How we improve health through value and innovation.

2019 | USC Schaeffer Center Annual Report

USC Schaeffer

Leonard D. Schaeffer Center
for Health Policy & Economics

The mission of the Leonard D. Schaeffer Center for Health Policy & Economics is to measurably improve value in health through evidence-based policy solutions, research excellence, and private and public sector engagement.

"The Schaeffer Center may be only 10 years old, but it is already a towering adult in the world of health policy."

Joseph Califano Jr., Former Secretary of Health, Education and Welfare

Ten years ago, we set out with a vision to become a premier research institution recognized for providing innovative, evidence-based solutions to our most pressing healthcare challenges. This past year, as we celebrated our first decade, we had the opportunity to reflect on our impact and progress toward delivering on that goal. I was humbled to hear Secretary Califano's remarks, and am inspired to continue our efforts to improve value in healthcare.

Our extraordinary scholars — including Nobel laureates Sir Angus Deaton, James Heckman and Daniel McFadden — come from a broad range of perspectives to find viable answers to vexing questions. Our work focuses on improving and expanding care delivery while reining in costs, recognizing the complexity of measuring and incentivizing the many dimensions of value. We strive to provide not only the foundational research that undergirds these issues, but also to offer the innovative, practical solutions required by leaders as they create policies that affect all of our lives.

With influence that spans the public and private sectors, our research and expertise serve as an important resource for the executive and legislative branches. This year, under the leadership of Paul Ginsburg, our work through the USC-Brookings Schaeffer Initiative on surprise medical bills has provided legislators with solutions

Leonard D. Schaeffer and Dana P. Goldman

to end this crushing burden on consumers. Seth Seabury and Sarah Axeen quantified the health and economic benefits of investing in educational opportunities for those with serious mental illness. Geoffrey Joyce and Erin Trish demonstrated that a nominal premium increase could cover the addition of a cap on out-of-pocket drug spending in Medicare Part D, providing beneficiaries with much-needed financial protection. These are just a few examples of our accomplishments from this past year, with many more presented on the following pages.

We cannot do this work alone. We are grateful to our many supporters and colleagues from across USC and beyond. The deans of our two partner schools — Jack Knott at the Sol Price School of Public Policy and Vassilios Papadopoulos at the School of Pharmacy — have been steadfast and unwavering in their belief in our mission. USC President Carol L.Folt and Provost Charles F. Zukoski have quickly embraced our work and its importance. Our Advisory Board continues to demonstrate its dedication and we are grateful for their leadership and generosity. Each and every one of our supporters contributes to making our vision a reality, and their belief in our efforts is humbling.

As we launch our second decade, I especially want to salute Leonard D. Schaeffer, whose support and inspiration have been our greatest gift. Our charge now is to delve more deeply into research to advance policy and improve health.

Dana P. Goldman
Leonard D. Schaeffer Director's Chair
Distinguished Professor of Public Policy, Pharmacy and Economics

"In its first decade, the Schaeffer Center achieved its vision to become a premier research institution impacting health policy both here and abroad. Now recognized and trusted for its independent research and policy expertise, the Center is ready to address the social, scientific and technological challenges of the next decade. Using its stature, the Center will continue to advocate for policy solutions shaped by data and facts." *– Leonard D. Schaeffer*

The USC Schaeffer Center for Health Policy & Economics steadfastly pursues innovative solutions rooted in evidence-based research to measurably improve value in health. Our experts focus on work that informs lawmakers, media and private-sector leaders on pressing healthcare challenges and, most importantly, research that makes a vital impact on the lives of individuals everywhere.

With an extraordinary breadth and depth of expertise, our emphasis on four key areas helps ensure our efforts effectively improve health through better policy.

These are our priorities:

1 Improve the Performance of Healthcare Markets

2 Foster Better Pharmaceutical Policy and Regulation

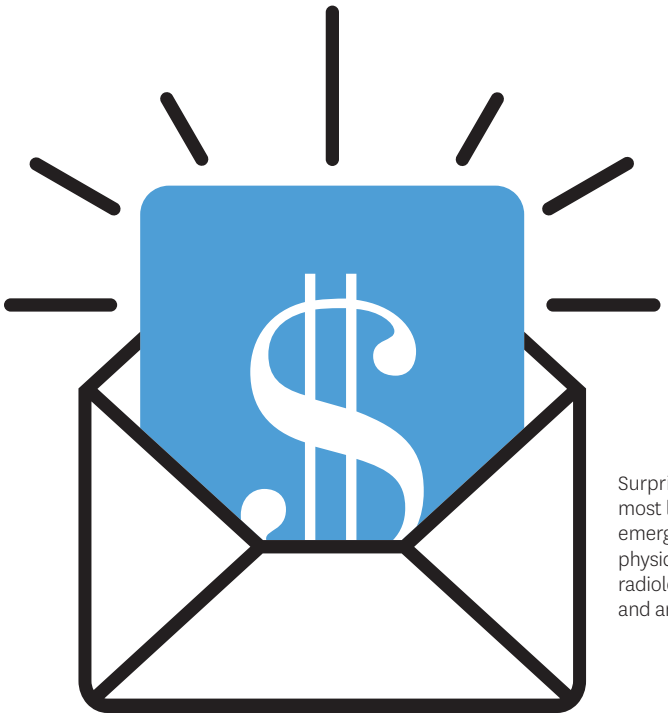
3 Increase Value in Healthcare Delivery

4 Improve Health and Reduce Disparities

We develop solutions to protect consumers.

1 | Improve the Performance of Healthcare Markets

Our experts lead the conversation on surprise medical billing.



Surprise bills are most likely to come from emergency medicine physicians, anesthesiologists, radiologists, pathologists and ambulance services.

Many patients who diligently seek providers from within their insurance networks still get stuck with massive medical bills in emergencies and other situations where choice is not possible. Such surprise medical billing can leave patients and families not only with the stress of recovery but also under financial strain.

Emergency patients are usually taken to the nearest hospital, whether in-network or not. Across the country, approximately 1 in 5 ER visits involves care from an out-of-network provider and, in 15 percent of hospitals, patients are seen by at least one out-of-network provider in 80 percent of emergency cases.

Even for preapproved surgeries at in-network hospitals, patients do not choose every member of their care team. Hospitals select ancillary clinicians like anesthesiologists and radiologists, who may be out-of-network even though the hospital is in the patient's insurance network.

While the insurer will typically pay a percentage of the charge for an out-of-network provider, it's often far less than that provider's list price. Patients get billed for the balance.

Data show that specialties with the most opportunity to send surprise bills also have much higher list prices (as a percentage of what Medicare pays for those services) than other types of physicians. For instance, surprise medical bills from out-of-network anesthesiologists can be up to 344 percent of the Medicare reimbursement rate for that service.

Policymakers across the political spectrum agree on the problem's urgency but disagree on its solution. To help build consensus grounded in evidence, experts with the USC-Brookings Schaeffer Initiative for Health Policy, a collaboration between the Schaeffer Center and the Brookings Institution, are at the forefront of analyzing this issue and the impact of proposed solutions. They have held one-on-one discussions with policymakers, given congressional testimony

"As long as providers can charge whatever they please, the problem [of surprise medical billing] won't go away."

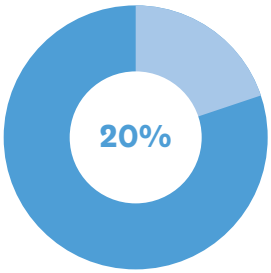
Loren Adler in Kaiser Health News

500+

major media mentions related to surprise billing

15+

citations of Schaeffer Initiative work in federal documents



1 in 5 emergency department visits may result in a surprise bill.

and authored numerous opinion pieces.

A pivotal February 2019 Schaeffer Initiative white paper clearly defined the market failures, backed by data and analysis. In addition, our experts — including Loren Adler, Erin Duffy, Paul Ginsburg, Christen Linke Young, Matthew Fiedler and Erin Trish — published 14 analyses on the topic and proposed numerous solutions in 2019. Combined, they garnered more than 500 media mentions, including in *The New York Times* and *The Washington Post* and on NPR. Seven federal agencies and committees requested their expertise as Congress weighed options.

The research revealed that surprise medical bills are most likely to come from emergency medicine physicians, anesthesiologists, radiologists and pathologists. Our experts also noted that ambulance services are often overlooked in legislation to address surprise billing but increasingly are cause for concern. More than half of ambulance rides are out-of-network, according to their findings. While such services once were provided either by local government or by hospitals for amounts close to the Medicare rate, new for-profit ambulance companies prefer to remain out-of-network so they can charge significantly higher rates.

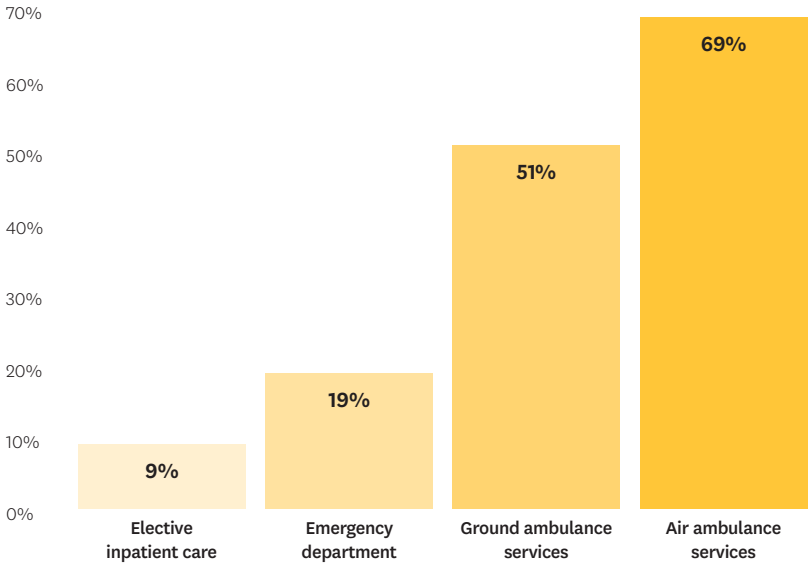
Many of the federal proposals rely on solutions previously implemented at the state level, including in New York and California, which took drastically different approaches. New York set up an arbitration process based on billed charges to determine payment. In contrast, California used average contracted rates as a benchmark for payment negotiation.

Schaeffer Initiative experts were the first to provide analysis and insight on the effects of these different solutions. They noted that the law in New York actually increased overall healthcare spending.

As policymakers in both the House and Senate deliberate changes, they rely on Schaeffer analysis on the potential impacts for patient pocketbooks and society overall. Current policy proposals prohibit billing by out-of-network emergency and facility-based providers, but intense debate lingers in Congress about how to negotiate the final price paid. Our experts continue to respond to new legislation as it is proposed, highlighting potential unintended consequences of new changes to the bills. ●

How Common Are Surprise Bills?

Care delivered by out-of-network providers in situations that patients cannot reasonably avoid is fairly common, ranging from almost 20 percent of emergency department visits to over half of ambulance rides.

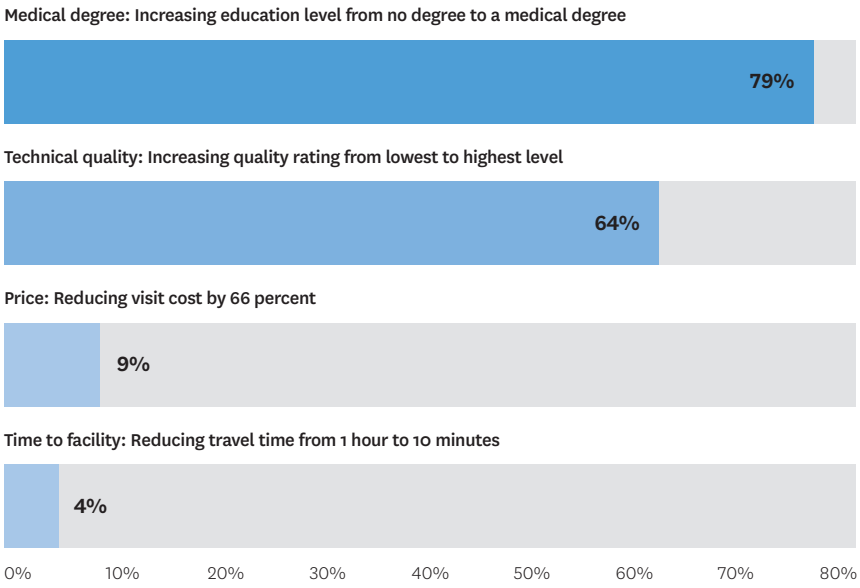


EVALUATING U.S. HOSPITALS

Delivery of high-value care varies significantly.

