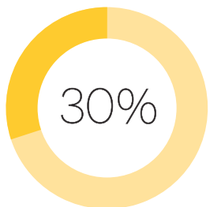
One of those is the market for insulin, needed by millions of Americans for diabetes—and for which out-of-pocket costs have more than doubled in the past decade.

An article by Van Nuys, Trish and Neeraj Sood again revealed the culpability of PBMs. While insulin manufacturers have granted increasingly large discounts to intermediaries, PBMs are pocketing these savings instead of passing them on to consumers.

300+ pharmacies closed in 2022. Predominantly Black and Latino neighborhoods have fewer pharmacies, and they are also more likely to experience closures.

$2.6B

was overpaid by Medicare Part D plans on 184 generics in 2018 compared with prices paid by Costco members.



of neighborhoods in Los Angeles are pharmacy deserts.

"Although insulin manufacturers have been receiving less, the savings from manufacturers taking less are not flowing to patients. Policymakers should bring together all players in the distribution system, require a transparent accounting of financial flows at each step, and from there develop solutions that improve health and system-wide affordability."

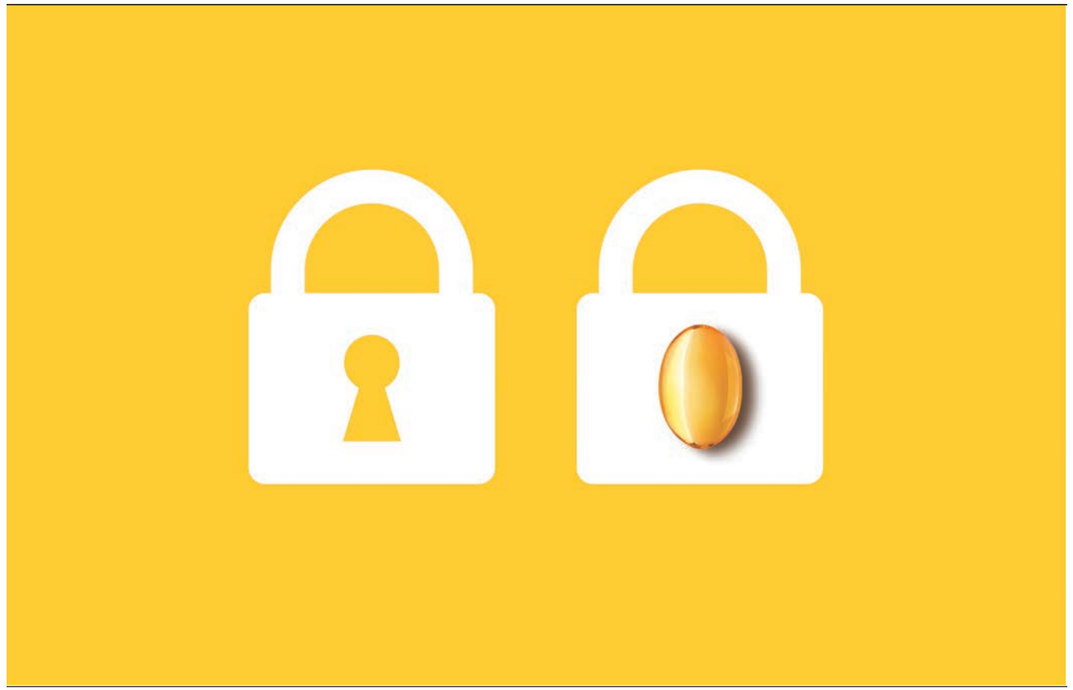
Karen Van Nuys

The Federal Trade Commission cited these studies in its decision to probe PBM practices. In addition, the Schaeffer Center submitted formal comments to the agency on the topic.

Policymakers have taken note. Senators Maria Cantwell (D-Wash.) and Chuck Grassley (R-Iowa) introduced legislation aimed at promoting market transparency by stopping PBMs from hiding profits from health plans and pharmacies. It also targets spread pricing and co-pay clawbacks.

Eliminating Pharmacy Deserts

Pharmacies are increasingly vital locations for essential health services, yet an estimated 100 million Americans lack convenient access to one. Dima Qato coined the term "pharmacy desert" to call attention to the issue, which has become even more acute as many pharmacy chains limit hours



and shutter locations nationwide. Since publishing her initial research, she has met with public health and policy officials across the country to discuss the issue and ways to solve it.

Her research reveals that predominately Black or Latino neighborhoods have fewer pharmacies than white or diverse neighborhoods, further contributing to persistent health disparities. To resolve this inequity, Qato suggests that policies should focus on pharmacy access and not just prices. Increasing Medicaid and Medicare pharmacy reimbursement would help, her research indicates. Another possibility is revising the definition of Federally Qualified Health Centers to include pharmacies. She recommends that government agencies deploy targeted grants and tax benefits to encourage pharmacies to open in underserved areas. Incentives could also be used to promote home-delivery services.

Lack of access also persists when it comes to emergency contraception, especially in the wake of the Supreme Court striking down *Roe v. Wade*. Qato finds that, even in Los Angeles County, only 10% of pharmacies offer pharmacist-prescribed preventive hormonal contraception. Dispensing mandates requiring pharmacists to provide contraceptive services to women and girls of all ages without identification would address this barrier.

Qato helped create an interactive map of every pharmacy location in the United States to show exactly which neighborhoods are pharmacy deserts. The mapping tool is part of a collaboration between USC and the National Community Pharmacists Association, which represents independent pharmacies across the country. The high-tech map may provide a framework to promote transparency and accountability—including in regulation of PBMs, which contribute to inequitable pharmacy reimbursement and pharmacy closures.

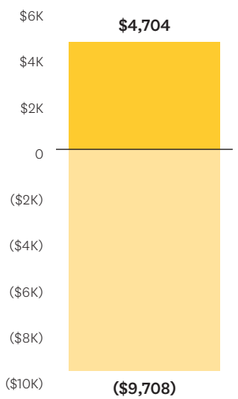
Saving Money Through Formulary Restrictions, but Increasing Risk

Atrial fibrillation (AF) is a major risk factor for stroke, and for decades the anticoagulant warfarin was the standard treatment for lowering that hazard. However, numerous drug and food interactions make warfarin burdensome for patients. Non-vitamin K antagonist oral anticoagulants (NOACs) have emerged as a more effective alternative with fewer side effects. NOACs also tend to be more expensive.

Research led by Geoffrey Joyce and Seth Seabury finds that the formulary restrictions used by insurers and pharmacy benefit managers to save money result in fewer patients using NOACs or warfarin—which likely leads to poor health outcomes.

The study finds that beneficiaries in Medicare Part D plans with restricted access to NOACs have a lower probability of using

SCHAEFFER POLICY IMPACT



Private payers are expected to accrue losses for patients age 61 to 65 who are receiving new Alzheimer's drugs under standard payment models. Losses are avoided under pay-for-performance models.

- Pay for performance
- Standard time of treatment

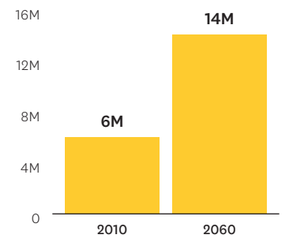
95%

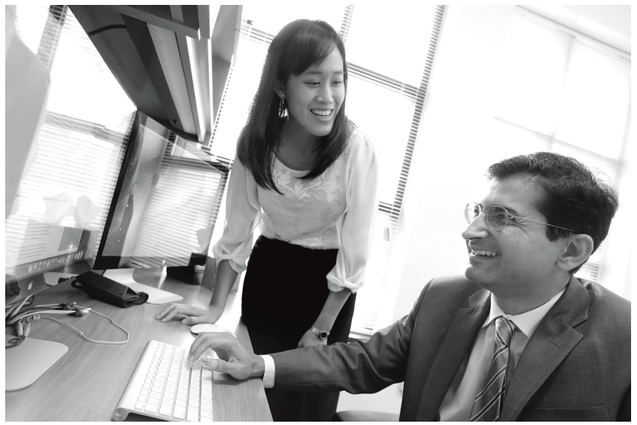
of patients with hepatitis C could be cured with new innovative treatments. Payment models developed by Schaeffer experts could ensure access.

"My colleagues and I have shown that [Netflix-style] subscription models can improve outcomes and save money at the same time. Compared to traditional fee-per-dose reimbursement, subscriptions can better balance the public health interest in gaining rapid, widespread and affordable access to these drugs, while assuring manufacturers generate enough revenues to justify the drugs' development costs."

Dana Goldman

By 2060, the patient population with Alzheimer's disease is expected to more than double.





Alice Chen and Darius Lakdawalla

the drugs, and those with reduced access show worse medication adherence. In addition, patients in the sample faced longer delays in filling their initial prescription after an AF diagnosis. This all adds up to a higher aggregate risk of death, stroke, transient ischemic attacks or systemic embolism for patients with restricted coverage.

The researchers note that, while formulary restrictions can be appropriate, such policies should be continuously reviewed to ensure that patients have timely access to effective medications.

Prioritizing Value and Access in the Pricing Debate

As advances are made in treating Alzheimer's and other devastating diseases, urgent need remains for fresh approaches that maximize access to new therapies without breaking budgets. Since our inception, the Schaeffer Center has devised innovative payment methods to align cost with value.

For example, the life-threatening condition hepatitis C can be cured in more than 95% of patients—provided they receive leading-edge antiviral therapies instead of standard, less effective drugs. However, with treatment costs of up to $30,000, these drugs are usually denied to Medicaid beneficiaries. As demonstrated by research from Dana Goldman, Darius Lakdawalla, Karen Van Nuys and others, treating hepatitis C patients saves considerable long-term costs by preventing the disease from spreading and eliminating the need for even more expensive treatments as the condition worsens.

Goldman and colleagues developed a Netflix-style solution in which payers could "subscribe" or license hepatitis C drugs, thereby paying a drug company up front for medication for several years in exchange for unlimited access to treatment. Neeraj Sood later served on a National Academy of Sciences committee exploring the advantages of this pricing scheme. In the years since, policymakers have reached out to Schaeffer Center experts about the potential of this subscription model.

Recent research led by William Padula highlights another solution in the form of partnering Medicaid with Medicare. The team evaluated Maryland's "total coverage" proposal, through which the state receives a credit from Medicare to offset Medicaid investments in hepatitis C treatments.

The researchers modeled the costs and benefits of different payment scenarios nationally and found that when Medicare chips in for Medicaid beneficiaries receiving hepatitis C drugs to offset the cost, savings can add up to nearly $1.1 billion over 25 years.

Meanwhile, although the Food and Drug Administration has approved two new treatments for Alzheimer's disease after decades of clinical trial failures, Schaeffer Center researchers found that current payment models pose challenges to patient access since costs may accrue sooner than benefits do. New payment approaches may be needed to address this difference in timing.

Using the Future Elderly Model to estimate the benefits of disease-modifying therapies for Alzheimer's patients, Lakdawalla, Jakub Hlávka and colleagues have found that even in the least optimistic scenarios for efficacy, patients younger than 65 at the time of treatment benefit the most. Yet, standard payment models, which require a total up-front payment, have misaligned incentives for the payer. This is because most of the health benefits to these patients will accrue after they are in Medicare. New strategies, including installment payments that would be made over the course of the patient's life, could encourage earlier access to these drugs, benefiting patients and society.

2 Shape the Debate: Disseminate Data-Driven Research to Focus Attention

99%

of eligible volunteers do not participate in Alzheimer's disease clinical trials.

Expanding Access to Clinical Trials

While valuable treatments are available for diabetes, heart disease and hypertension, significant disparities in health outcomes and life expectancy still exist. Several factors contribute to such disparities, but lack of representation in clinical trials plays a significant role. It not only hampers understanding of the tested therapies' effects on large portions of the population but also prevents many from benefiting from leading-edge treatments. According to analysis using the Schaeffer Center's Future Elderly Model and led by Bryan Tysinger, eliminating just 1% of health disparities through improved diversity in clinical trials would result in hundreds of billions of dollars in gains for society.

The analysis was a foundational element of a National Academies of Sciences, Engineering and Medicine committee report to advance enrollment of underrepresented populations in clinical studies. Dana Goldman served on the committee.

Instituting financial incentives to spur the industry to action—including tax credits, fast-track eligibility or extended market exclusivity—would help turn the problem around, wrote Goldman and two committee colleagues in a *STAT* "First Opinion."

Recruiting participants in clinical trials for Alzheimer's is more challenging than other disease areas, hampering therapeutic progress to combat the condition. "The steepest barriers to more efficient Alzheimer's clinical trials are those that are keeping potential volunteers from ever participating in the first place," says Julie Zissimopoulos, who co-authored a paper in *Alzheimer's & Dementia* that identifies actionable and inclusive solutions to accelerate innovation in Alzheimer's treatments. "Reducing these barriers to support progress on Alzheimer's treatments—even modest progress—would have a profound impact on the communities affected by this disease."

To spearhead and evaluate new methods of widening participation and accelerating trial times, the Schaeffer Center joined with USC's Alzheimer's Therapeutic Research Institute to establish the Clinical Trial Recruitment Lab (CTRL).

"We suffer from two interconnected issues: the slow pace of trials and a lack of diversity," Goldman says. "The Clinical Trial Recruitment Lab will address both of these issues and potentially transform pharmaceutical and medical device development."

Launched with a $5.8 million grant from Gates Ventures and the American Heart Association, CTRL will be led by Goldman, Paul Aisen and Rema Raman.

CTRL will launch pilot studies to test innovative, scalable strategies to minimize barriers that prevent patients from accessing clinical trials. It will also develop a fellowship program in partnership with Howard University's Department of Economics.

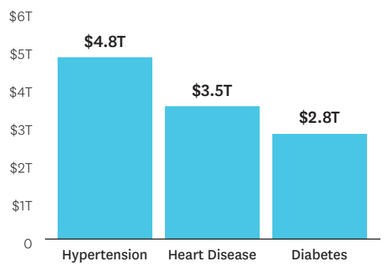
34%

more is spent by Medicare on people with obesity compared with those of lower weight.

$5.8M

grant has been awarded to the Schaeffer Center to launch the Clinical Trial Recruitment Lab.

Life expectancy disparities for diabetes, heart disease and hypertension will cost society $11 trillion through 2050.



"Medicare and private insurers pay for treatments for diabetes, heart disease and high blood pressure. If saving lives is the objective, then logic, clinical evidence and compassion dictate that they should also pay for preventing and treating obesity, starting now. … Not only does preventing obesity and obesity-related diseases eliminate unnecessary suffering and death, it also makes financial sense."

Dana Goldman and Anand Parekh

Treating Obesity as a Disease

By 2030, nearly half of American adults will have obesity—a disease that already contributes to 300,000 deaths across the nation each year. While therapies are available, Medicare does not cover weight-loss treatments, and less than 10% of the privately insured have coverage. As a result, only 2% of eligible patients are prescribed anti-obesity medications.

This is particularly vexing because Schaeffer Center research demonstrates that treatments preventing or significantly reducing obesity would have significant value for patients and society. Our research has shown that obesity poses a bigger risk to public finances than smoking and that the lifetime consequences of obesity force Medicare to spend nearly 34% more on people with the condition than on those of lower weight. The personal toll is even higher, as obese people enjoy fewer disability-free life years and experience higher rates of diabetes, hypertension, heart disease and stroke.

Stigmatizing people who have obesity does not help. An op-ed in *The Hill* by Dana Goldman and Anand Parekh, chief medical advisor for the Bipartisan Policy Center, observes that "the medical establishment spent nearly a quarter trillion dollars in 2020 treating conditions where obesity was a driving cause, but spent alarmingly little on preventing or treating obesity itself. Not only does preventing obesity and obesity-related diseases eliminate unnecessary suffering and death, it also makes financial sense."

Lifting the limits Congress placed on Medicare coverage of obesity therapies—from which private insurers took their cue—would make a profound difference. "Currently, coverage is limited to behavioral counseling in primary care settings and weight-loss surgery for people with severe obesity and other related conditions—leaving most people with obesity with too few effective options," Goldman and Parekh write.

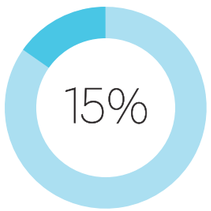
"Medicare and private insurers pay for treatments for diabetes, heart disease and high blood pressure," Goldman and Parekh note. "If saving lives is the objective, then logic, clinical evidence and compassion dictate that they should also pay for preventing and treating obesity, starting now."

Policymakers are making strides to change Medicare reimbursement policy. The bipartisan Treat and Reduce Obesity Act would lift the restriction on FDA-approved prescription drugs for chronic weight management and allow coverage of weight-loss counseling from qualified specialists. Likewise, the Medical Nutrition Therapy Act would expand Medicare coverage to enable dietitians and nutritionists to address obesity. Currently, medical nutrition therapy services are covered only for patients with diabetes or kidney disease.

Schaeffer Center research demonstrates that the true value of such interventions would ultimately lie in longer, healthier lives—benefits that could result in significant medical cost offsets as well as improved health.

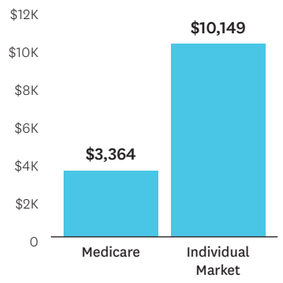
Reforming the Dialysis Market

Fifteen percent of the U.S. population has chronic kidney disease. At its most severe, end-stage kidney disease (ESKD) requires patients to receive dialysis regularly or have a kidney transplant. According to the Centers for Disease Control and Prevention, some 750,000 Americans have ESKD, with more than 70% of that number needing regular dialysis treatment. Although dialysis is life-saving in the short term, five-year mortality rates still exceed 60%.



of the U.S. population has chronic kidney disease.

Average Monthly Cost of Outpatient Dialysis



"Leaving out large portions of the population in these studies inevitably leads to disparities, because different populations exhibit different behaviors and experience different social determinants of health. By gathering this information, we hope to create precision public health interventions that meet individual needs rather than relying on our current one-size-fits-all approach."

Ritika Chaturvedi

Eugene Lin and Erin Trish are helping shape the conversation among policymakers about dialysis costs, care and outcomes.

Most patients with ESKD receive health insurance through Medicare, which provides coverage for patients with kidney failure regardless of age. However, a growing number are covered through private payers. In research published in *JAMA Internal Medicine*, Lin, Trish and colleagues found that monthly spending on ESKD-related outpatient dialysis services was three times higher in the individual market than through Medicare. This raises concerns that dialysis centers are steering patients into the individual market—and costing the healthcare system more in the process.

"Such a large pay differential financially rewards dialysis facilities with more patients covered by the individual market," Lin adds. "Facilities that encourage steering through subsidizing premiums would likely see a large increase in profits."

1,000

people are enrolled in ALiR, a nationally representative, comprehensive digital health dataset.

Erin Duffy, Erin Trish and Eugene Lin

"Our study shows that, even though the number of dialysis patients in the individual market is relatively small, because their spending is so high, this enrollment can actually raise premiums across the entire individual market," Trish says.

Congresswoman Katie Porter (D-Calif.) cited the team's research in a report calling for robust oversight of the dialysis industry.

Since two large companies dominate that industry, Lin and Trish note that any effective oversight must grapple with the dialysis market's heavy consolidation. This need became even greater when the 21st Century Cures Act allowed patients with kidney failure to enroll in Medicare Advantage, the private-sector alternative to traditional Medicare. Lin and Trish found that Medicare Advantage plans pay 27% more than Medicare for the median price of outpatient dialysis treatment. Without significant reforms to increase competition, such high markups will ultimately increase premiums and reduce benefits.

Spurred by an increasing share of dialysis clinics being owned by nephrologists, Lin evaluated whether this conflict of interest impacted patient outcomes. He found that patients treated by physician-owners were more likely to receive home dialysis and less likely to receive expensive medications.

Using Data to Improve Healthcare for All

Although big data is revolutionizing healthcare, its potential has been limited by a lack of information from marginalized racial and socioeconomic groups. To close this gap and better address health disparities, biomedical engineer Ritika Chaturvedi led creation of American Life in Realtime (ALiR), a first-of-its-kind comprehensive digital health dataset representing all demographic populations in the U.S.

"Leaving out large portions of the population in these studies inevitably leads to disparities, because different populations exhibit different behaviors and experience different social determinants of health," Chaturvedi says. "We hope to create precision public health interventions that meet individual needs."

More than 1,000 people have enrolled in ALiR, which is supported through a $1.2 million, four-year grant from the National Institutes of Health. Each participant receives a Fitbit to collect physical activity, sleep and heart rate data. Giving participants the device helps overcome the biases of most digital health studies, which overlook key demographics by focusing on people who already own such devices. The research team also created an app that surveys participants and awards points based on data engagement and response. ALiR will ultimately be made publicly available to benefit health research everywhere.

3 Design Policy Solutions: Provide Evidence-Based Analysis to Decision Makers

40+

countries were present at the U.N. event where Rosalie Liccardo Pacula presented her research.

Setting Public Health Frameworks for Cannabis Regulation

Nearly half the nation allows adults to use cannabis recreationally, and all but 13 states have legalized it for medical purposes. Yet, no nationwide standards exist for quality or safety since cannabis remains prohibited at the federal level.

A white paper co-authored by Rosalie Liccardo Pacula and Seema Choksy Pessar highlights how the weakness of state-level cannabis regulations—especially when compared to other countries—leaves consumers at risk. In addition, industry innovation has not only increased the potency of cannabis products but has also outpaced state regulations and our knowledge of the drug's health impacts.

We do, however, know that prolonged use of high-potency cannabis products is associated with numerous health issues, including short-term memory and coordination difficulties, impaired cognition, psychosis, anxiety and depression. Pacula also notes a rise in cannabis-related emergency department visits.

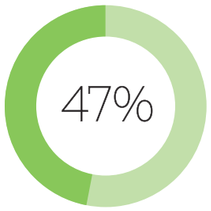
To better regulate legal cannabis markets and products, she and fellow researchers suggest four strategies for state and national lawmakers: limiting the amount of cannabis' main intoxicant, THC, in products; restricting the amount of THC that can be sold in a single transaction; taxing products based on their potency; and implementing seed-to-sale data-tracking systems. Above all, Pacula urges such measures be implemented at the federal level to ensure that public health—and not just profit—is a market consideration.

Pacula's research also closes gaps in knowledge about the use of medical cannabis. Most information about this has come from patients' survey responses. But for research published in *JAMA Network Open*, she, Alexandra Kritikos and colleagues examined point-of-sale data from more than 80,000 purchases made between 2016 and 2019 as part of the New York state medical cannabis program. Cannabis flower and edibles were still barred from the medical market at that time, but other products were allowed.

The analysis found considerable variation in the products chosen for most medical conditions, as well as high variability in labeled doses of THC. This suggests a lack of consistent guidance from clinicians and pharmacists. The researchers also noted an absence of clinical data on appropriate dosing in numerous disease areas.

Combined with earlier research by Pacula showing that electronic medical records often underreport the number of medical cannabis users, this study suggests the need for improved medical guidance and oversight of dosing. "We suspect the lack of clinical guidelines on dosing of cannabinoids for

The cost of hospital-acquired infections has risen to nearly $48 billion annually.



of Americans now live in a state with legal recreational cannabis.

500

10-milligram THC servings can be purchased in a single transaction in most states with recreational cannabis. By comparison, a keg provides 165 servings of beer.

"Allowing the industry to self-regulate in the U.S. has generated products that are more potent and diverse than in other countries and has led to a variety of youth-oriented products, including cannabis-infused ice cream, gummies and pot tarts. Current state regulations and public advisories are inadequate for protecting vulnerable populations who are more susceptible to addiction and other harm."

Rosalie Liccardo Pacula

particular medical conditions has made medical providers uncomfortable talking to their patients about their medical cannabis use," Pacula says.

As more states and countries legalize cannabis, U.S. and international policymakers are relying on Pacula's expertise. Frequently quoted in the media about cannabis and addiction policy, she has presented her research before the United Nations Commission on Narcotic Drugs. The German government asked her to share her findings as that nation considers cannabis legalization, and officials working in Canada have reached out to her about implementing their cannabis laws.

Preventing Hospital Complications

Hospital-acquired conditions (HACs) such as adverse drug effects, infections and pressure injuries cost the U.S. nearly $48 billion annually. Avoidable complications afflict more than 3.7 million patients every year. HACs are also the third-leading cause of death nationwide.

William Padula is a nationally recognized expert leading the charge to design policies that prevent these conditions from occurring in the first place, saving both lives and money.