Improving value is central to reform, but measuring value is surprisingly complicated. John Romley and colleagues have formulated a novel framework for measuring variations in inpatient quality and cost of care, providing a blueprint to measure value in care delivery. They analyzed data on more than 33,000 fee-for-service Medicare beneficiaries admitted with heart attacks to 2,232 hospitals in 304 hospital referral regions in 2013. The team compared survival rates to total treatment costs, accounting for patient severity and socioeconomic factors, and found significant variation. Hospitals in the 90th percentile delivered 54 percent more high-quality stays compared to those in the 10th percentile. The findings may help achieve higher quality, lower costs — or both.

We can better inform patients to improve private-sector care globally.



Provider Characteristics That Patients Care About

When given reliable information, patients had a strong preference for technical quality and medical degrees and prioritized these attributes over price and travel time. For example, cutting the visit cost by two-thirds only increased the probability of choosing that provider by 9 percent. But raising the quality rating from lowest to highest increased the probability of choosing that provider by

64%

"Thousands of deaths could be prevented and spending on unnecessary treatment spared if we could improve quality of care in low- and middle-income countries."

Neeraj Sood and colleagues, working paper in the National Bureau of Economic Research

90%

of patients in low- and middle-income countries receive care from providers with poor technical quality.

The private sector plays an important role in healthcare for low- and middle-income countries — but much of that care remains poor in quality. Neeraj Sood helped decode the causes of this marketplace failure, including why patients rely on less skillful providers and what impact cost has on decision-making. The study builds on Sood's earlier work as an expert health economist for a report issued by the National Academies of Sciences, Engineering and Medicine spotlighting the poor quality of healthcare in developing nations.

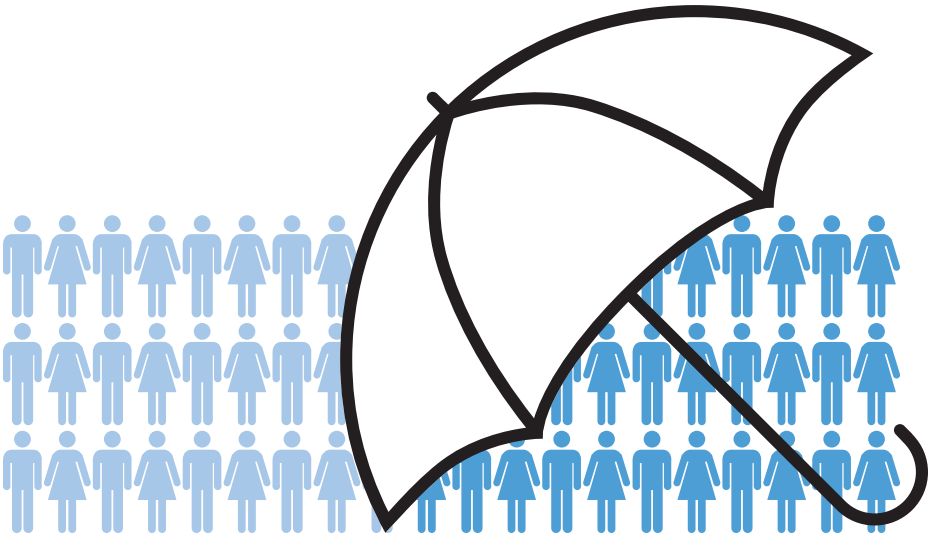
Conducted in India, the new project looked at the example of using failed treatments instead of the cheap yet effective technique of oral rehydration therapy for children with diarrhea-related dehydration. One hypothetical analysis asked parents to choose between two providers to discern the service characteristics they most value. Another involved actors portraying parents of children with diarrhea or pneumonia to assess associations between levels of quality and provider fees.

Findings showed that, while people are indeed willing to pay more for good care, they often have difficulty distinguishing what constitutes technical quality. Without reliable quality information, patients prized observable factors — like positive interactions and longer appointments — rather than attributes such as correct diagnoses and proper treatments, which actually improve outcomes but are less visible.

While the quality of care may be lacking overall in India's private sector, many physicians are capable of providing service of a better technical quality. For example, more than 70 percent of providers surveyed indicated that they would provide oral rehydration therapy — although only 13 percent actually did so in practice. Better incentives for physicians may remedy this discrepancy. Providing more information to consumers may also incentivize improvement in quality of care.

Sood and his co-authors suggest that more must be done to educate consumers about quality healthcare. Options include posting letter grades as is done for restaurants or developing mobile apps. Whichever strategies are used, the public sector should do more to provide information on improving healthcare in the private market. ●

Universal coverage can be a reality while reducing costs and improving quality.



50%

share of the uninsured population eligible for a marketplace tax credit, Medicaid or CHIP, but not enrolled

"Consider an industry that excels in long-term planning and has a strong incentive to keep clients alive: life insurance."

Dana Goldman and Darius Lakdwalla, op-ed in The Wall Street Journal

At the request of the U.S. Senate Committee on Health, Education, Labor and Pensions, the Schaeffer Initiative and the American Enterprise Institute collaborated to propose joint recommendations to reduce healthcare costs and achieve universal coverage. Their suggestions centered on improving incentives in private insurance and Medicare, removing state regulatory barriers to provider market competition and promoting competition in the pharmaceutical market.

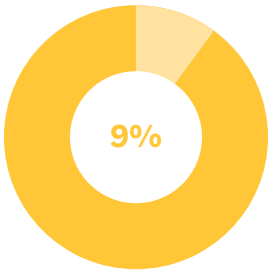
Schaeffer Initiative experts also authored a piece in the *New England Journal of Medicine* on how to build upon the Affordable Care Act (ACA). They discussed expanding Medicaid in all states, increasing assistance for buying private insurance, ensuring that people enroll in affordable programs for which they're eligible and addressing coverage for undocumented immigrants.

An alternative recommendation is a plan costing the same as the ACA today — or less than a third to a quarter of the estimated annual price tags of Medicare for All proposals. The centerpiece would be universal catastrophic coverage for Americans not covered by Medicare, Medicaid or Veterans Affairs. These high-deductible policies would come from private insurers under federal contract.

Even though it vastly expands the number of people insured, the plan is cost-effective because it doesn't cover all services all the time. However, high-value basic treatments such as preventive care, prenatal services and vaccines would be exempt from the deductible. The plan, developed by Dana Goldman and Kip Hagopian, varies the deductible based on family income — a feature not available in employer-sponsored plans.

Another alternative to Medicare for All, suggested by Geoffrey Joyce, is to harness the competitive forces inherent in Medicare Advantage while modernizing the bidding process and standardizing plans to improve efficiency. A limited set of Medicare Advantage plans would allow consumers to compare prices, facilitating competition on both price and quality. The approach is more politically feasible and more

30 million
Americans remain uninsured.



In 2018, 9 percent of the U.S. population was uninsured, a decrease from 13 percent in 2013 before the ACA took effect.

economically sustainable than expanding fee-for-service Medicare, Joyce concluded.

In other innovative research, Schaeffer investigators note the misalignment of incentives between insurers and patients with high-cost diseases like cancer — which leads many to distrust the private health insurance system. Goldman and Darius Lakdawalla suggest a way to rearrange priorities within the existing system by taking a cue from the life insurance industry.

At the time of a cancer diagnosis, both the patient and her life insurer want her to live as long as possible because every month of added life postpones benefits and ensures additional premiums. In contrast, a health insurer wants to contain costs, which might mean limiting access to high-cost treatments. Partnerships between oncology care providers and life insurers may hold promise: Care providers could help patients identify and finance clinically appropriate therapies via their existing life insurance policies, creating a more effective and sustainable health insurance system, they write. ●

"Generic drugs are by definition homogenous products, so there isn't a lot of room in the industry for innovation or differentiation. Buying competitors or going into a therapeutic class with no competitors probably makes good business sense in terms of increasing profits, but it points to weaknesses in the market overall that should be corrected by policy or regulatory oversight."

Geoffrey Joyce, on his study published in Health Affairs

SPURRING COMPETITION

Are generic drugs becoming too costly?

Generic drugs, which account for nearly 90 percent of prescriptions filled nationwide, have historically saved money for patients and the healthcare system — but Schaeffer Center research revealed that price spikes might indicate a market no longer functioning optimally. The study, led by Geoffrey Joyce, found that the portion of generic medications doubling or more in price annually represents a small but growing market share: from 1 percent of generic drugs in 2007 to 4.39 percent in 2013. For consumers, this can mean soaring costs for lifesaving drugs. Joyce suggests regulatory changes to spur competition and more rigorously analyze the impact of drug company mergers on generic pricing as corrective actions legislators might consider.

We work to expand access and innovation.

Our researchers inform the federal and state drug pricing debate.

Schaeffer Center researchers are a trusted resource for state and federal policymakers who are reforming drug pricing.

Voters across the political spectrum agree that reducing prescription drug prices should be a top congressional priority. Yet the challenge remains: how to control costs without removing the rewards that encourage medical innovation.

Medicare Part D, the federal program to help beneficiaries pay for outpatient prescription drugs, is at the heart of many recent federal proposals to address drug costs.

Dana Goldman wrote a piece for STAT evaluating one recent proposal that estimated $345 billion in Medicare savings over seven years, noting that, while it would reduce drug prices, it would also suppress innovation and could have long-term negative consequences on health.

From early debates about what a federal prescription drug benefit could entail to current discussions about high and rapidly rising prescription drug spending, Schaeffer experts have provided sound guidance, innovative research and evidence-based policy recommendations. Recent work centers on how to restructure Part D's benefit design to provide better financial protection for vulnerable consumers. Goldman, Paul Ginsburg, Geoffrey Joyce, Neeraj Sood and Erin Trish have shared research findings with the Centers for Medicare and Medicaid Services (CMS), the White House and committees in both houses of Congress to shed light on viable solutions.

They also have used the implementation of Part D to explore the effects of pharmaceutical marketing on prescribing patterns, the influence of the program's growth on innovation trends, and the link between benefit design, formularies and medication adherence. To date, Schaeffer researchers have authored more than 25 studies that have been cited over 1,000 times, including in federal policy documents. In the last year, multiple legislative bodies reached out to Schaeffer experts to discuss proposed reforms to Part D.

"The poor market dynamics of recent years and the perverse incentives in the supply chain must not stand in the way of a better drug policy for U.S. seniors."

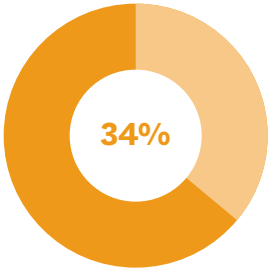
Erin Trish and Dana Goldman, op-ed in STAT

30+

citations in 2019 government reports and documents related to drug pricing.

13

federal and state agencies and committees reached out to Schaeffer experts to discuss drug pricing.



Part D plans are responsible for only 34 percent of total prescription drug spending. In contrast, health insurers in the commercial market pay an average 85 percent of total drug costs.