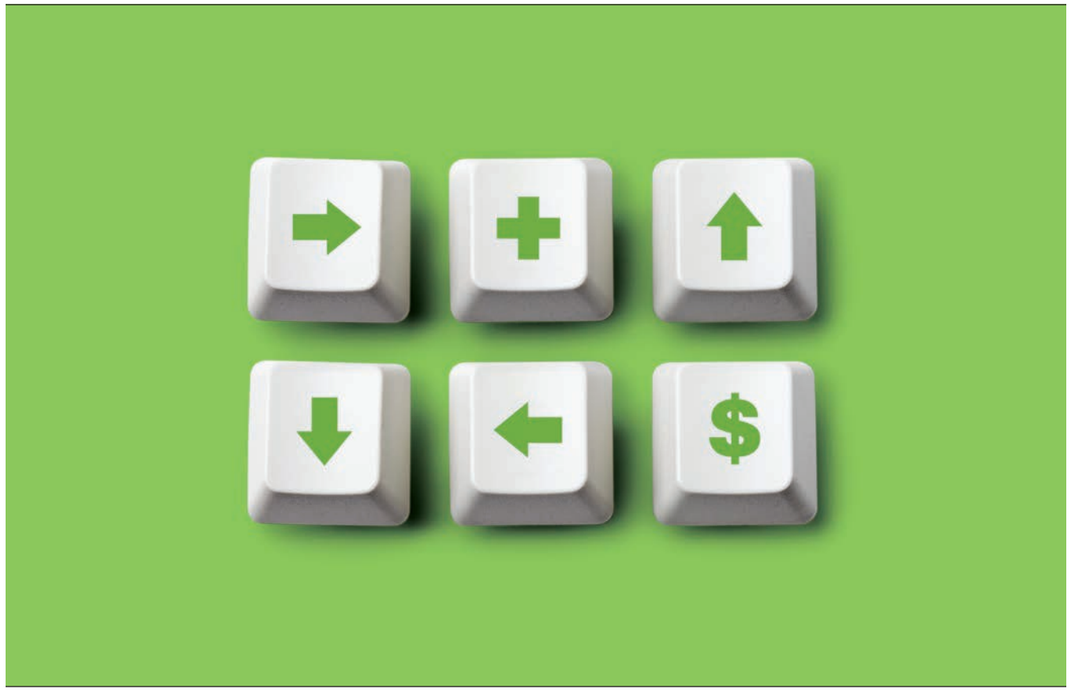
Although hospitals and the Centers for Medicare & Medicare Services (CMS) have made progress in recent years toward reducing HACs, they are missing a chance for even greater impact. This is because hospital systems, in response to the threat of payment reductions from CMS, tend to create initiatives that treat issues as different and distinct. This leads to nurses and practitioners dividing the issue into too many parts rather than addressing it holistically.

As Padula, Dana Goldman and David Armstrong argue in an editorial for *Mayo Clinic Proceedings*, many HACs have overlapping risk factors. So a better way to prevent them is to focus on factors that overlap between outcomes—such as nutrition or mobility.

To reduce complexity bias—the tendency to choose the most complex of two competing approaches—they write that CMS should consider rewarding health systems for good performance, rather than enforcing only punitive measures. They believe that hospitals that become designated as Centers of Excellence—that is, go beyond providing a baseline standard of care—would meet eligibility criteria for these reward-based payments.

Pressure injuries, a common but preventable HAC, affect approximately 2.5 million patients in the U.S., cost the healthcare system $26.8 billion and result in 60,000 deaths annually.

Padula's findings have gained attention from federal policymakers and health system administrators. His checklist for pressure injury prevention was written into law as the standard of care for Veterans Affairs facilities nationwide in 2022.



Paying Attention to Medicare Part D Switching

Enabling beneficiaries to switch Medicare Part D plans through open enrollment is important not only because plan coverage changes over time, but also because people's health and prescription needs evolve. Yet the option is only effective if consumers take action to modify their plans—and most beneficiaries do not. The resulting costs can be large.

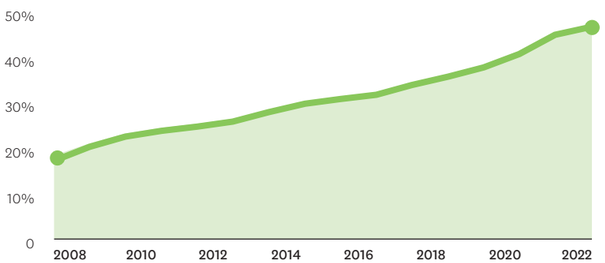
Nobel Laureate Daniel McFadden and colleagues developed a data model to address the separate stages of attention and choice. In research published in *American Economic Review*, they used this model to characterize the inertia keeping people in plans even after better alternatives become available.

The team found lack of attention is an important reason for this inaction, but concerns about the costs of switching also play a role. Consumers pay attention to the

49%

of Medicare beneficiaries were enrolled in Medicare Advantage plans in 2022.

Total Medicare Advantage Enrollment 2008–2022



"Converting Medicare Advantage (MA) to a competitive bidding system offers an opportunity to make the program more efficient and produce significant federal budgetary savings, potentially without shifting costs (on average) to beneficiaries. Greater program efficiency should be achievable by incentivizing MA organizations to compete on price for a standardized product, instead of competing primarily on benefit generosity."

Paul Ginsburg, Erin Trish and Loren Adler

possibility of switching plans when they are triggered by potential financial consequences, mainly premium increases and exposure to a gap in coverage. Furthermore, attention seems to decrease with age and experience in Part D. McFadden's data model is important for designing policies that ensure consumers are in the optimal Part D plan each year.

Reforming Medicare Payment Systems

With Medicare spending growth expected to exceed gross domestic product growth over the next decade, reform is drastically needed—especially with nearly 10,000 baby boomers aging into the program every day.

Medicare Advantage offers the choice of receiving Medicare benefits through private health plans with the aim of promoting competition to lower costs and enhance care. The option is popular, with almost half of Medicare beneficiaries currently enrolled.

10%

of Medicare Part D beneficiaries switch plans each year.

Paul Ginsburg

60+

research analyses of Medicare

However, it is costlier to the government than if these beneficiaries had remained in traditional Medicare. Medicare Advantage is flawed by a complex structure of benchmarks that results in excessive profits for plans, overly complex choices for consumers and uneven subsidization.

In considering ways to enhance Medicare Advantage so it can remain viable, the Medicare Payment Advisory Commission (MedPAC) has taken up a solution proposed by the USC-Brookings Schaeffer Initiative for Health Policy. Paul Ginsburg, Erin Trish, Loren Adler and colleagues developed strategies that include standardizing Medicare Advantage offerings. They suggest replacing the current structure with a more efficient one that makes most Medicare Advantage insurance products uniform and revises the contracting process to truly spur price competition. Under the proposal, Medicare Advantage plans would offer three levels of benefits: standard, standard-plus and an enhanced benefits tier.

MedPAC discussed the Schaeffer Initiative proposal at a presentation on standardizing benefits held in September 2022. The discussion focused on applying the strategy to Medicare Part A and B services. Part A covers inpatient, nursing facility and nursing home care as well as hospices and home health. Part B covers preventive services and those deemed medically necessary.

"The MedPAC, which advises Congress on Medicare issues, presentation represents the first time that the idea of a standard benefit design in Medicare Advantage has been taken up," notes Ginsburg, who served as the commission's founding executive director and as commissioner and vice chair from May 2016 to May 2022. "Although standardizing benefits was part of the competitive bidding proposals that the Schaeffer Initiative came up with, our work also outlined the merits of standardization to increase competition among plans even under the current system of administered prices."

Meanwhile, Alice Chen presented a potential solution for reforming traditional Medicare at a meeting of the Physician-Focused Payment Model Technical Advisory Committee in Washington, D.C. The committee cited her work in a recent report.

Chen and colleagues propose reforming Medicare through a multitrack, population-based payment model that accommodates all types of providers. A white paper sketches out their blueprint for addressing key challenges of accountable care organization models, which should be flexible enough to accommodate side contracts with appropriate outside entities. The strategy would establish stronger participation incentives along with firm benchmarks in meeting long-term financial and clinical accountability. It would also advance health equity by using risk adjustments to allocate more resources to underserved and socially disadvantaged communities.

4 Evaluate Outcomes: Measure the Costs, Benefits and Distributional Impact of Reform

40+

Schaeffer analyses and events on the issue of surprise billing, between 2016 and 2022. The No Surprises Act was signed into law in 2020.

Examining the Impact of the No Surprises Act

Informed by findings from the USC-Brookings Schaeffer Initiative for Health Policy, and implemented in January 2022, the No Surprises Act shields insured patients from excessive billing for numerous out-of-network medical services. Among the most common surprise-billing scenarios were emergency procedures performed by out-of-network specialists at in-network facilities—which patients could not have known about in advance. The act also established an independent dispute resolution process to determine appropriate reimbursement levels.

Between 2016 and 2022, Schaeffer Initiative experts authored 40 analyses on the subject, including journal articles, white papers and blog posts. Our researchers are now evaluating the law's impact and consequences while crafting recommendations to protect patients from situations overlooked by the legislation.

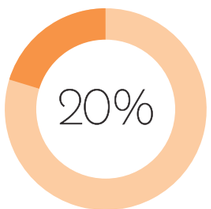
Research co-authored by Erin Duffy and Erin Trish finds that the law could lower rates for emergency medicine procedures by reducing the bargaining power of hospitals and physician groups. The study, published in *JAMA Health Forum*, builds on previous research showing that negotiating leverage allowed emergency medicine providers and other specialists to charge significantly higher rates than other caregivers. These higher rates often applied to in-network services as well.

The researchers found that average out-of-network prices for emergency services before the No Surprises Act were 112% higher than qualifying payment amounts (QPAs), while in-network payments were 14% more. Self-funded employer plans were even more generous, allowing payments 120% higher than the QPA estimate for out-of-network care and 15% more for in-network services.

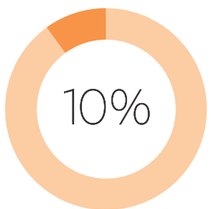
"There is a large body of literature that's shown that emergency medicine providers and other types of specialists most likely to surprise bill were receiving significantly higher rates—even for in-network services provided—because of their outsized negotiating leverage," Duffy says. "Our results suggest that using the qualifying payment amount to arbitrate out-of-network payment disputes will likely affect payment rates that insurers and affected clinicians negotiate for in-network services as well."

Under the No Surprises Act, disputes between payers and providers are settled through arbitration. Duffy, Trish, Loren Adler and Benjamin Chartock evaluated trends in dispute resolution outcomes in Texas—a state that implemented a dispute resolution system in 2020—to understand which factors affected decisions. They find that decisions were largely anchored to the established median in-network allowed

According to a 2017 *Health Affairs* study of the No Surprises Act, the risk of a surprise bill was high.



of emergency room visits led to a potential surprise bill.



of elective surgeries led to a potential surprise bill.

"Before the No Surprises Act, several states enacted laws to prevent surprise bills but consumers were still vulnerable to harm from higher premiums. The economic evidence indicates that the No Surprises Act will help keep insurance premiums steady—or even lower them—without limiting patients' access to in-network providers or reducing providers' payments to below-market rates."

Erin Trish

16%

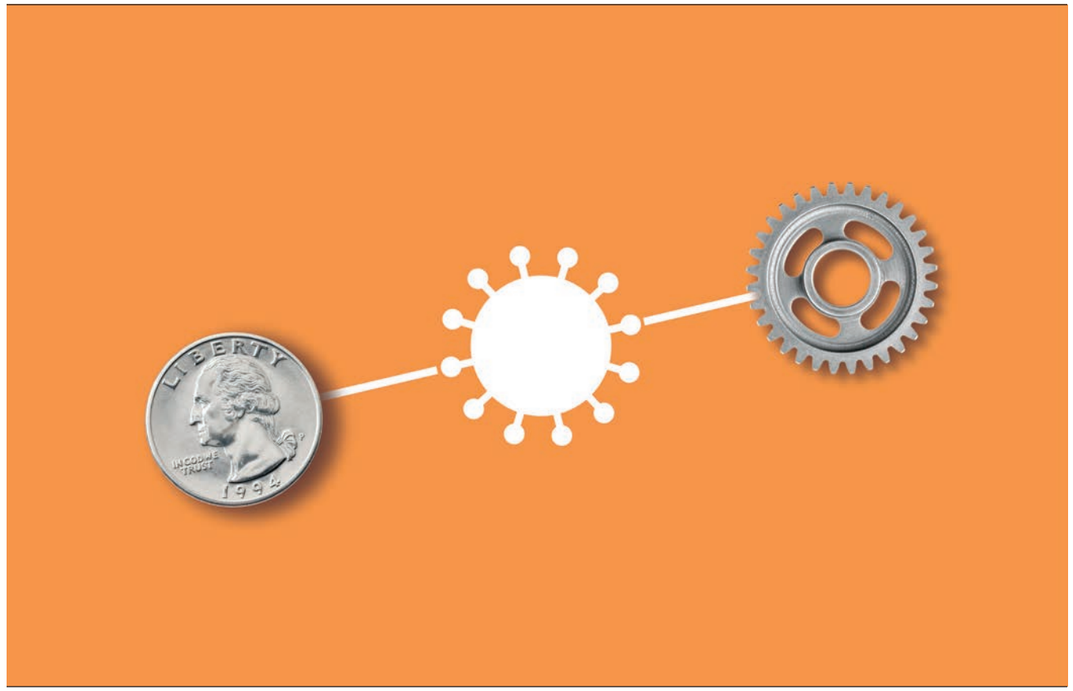
of surveyed adults who said they initially wanted the COVID-19 vaccine reported that they no longer wanted it after they were passed over.

amount, rather than a much higher alternative benchmark set at the 80th percentile of charges.

"If arbitration outcomes continue to follow the median in-network price benchmark, Texas' law should result in significant savings to consumers not only by eliminating surprise bills but also by reducing cost-sharing and premiums," Adler says.

"Prior to the No Surprises Act, some emergency physician groups leveraged a market failure to command high prices," Trish notes. "The law helped address this market failure, which will not only protect patients from surprise bills, but may also help bring down emergency physician prices more broadly."

Adler, Duffy, Trish and Ginsburg joined health policy experts from across the U.S. in submitting three amicus briefs that provided analysis and research on the issue of surprise bills and the No Surprises Act.



Does Working From Home Enhance Public Health?

Even though many jobs must be done in person, working remotely has been on the rise since the COVID pandemic. Matthew Kahn, author of *Going Remote: How the Flexible Work Economy Can Improve Our Lives and Our Cities*, suggests that, instead of exacerbating disparities, this trend may lead to health benefits reaching beyond those able to work from home.

Workers who commute only two days a week could save an average of five hours weekly, opening up new opportunities for improving mental and physical health.

Cutting down on commutes can reduce pollution while lessening people's stress and giving them more personal time. Employees could also be more free to live where they want. Those with asthma, for example, could move to areas with cleaner air. More people moving also creates local service-sector jobs in towns where they relocate. However, Kahn cautions, area policymakers must ensure that living costs do not rise disproportionately for current residents.

Allowing staff to work from home could benefit companies as well, he notes. In addition to increased productivity stemming from employee well-being, better health among workers could result in lower health coverage costs. Kahn thus urges employers to support staff preferences for working at home whenever possible.

Rewriting the Pandemic Playbook

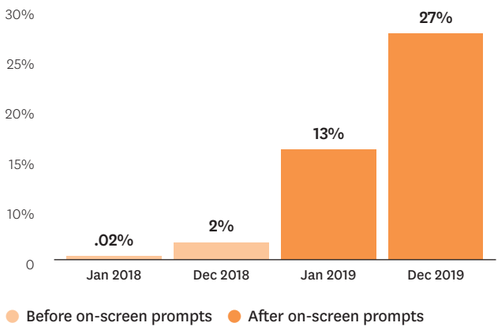
Directed by Neeraj Sood, the Schaeffer Center COVID-19 Initiative has fostered insights and strategies to not only mitigate the damage of COVID-19 but also prepare for future pandemics.

By early February 2022, COVID-19 had cost the U.S. 1 million excess lives. Analysis by Hanke Heun-Johnson and Bryan Tysinger finds that the average person lost 13.5 years of life—a statistic that rose as the pandemic's second year inflicted increased losses among younger adults. Despite widespread vaccine availability, adults under age 65 make up 56% of life years lost.

Much of the early public health strategy hinged on minimizing infections, with the hope that the population would build up antibodies through vaccination or prior infection to help stop the virus from spreading. Research led by Sood shows that achieving herd immunity was unlikely. Published in *JAMA Network Open*, his study estimates that, in April 2021, 72% of adults in Los Angeles County had either been vaccinated or accumulated antibodies through past infection. Yet the county still experienced significant surges, while health disparities grew.

"Testing the symptomatic, ensuring access to new treatments and encouraging

The percent of patient visits resulting in a prescription for naloxone alongside opioids increased after implementation of on-screen prompts for physicians.



"Chronic pain itself remains a significant public health problem. But evidence suggests it is possible to reduce opioid use while managing pain and maintaining function and quality of life. The most effective way to curb opioid addiction is to start upstream with how opioids are being prescribed. Nudges can be a great way of changing behaviors."

Jason Doctor

72%

of L.A. County adults had COVID antibodies in April 2021. Yet, the county still experienced significant surges in the following months.

vaccinations for high-risk populations should be the pillars of our pandemic response going forward," Sood says.

Vaccine rollout strategies also need to be rethought, according to a study led by Mireille Jacobson. She and colleagues evaluated the impact of three behavioral nudges on COVID vaccine intent and uptake: a video message, a financial incentive and access to a simple vaccination appointment scheduler. None increased vaccination rates.

How vaccines are allocated, and which groups receive priority, may also contribute to vaccine-hesitant individuals refusing the vaccine, according to research by Wändi Bruine de Bruin. She found that disinterest increased among all groups when they had to wait for a vaccine.

Other Schaeffer research found that to combat vaccine resistance, public health communications must use everyday language, be consistent and remove barriers to recommended behaviors.

Opioid prescriptions dropped 23% following use of best practice alerts nudging physicians away from unnecessary prescribing.

Jason Doctor and Wändi Bruine de Bruin

Nudging to Improve Prescription Practices

Low-cost interventions developed by Jason Doctor to nudge physicians away from unnecessary prescribing continue to improve patient safety. Officials nationwide have contacted him about how to implement such nudges, which are now used by agencies in California, Kentucky, Maryland, Oregon and other states.

California law requires naloxone, an opioid overdose reversal drug, to be prescribed alongside opioids for at-risk patients. Doctor worked with Kaiser Permanente to evaluate its success in using best practice alerts to increase naloxone prescriptions and reduce medical opioid use. Whenever Kaiser Permanente physicians prescribe opioids, they receive on-screen nudges that explain the risks of opioid prescribing, remind them to order naloxone and offer safety recommendations.

The results, published in *JAMA Network Open*, show a 23% drop in opioid prescriptions and a 27% increase in naloxone prescriptions. Female physicians are more likely to adjust opioid prescribing compared with male peers, and younger physicians are likelier to change habits than their older counterparts. The researchers also found that primary care physicians changed their habits more than nonprimary care physicians.

Doctor has also worked to reduce opioid prescriptions through strategies such as sending letters to physicians whose patient suffers a fatal overdose. These letters, issued by a county medical examiner, also prompted the reduction of prescriptions for benzodiazepines. Benzodiazepines are commonly prescribed for conditions ranging from anxiety to sleep disorders, but can be deadly when combined with opioids, other prescription drugs or alcohol.

Doctor's findings, published in *JAMA Internal Medicine*, show that the daily use of 2 mg doses of these drugs declined by 3.7% among physicians who received the letter compared to those who didn't. Federal, state and local policymakers, and public health officials have reached out to Doctor about how to best implement these letters in their communities.

In response to new federal guidelines for prescribing opioids issued by the Centers for Disease Control and Prevention that allow physicians to ignore the previous recommended dosage ceiling, Doctor points to the need for a universal strategy for ensuring patient safety.

To rectify this, Doctor suggests implementing a deprescribing plan before a physician prescribes opioids. The approach may also involve mental healthcare, community support and social services.

"A straightforward commitment to reduce opioid use, a specific set of recommendations to get there and a network of support is the right prescription," Doctor writes.

75+
exchanges with policymakers, staffers and stakeholders in the past year

16
fellows ranked in the top 2% of researchers globally, by citations

88
federally funded projects

53
opinion pieces and blogs in publications including The Wall Street Journal *and* Health Affairs *in 2022*

8
research programs

78,000
pageviews and downloads of Schaeffer Center white papers in 2022

3
Nobel laureates

5,500
media mentions in 2022, including interviews with the BBC, The New York Times, The Wall Street Journal *and* The Washington Post

146
studies published in 2022

40+
citations in government documents in 2022, including reports by the Government Accountability Office and other agencies

2022 Economic Report of the President cited work from the Schaeffer Center—as have 9 of the last 10 reports.

The Schaeffer Center pursues innovative solutions rooted in evidence-based research to measurably improve value in health. Our research programs feature portfolios in key priority areas to advance this mission.

Each of our research programs—Aging and Cognition, Behavioral Sciences, COVID-19 Initiative, Healthcare Markets Initiative, Health Policy Simulation, Population Health, USC-Brookings Schaeffer Initiative for Health Policy and Value of Life Sciences Innovation—develops approaches that improve patient outcomes and the system itself.

Research Programs

1,550+
journal articles by Schaeffer Center experts since 2009

67
white papers published since 2017

Aging and Cognition

While the healthcare profession has achieved remarkable progress in lengthening life expectancy, these benefits bring considerable challenges—from Alzheimer's and other age-related diseases to increased injuries, disabilities and poverty risks. Our Aging and Cognition program studies the fiscal and health consequences of our aging population, including race and ethnic differences between Alzheimer's risk and use of prescriptions for chronic conditions. Policymakers rely on our research and modeling tools to improve the lives of older adults and keep people as healthy as possible throughout their lives.

Co-Directors: Mireille Jacobson, PhD, and Julie Zissimopoulos, PhD

COVID-19 Initiative

COVID-19 has cost millions of lives worldwide, overwhelmed healthcare systems, devastated economies and changed society for years to come. The Schaeffer Center quickly responded to the pandemic, launching studies working with local public health officials to understand the virus, how it spreads and how to mitigate harms. Our COVID-19 Initiative continues working to improve public health, develop analyses and strategies to ease damage from the pandemic, reveal COVID's hidden costs, understand disparities in vaccination rates and leverage knowledge gained to better prepare for future pandemics.

Director: Neeraj Sood, PhD

Behavioral Sciences

We combine insights from psychology, economics and other social sciences to understand how people make decisions and apply that knowledge to find ways to steer clinicians and patients toward better choices. For example, our team has evaluated prescribing decisions related to antibiotics and opioids and developed nudges to inform prescribing behavior without reducing physician autonomy. During the COVID-19 pandemic, we looked at what was driving vaccine uptake and the use of protective behaviors to help public health professionals better communicate and develop more effective programs.

Co-Directors: Wändi Bruine de Bruin, MSc, PhD, and Jason Doctor, PhD

Healthcare Markets Initiative

U.S. healthcare markets maintain many inefficiencies, resulting in both overuse and underuse of care. The challenge is developing appropriate incentives that eliminate the shortcomings that lead to some services being too expensive and reimbursements for others being too low. The Healthcare Markets Initiative advances market-based solutions to health policy challenges in a variety of areas including rare diseases, medical devices and digital health. Our researchers analyze the most appropriate market incentives for motivating individuals and stakeholders to improve the functioning of the healthcare system.

Director: Matthew Kahn, PhD

Health Policy Simulation

Our Health Policy Simulation work has set the gold standard for researchers to effectively model future trends in health and longevity. The pioneering Future Elderly Model (FEM) models trends in health, functional status, health spending, pharmaceutical innovation, labor supply and earnings for individuals over age 50 in the U.S. Our team has created a global network of collaborators who are building out country-level FEM-based models in 20 countries. An extension of FEM, the Future Adult Model, models similar trends for individuals ages 25 to 50.

Director: Bryan Tysinger, PhD

Value of Life Sciences Innovation

Biomedical advances are at the front lines of transforming healthcare through innovations that benefit countless people. But as spending on new medications and devices increases, so do calls to rein in costs—which risks stunting medical discoveries essential to saving and improving lives. The Value of Life Sciences Innovation program exemplifies the Schaeffer Center's focus on evidence-based analyses that encourage breakthroughs while developing pricing and reimbursement strategies that are focused on value to help ensure that patients have access to the therapies they need.

Executive Director: Karen Van Nuys, PhD

Population Health

From combating the opioid crisis to eliminating pharmacy shortage areas to understanding the changing role of the emergency department, improving health starts at the community level. The Schaeffer Center conducts vital research aimed at reducing health disparities among the most underserved and vulnerable among us. Our investigators use high-tech mapping to help identify and eliminate pharmacy deserts in both rural and urban areas to ensure access to essential medications. Other experts are studying the impact of cannabis legalization on public health, as well as devising strategies to strengthen overdose prevention and analyzing policies designed to address addiction.

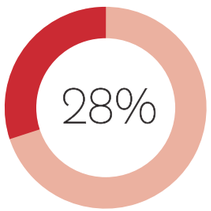
Director: Seth Seabury, PhD

USC-Brookings Schaeffer Initiative

The USC-Brookings Schaeffer Initiative for Health Policy unites the Schaeffer Center's data and analytic strengths with Brookings Institution's economic policy expertise. It aims to inform the national healthcare debate with rigorous analysis leading to practical recommendations. Initiative experts have played pivotal roles in major health policy debates, including the 2017 Affordable Care Act (ACA) repeal-and-replace debate and the issue of surprise billing and how to solve it. The Initiative currently focuses on implementing the No Surprises Act, Medicare and ACA Marketplace enrollment policies, drug pricing and mental health coverage.

Director: Richard G. Frank, PhD

USC-Brookings Schaeffer Initiative



of commercially insured emergency ground-ambulance transports resulted in a potential surprise bill between 2014 and 2017.

$38B

in savings would accrue to those with private health insurance if payments for services that typically surprise bill were reduced.