Trish and Joyce wrote a body of work published in *Health Affairs* about how the increased use of expensive specialty drugs has ballooned spending related to catastrophic coverage, which kicks in after a beneficiary has spent a certain amount on prescriptions. Private insurance plans have little incentive to manage spending once the threshold is met because the government picks up 80 percent of the catastrophic tab. Therefore, more "skin in the game" is needed from these plans. Trish has met with congressional policymakers and CMS staff to propose solutions.

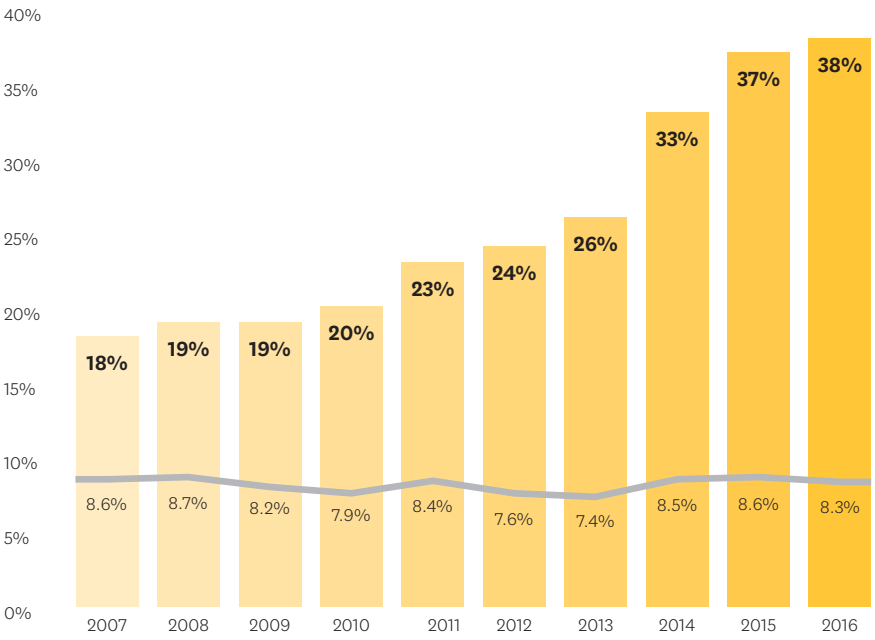
One potential answer — proposed by Trish in collaboration with Ginsburg, Joyce and Goldman in the *New England Journal of Medicine* — is to increase the financial stake of insurance plans, including liability in the reinsurance and coverage gap phases. These reforms could be coupled with changes granting plans greater flexibility in their use of formularies and transparency tools to speed progress toward more innovative contracting. Capping patients' out-of-pocket costs is also important. Beneficiaries not receiving low-income subsidies are still expected to pay up to 5 percent of prescription drug costs during catastrophic coverage — which adds up rapidly.

Dissatisfied with the slow pace of policy reform federally, many states have moved ahead with drug pricing legislation, with 166 bills passed between 2015 and 2018. Sood co-authored a first-of-its-kind study of state drug pricing laws. He examined 35 state laws aimed at increasing drug price transparency. His finding: Only six states required more information than is already available, and no state has passed bills for tracking prices and profits at each link of the supply chain.

"The problem with all these bills is that they are shooting in the dark," he wrote for The Hill. "A lot of information is available about drugs' published list prices. But the drug distribution system is so complex — involving numerous middlemen and confidential negotiations for myriad rebates, fees and discounts — that manufacturers' list prices are almost meaningless." In response to this work, stakeholder and policymaker groups at the national and state levels have reached out to Sood to enhance the effectiveness of legislation related to drug prices. ●

Medicare Part D Spending

Part D spending has become increasingly concentrated in the catastrophic coverage phase. Between 2007 and 2016, the percent of total Part D spending on catastrophic coverage increased from 18 to 38 percent (gold bars). Meanwhile, the percent of beneficiaries reaching catastrophic coverage has remained relatively flat (gray line).



ALIGNING INCENTIVES

We are creating a new model for pricing drugs.

Drug manufacturers and health insurers rely on a price-per-dose model but this encourages high launch prices and access barriers that frustrate patients and providers. Alternative value-based reimbursement links pay to performance but it's difficult to determine a drug's long-term efficacy at its launch. Dana Goldman, Karen Van Nuys, Jakub Hlávka and co-investigators proposed a different approach that ties prices to value but allows adjustments. Their three-part pricing would provide early access at a lower price while the drug undergoes further evaluation in a real-world setting. The result is increased access while still rewarding innovators. Other research by Jeff McCombs and Joel Hay explores value-based contracting and the dynamics of cost, value and innovation.

What if prescription drug companies followed the Netflix model?

"It's time to implement this pricing model in healthcare. It can lead us out of our prescription drug crisis by bringing universal access without breaking the bank."

Neeraj Sood, op-ed in The Conversation

Across the country, states are grappling with growing populations with infectious disease, many of which disproportionately affect vulnerable populations who have the least access to care.

An essential lesson from the early years of the HIV/AIDS epidemic is that early access to effective treatment not only improves health outcomes for patients affected but also avoids long-term costs. The bottom line is that widespread screening for infectious disease — and then treating those at highest risk — is cost-effective.

Today, approximately 20,000 Americans die from hepatitis C annually. That is more than the combined death toll from 60 other infectious diseases (including HIV). Unlike other public health challenges, a cure has been on the market for years, but the high cost puts it out of reach for many who have the condition. Fewer than 3 in 100 Medicaid beneficiaries and fewer than 1 in 100 prison inmates have received the treatment.

In his work on a National Academies of Sciences, Engineering and Medicine committee, Neeraj Sood and colleagues found that if 85 percent to 95 percent of people with hepatitis C were treated, the disease would be eliminated as a public health problem.

3 in 100

Medicaid beneficiaries receive the curative treatments for hepatitis C, while fewer than 1 percent of prison inmates receive the cure.

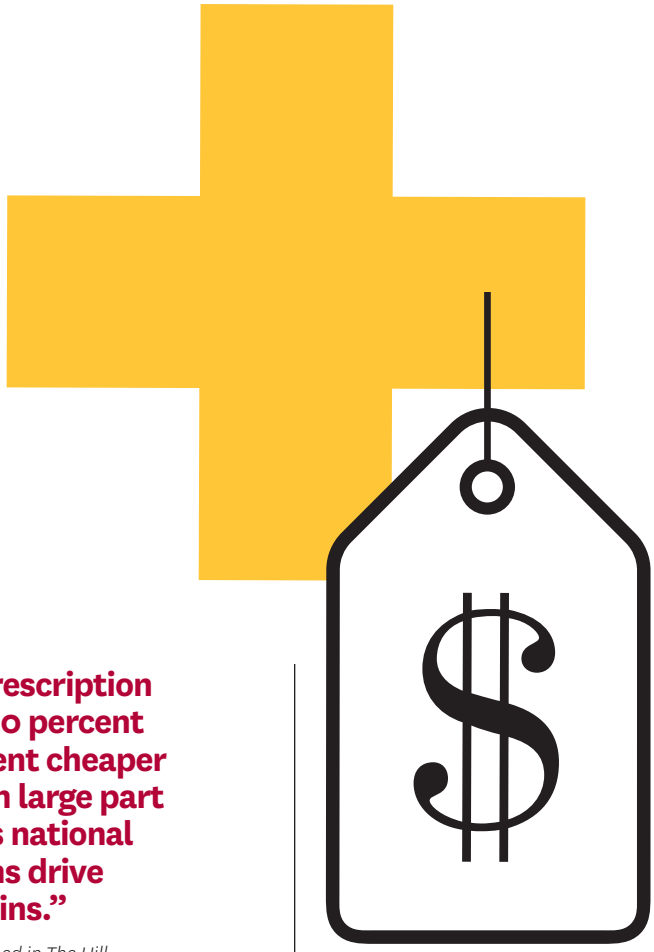
As states struggle to provide access to treatment to those in need without busting their budgets, Sood and his co-investigators have shown how engaging a subscription model, instead of a price-per-pill model, can meet this challenge. Colloquially called the "Netflix model," Dana Goldman first coined the term to describe a novel licensing strategy whereby a state agency or payer pays a lump sum for unlimited access to treatment.

This sort of subscription model could reach more patients and improve outcomes while saving money.

Inspired by Sood's research, Louisiana has already instituted a modified version of the plan. The state pays an annual fee of up to $58 million, partially covered by federal funds. In return, the contracted manufacturer provides unlimited access to an effective hepatitis C therapy. Compared to the status quo, the model provides greater incentive to treat as many people as possible.

Other states have also been in discussions with the Centers for Medicare and Medicaid Services about obtaining the necessary approvals to develop such a program. ●

We are developing ways to assess technology's true value in healthcare.



78%

U.S. percentage of global drug profits

"Branded prescription drugs are 20 percent to 40 percent cheaper in Europe in large part because its national health plans drive hard bargains."

Dana Goldman, op-ed in The Hill

$10,500

annual U.S. spending per capita on healthcare

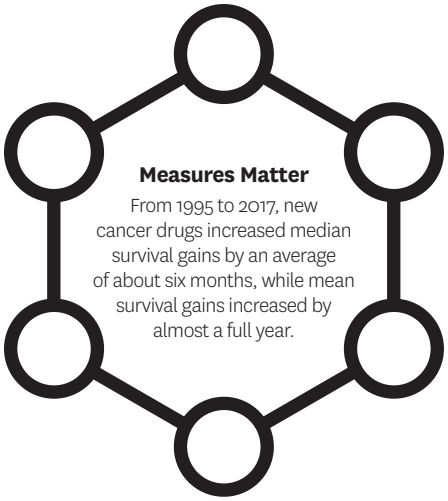
Technological breakthroughs are pivotal to medical progress but are also a major driver of increasing prices. While health technology assessment (HTA) is considered an essential technique for evaluating the value and appropriate price of new treatments in nations with single-payer systems, its advantages have yet to be felt in our country's fragmented system.

Schaeffer Center and the Aspen Institute are collaborating to help foster the future of HTA in the U.S. Co-chaired by Darius Lakdawalla, Gail Wilensky of Project HOPE and Peter Neumann of Tufts Medical Center, the project will convene experts on value assessment to develop practical policy recommendations for easing expenses while promoting medical advances.

In the partnership's first white paper, Lakdawalla, Karen Mulligan, Jakub Hlávka, Desi Peneva, Martha Ryan and colleagues give historic context and consider what a U.S. HTA body could look like today. Such a program would face unique challenges, given the complexity of the U.S. healthcare system and the exceptional role the U.S. plays in innovation globally.

Writing for The Hill, Dana Goldman suggested that a previous HTA model in the form of the federal Office of Technology Assessment (OTA) is ripe for restoration. Created in 1972, the OTA used systems and cost-benefit analyses — along with market research and consensus methods — to provide objective reports on science and technology-related issues. Congress dismantled the agency in 1995, but, according to Goldman, a new OTA could focus on medical innovation to help derive the appropriate value-based prices of new technologies.

In an article for STAT, William Padula addressed the importance of using HTAs to prioritize and protect patients when restraining prices. Nations



use HTAs to not only set terms for negotiating with manufacturers but also in defining the limits on how much will be paid for care in certain circumstances. This is not always to the consumer's advantage. The United Kingdom, for instance, limits dialysis coverage for diabetic patients over age 60, while all Americans on Medicare are eligible to receive it if needed.

Padula also posits that an OTA-style agency could provide the U.S. with a much-needed official voice in international pharmaceutical pricing. U.S. involvement might lead to our embracing the positive attributes of some aspects of pricing used by other countries. It may also result in other nations understanding the extent to which the U.S. shoulders the costs of medical discovery — and convincing them to share some of the weight.

Even if funded by the U.S. government, this new agency must operate independently to be truly effective. But just as the original OTA generated reports that saved enormous amounts of taxpayer money, a new agency devoted to HTAs could prove invaluable in controlling current costs while stimulating future innovation. ●

"Taken alone, median survival gains can make a price look like gouging. But it doesn't capture the value accruing to the other half of the participants in the clinical trials. Promising therapies await more and more people with cancer. Striking a balance between affordability and future innovation will require policies that, among other considerations, accurately relate a drug's price to its total value."