Case Study: Stopping Surprise Medical Billing

Insured patients have long endured financial strain from surprise medical bills stemming from receiving care from out-of-network providers they didn't choose. Since the USC-Brookings Schaeffer Initiative for Health Policy's launch in 2016, its experts—including Loren Adler, Erin Duffy, Paul Ginsburg, Matthew Fiedler and Erin Trish—have published research to shed light on the market failure that causes surprise billing and developed data-driven policy recommendations. Stakeholders, policymakers and journalists nationwide turned to the Initiative's researchers to help define the problem and unpack the impact of proposed solutions.

Identify the Problem

Schaeffer Initiative experts showed that providers most likely to surprise bill garner contracted payment rates that are substantially higher compared to the rates other specialists receive relative to Medicare prices.

To show how pervasive the practice is, the researchers analyzed settings where little prior data existed. For example, Duffy and colleagues found that 8% of episodes at in-network ambulatory surgery centers resulted in a potential surprise bill—and the average amount of that bill almost doubled between 2014 and 2017. A separate study found that 40% of air-ambulance rides resulted in a potential surprise bill.

These higher rates impact more than the patient who receives the unexpected bill. They also add to overall healthcare spending. Schaeffer research found that if payments for these services were reduced, health insurance premiums could drop by up to 5.1%, amounting to savings of as much as $38 billion for those with private health insurance.

Shape the Debate

This research and analysis became the foundation of an evidence-based playbook and Schaeffer Initiative experts established themselves as an unbiased resource on this topic. Over the last seven years, they authored 12 journal articles and white papers and more than 20 op-eds and blog posts. They have been asked to testify at congressional hearings and have joined meetings of policymakers, staff members and analysts to discuss the problem and proposed solutions. The media have also turned to these experts as a trusted source, resulting in over 500 media mentions.

Design Policy Solutions

While everyone agreed that patients should be protected, how the market failure should be solved was unclear. Over the entirety of the debate, Schaeffer Initiative fellows analyzed a range of federal and state proposals to solve surprise billing, highlighting the benefits and shortcomings of various approaches. Multiple analyses helped draw attention to concerns that some arbitration-style approaches would lead to higher costs—and proposed solutions that might help mitigate these effects. For example, Initiative experts demonstrated that approaches taken by New York and New Jersey could actually increase healthcare prices. Many of these pieces contributed to the adoption of the No Surprises Act.

Evaluate Outcomes

The law, however, is not perfect. The Schaeffer Initiative has now turned to examining how the No Surprises Act is being implemented and calling attention to its gaps. For example, Initiative experts are evaluating the arbitration process between providers and insurers. "We need to understand how arbitration to resolve out-of-network billing disputes is working in practice," Trish says. "It is important to protect patients, but we also need to avoid a solution that provides perverse incentives and ultimately increases spending."

This includes remedying the omission of ground ambulances, which still leaves patients vulnerable to balance billing for certain emergency care. In response, Congress created the Advisory Committee on Ground Ambulance and Patient Billing (GAPB). Adler serves on GAPB, which is charged with making recommendations on how best to protect patients.

The Schaeffer Initiative is also addressing a loophole that allows hospitals to be out of network, despite having a contract with the affected patient's insurer, and permits higher cost-sharing rates. In addition, Initiative researchers have contributed expert briefs in litigation surrounding the No Surprises Act and are contributing strategies for improving the law's arbitration processes.

These extensive, far-reaching efforts aim to ensure that the No Surprises Act—and similar laws at the state level—succeeds in reducing healthcare costs and protecting patients from unexpected bills.

Data and Microsimulation

16

data scientists maintain over 70 databases and provide support for each of the Schaeffer Center's research projects.

The Schaeffer Center's microsimulation team and data core leverage the information and tools necessary to help answer significant questions in health policy with evidence-based solutions. The team—which includes programmers, microsimulation modelers, statisticians, analysts and a data resource administrator—has expertise in the methods and programming necessary to rigorously analyze big data. Schaeffer Center fellows and students rely on this team for support on a range of projects.

Data Core and Data Security

Data core programmers strive to develop best practices for data analysis and improve the quality and productivity of research by providing organized data resources, training and staff expertise. Schaeffer Center fellows and students rely on this team for support on a range of projects.

The data library maintained at the Schaeffer Center includes survey data, public and private claims, contextual data and electronic health network data feeds. The Schaeffer Center data core is a pioneering information resource and computing environment that meets exacting standards of excellence in data security. It manages a mix of security measures, from an air-gapped workstation to state-of-the-art, Health Insurance Portability and Accountability Act (HIPAA)-compliant systems that include 24/7 monitoring to ensure private health data resources are protected.

Health Policy Microsimulation

For more than a decade, the Schaeffer Center has been at the forefront of developing pioneering, economic and demographic microsimulation tools to effectively model future trends in health and longevity and answer salient questions in health policy. The centerpiece effort is the well-validated Future Elderly Model (FEM), which projects a robust set of health and economic outcomes for the U.S. population age 50 and older. The FEM was originally set up to answer questions about the long-term economic viability of the Social Security and Medicare programs.

Schaeffer Center researchers have used the FEM to explore an increasingly wide variety of policy questions, ranging from the fiscal future of the U.S. to the role that biomedical innovation can play in future health outcomes and disease burdens. This includes some of the most pressing health issues of our time, including the COVID-19 pandemic, Alzheimer's disease, obesity and diabetes. Furthermore, our investigators use the FEM to study issues across the life course, from adverse childhood experiences to challenges at the end of life.

The microsimulation team continues to build a global network of collaborators who are developing country-level FEM-based models in nations around the world. Twenty countries—including Mexico, Taiwan and Ireland—are part of this network, which is focused on modeling the costs and implications of Alzheimer's disease and related dementias. This effort will allow researchers to compare demographic, health and economic trends on a global scale—and is especially important given that the number of individuals age 65 years and older is projected to double by 2050.

Bryan Tysinger, Johanna Thunell and Niloofar Fouladi Nashta

In research published in a special issue of *Health Economics*, investigators leveraged the FEM to forecast long-term trends in disease dynamics from 15 countries. Focusing on the consequences of policy and behavioral factors in healthy aging—including trends in chronic disease, education and behavioral factors like smoking—they produced forecasting models that can be used by policymakers and stakeholders. Researchers involved in the project include two winners of the Nobel prize in economics, Daniel McFadden and James Heckman. In total, eight papers were published as part of the special issue.

The FEM was also leveraged for a National Academy of Sciences report on diversity in clinical trials. The committee that authored the report relied on FEM projections to calculate the burden from lost life, increased disability and lost productivity arising from disparities in diabetes, heart disease and hypertension.

Models have also gone local, with simulations conducted for California and Los Angeles County to help policymakers at the state and county levels understand trends and the impact of policy decisions. Modelers are also evaluating urban-rural disparities and other demographic trends across the country.

Ultimately, the goal is to offer a tool to help policymakers weigh the pros and cons of potential policies using actual evidence about impact when deciding where to put resources. Findings using the FEM and Future Adult Model have been published in top journals and cited—or commissioned—by government agencies, the White House, the National Academies of Sciences, Engineering and Medicine, and private organizations interested in aging policy. In fact, President Biden's Build Back Better plan cited two papers that used Schaeffer Center's microsimulation modeling to project the benefits of early childhood education.

Data Partnerships and Collaborations

In addition to serving as a resource for Schaeffer Center researchers, the data core and microsimulation team partners with local, state, federal and international collaborators to develop data projects and models. Key collaborations include the National Academies of Sciences, Engineering and Medicine and the Los Angeles County Department of Public Health.

170M

lives represented in Schaeffer Center data

↑

The number of nations that are part of our global network developing country-specific FEM-based models has grown to 20.

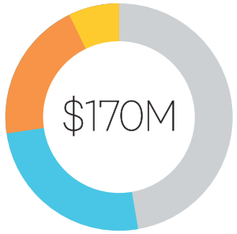
Financial Report

For fiscal year 2022 (July 1, 2021–June 30, 2022), the operating budget includes compensation for faculty, scholars and staff; programmatic expenses; and general operating costs. Faculty salaries covered by the schools are not included in these totals. Expenses by function are outlined in the graph below left.

In fiscal year 2022, the Schaeffer Center funded $15.6 million in operating expenses from $16.6 million in current revenue. University support does not include faculty salaries covered by the schools. Since its inception, the Schaeffer Center has raised $170 million, the majority from federal grants.

Operating Expenses
for fiscal year 2022

- **Research and Training: $11.2M (72%)**
  Salaries, research expenses, initiatives, special projects and training programs
- **Data Core and Health Informatics: $1.8M (11%)**
  Salaries, data and data infrastructure
- **External Affairs: $1.4M (9%)**
  Salaries, development, communications and event expenses
- **Administration: $1.2M (8%)**
  Salaries and general operating expenses



Revenue
from inception through June 30, 2022

- **Government: $80.3M (47%)**
  National Institutes of Health, Centers for Medicare & Medicaid Services, and other government sources
- **Corporations: $43.1M (26%)**
  Industry
- **Individuals and Foundations: $34.1M (20%)**
  Foundations, family foundations and individuals
- **USC and Others: $12.2M (7%)**
  University support and miscellaneous income

Conflict of Interest Policy

The USC Leonard D. Schaeffer Center for Health Policy & Economics conducts innovative, independent research that makes significant contributions to policy and health improvement. Center experts pursue a range of priority research areas focused on addressing problems within the health sphere. Donors may request that their funds be used to address a general research priority area, including:

- Improve the performance of healthcare markets
- Foster better pharmaceutical policy and regulation
- Increase value in healthcare delivery
- Improve health and reduce disparities throughout the life span

Schaeffer Center funding comes from a range of sources, including government entities, foundations, corporations, individuals and endowment. At all times, the independence and integrity of the research is paramount and the Center retains the right to publish all findings from its research activities. Funding sources are always disclosed. The Center does not conduct proprietary research.

As is the case at many elite academic institutions, faculty associated with the Schaeffer Center are sought for their expertise by corporations, government entities and others. These external activities (e.g., consulting) are governed by the *USC Faculty Handbook* and the university's Conflict of Interest in Professional and Business Practices and Conflict of Interest in Research policies. All outside activities must be disclosed via the university's online disclosure system, diSClose, and faculty must adhere to all measures put in place to manage any appearance of conflict.

Supporters

Numerous public and private funders provide grants, gifts and sponsorships that help advance our work. Thank you!

Your generosity contributes to the work of the Schaeffer Center—from groundbreaking, multidisciplinary research to national conferences and fellowships—all of which helps us pursue innovative solutions to improve healthcare delivery, policies and outcomes.

The Schaeffer Center gratefully acknowledges the following fiscal year 2022 supporters:

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National Institute on Alcohol Abuse and Alcoholism
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National Institute of Diabetes and Digestive and Kidney Diseases
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University of Essex
University of Michigan
University of Southern California
USC Dornsife Center for Economic and Social Research
USC Mann School of Pharmacy and Pharmaceutical Sciences
USC Price School of Public Policy
Utrecht University
Felix George Vladimir
Wake Forest University
Sharon Webb and Philip Lebherz
Elizabeth and Timothy Wright

Research Training Program

In partnership with the USC Mann School of Pharmacy and Pharmaceutical Sciences and USC Price School of Public Policy, the USC Schaeffer Center prepares the next generation of health policy researchers to bring innovation and expertise to higher education, government, healthcare and research institutions. The Center's Research Training Program has developed a network of scholars from throughout the U.S.

National Institutes of Health-Funded Pilot Opportunities

USC Alzheimer's Disease Resource Center for Minority Aging and Health Economics Research
Aiming to increase the number, diversity and academic success of junior faculty who are focusing their research on the health and economic well-being of minority elderly populations, the USC Alzheimer's Disease Resource Center for Minority Aging and Health Economics Research has cultivated 30 early-career scholars since its launch in 2012. It is funded through a grant from the National Institute on Aging with additional support from the USC Office of the Provost, Price School of Public Policy, and Mann School of Pharmacy and Pharmaceutical Sciences. Collaborating centers include the USC Roybal Center for Behavioral Interventions in Aging, USC Edward R. Roybal Institute on Aging, USC Roybal Center for Financial Decision Making and Financial Independence in Old Age, USC Alzheimer Disease Research Center, and USC/UCLA Center on Biodemography and Population Health.

USC Center for Advancing Sociodemographic and Economic Study of Alzheimer's Disease and Related Dementias
An interdisciplinary research center established through a partnership with the Schaeffer Center, University of Texas at Austin Population Research Center and Stanford Health Policy, the USC Center for Advancing Sociodemographic and Economic Study of Alzheimer's Disease and Related Dementias (CeASES-ADRD) works to advance innovative social science research in Alzheimer's disease and related dementias, increase and diversify the number of researchers working in the field, and disseminate findings for impact. Funded through the National Institutes of Health, this mission is accomplished through network meetings, workshops, pilot project support and the annual Science of ADRD for Social Scientists Program.

USC Roybal Center for Behavioral Interventions in Aging
By developing and testing interventions based on insights from behavioral science to promote healthy aging, the USC Roybal Center for Behavioral Interventions in Aging aims to strengthen the ability of clinicians to recommend the safest, most effective treatments for patients. The center conducts research that advances healthy aging for older adults who are economically insecure, culturally diverse and underserved by human services organizations. It funds pilot projects proposed by senior and junior researchers from academic and research institutions focused on the consequences of current patterns of practice and development of interventions that will improve care delivery, quality of care and value to aging adults.

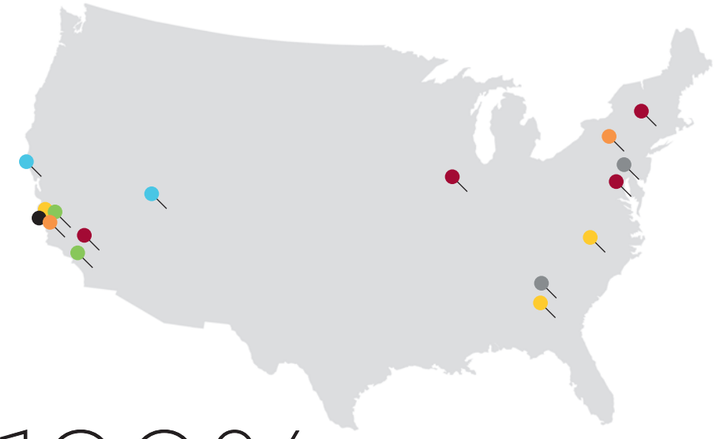
Additional Opportunities

Price School Diversity Initiative for Visiting Distinguished Scholars
The USC Price School is partnering with historically Black colleges and universities as part of a pilot program to promote research, engage diverse populations, provide mentorship opportunities, foster dialogue among faculty and students, and bring innovative work to our research centers. Scholars have the opportunity to partner with Schaeffer experts on issues related to health policy.

Clinical Fellowships
The clinical fellows program fosters collaboration between Schaeffer Center fellows and exceptional early-career scholars, clinical researchers and thought leaders. The program provides training and support for grants, papers and ongoing research projects.

Predoctoral Fellowships
Predoctoral students in related programs in the USC Mann School of Pharmacy and Pharmaceutical Sciences, USC Price School of Public Policy, and USC Dornsife College of Letters, Arts and Sciences conduct research under the guidance of a Schaeffer Center fellow, gaining knowledge and experience relevant to their doctoral program.

Postdoctoral Fellowships
Scholars chosen for our prestigious postdoctoral fellowships focus completely on research, with no teaching requirement. They receive one-on-one mentoring to support development of their individual research agendas and collaborate with other Schaeffer Center researchers.



100%

of Schaeffer Center trainees go on to careers in healthcare or health policy in academic, private and public-sector organizations.

USC Schaeffer Center Summer Internships
Each summer, the USC Schaeffer Center welcomes outstanding graduate, undergraduate and high school students to gain hands-on experience and mentorship in health policy research and data analysis as well as an introduction to the broader field of health economics through a three-week intensive internship program. Interns are paired with a USC Schaeffer Center mentor and given resources to conduct a tailored research project.

Research Assistantships
Students from relevant disciplines—such as economics, public policy, health policy, statistics, medicine and psychology—work directly with Schaeffer Center fellows on specific research projects, attaining valuable experience and skills to further their research proficiency.

Through our programs, we develop innovators for positions in higher education, research, government and healthcare. Distinctions include:

- One-on-one mentorship and opportunities to collaborate with distinguished investigators in the field
- Dedicated, full-time administrative and data support at the USC Schaeffer Center, and access to university-wide educational and career-development resources
- Equipping trainees with sophisticated data-analysis tools and resources
- Numerous professional development opportunities, including support for grant writing, publication in peer-reviewed journals, and travel for attending and presenting at major conferences
- Assistance in securing influential positions in prestigious academic, public and private settings

2022 Research Training Program Participants

- **Postdoctoral Fellows**
  Boston (Brandeis University)
  Boston (Harvard)
  Chicago (University of Chicago)
  Irvine, California (UC Irvine)
  Warsaw, Poland (SwPS University)
  Washington, D.C. (Howard)
- **USC-AD RCMAR Scientists**
  Atlanta (Spelman)
  Columbia, South Carolina (USC)
  Los Angeles (USC)
- **CeASE-ADRD Pilots**
  Los Angeles (RAND)
  Los Angeles (USC)
  Philadelphia (University of Pennsylvania)
- **Roybal Center for Behavioral Interventions in Aging**
  Los Angeles (AltaMed)
  Los Angeles (USC)
  San Diego (UC San Diego)
- **Roybal Center for Behavioral Interventions in Aging Postdoctoral Fellows**
  Davis, California (UC Davis)
  Salt Lake City (University of Utah)
- **Clinical Fellows**
  Los Angeles (Keck, Children's Hospital Los Angeles, UCLA)
- **Price School Diversity Initiative for Visiting Distinguished Scholars**
  Atlanta (Morehouse)
  Washington, D.C. (Howard)

Events and Seminars

Building a Modern Behavioral Crisis Response System: The Role of Federal Policy

January 10, 2022

Mental health crises are far from a new phenomenon, but broad awareness of them, as well as the need for holistic and effective response services, is increasingly being prioritized by policymakers and communities across the country. The USC-Brookings Schaeffer Initiative for Health Policy brought together a panel of experts, moderated by Schaeffer Initiative Director **Richard G. Frank**, PhD, to discuss policy initiatives that can more effectively and humanely address behavioral health crises.

Panelists included:

***Ayesha Delany-Brumsey**, PhD, director, Behavioral Health Division, The Council of State Governments Justice Center*

***Kana Enomoto**, MA, director of brain health, McKinsey Health Institute*

***Evelyn Lundberg Stratton**, JD, retired justice, Supreme Court of Ohio*

***Hemi Tewarson**, JD, MPH, executive director, National Academy for State Health Policy*

***Vikki Wachino**, MPP, principal, Viaduct Consulting LLC*

Healthcare Delivery in California: Where Do We Go From Here?

February 3, 2022

California's healthcare systems struggled under the surge of COVID-19 cases in 2020 and 2021, intensifying disparities in care and resources. In collaboration with the USC Price School, Schaeffer Center Co-Director **Dana Goldman**, PhD, spoke with California Health and Human Services Secretary **Mark Ghaly**, MD, MPH, about what the state can do to address the broader inequities exposed by the pandemic.

Policy Approaches to Improve Access to Palliative Care

February 24, 2022

Despite spending nearly 20% of GDP on healthcare annually, many U.S. patients with serious illness report unmanaged pain, unmet needs, inadequate care coordination and treatment that is inconsistent with their preferences. The Schaeffer Center brought together a panel of experts, moderated by **Mireille Jacobson**, PhD, co-director of the Center's Aging and Cognition Program, to discuss how increased access to palliative care has the potential to improve quality of life for patients and their families and increase the value of care provided.

Panelists included:

***Shari Ling**, MD, deputy chief medical officer, Centers for Medicare & Medicaid Services*

***R. Sean Morrison**, MD, Ellen and Howard C. Katz Professor and chair, Brookdale Department of Geriatrics and Palliative Medicine, Icahn School of Medicine at Mount Sinai*

***Thomas J. Smith**, MD, Harry J. Duffey Family Professor of Palliative Care, Johns Hopkins Medicine*

Global Projections of Dementia: United States, Ireland, Japan and Mexico

March 9, 2022

Forecasting the health of populations is integral to setting evidence-based policies that improve population health, ensure high-quality care and advance equity. The Schaeffer Center held a seminar, moderated by **Julie Zissimopoulos**, PhD, co-director of the Center's Aging and Cognition Program, on the projections of population-level cognitive impairment and dementia in the U.S., Ireland, Japan and Mexico, with an expert panel discussing how simulation modeling can be used for projecting costs and health outcomes of new therapeutics for Alzheimer's and related dementias.

Panelists included:

***Karen Eggleston**, PhD, senior fellow, Freeman Spogli Institute for International Studies, Stanford University*

***Hanke Heun-Johnson**, PhD, research scientist, USC Schaeffer Center*

***Peter May**, PhD, research assistant professor, Public Health & Primary Care and School of Nursing & Midwifery, Trinity College Dublin*

***Bryan Tysinger**, PhD, director, Health Policy Microsimulation, USC Schaeffer Center*

A Conversation on the Biden-Harris Administration's Drug Control Policy

April 6, 2022

While the Biden-Harris administration has offered up a range of drug policy priorities—including specific actions to reduce drug overdoses, promote recovery, reduce the supply of illicit substances and enhance harm reduction—alcohol and drug overdoses have continued to increase. **Ricky Bluthenthal**, PhD, associate director of community engagement and health equity at the USC Institute for Addiction Science, and **Rosalie Liccardo Pacula**, PhD, senior fellow at the USC Schaeffer Center, hosted a conversation with **Rahul Gupta**, MD, MPH, MBA, director of National Drug Control Policy for the White House Office of National Drug Control Policy, on the administration's priorities and how they are leveraging science to develop evidence-based policies.

Leveraging Alzheimer's Disease Clinical Trial Outcomes in Health Economics Research

April 12, 2022

As new treatments for Alzheimer's disease emerge, researchers and policymakers are shifting their attention to the magnitude of the potential benefits for patients. Estimating these potential benefits is largely based on data from clinical trials. Schaeffer Center research scientist **Alison Sexton Ward**, PhD, hosted an academic seminar on the implications of clinical trial design on Alzheimer's disease modeling.

Panelists included:

***Ron Handels**, PhD, assistant professor, Alzheimer Centre Limburg, Maastricht University*

***Jakub Hlávka**, PhD, fellow, USC Schaeffer Center*

***Jeffrey Yu**, MHS, health economics researcher, USC Schaeffer Center*

Wall Street Comes to Washington Healthcare Roundtable

April 13, 2022

The COVID-19 pandemic has profoundly disrupted American society—especially healthcare. The USC-Brookings Schaeffer Initiative hosted the 26th Wall Street Comes to Washington Healthcare Roundtable to bridge the worlds of Wall Street and Washington health policy. Schaeffer Center Senior Fellow **Paul Ginsburg**, PhD, moderated an expert panel of equity analysts to discuss market trends shaping the healthcare system and the impact of federal policies on healthcare companies.

Panelists included:

***Ricky Goldwasser**, MBA, managing director, Morgan Stanley*

***George Hill**, managing director, Deutsche Bank*

***Ann Hynes**, MBA, managing director, Mizuho*

Addressing the National Mental Health Crisis: Opportunities and Challenges

April 16, 2022

The USC-Brookings Schaeffer Initiative hosted a discussion of President Biden's strategy to transform how mental health is understood, accessed, treated, and integrated into the broader health and social services systems. The panel, moderated by Schaeffer Initiative Director **Richard G. Frank**, PhD, brought together mental health organizations and advocates to discuss challenges and opportunities for improving access to care.

Panelists included:

***David Blumenthal**, MD, president, The Commonwealth Fund*

***Kenna Chic**, former president, Project Lighthouse, Georgetown University*

***Mary Giliberti**, JD, chief public policy officer, Mental Health America*

*Ambassador **Susan Rice**, MPhil, PhD, domestic policy advisor, Biden administration*

***Ruth Shim**, MD, MPH, Luke & Grace Kim Professor in Cultural Psychiatry and associate dean of Diverse and Inclusive Education, UC Davis School of Medicine*

***Sandra Wilkniss**, PhD, senior program director, National Academy for State Health Policy*

***Christen Linke Young**, JD, deputy director, Domestic Policy Council for Health and Veterans*

Estimating the Value of Diagnosing and Treating Alzheimer's Disease

May 9, 2022

Alzheimer's disease is the seventh-leading cause of death in the United States and the most common cause of dementia among older adults—and its impact is only growing. The Schaeffer Center hosted a panel discussion, moderated by **Peter J. Neumann**, ScD, director of the Center for the Evaluation of Value and Risk in Health at Tufts Medical Center's Institute for Clinical Research and Health Policy Studies, on the need for affordable diagnostic tests, the challenge of determining the size of the treatment-eligible population and how innovative payment models would help ensure that the healthcare system has ample capacity and resources.