Alice Chen and Dana Goldman in an op-ed on the metrics of cancer care for STAT

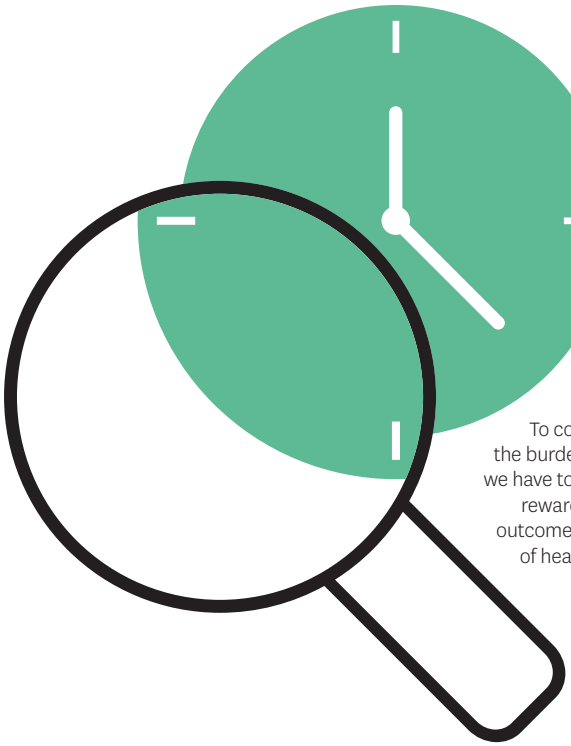
ASSESSING HEALTH GAINS

Measuring the value of lifesaving cancer therapies

Cancer drugs with six-figure prices have sparked outrage, but are these new drugs measurably improving outcomes enough to justify the cost? A Schaeffer Center study cut through the controversy to gauge the true worth of these therapies. Conducted by a team including Alice Chen and Dana Goldman, the research found that these amounts are not as inflated as the accusations suggest. The study assessed trends in price per health gains when measured by two widely used metrics, median survival and mean survival. While price per median survival gain showed large increases, price per mean survival gain increased much more slowly between 1995 and 2012. In recent years, price increases have reflected equally large growth in both metrics.

We address the burden of chronic disease.

Our investigators explore strategies for long-term well-being.



To continue to reduce the burden of chronic disease, we have to move to a model that rewards positive health outcomes rather than the use of healthcare resources.

The U.S. has become a victim of its success in improving medical care. While Americans are living longer, those added years are not necessarily being spent in good health. Disability rates are rising, due largely to the high levels of disease among our elderly. In addition, mental illness is too often neglected — and, like other chronic conditions, can be expensive to treat when care becomes necessary.

Dana Goldman, Seth Seabury and Bryan Tysinger are examining the benefits — and costs — of chronic disease prevention to find the most viable strategies for long-term well-being. The challenges are enormous and urgent. Personal healthcare costs extract more than $2 trillion from our economy every year. Yet the U.S. ranks last among comparable nations on measures of healthcare system quality, efficiency, access to care, equity and lifespan.

Beyond the immense personal toll on individuals and families, more people are qualifying for senior entitlement programs and remaining in them longer, straining our national resources. Medicare spending alone is projected to almost double in the coming decades.

Goldman, Seabury and colleagues used the Schaeffer Center's dynamic Future Elderly Model and Future Adult Model to discern the specific societal advantages of prevention. They examined the potential impact of such strategies on cardiovascular disease, serious mental illness and aging. In combating cardiovascular disease, the researchers estimated that following guidelines that include the simple, inexpensive intervention of taking low-dose aspirin would save almost 900,000 lives a year. Positive economic impact and increased life expectancy could also be achieved by early intervention in severe mental illness in young adults. Meanwhile, delaying the negative effects of aging could generate more than $7 trillion in health benefits if those senior years were productive.

Working with Tysinger, Goldman also used the Future Adult Model to gauge the fiscal impact

"Even without longer contracts, we could install a system that would reward plans for reimbursing care that was in the patient's long-term interest, but not in the plan's short-term interest."

Dana Goldman, Seth Seabury and colleagues, chapter in the Aspen Institute Health Strategy Group's report on chronic disease

$1K to $2K

additional annual healthcare spending by a 65-year-old with a serious chronic illness compared with a similar adult without the condition

40+

research citations in government documents and reports about the costs of chronic diseases

Two Schaeffer Center microsimulation models are used to explore trends in health and longevity. Schaeffer findings have been featured by both the White House and Congress as well as private organizations interested in aging policy.

of preventing cancer, diabetes, heart disease, hypertension, lung disease and stroke through 2050. Their analysis incorporated trends in demography, health behaviors and chronic disease to cast light on future disease burden, disparities, healthcare costs and the ramifications on federal programs. They compared a number of disease-reduction scenarios to estimate the effects of technological and lifestyle changes. They also factored educational attainment into their modeling to calculate how such changes might remedy socioeconomic disparities.

While the researchers acknowledge that eradicating chronic conditions is a lofty goal, they believe the explored scenarios are useful in demonstrating the financial benefits of disease prevention. In addition to reducing medical costs, successful interventions also would affect the labor supply, personal wealth, tax revenues and government spending.

Their research estimates that eradicating any one of the chronic conditions considered could result in savings of up to $3.5 trillion in current dollars when aggregated through 2050. This amount would offset federal subsidies for the Affordable Care Act. More important benefits would come in the form of longer, healthier and more productive lives.

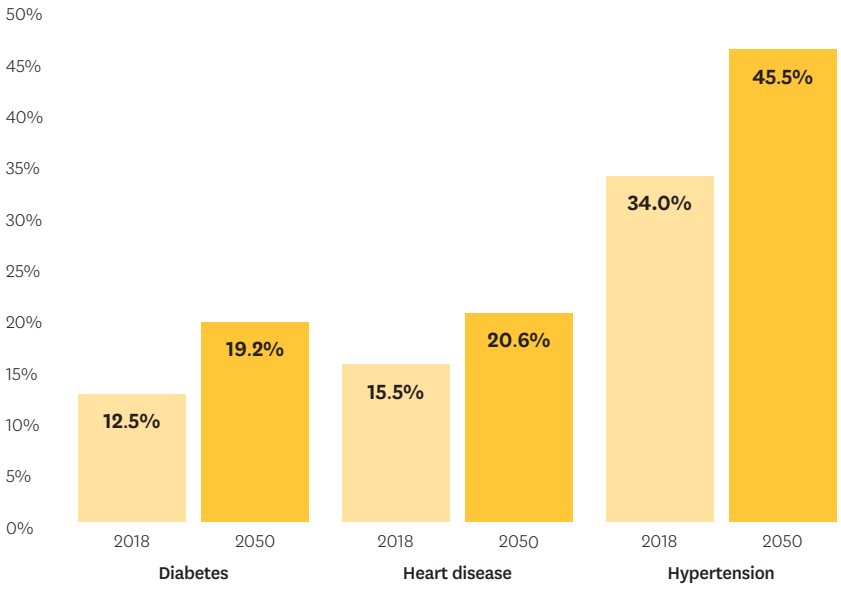
The researchers note that, while progress in reducing the burden of chronic diseases depends on scientific innovation and lifestyle changes, the key to maximizing the impact of medical progress is moving to a model that rewards positive health outcomes rather than the use of healthcare resources.

They found "a disconnect between the ultimate payers (beneficiaries) and the intermediates who are doing our negotiating. At the end of the day, it is the employers and the government who decide what is going to be covered, not an insurer, and, as a society, we can decide that we want to start reimbursing for long-term health outcomes."

As Goldman and Tysinger observe, this requires an increased focus on preventing disease rather than just treating it once it develops. To achieve this, patients and caregivers must change certain behaviors so that longer lives can be more independent, productive and enjoyed in better health. ●

Chronic Disease Rates

The percentage of individuals with diabetes, heart disease and hypertension is expected to rise sharply over the next three decades.

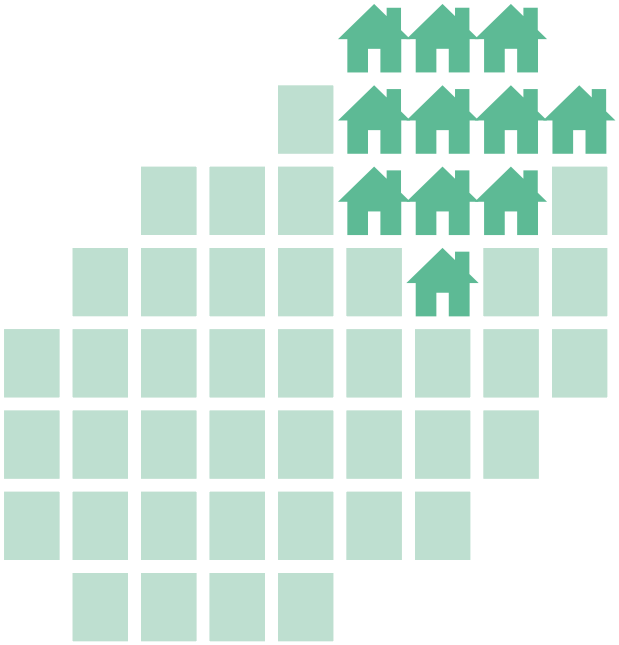


ENHANCING ADHERENCE

The benefits of extended-release formulations

Even though correct doses are crucial to healthy outcomes, suboptimal medication adherence is all too common. In addition to undermining the effectiveness of chronic disease therapies, inadequate adherence costs the U.S. up to $289 billion annually. John Romley and colleagues examined the potential of extended-release formulations as a partial solution. Previous extended-release studies were limited to particular medications used for brief periods. Romley's team investigated 15 extended-release treatments taken for more than a year. The findings showed better adherence — and improved health. For example, a 5.4 percent improvement in using preventive medications after myocardial infarction was associated with an 11 percent reduction in the rate of major vascular events.

New evidence suggests policy changes that could improve kidney care.



Dialysis Treatment In-home vs. Clinic

Although outcomes are similar, Medicare pays 20 percent more for dialysis performed outside the home. As a result, only

12%

of dialysis patients receive treatment at home.

"Laudable goals could become dangerous mandates, and incentives that enhance care in one area could also reduce access to other essential services."

Eugene Lin, op-ed in Morning Consult

$89,000

average cost per patient for the 450,000 Americans who enter dialysis clinics each year

An estimated 15 percent of Americans will develop chronic kidney disease. Every year, more than 450,000 of these patients enter hospitals and clinics for dialysis to cleanse their blood. The high expense of this procedure and its disruptiveness to patients' lives — especially when performed outside the home — garner considerable attention from regulators and doctors.

Medicare penalizes providers for 30-day readmission rates, assuming that providers can reasonably reduce rehospitalization by providing high-quality care. However, 30-day rehospitalizations are common in patients who receive dialysis and are more likely due to underlying disease burden than indicative of poor healthcare quality.