Panelists included:

***Jakub Hlávka**, PhD, fellow, USC Schaeffer Center*

***Soeren Mattke**, MD, DSc, research professor of economics, USC Dornsife College of Letters, Arts and Sciences*

***Yifan Wei**, MPH, PhD student, health economics, USC Mann School of Pharmacy and Pharmaceutical Sciences*

A Conversation on America's Mental Health Crisis

June 2, 2022

The COVID-19 pandemic has fueled increasing concern about the state of Americans' mental well-being. Digital advances, such as telemedicine, offer the promise of personalized and accessible care, but also raise questions about disparities and privacy. The Schaeffer Center and Price School of Public Policy hosted a conversation with Schaeffer Center Co-Director **Dana Goldman**, PhD, and **David Ebersman**, CEO and co-founder of Lyra Health, to discuss these trends.

Approval and Reimbursement of Alzheimer's Disease Therapies

June 6, 2022

In June 2021, the Food and Drug Administration approved the first therapy in nearly two decades to treat Alzheimer's disease. But the approval, once seen as a significant step for a disease that affects millions, has been largely overshadowed by controversies around safety, effectiveness and cost. The Schaeffer Center brought together a panel of experts, moderated by Schaeffer Center Director of Research **Darius Lakdawalla**, PhD, to discuss the regulatory challenges of approving and reimbursing therapies for Alzheimer's disease.

Panelists included:

***Joe Grogan**, JD, nonresident senior fellow, USC Schaeffer Center*

***Rachel Sachs**, JD, MPH, Treiman Professor of Law, Washington University in St. Louis School of Law*

Roe v. Wade: What Happens Next?

June 23, 2022

The USC Schaeffer Center and USC Price School hosted a conversation with **Faye Wattleton**, former president and CEO of Planned Parenthood Federation of America, and Schaeffer Center Co-Director **Dana Goldman**, PhD, about the history of *Roe v. Wade* and what the Supreme Court decision to overturn it might mean for women's health, abortion access and our national political discourse.

Revising Payment to Medicare Advantage Plans to Reflect the Rapid Growth in Enrollment

July 15, 2022

In recent years, Medicare Advantage (MA)—private health plans that beneficiaries can enroll in as an alternative to traditional Medicare—has grown rapidly. But this expansion has come with consequences. Basing payment on the experience of those who remain in traditional Medicare has proven challenging to pursue in a fiscally responsible manner. The USC-Brookings Schaeffer Initiative hosted a conversation, moderated by Schaeffer Center Senior Fellow **Paul Ginsburg**, PhD, on the implications of the rapid growth in MA.

Panelists included:

***Matthew Fiedler**, PhD, fellow, USC-Brookings Schaeffer Initiative for Health Policy*

***Clive Fields**, MD, co-founder and chief medical officer, VillageMD*

***Meena Seshamani**, MD, PhD, deputy administrator and director of the Center for Medicare, Centers for Medicare & Medicaid Services*

***Erin Trish**, PhD, co-director, USC Schaeffer Center*

***Gail R. Wilensky**, PhD, senior fellow, Project HOPE*

The Urgent Need for a New Generation of Antibiotics

December 8, 2022

The Schaeffer Center and the USC Price School brought together health policy experts to discuss how to ensure the development of new antimicrobials to replace antibiotics and other critical medications that are beginning to lose their effectiveness. The panel, moderated by Schaeffer Center Senior Fellow **Neeraj Sood**, PhD, examined incentives and policy solutions that could encourage innovation and accelerate development of these lifesaving medications.

Panelists included:

***Genevieve Kanter**, PhD, nonresident fellow, USC Schaeffer Center*

***Henry Skinner**, PhD, MJur, chief executive officer, AMR Action Fund*

***Brad Spellberg**, MD, chief medical officer, Los Angeles County + USC Medical Center*

Making Behavioral Health Work

December 13, 2022

In September 2022, the U.S. Department of Health and Human Services (HHS) released its Roadmap for Behavioral Health Integration, which sets out policies for better integration of mental health and substance use care into the larger healthcare system. The USC-Brookings Schaeffer Initiative hosted HHS Secretary **Xavier Becerra**, JD, for a panel discussion led by **Vikki Wachino**, deputy administrator at the Center for Medicaid and CHIP Services, on federal efforts to advance the integration of behavioral health into healthcare.

Panelists included:

***Jameta Barlow**, PhD, MPH, assistant professor of writing, health policy and management, and women's gender and sexuality studies, George Washington University*

***Kenna Chic**, former president, Project Lighthouse, Georgetown University*

***Richard G. Frank**, PhD, director, USC-Brookings Schaeffer Initiative for Health Policy*

***Howard Goldman**, MD, PhD, professor of psychiatry, University of Maryland School of Medicine*

***Andrea Palm,** MSW, deputy secretary, U.S. Department of Health and Human Services*

***Amanda Seitz**, reporter, Associated Press*

***Sandra Wilkniss**, PhD, senior program director, National Academy for State Health Policy*

Seminar Series

Our Seminar Series features prominent academics, researchers, policymakers and industry leaders discussing timely themes in health policy and economics. The seminars prioritize informal discussions with an audience. The 2022 seminars included the following featured speakers:

***Pinar Karaca-Mandic**, PhD, C. Arthur Williams Jr. Professor in Healthcare Risk Management, Department of Finance, University of Minnesota Carlson School of Management: "Characteristics of Regulatory Submissions and Recalls of 510(k) Medical Devices"*

***Katherine Meckel**, PhD, assistant professor of economics, University of California San Diego: "Dependent Coverage and Parental 'Job Lock': Evidence from the Affordable Care Act"*

***Elena Prager**, PhD, assistant professor of economics, University of Rochester Simon Business School: "Regulating Out-of-Network Hospital Payments: Disagreement Payoffs, Negotiated Prices and Access"*

***Anthony Lo Sasso**, PhD, professor and chair, Department of Economics, DePaul University: "Optional Licensing and the Healthcare Labor Market"*

***Mark Shepard**, PhD, assistant professor, Harvard Kennedy School of Government: "Reducing Ordeals Through Automatic Enrollment: Evidence from a Health Insurance Exchange"*

***Robert J. Wallis**, PhD, professor emeritus, Department of Economics, University of Michigan: "Seeking the Biological Foundations of Human Capital Theory"*

Private Conferences

The Schaeffer Center convened recognized academics and researchers, policymakers and private-sector leaders for several conferences in 2022. These events provided an opportunity to discuss critical issues and develop evidence-based solutions.

Sustaining Global Pharmaceutical Innovation and Access

April 20, 2022

London

Hosted by the London Business School and the USC Schaeffer Center, this one-day symposium brought together more than 30 experts to discuss pharmaceutical innovation in a global context. Conversations centered around lessons for global innovation, accelerating clinical trial development and rewarding value in global pharmaceutical markets. Funding for this conference was provided by the USC Schaeffer Center.

The Science of Alzheimer's Disease and Related Dementias (ADRD) for Social Scientists Program

October 27–28, 2022

Los Angeles

This conference provided an opportunity for social science researchers to learn the biomedical and clinical foundations of ADRD, advance interdisciplinary collaborations and promote data sharing. Twelve globally recognized experts provided scientific lectures geared specifically toward social scientists. Forty-two social scientists at all career stages representing 25 institutions attended the conference. Participant fields of expertise included economics, sociology and gerontology. Funding for this conference was provided by National Institute on Aging-funded centers housed at the Schaeffer Center: Center for Advancing Sociodemographic and Economic Study of Alzheimer's Disease and Minority Aging Health Economics Research Center.

Revisiting the Role of U.S. Hospitals in the Age of COVID and Beyond

November 1–2, 2022

Washington, D.C.

In the years leading up to the pandemic, financial pressures on hospitals required many to shrink, merge or even close. This was coupled with longstanding trends to rethink healthcare delivery. Throughout the pandemic, hospitals demonstrated their dedication and resilience, but balancing competing needs has been an unprecedented challenge. The Aspen Institute's Health, Medicine & Society Program and the USC Schaeffer Center formed an advisory panel to consider the future role of hospitals beyond the COVID pandemic. Over two days, the panel met to propose policy recommendations that support the evolving role of hospitals in providing efficient, equitable and high-quality care across populations, disease states and public health emergencies.

Curing What Ails Healthcare Markets

November 30–December 1, 2022

Los Angeles

A distinguished group of policymakers, academics and healthcare leaders convened to consider the long-term policy issues that impact healthcare markets and ways to make these markets more efficient. Over the course of two days, the group discussed a variety of topics, including the future of value-based pricing in the U.S., the federal government's role in accelerating or decelerating innovation, and how emerging health technologies can improve or worsen equity. Funding for this conference was provided by the USC Schaeffer Center.

Featured Publications

White Papers

White papers, which provide policy analysis and solutions, are published by the Schaeffer Center White Paper Series or in collaboration with Brookings under the USC-Brookings Schaeffer Initiative for Health Policy.

Eliminating Small Marketplace Premiums Could Meaningfully Increase Insurance Coverage
Matthew Fiedler

Federal Regulations of Cannabis for Public Health in the United States
Rosalie Liccardo Pacula, Seema Pessar, Joy Zhu, Alexandra F. Kritikos and Rosanna Smart

Price Changes Varied Widely Across California Hospital Systems from 2012 through 2018
John Romley, Moonkyung Choi, Erin Trish and Darius Lakdawalla

The FDA Could Do More to Promote Generic Competition: Here's How
Rachel Sachs, Marta Walentynowicz, Richard Frank and Loren Adler

U.S. Consumers Overpay for Generic Drugs
Erin Trish, Karen Van Nuys and Robert Popovian

Op-Eds

Schaeffer Center experts frequently publish high-profile opinion pieces that weigh in on important issues of the day.

Before Prescribing Opioids, Draft a Deprescribing Plan
MedPage Today, April 9, 2022
Jason Doctor

Tweak the Affordable Care Act to Mandate Backstop Health Insurance
MarketWatch, September 27, 2022
Paul Ginsburg

Aduhelm Decision Shows Medicare Is Making a Mistake in the Fight Against Alzheimer's
The Evidence Base, February 1, 2022
Dana Goldman and Joseph Grogan

Lack of Diversity in Clinical Trials Costs Billions of Dollars. Incentives Can Spur Innovation
STAT, August 5, 2022
Dana Goldman, Edith A. Perez and Carlos del Rio

Drugmakers Aren't Driving Inflation. Price Controls Would Hinder Medical Progress
Wall Street Journal, August 7, 2022
Dana Goldman and Erin Trish

The Burden of 1 Million Excess Deaths: 13.5 Million Years of Life Lost During the COVID Pandemic
The Evidence Base, February 2, 2022
Hanke Heun-Johnson and Bryan Tysinger

The High Cost of "Free" COVID Testing
Wall Street Journal, February 3, 2022
Cameron Kaplan

California Should Lead on Health Technology Assessment
CalMatters, January 27, 2022
Darius Lakdawalla and Dana Goldman

Complexity Bias in the Prevention of Iatrogenic Injury: Why Specific Harms May Inhibit Performance
Mayo Clinic Proceedings, February 14, 2022
William Padula, David Armstrong and Dana Goldman

Shame Won't Solve America's Obesity Crisis: How Congress Can Help
The Hill, November 15, 2022
Anand Parekh and Dana Goldman

Women and Adolescent Girls Face Barriers in Accessing Birth Control and Plan B—Even in Blue States Like California
The Evidence Base, July 21, 2022
Dima Qato

We Should Double Down on Treatments for Those at High Risk Instead of Pushing Boosters and Tests for Everyone
MarketWatch, January 20, 2022
Neeraj Sood

The Cantwell-Grassley PBM Bill Is Much Needed But More Can Be Done
Health Affairs Forefront, July 12, 2022
Neeraj Sood and Karen Van Nuys

The Unequal Causes and Costs of Dementia
The Evidence Base, June 23, 2022
Johanna Thunell and Julie Zissimopoulos

PBMs Are Inflating the Cost of Generic Drugs. They Must Be Reined In
STAT, July 5, 2022
Erin Trish, Karen Van Nuys and Robert Popovian

Journal Articles

Research led by Schaeffer experts is published in top-tier, peer-reviewed journals that inform health policy and economic analysis.

Avery, R. J., J. Niederdeppe, M. D. Eisenberg, **N. Sood**, B. Welch and J. J. Kim. (2022). Messages in Prescription Drug Advertising for Four Chronic Diseases, 2003-2016: A Content Analysis. *Preventive Medicine*, 158: 107015.

Blanchette, J. G., **R. L. Pacula**, R. Smart, M. C. Lira, **S. C. Pessar** and T. S. Naimi. (2022). The Cannabis Policy Scale: A New Research and Surveillance Tool for U.S. States. *Journal of Studies on Alcohol and Drugs*, 83 (6): 829-38.

Cantor, J., **N. Sood**, D. M. Bravata, M. Pera and C. Whaley. (2022). The Impact of the COVID-19 Pandemic and Policy Response on Health Care Utilization: Evidence from County-Level Medical Claims and Cellphone Data. *Journal of Health Economics*, 82: 102581.