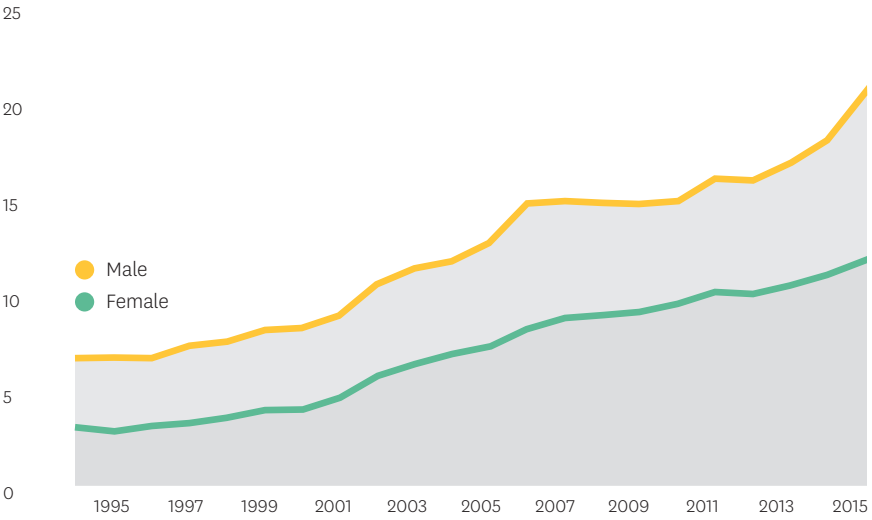
Although prior studies have identified major causes for 30-day readmissions in dialysis patients, few have assessed the clinical relatedness of hospitalization to kidney care. Nephrologist and policy researcher Eugene Lin and co-investigators conducted a study that rectified this gap in knowledge. Their findings suggest that Medicare and other payers should refine readmission metrics to account for the actual relationship to dialysis as opposed to unrelated factors.

Writing for Morning Consult, Lin also considered a recent federal initiative aimed at improving the lives of kidney patients while reducing costs. One much-needed aspect is increasing incentives for home dialysis. Currently, Medicare pays kidney specialists 20 percent more for dialysis performed outside a patient's home than within it. As a result, only 12 percent of patients get home treatment, even though the outcomes are similar to in-clinic dialysis. Lin's investigations demonstrate that even well-intentioned policies can be restructured to better help patients. ●

We increase understanding and create solutions for the opioid crisis.

U.S. Drug Overdose Death Rates

Drug overdose mortality has more than tripled over the past two decades in the U.S. (age-adjusted accidental drug death rate per 100,000)



3.5x

American lives are lost to drug overdoses at a rate nearly 3.5 times higher than other high-income countries.

"One of the takeaways I'd like people to have is that doctors learn a lot of clinical facts but, when it comes to clinical judgment and decision-making, they fall prey to the same biases that we all do."

Jason Doctor, in The Washington Post

Six state or city agencies have implemented the nudge, notifying prescribers of a patient's fatal overdose.

The opioid epidemic began with well-intended prescriptions for managing pain. As the crisis grew, many physicians remained unaware of its connections to their own procedures. Jason Doctor evaluated what happened when physicians found out about patients' deaths from opioid abuse.

The study, published in *Science*, involved 861 San Diego clinicians who prescribed opioids to patients who later overdosed fatally. Doctor's team randomly selected half to receive a notification from the county medical examiner. The letter offered a supportive tone and information about safe prescribing guidelines.

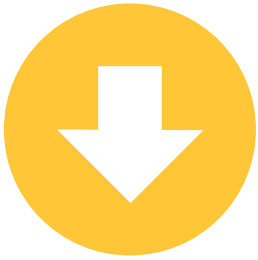
Within three months, opioid prescriptions from those receiving the letter decreased by nearly 10 percent compared to the group that did not receive the letter. They also were 7 percent less likely to start a new patient on opioids. These results are particularly promising given that numerous state regulations aimed at limiting opioids have shown little impact. In addition, Doctor's interventions are easily scalable as existing state and federal resources already track drug overdose deaths. As a result, numerous states and city health departments are adopting his tactics.

Rosalie Liccardo Pacula also evaluates the mechanics of the opioid crisis and how they influence the abuse of heroin, cannabis, and other illicit or addictive substances. She joined the Schaeffer Center in 2019, bringing with her the Opioid Policy Tools and Information Center (OPTIC). OPTIC is supported by the National Institute on Drug Abuse as a research center of excellence. Among other investigations, Pacula recently revealed that allowing pharmacists to sell the opioid antidote naloxone without a prescription was associated with a nearly 30 percent drop in overdose fatalities. Pharmacists have a key advantage in helping curb opioid abuse, she notes, because of their direct interactions with patients when filling prescriptions.

Pacula has presented her findings at the Centers for Disease Control and Prevention, National Institutes of Health, and in front of state

12%

of the male average life expectancy gap between the U.S. and other high-income countries is due to drug overdose. For U.S. women, overdose accounted for 8 percent of the gap.



30 percent drop in overdose fatalities when pharmacists are allowed to dispense opioid antidote naloxone without a prescription

and federal policymakers. She joins other Schaeffer Center researchers who are developing and evaluating strategies to combat substance abuse.

The need to find more solutions to this epidemic of addiction is urgent. American lives are lost to drug overdoses at a rate nearly 3.5 times higher than other high-income countries, according to research led by Jessica Ho. With data from 17 high-income nations, Ho's study is the first to demonstrate the drug epidemic's impact on widening gaps in life expectancy between the U.S. and the rest of the developed world. Especially alarming is her finding that U.S. death rates are 27 times higher than Italy and Japan, which have the lowest numbers of overdose fatalities.

In an influential book, Nobel Laureate Sir Angus Deaton calls these tragedies "deaths of despair." His research suggests that they are accompanied by measurable deteriorations in economic and social well-being. Opioid and other substance addiction may therefore just be a symptom of larger issues that must be addressed to enhance community well-being. ●

"Pressure injuries are preventable hospital-acquired conditions, and investments made toward pressure injury prevention are akin to low-hanging fruit in the battle against rising healthcare costs. In a healthcare environment that penalizes hospitals for preventable hospital-acquired diseases, providing pressure ulcer prevention represents a very cost-effective strategy for reducing [hospital-acquired pressure injuries] and improving patient outcomes.

William Padula and colleagues, in BMJ Quality & Safety

APPLYING PRESSURE TO COSTS

New quality protocols for pressure injury

The national cost of hospital-acquired pressure injuries, also known as bedsores, could exceed $26.8 billion annually, not to mention leading to potentially fatal complications for patients, according to research by William Padula. His investigations center on quality-improvement protocols that can reduce both physical risks and financial costs. Padula's findings suggest that hospitals should invest more in early detection and care — especially since Medicare penalizes providers for pressure injuries appearing after admission. The Department of Veterans Affairs has shown interest in implementing his recommendations. In addition, as treasurer of the National Pressure Ulcer Advisory Panel, Padula has provided testimony to the U.S. House of Representatives on his solutions for preventing such injuries.

We prioritize the health of vulnerable populations.

Keeping youth with mental illness in school accrues lifetime benefits.

Education can make a profound difference in the lives of people with mental illness.

Serious mental illness exacts devastating personal and financial tolls on those afflicted, their families and society. The relatively early age of onset exacerbates these costs, and it has long been assumed that early interventions lead to lifetime benefits in reducing this burden. However, little evidence existed to support this until groundbreaking research led by Seth Seabury.

The team, which included Sarah Axeen, Dana Goldman and Bryan Tysinger, employed Schaeffer Center's Future Adult Model — an economic-demographic microsimulation — to examine the lifelong consequences of serious mental illnesses for people diagnosed before age 25. Simulation results demonstrate that these illnesses — which include psychoses, major depressive disorder and bipolar disorder — significantly worsen lifetime health outcomes, raise medical costs and reduce economic outcomes. For example, people showing serious mental illness by age 25 lost an average of nearly 10 years in life expectancy and $537,000 in lifetime earnings.

The study revealed that education has an outsized impact on the prospects of people with severe mental disorders.

Overall, the researchers conservatively estimated the lifetime burden to be $1.85 million for each patient — adding up to nearly a quarter of a trillion dollars nationwide for each new cohort. Significantly, this burden is unequally distributed, with the largest losses accruing to those with the worst educational outcomes.

While interventions may seem costly, the study shows that a two-year educational intervention would produce an almost 2-to-1 return on investment. In California alone, early educational interventions would save more than $900 million over the lifetimes of the state's roughly 16,600 25-year-olds currently living with serious mental illness. A 2019 poll by the California Health Care Foundation and Kaiser Family Foundation found that Californians' top health priority was making sure people with mental illness can get treatment.

"By spending more now to expand the behavioral health system's capacity … we may be able to spot mental disorders early."

Seth Seabury and Tom Insel, op-ed in CalMatters

$1.85 million

per-patient lifetime burden of serious mental illness

$900 million

projected savings from early educational interventions for California's roughly 16,600 25-year-olds currently living with serious mental illness

$80 million

increase for mental health and addiction in Illinois state budget, citing Schaeffer evidence as justification

Although previous research showed the positive impacts of early identification, diagnosis and treatment on quality of life, the Schaeffer study is the first to assess the benefits of these interventions across individual lifespans.

Seabury presented the findings to policymakers and mental health advocates at a briefing at the Capitol in Sacramento. Schaeffer Center co-hosted the event with the Steinberg Institute, an organization founded by Sacramento Mayor and former State Senate President Pro Tem Darrell Steinberg to enhance policymaking related to mental health.

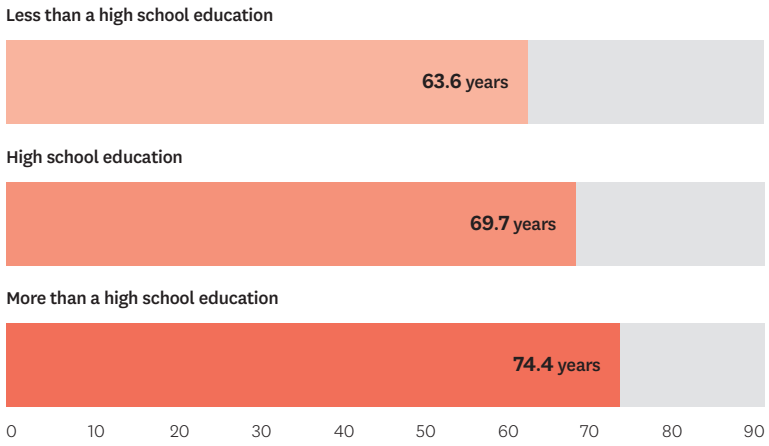
While reaching people with mental health issues — including those with behavioral disorders and substance addiction — remains a significant nationwide challenge, solutions must be found that address local and state concerns. To aid policymakers in assessing proposals to improve mental health treatment and access, Schaeffer Center — through the Keck-Schaeffer Initiative for Population Health Policy — is creating data chartbooks specific to individual states.

The data chartbooks provide key research and easy-to-understand statistics quantifying the magnitude of each state's needs and challenges. The rigorously sourced findings describe the population with mental health disorders, the shortage of mental health providers, the impact on the healthcare system and the implications for the criminal justice system. This project is a collaboration with Behavioral Health + Economics Network (BHECON), which aims to unite diverse stakeholders to identify, examine and advance policy reforms to strengthen states' mental health delivery systems.

State policymakers and stakeholders have found this data beneficial in improving policies related to psychological well-being. Illinois, for example, cited our research when instituting an $80 million increase in funding for mental health and addiction treatment. The state budget included $39 million for addiction treatment and prevention and $43 million for mental health services. This represented respective increases of 18 and 13 percent — as opposed to the previous year's increase of just 3 percent. The chartbook produced for Illinois, which was presented at a stakeholder conference, found that nearly 25 percent of Illinois residents with serious psychological distress were not receiving needed help. ●

Life Expectancy and Mental Illness

Higher levels of educational attainment lead to longer lives for people with serious mental illness.

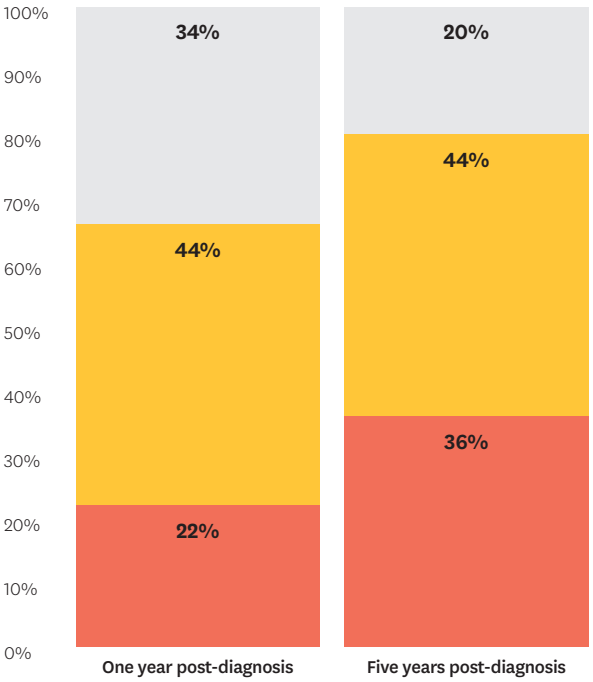


TRACKING LONG-TERM IMPACT

Early childhood education breaks the cycle of poverty.

Nobel Laureate James Heckman used an extension of the Future Elderly Model to estimate the impact of early childhood education on lifetime health outcomes. Following data from low-income African-American children who participated in the noted Perry Preschool Project decades ago, his latest research looks at their outcomes at midlife — as well as their offsprings' progress. Heckman, Duncan Ermini Leaf and colleagues found that those who participated in the program achieved significant gains that provided positive multigenerational effects on education, health, employment and civic life. Early childhood education resulted in stronger families and enhanced upward mobility for the next generation — an indication that early childhood education can be effective in breaking the cycle of poverty.

We are revealing trends in access to dementia specialty care.



Dementia Specialist Care Disparities

One year after a dementia diagnosis, less than a quarter of patients had seen a dementia specialist. After five years, that amount had only increased to 36 percent.

- No follow-up
- Non-specialist follow-up
- Specialist follow-up

Patients diagnosed with Alzheimer's disease or dementia by a non-specialist

85%

"Dementia specialists are more familiar with subtypes of dementia and may be less likely to misdiagnose and wrongly prescribe medications to patients."

Julie Zissimopoulos, study in Alzheimer's & Dementia: The Journal of the Alzheimer's Association

In the first large study to examine dementia diagnoses in older Americans over time, Julie Zissimopoulos and colleagues found that most patients never see a specialist. Using Medicare data to track diagnoses of nearly a quarter-million people over five years, the team found that 85 percent of individuals were first diagnosed by a non-specialist, usually a primary care doctor, and an "unspecified dementia" diagnosis was common. The researchers also found that the use of dementia specialty care was particularly low for Hispanic and Asian patients.

More accurate identification of dementia type may lead to better treatment, enhance knowledge of medications that may worsen symptoms, inform disease progression over time and encourage advance care planning.

In other research, Zissimopoulos and collaborators have investigated possible new uses for old drugs as alternative approaches to Alzheimer's-specific pharmaceuticals that have failed to clear the beta-amyloid proteins linked to the condition. In two separate studies using large, national data sets, the researchers assessed antihypertensive medications and cholesterol-lowering statins — used to fight heart disease — for potential impact on Alzheimer's disease. They found that certain types of both of these inexpensive medications hold the potential for preventing or delaying the onset of Alzheimer's.

A nationally recognized thought leader in the field, Zissimopoulos was asked to join a National Academy of Sciences committee on Alzheimer's and dementia. Together with Mireille Jacobson, she is also co-leading the Schaeffer Center's new Aging and Cognition Project, which focuses on Alzheimer's disease and related dementias, palliative and end-of-life care, and racial disparities. ●

How does insurance coverage affect outcomes for vulnerable groups?

"Diabetes is a top cause of death in the United States, affects 18 million nonelderly adults and accounts for over $300 billion in costs annually. Studies have suggested that insurance coverage can increase diabetes diagnosis and treatment, setting patients on the path to manage the disease. Yet, many people with diabetes remain uninsured and suffer from preventable complications."

Rebecca Myerson, on her study in the American Diabetes Association's Diabetes Care

After the ACA took effect, the number of uninsured adults under age 65 with diabetes declined

70%

"Many people who have diabetes don't know it. Access to insurance coverage through the ACA has helped this underserved population get diagnosed and access appropriate care."

John Romley, study in the American Diabetes Association's Diabetes Care

Cancer and diabetes are two of the nation's leading causes of death, and low-income populations are especially vulnerable. Schaeffer Center researchers conduct vital studies on the impact of these diseases on both the insured and uninsured.

The Affordable Care Act (ACA), signed into law in 2010, significantly reduced the number of uninsured Americans. For diabetes patients alone, it expanded coverage for nearly 2 million people, more than half of them low-income. Research by Rebecca Myerson, John Romley and Dana Goldman analyzed the impact of the ACA on diabetes patients.

"Diabetes is a top cause of death in the United States, affects 18 million nonelderly adults and accounts for over $300 billion in costs annually," Myerson notes. "Studies have suggested that insurance coverage can increase diabetes diagnosis and treatment, setting patients on the path to manage the disease. Yet, many people with diabetes remain uninsured and suffer from preventable complications."

The team's research found that, in 2009 and 2010, 17 percent of adults under age 65 who had diabetes were uninsured. After the ACA took effect, that number declined by 70.5 percent, from 17 to 5 percent. Among low-income adults with diabetes, the uninsured number declined by 27 percentage points. This study was the first to demonstrate gains in coverage under the ACA for patients with both diagnosed and undiagnosed diabetes.

"Many people who have diabetes don't know it," Romley adds. "Access to insurance coverage through the ACA has helped this underserved population get diagnosed and access appropriate care."

Timely detection of certain cancers also significantly improves treatment options and health outcomes. However, access to screenings may be affected by lack of health insurance.

A study co-authored by Myerson, Goldman, Darius Lakdawalla and Reginald Tucker-Seeley examined whether Medicare — which provides nearly universal coverage for Americans begin-

$300 billion

annual cost of diabetes in the United States

2 million

people with diabetes gained insurance coverage through the ACA — more than half of whom are low-income.

At age 65, nearly universal Medicare coverage increased cancer detection by 10 percent compared to people aged 63 to 64.

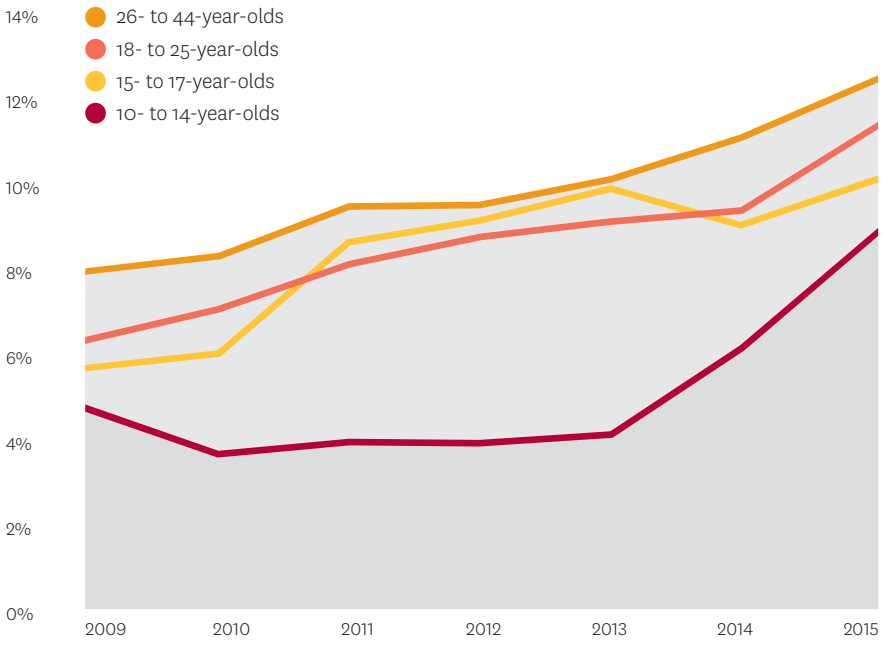
ning at age 65 — impacted cancer detection and mortality. They focused on breast, colorectal and lung cancer, for which screenings are recommended before and after age 65.

They noted that an initial year of treatment cost an average $73,000 for lung cancer and $28,000 for breast cancer in 2010 dollars. The elevated rates of bankruptcy among lung and breast cancer patients ages 50 to 64 suggest that out-of-pocket treatment expenditures may lead to substantial financial hardship for people lacking Medicare coverage.

Their report found a 10 percent increase in cancer detection among Medicare beneficiaries when compared to 63- and 64-year-olds not enrolled in the program. Detection increased more for women than for men, and the study also found differences by race. For example, black women experienced a particularly large jump in cancer detection — along with a decrease in mortality — at age 65. These estimates provide new evidence of Medicare's impact on health outcomes for people in need of medical care. ●

Overtaxed Emergency Care Resources

Mental health-related emergency department visits increased significantly between 2009 and 2015, particularly among youth.



STEMMING A CRISIS

Mental health needs and emergency care resources

Mental health-related visits account for a growing share of emergency department (ED) visits and resources. Research by Sarah Axeen and Michael Menchine shows the trend is driven largely by adolescent and young adult visits. For patients between 10 and 25 years old, annual growth rates for behavioral health-related visits were double those of older groups. Their findings also show that, because of longer patient stays, mental health-related visits use an increasingly disproportionate amount of ED time. The researchers urge more focus on acute mental healthcare and better understanding of needs by patient age group, with potential solutions including specialized psychiatric observation units, increased use of tele-psychiatry for emergency consultations and dedicated psychiatric emergency units.

USC-Brookings Schaeffer Initiative: A Leading Forum for Health Policy Analysis


Paul Ginsburg

Buoyed by the leadership of Paul Ginsburg and the continued support of Leonard Schaeffer, the USC-Brookings Schaeffer Initiative for Health Policy — now in its fifth year — remains a crucial resource for federal and state lawmakers who rely on its objective analysis of pressing healthcare issues. The Schaeffer Initiative — which blends the Schaeffer Center's strengths in evidence-based solutions with the policy expertise of the Brookings Institution — produces in-depth white papers, articles analyzing time-sensitive health issues, blog posts, perspectives and public conferences. It expands the Schaeffer Center's presence in Washington, D.C., and serves as a forum for sharing analysis and insights with top officials.

The Schaeffer Initiative is directed by Paul Ginsburg, who, in 2019, was appointed to serve as vice chair of the Medicare Payment Advisory Commission (MedPAC), a nonpartisan congressional agency that provides the U.S. Congress with analysis and policy advice on the Medicare program. Ginsburg previously was a MedPAC commissioner. In addition to heading the Schaeffer Initiative, Ginsburg is director of public policy at the Schaeffer Center and a professor at the USC Price School of Public Policy.

Also leading the initiative are Associate Director Loren Adler and Schaeffer Center Director Dana Goldman. They oversee a growing team of experts including Erin Trish, Matthew Fiedler, Christen Linke Young, John Romley and Neeraj Sood in meeting three overarching challenges:

- Healthcare reform, including evaluating proposals to improve the Affordable Care Act
- Charting the future course of Medicare
- Maximizing the value of innovation in drugs and medical devices

In addition to investigating a wide range of issues relating to healthcare policy, initiative researchers engage directly with policymakers and stakeholders across the public and private sectors through briefings, testimony and productive meetings. Congressional staff and White House officials frequently call on our experts to discuss potential and pending legislative matters.

One case in point: the team's work on surprise

1,500+

media mentions featuring Schaeffer Initiative experts in 2019

medical billing. Since 2016, Adler, Fiedler, Ginsburg, Trish and Linke Young have offered policy analysis and solutions at the state and federal levels and are go-to experts for understanding the issue and the potential impact of proposed solutions. They have met with staff members from a number of legislative bodies to offer technical assistance on the topic. For example, Senator Lamar Alexander (R-TN) cited Adler's work in an op-ed, and Schaeffer Initiative findings informed Alexander as he worked across the aisle with Senator Patty Murray (D-WA) on legislation targeting such billing.