Chang, T., **M. Jacobson**, M. Shah, R. Pramanik and S. B. Shah. (2022). Can Financial Incentives and Other Nudges Increase Covid-19 Vaccinations Among the Vaccine Hesitant? *Vaccine*, 40 (43): 6235-42.

Chaturvedi, R., T. Gracner, **B. Tysinger**, **K. Narain**, **D. Goldman** and R. Sturm. (2022). The Long-Term Value of Bariatric Surgery Interventions for American Adults With Type 2 Diabetes Mellitus. *Annals of Surgery*, 10-1097.

Cohrs, A. C., D. E. H. Khotimah, A. W. Dick, B. D. Stein, **R. Pacula** et al. (2022). Spatial and Temporal Trends in the Diagnosis of Opioid-Related Problems in Commercially Insured Adolescents and Young Adults. *Preventive Medicine*, 163: 107194.

Duan, L., M. S. Lee, J. L. Adams, A. L. Sharp and **J. N. Doctor**. (2022). Opioid and Naloxone Prescribing Following Insertion of Prompts in the Electronic Health Record to Encourage Compliance With California State Opioid Law. *JAMA Network Open*, 5 (5): e229723.

Duffy, E. L., **L. Adler**, B. Chartock and **E. Trish**. (2022). Dispute Resolution Outcomes for Surprise Bills in Texas. *JAMA*, 327 (23): 2350-51.

Duffy, E. L., A. Biener, C. Garmon and **E. Trish**. (2022). Comparison of Estimated No Surprises Act Qualifying Payment Amounts and Payments to In-Network and Out-of-Network Emergency Medicine Professionals. *JAMA Health Forum*, 3 (9) e223085.

Guadamuz, J. S., R. A. Durazo-Arvizu, J. F. Morales and **D. M. Qato**. (2022). Citizenship Status and Mortality Among Young Latino Adults in the US, 1998-2015. *American Journal of Preventive Medicine*, 62 (5): 777-81.

Hammond, D., S. Goodman, E. Wadsworth, T. P. Freeman, B. Kilmer, G. Schauer, **R. L. Pacula** and W. Hall. (2022). Trends in the Use of Cannabis Products in Canada and the USA, 2018-2020: Findings From the International Cannabis Policy Study. *International Journal of Drug Policy*, 105: 103716.

Hlávka, J. P., **B. Tysinger**, C. Y. Jeffrey and **D. N. Lakdawalla**. (2022). Access to Disease-Modifying Alzheimer's Therapies: Addressing Possible Challenges Using Innovative Payment Models. *Value in Health*, 25 (11): 1828-36.

Joyce, G., **P. Ferido**, **J. Thunell**, **B. Tysinger** and **J. Zissimopoulos**. (2022). Benzodiazepine Use and the Risk of Dementia. *Alzheimer's & Dementia: Translational Research & Clinical Interventions*, 8 (1): e12309.

Kelley, M. A., R. Lev, J. Lucas, **T. Knight**, **E. Stewart**, **M. Menchine** and **J. N. Doctor**. (2022). Association of Fatal Overdose Notification Letters With Prescription of Benzodiazepines: Secondary Analysis of a Randomized Clinical Trial. *JAMA Internal Medicine*, 182 (10): 1099-1100.

Kritikos, A. F., and **R. L. Pacula**. (2022). Characterization of Cannabis Products Purchased for Medical Use in New York State. *JAMA Network Open*, 5 (8): e2227735.

Langbaum, J. B., **J. Zissimopoulos** ... **D. Lakdawalla** ... **D. Peneva** and P. S. Aisen. (2022). Recommendations to Address Key Recruitment Challenges of Alzheimer's Disease Clinical Trials. *Alzheimer's & Dementia*.

Li, K., T. Yu, **S. A. Seabury** and A. Dor. (2022). Trends and Disparities in the Utilization of Influenza Vaccines Among Commercially Insured US Adults During the COVID-19 Pandemic. *Vaccine*, 40 (19): 2696-2704.

Lin, E., **B. Ly**, **E. Duffy** and **E. Trish**. (2022). Medicare Advantage Plans Pay Large Markups to Consolidated Dialysis Organizations: Study Examines Payments Medicare Advantage Plans Make to Consolidated Dialysis Organizations. *Health Affairs*, 41 (8): 1107-16.

Mireille Jacobson, Julie Zissimopoulos and Geoffrey Joyce

Mulligan, K., **S. Choksy**, **C. Ishitani** and **J. A. Romley**. (2022). What Do Nonprofit Hospitals Reward? An Examination of CEO Compensation in Nonprofit Hospitals. *PLOS One*, 17 (3): e0264712.

Nicholas, W., **N. Sood**, C. N. Lam, **R. Kotha**, H. Hu and P. Simon. (2022). Did Prioritizing Essential Workers Help to Achieve Racial/Ethnic Equity in Early COVID-19 Vaccine Distribution? The LA Pandemic Surveillance Cohort Study. *American Journal of Industrial Medicine*, 65 (4): 231-41.

Ozenberger, K., G. C. Alexander, J. I. Shin, E. A. Whitsel and **D. M. Qato**. (2022). Use of Prescription Medications With Cardiovascular Adverse Effects Among Older Adults in the United States. *Pharmacoepidemiology and Drug Safety*, 31 (10): 1027-38.

Sood, N., O. Pernet, C. N. Lam, A. Klipp, **R. Kotha**, A. Kovacs and H. Hu. (2022). Seroprevalence of Antibodies Specific to Receptor Binding Domain of SARS-CoV-2 and Vaccination Coverage Among Adults in Los Angeles County, April 2021: The LA Pandemic Surveillance Cohort Study. *JAMA Network Open*, 5 (1): e2144258.

Trish, E., **K. M. Kaiser**, J. Celestin and **G. Joyce**. (2022). Reforming the Medicare Part D Benefit Design: Financial Implications for Beneficiaries, Private Plans, Drug Manufacturers, and the Federal Government. *Journal of Health Politics, Policy and Law*, 47 (6): 853-77.

Wang, G. S., C. Buttorff, A. Wilks, D. Schwam, T. D. Metz, G. Tung and **R. L. Pacula**. (2022). Cannabis Legalization and Cannabis-Involved Pregnancy Hospitalizations in Colorado. *Preventive Medicine*, 156: 106993.

Wang, G. S., C. Buttorff, A. Wilks, D. Schwam, G. Tung and **R. L. Pacula**. (2022). Impact of Cannabis Legalization on Healthcare Utilization for Psychosis and Schizophrenia in Colorado. *International Journal of Drug Policy*, 104: 103685.

Wei, Y., H. Heun-Johnson and **B. Tysinger**. (2022). Using Dynamic Microsimulation to Project Cognitive Function in the Elderly Population. *PLOS One*, 17 (9): e0274417.

Whaley, C., **N. Sood**, M. Chernew, L. Metcalfe and A. Mehrotra. (2022). Paying Patients to Use Lower-Priced Providers. *Health Services Research*, 57 (1): 37-46.

Xu, J., **E. Trish** and **G. Joyce**. (2022). Pharmacy Switching in Response to Preferred Pharmacy Networks in Medicare Part D. *Health Services Research*, 57 (5):1112-20.

Zhou, B., **S. Seabury**, **D. Goldman** and **G. Joyce**. (2022). Formulary Restrictions and Stroke Risk in Patients With Atrial Fibrillation. *American Journal of Managed Care*, 28 (10).

Zissimopoulos, J., **M. Jacobson**, Y. Chen and S. Borson. (2022). Knowledge and Attitudes Concerning Aducanumab Among Older Americans After FDA Approval for Treatment of Alzheimer Disease. *JAMA Network Open*, 5 (2): e2148355.

National Academies Participation

Neeraj Sood

28

National Academy of Medicine panels with Schaeffer Center representation since 2009

National Academy of Medicine

Eileen Crimmins
Elected 2012

Paul Ginsburg
Elected 2021

Dana Goldman
Elected 2009

Leonard Schaeffer
Elected 1997

National Academy of Sciences

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Daniel McFadden
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Understanding the Aging Workforce and Employment at Older Ages, National Academies of Sciences, Engineering and Medicine; National Advisory Council on Minority Health and Health Disparities, National Institute on Minority Health and Health Disparities

Wändi Bruine de Bruin
Respiratory Protection for the Public and Workers Without Respiratory Protection Programs at Their Workplaces, National Academies of Sciences, Engineering and Medicine

Paul Ginsburg
Committee on Emerging Science, Technology and Innovation in Health and Medicine, National Academy of Medicine; Medicare Payment Advisory Commission

Mireille Jacobson
Review of Department of Veterans Affairs Monograph on Health Economic Effects of Service Dogs for Veterans with Post-Traumatic Stress Disorder, National Academy of Sciences, Engineering and Medicine

Darius Lakdawalla
Addressing Sickle Cell Disease: A Strategic Plan and Blueprint for Action, National Academies of Sciences, Engineering and Medicine

Rosalie Liccardo Pacula
Technical Expert Committee on Public Health Risks Associated with Cannabis Use and Cannabis Use Disorder, World Health Organization; Review of Specific Programs in the Comprehensive Addiction and Recovery Act, National Academies of Sciences, Engineering and Medicine

Neeraj Sood
Community Wastewater-based Infectious Disease Surveillance, National Academies of Sciences, Engineering and Medicine

Julie Zissimopoulos
2022 Alzheimer's Disease-Related Dementias Summit Sub-Committee, National Institute of Neurological Disorders and Stroke; Committee on Developing a Behavioral and Social Science Research Agenda on Alzheimer's Disease and Alzheimer's Disease-Related Dementias, National Academies of Sciences, Engineering and Medicine

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USC Mann School of Pharmacy and Pharmaceutical Sciences

One of the top pharmacy schools nationwide and the highest-ranked private pharmacy school, the USC Mann School of Pharmacy and Pharmaceutical Sciences continues its century-old reputation for innovative programming, practice and collaboration. Founded in 1905 as the USC College of Pharmacy, the school was known as the USC School of Pharmacy from the mid-20th century until 2022, when it received a $50 million endowment and was renamed on behalf of inventor and entrepreneur Alfred E. Mann.

The school created the nation's first Doctor of Pharmacy program, the first clinical pharmacy program and clerkships, the first doctorates in pharmaceutical economics and regulatory science, and the first PharmD/MBA dual-degree program, among other innovations in education, research and practice. The USC Mann School is the only private pharmacy school on a major health sciences campus, which facilitates partnerships with other health professionals as well as new breakthroughs in care. Uniquely, it owns and operates four pharmacies with a fifth coming in early 2024.

The school is home to the D. K. Kim International Center for Regulatory Science at USC, the Titus Center for Medication Safety and Population Health, and the Center for Quantitative Drug and Disease Modeling, and is a partner in the USC Leonard D. Schaeffer Center for Health Policy & Economics, the USC Institute for Addiction Science, the USC Ginsburg Institute for Biomedical Therapeutics, the Southern California Clinical and Translational Science Institute, and the USC Center for Drug Discovery, Delivery and Development. The Mann School pioneered a national model of clinical pharmacy care through work in safety-net clinics throughout Southern California and is a leader in comprehensive medication management.

Vassilios Papadopoulos has served as dean since October 2016.

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Since 1929, the USC Sol Price School of Public Policy has defined excellence and innovation in public affairs education. Ranked third nationwide among 285 schools of public affairs, the Price School's mission is to improve the quality of life for people and their communities, here and abroad. For nine decades, the Price School has forged solutions and advanced knowledge, meeting each generation of challenges with purpose, principle and a pioneering spirit.

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Dana Goldman was appointed dean in July 2021 after serving as interim dean the previous year.

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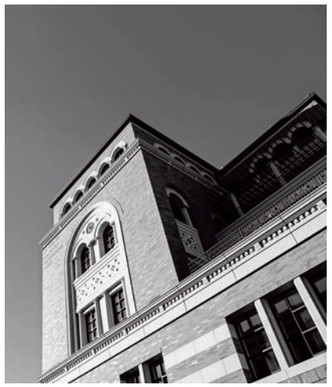

The Leonard D. Schaeffer Center for Health Policy & Economics

The Leonard D. Schaeffer Center for Health Policy & Economics was established in 2009 at the University of Southern California through a generous gift from Leonard and Pamela Schaeffer. The Center reflects Mr. Schaeffer's lifelong commitment to solving healthcare issues and transforming the healthcare system.

Improving our healthcare system requires creative solutions, robust research methods and expertise in a variety of fields. A collaboration between the USC Price School of Public Policy and the USC Mann School of Pharmacy and Pharmaceutical Sciences, the Schaeffer Center brings together health policy experts, a seasoned pharmacoeconomics team, faculty from across USC—including the Keck School of Medicine, the Dworak-Peck School of Social Work and the Viterbi School of Engineering—and affiliated researchers from other leading universities to solve the pressing challenges in healthcare.

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