Goldman, Karen Van Nuys and Geoffrey Joyce assisted Senator Susan Collins (R-ME) on a bill banning the gag clauses that stopped pharmacists from telling customers when they could save money by paying cash instead of using insurance co-payments. The bill has since become law.

Seeking ways to achieve universal healthcare coverage, Schaeffer Initiative experts explored the advantages of building upon the ACA in a piece published in the *New England Journal of Medicine*. The Schaeffer Initiative also hosted a conversation on universal coverage featuring California Attorney General Xavier Becerra. At this event, Adler, Linke Young and Fiedler compared the potential benefits and drawbacks of the single-payer option. They also discussed ways to close the gaps in ACA coverage, reduce private insurance costs and insure the undocumented to achieve healthier communities overall.

Other important research has examined how to automatically and retroactively enroll the uninsured in coverage to expand access to healthcare for the 30 million Americans in need. Initiative scholars also are presenting ways to restrain the rapidly rising costs of Medicare Part B, which covers treatments in physician offices and hospital outpatient departments. Potential fixes include market-oriented strategies such as shared-savings contracts that would be voluntarily agreed upon by physicians, drug companies and an intermediary that would negotiate prices.

The Schaeffer Initiative holds conferences that attract policy and healthcare leaders from across the nation. For example, when then-FDA Commissioner Scott Gottlieb made the announcement that he was stepping down in March 2019, he turned to the Schaeffer Initiative for a public forum, speaking to more than 700 in-person and online attendees about his tenure and policy reform. Representatives from the Centers for Medicare and Medicaid Services, congressional staffers, state health policy and insurance departments, National Governors Association, American Hospital Association, industry representatives and other important stakeholder groups have taken part in these conferences.

Given the massive complexities of our nation's healthcare challenges, much remains to be accomplished. Initiative experts continue cultivating solutions to improve Medicare and the ACA and stamp out surprise billing.

"Drawing on the strengths of both institutions, the USC-Brookings Schaeffer Initiative continues to be an integral resource for policymakers and other stakeholders in improving health policy at both the federal and state levels. It would be difficult to overstate the importance of this initiative."

John R. Allen, President, The Brookings Institution

In 2019, the Schaeffer Initiative produced:

26
timely, targeted articles

7
conferences

5
journal publications

3
federal testimonies

3
major reports

Data Report

18 country-level FEM-based microsimulation models:

Austria, Belgium, Canada, Denmark, France, Germany, Italy, Japan, Korea, Mexico, Netherlands, Singapore, Spain, Sweden, Switzerland

In progress: England, Ireland, Taiwan

2 local-level FEM-based microsimulation models:

California and Los Angeles County

A team of 14 data scientists maintains over 70 databases and provides support for each of the Center's research projects.

170M

lives represented in Schaeffer Center data

20

county, state and country-level Future Elderly Model-based microsimulation models

The Schaeffer Center's data core and microsimulation team leverages the information and tools necessary to help answer big questions in health policy with evidence-based solutions.

The Center's data core and microsimulation staff members are experts in the methods and programming necessary to rigorously analyze big data. They include experienced programmers, microsimulation modelers, statisticians, analysts and a data resource administrator who bring unique backgrounds from a variety of fields. Schaeffer Center fellows and students rely on this team for support on a range of projects.

Data Partnerships and Collaborations

In addition to being 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 Organisation for Economic Co-operation and Development; National Academies of Sciences, Engineering and Medicine; Los Angeles County Department of Public Health; and Los Angeles Homeless Services Authority.

For example, data from the Greater Los Angeles Homeless Count is analyzed by the Schaeffer Center's data core team members, who clean, categorize and divide the data to understand key components of the homeless population, including age, race, ethnicity,

chronic mental and physical health problems, HIV status, veteran status and the length of time persons have experienced homelessness. The Schaeffer Center has served as the project's data partner since 2017.

Microsimulation

For more than a decade, the Schaeffer Center has been at the forefront of developing pioneering economic demographic microsimulation tools to effectively model future trends in health and longevity and answer salient questions in health policy.

The centerpiece effort is the Future Elderly Model (FEM), which projects a rich 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. 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 biomedical innovation can play in future health outcomes. They are also using the model to drill down into the financial impact of a range of disease states.

The microsimulation team is building a global network of collaborators who are developing country-level FEM-based models in 18 countries. This effort allows researchers to compare demographic, health and economic trends. Models have also been developed for California and Los Angeles County to help policymakers at the state and county levels understand trends and the impact of policy decisions.

Bryan Tysinger at a conference about microsimulation research at the Organisation for Economic Co-operation and Development (OECD)

The Future Adult Model (FAM) extends the FEM to the adult population age 25 and older in the United States, allowing the team to model much more of the lifespan.

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.

Since 2004, the National Institute on Aging has supported this work as one of 13 prestigious Edward R. Roybal Centers for Translation Research. Findings using the FEM and FAM models have been published more than 60 times and cited — or commissioned — by government agencies, the White House, the National Academy of Sciences and private organizations interested in aging policy.

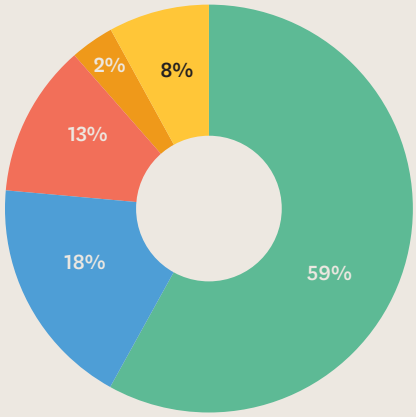
Data Library and Data Security

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. The data core 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.

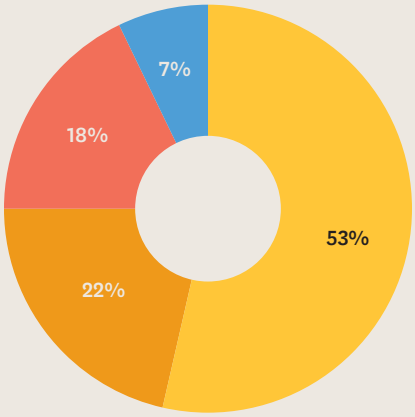
Financial Report

Operating Expenses
(fiscal year 2019)
$13.2 million



- **Research, $7.8M**
  Salaries, research expenses, initiatives and special projects
- **Data Core & Health Informatics, $2.4M**
  Salaries, data and data infrastructure, and research support
- **External Affairs, $1.7M**
  Salaries, development, communications, travel and event expenses
- **Research Training Programs, $0.3M**
  Salaries and training expenses
- **Administration, $1M**
  Salaries and general operating expenses

Revenue
(inception through 06/30/19)
$109.3 million



- **Government, $58.5M**
  National Institutes of Health, Centers for Medicare and Medicaid Services, and other government sources
- **Corporations, $23.8M**
  Industry
- **Individuals and Foundations, $19.4M**
  Foundations, family foundations and individuals
- **USC and Others, $7.6M**
  University support and miscellaneous income

The Schaeffer Center has been supported in large part by funding from federal agencies.

$64.5M
in government funding since the Center's inception

60
projects spanning topics including Alzheimer's disease, Medicare Part D and health disparities

For fiscal year 2019 (July 1, 2018–June 30, 2019), total expenditures on the operating budget were $13.2 million. The operating budget includes compensation for fellows and staff, programmatic expenses and general operating costs. Faculty salaries that are covered by the schools are not included in these totals. Expenses by function are outlined in the graph on the opposite page.

In fiscal year 2019, the Center funded the $13.2 million in operating expenses with $16 million current revenue. University support does not include faculty salaries covered by the schools. Since its inception, the Schaeffer Center has raised more than $109 million, the majority of which has come from federal grants.

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

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 USC 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

A wide range of public and private funders provides grants, gifts and sponsorships that help advance our work. The Schaeffer Center gratefully acknowledges the following fiscal year 2019 supporters:

Thank you

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

For more information about how to make a gift, please contact:
Ann S. M. Harada
Schaeffer Center Managing Director
(213) 821-1764

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Cristina Wilson

Mary E. Wilson and Harvey V. Fineberg

Louise and Derek Winstanly

Timothy Wright

Julie Zissimopoulos

ZS Associates

Sandy and Kenneth Zurek

Research Training Programs

Reginald Tucker-Seeley is a Schaeffer Center fellow and was a 2018-2019 RCMAR scientist. His research focuses on racial and ethnic disparities in financial hardship following a diagnosis of cancer or dementia.

One hundred percent of Schaeffer Center trainees go on to careers in health-care or health policy. These roles are in academic, private and public-sector organizations.

10

USC RCMAR program partner centers that collaborate to advance understanding and offer policy solutions to address minority aging and health disparities

4

RCMAR scientists have gone on to receive prestigious career development awards from the National Institutes of Health

Developing leaders in collaboration with our partner schools:

- **USC Price School of Public Policy**
- **USC School of Pharmacy**

A preeminent destination for current and emerging leaders in health policy and economics, the Schaeffer Center cultivates innovators for positions in higher education, research, government and healthcare by:

- Offering one-on-one mentorship and opportunities to collaborate with distinguished investigators in the field
- Providing dedicated, full-time administrative and data support at the Schaeffer Center, and access to a host of university-wide educational and career development resources
- Equipping trainees with sophisticated data-analysis tools and resources
- Ensuring numerous professional development opportunities, including support for grant writing, publication in peer-reviewed journals, and travel to present at or attend major conferences
- Assisting trainees in securing influential positions in prestigious academic, public and private settings

The Schaeffer Center offers a range of research training programs briefly described here. More information, including relevant contact information and application deadlines, can be found on the Schaeffer Center website at healthpolicy.usc.edu.

Fellows associated with the Schaeffer Center work with students in a range of undergraduate and graduate degree programs offered through the USC School of Pharmacy and the USC Price School of Public Policy. For more about the degree programs available, visit priceschool.usc.edu or pharmacyschool.usc.edu.

Postdoctoral Fellowships

Postdoctoral researchers at the Schaeffer Center focus completely on research, with no teaching requirement. They receive one-on-one mentoring that supports the development of their individual research agendas while they also collaborate on other research projects within the Schaeffer Center. This select group of scholars has access to all fellows associated with the center.

USC Resource Center for Minority Aging and Health Economics Research Scientists

Funded through a grant from the National Institute on Aging, the USC Resource Center for Minority Aging and Health Economics (USC RCMAR) was established at the Schaeffer Center in 2012. It is supported by the USC Office of the Provost, USC Price School of Public Policy and USC School of Pharmacy. Since its launch, USC RCMAR has supported the research of 24 early-career scholars. The program aims 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, with a particular focus on reducing the burden of Alzheimer's disease and dementia.

Collaborating centers include the USC Roybal Center for Health Policy Simulation, USC Edward R. Roybal Institute on Aging, Roybal Center for Financial Decision Making and Financial Independence at Old Age, Alzheimer's Disease Research Center and USC/UCLA Center on Biodemography and Population Health.

Predoctoral Fellowships

Predoctoral students in related programs in the USC School of Pharmacy, USC Price School of Public Policy, and USC Dornsife College of Letters, Arts and Sciences are provided with fellowships to conduct research at the Schaeffer Center under the guidance of a Schaeffer Center fellow, gaining knowledge and expertise relevant to their doctoral program.

Clinical Fellowships

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

Science of Alzheimer's Disease and Related Dementias for Social Scientists Program

This new program for junior and more advanced social scientists interested in pursuing research into the biomedical foundations of Alzheimer's and related dementias consists of a one-day series of lectures by national biomedical experts. The inaugural program, which is funded by the National Institute on Aging, will take place in 2020.

Julie Zissimopoulos and Mireille Jacobson co-direct the Center's Aging and Cognition Program, which includes an emphasis on research training programs.

Internships

Each summer, the Schaeffer Center enables 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 who are accepted into the program are paired with a Schaeffer mentor and given the 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 felllows on specific research projects, garnering invaluable experience and skills to further their research proficiency.

Visiting Scholars

Researchers from leading institutions around the world come to the Schaeffer Center each year as visiting scholars to collaborate with faculty and gain access to the center's unique data core and other resources.

Events and Seminars

Pictured left to right: Deputy Secretary of Health and Human Services Eric Hargan, FDA Commissioner Scott Gottlieb, Pennsylvania Insurance Commissioner Jessica Altman and National Governors Association Health Division Program Director Lauren Block, Paul Ginsburg, and Seth Seabury giving a presentation in Sacramento

22+

Schaeffer Center conferences, seminars and policy forums in 2019

Reforming Stark/ Anti-Kickback Policies

The Brookings Institution
Washington, D.C.
January 30, 2019

The USC-Brookings Schaeffer Initiative for Health Policy hosted **Eric Hargan**, JD, deputy secretary of Health and Human Services, for a discussion about Medicare and Medicaid anti-fraud laws. Hargan discussed whether these laws prevent innovation and hold back potentially promising new arrangements, and how the regulations implementing the laws could be modified to promote value-based, coordinated, integrated care delivery while protecting taxpayers and beneficiaries from fraud. A panel discussion following Hargan's remarks was moderated by Schaeffer Initiative fellow **Christen Linke Young**, JD.

Panel participants included:

***Kimberly Brandt**, JD, principal deputy administrator for operations, Centers for Medicare and Medicaid Services*

***Bobbie Gostout**, MD, president, Mayo Clinic Health; vice president, Mayo Clinic; professor of Obstetrics and Gynecology, Mayo Clinic*

***Tim Gronniger**, CEO, Caravan Health*

***Kevin McAnaney**, JD, healthcare lawyer, Law Offices of Kevin McAnaney*

A Conversation with Departing FDA Commissioner Scott Gottlieb on His Tenure and Policy Reforms

The Brookings Institution
Washington, D.C.
March 19, 2019

The USC-Brookings Schaeffer Initiative for Health Policy and the Hutchins Center on Fiscal and Monetary Policy at Brookings hosted outgoing FDA Commissioner **Scott Gottlieb**, MD, in a discussion about his tenure and policy reforms. His opening remarks were followed by a conversation with Bloomberg reporter **Anna Edney**. Topics included competition and market failures; the dramatic increase of youth smoking due to e-cigarettes; prescription drug pricing and the impact of biosimilars; and ways to get pharmaceuticals to the over-the-counter market more rapidly.

Emerging Policy Solutions to Surprise Medical Bills

The Brookings Institution
Washington, D.C.
March 22, 2019

At this event, the USC-Brookings Schaeffer Initiative for Health Policy presented new analysis of policy approaches to eliminate surprise out-of-network billing. **Loren Adler**, associate director of the USC-Brookings Schaeffer Initiative, opened the event by addressing the scope

of the problem. For discussion on how to craft a solution, attendees heard from two panels: a policymakers panel moderated by **Mark Hall**, JD, nonresident senior fellow in economic studies at the Brookings Institution; and a stakeholders panel moderated by **Paul Ginsburg**, PhD, director of the USC-Brookings Schaeffer Initiative for Health Policy, director of public policy and senior fellow at the USC Schaeffer Center, and professor at the USC Price School of Public Policy.

Policymaker panel included:

***Jessica Altman**, commissioner, Pennsylvania Insurance Department*

***Jane Beyer**, JD, senior health policy advisor, Washington State Office of the Insurance Commissioner*

***Lauren Block**, program director, Health Division, National Governors Association*

***L. Anthony Cirillo**, MD, board member, American College of Emergency Physicians*

***Mary Moody**, health policy advisor, Office of Senator Bill Cassidy (R-LA)*

Stakeholder panel included:

***Claire McAndrew**, MPH, director of campaigns and partnerships, Families USA*

***Molly Smith**, vice president, Coverage and State Issues Forum, American Hospital Association*

***Jeanette Thornton**, senior vice president of product, employer and commercial policy, America's Health Insurance Plans*

World Class: A Conversation with Author Dr. William A. Haseltine

The Brookings Institution
Washington, D.C.
April 22, 2019

The USC-Brookings Schaeffer Initiative for Health Policy hosted **William A. Haseltine**, PhD, for a discussion on his book *World Class: A Story of Adversity, Transformation, and Success at NYU Langone Health*. Known for his groundbreaking work on HIV-AIDS and pioneering application of genomics to drug discovery with Human Genome Sciences, Haseltine outlined the "levers of change" that NYU Langone Health used to transform into a global leader in delivering patient-centered, effective care at manageable costs. Haseltine is chair and president of ACCESS Health International Inc.; chair of the William A. Haseltine Foundation for Medical Sciences and the Arts; and trustee at the Brookings Institution. Following Haseltine's keynote, a conversation and Q&A was moderated by **Paul Ginsburg**.

Briefing: Return on Investment of Early Intervention for People with Serious Mental Illness

California State Capitol
Sacramento
May 7, 2019

The USC Schaeffer Center and the Steinberg Institute — a Sacramento-based mental health policy organization — convened a briefing about the benefits for California of investing in mental health prevention and early intervention and mitigating burdensome lifetime costs of untreated mental illness. The briefing focused on a landmark USC Schaeffer Center study, published in *Health Affairs* in April 2019 that demonstrates in stark terms the dramatic return on investment that society can reap by providing early treatment for people affected by mental health conditions, and the enormous economic costs and human suffering that comes from failing to do so. About 50 analysts, staff members and mental health advocates representing federal, state and local offices attended the briefing, which was presented by lead author **Seth Seabury**, PhD, director of the Keck-Schaeffer Initiative for Population Health Policy, associate professor of Pharmaceutical and Health Economics, and director of Graduate Studies, Pharmaceutical Economics and Policy Program, at the USC School of Pharmacy.

Pictured left to right: USC Schaeffer Senior Fellow Neeraj Sood, California Attorney General Xavier Becerra and Schaeffer Initiative Fellow Christen Linke Young

Hospital Productivity Trends: Implications for Medicare Payment Policy

The Brookings Institution
Washington, D.C.
June 25, 2019

The USC-Brookings Schaeffer Initiative for Health Policy hosted this conference on hospital productivity trends and the implications for Medicare policy. An introduction to the topic from **Paul Ginsburg** was followed by a presentation of the latest literature from **John Romley**, PhD, senior fellow at the Schaeffer Center, associate professor of Public Policy at the USC Price School of Public Policy and associate professor of Pharmaceutical and Health Economics at the USC School of Pharmacy. Expert reactions were shared by **Chapin White**, PhD, MPP, adjunct senior policy researcher at RAND Corporation and a faculty member at the Pardee RAND Graduate School; and **Louise Sheiner**, PhD, the Robert S. Kerr Senior Fellow of Economic Studies and policy director at the Hutchins Center on Fiscal and Monetary Policy, who also moderated a panel discussion.

Other panel participants included:

***Stuart Altman**, PhD, chairman, Massachusetts Health Policy Commission; Sol C. Chaikin Professor of National Health Policy, Heller School for Social Policy and Management, Brandeis University*

***James Mathews**, PhD, executive director, MedPac*

***Paul Spitalnic**, chief actuary, Centers for Medicare and Medicaid Services*

Louisiana's Prescription Drug Experiment: A Model for the Nation?

The Brookings Institution
Washington, D.C.
July 22, 2019

Co-hosted by the USC-Brookings Schaeffer Initiative for Health Policy and the Hutchins Center on Fiscal and Monetary Policy, this event focused on the Louisiana Department of Health's novel "subscription" model, under which Asegua Therapeutics, a subsidiary of

Gilead Sciences, will supply for a negotiated sum enough hepatitis C drugs to cure virtually all incarcerated and Medicaid patients in Louisiana over the next five years. Experts discussed the benefits and pitfalls of subscription models and provided insights into other novel approaches to increasing prescription drug affordability. Featured speakers included **Rebekah Gee**, MD, MPH, secretary of the Louisiana Department of Health; **Wendell Primus**, PhD, senior policy advisor to Speaker of the House Rep. Nancy Pelosi (D-CA), whose office is working on legislation to lower prescription drug prices; and **Neeraj Sood**, PhD, senior fellow at the USC Schaeffer Center; vice dean for research and vice dean for faculty affairs at the USC Price School of Public Policy.

Other participants included:

***Rena Conti**, PhD, Dean's Research Scholar and associate professor of Markets, Public Policy and Law, Questrom School of Business; associate research director, Institute for Health System Innovation and Policy, Boston University*

***Matthew Fiedler**, fellow in Economic Studies, USC-Brookings Schaeffer Initiative for Health Policy*

***Rekha Ramesh**, executive director of public policy, Gilead Sciences Inc.*

***Louise Sheiner**, PhD, Robert S. Kerr Senior Fellow of Economic Studies and policy director, Hutchins Center on Fiscal and Monetary Policy*

***David Wessel**, director, Hutchins Center on Fiscal and Monetary Policy; senior fellow in Economic Studies, Brookings Institution*

Moving Toward Universal Coverage: Policy Approaches

University of Southern California
Los Angeles
September 26, 2019

The USC-Brookings Schaeffer Initiative for Health Policy, the USC School of Pharmacy and the USC Price School of Public Policy co-hosted a discussion on policy approaches to achieving universal coverage for Americans while keeping costs affordable and sustainable. Featured speakers included California Attorney General **Xavier Becerra**, JD, who has challenged multiple actions by the federal government to limit some healthcare funding and has targeted alleged anti-competitive practices in the health-care industry. A panel followed to discuss various paths to universal coverage, including how to fix and expand the Affordable Care Act, create a process for automatic enrollment and manage excessive prices in the healthcare system.

Panel participants included:

***Loren Adler**, associate director, USC-Brookings Schaeffer Initiative for Health Policy*

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

***Dana Goldman**, PhD, Leonard D. Schaeffer Director's Chair, USC Schaeffer Center; Distinguished Professor of Public Policy, Pharmacy and Economics, USC School of Pharmacy and USC Price School of Public Policy*

***Christen Linke Young**, JD, fellow, USC-Brookings Schaeffer Initiative for Health Policy*

Los Angeles County's Information Hub: Integrating Administrative Data to Enable Cross-Sector Analytics and Service Coordination

University of Southern California
Los Angeles
December 5, 2019

As the nation's most populous county, Los Angeles County is an ideal hub for harnessing the power of big data to increase the efficiency and effectiveness of a wide range of social and health services. The event featured **Mark Greninger**, Los Angeles County's chief data officer, whose goal is to facilitate county-wide information sharing and management, support data-driven decision-making and provide a 360-degree view of county residents to help the county provide the right service at the right time to ensure the best outcomes for individuals. Also featured at the event was **Ricardo Basurto-Davila**, principal analyst at the Los Angeles County Chief Information Office, where he leads the Countywide Performance Unit within the Analytics Center of Excellence.

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 the audience. The 2019 seminars included the following featured speakers:

***Jeffrey Bohn**, PhD, chief research and innovation officer and head of Research and Engagement, Swiss Re Institute: "Exploring the Research Question of Nutrition and Type 2 Diabetes Through the Lens of Causal Inference"*

***Ritika Chaturvedi**, PhD, engineer, RAND Corporation: "Emerging Technologies in the Life Sciences: Trends, Opportunities and Impact"*

***Carrie Colla**, PhD, health economist and associate professor, Dartmouth Institute for Health Policy and Clinical Practice, Geisel School of Medicine, Dartmouth College: "Learning for Medicare ACOs: Policy to Practice"*

***Aaron Klein**, MPA, fellow in Economic Studies and policy director, Center on Regulation and Markets, Brookings Institution: "The New Digital Divide: Financial Services"*

***Luca Maini**, PhD, assistant professor of Economics, University of North Carolina at Chapel Hill: "Reference Pricing as a Deterrent to Entry: Evidence from the European Pharmaceutical Market"*

***Manish Mishra**, MD, MPH, director of Professional Education, Dartmouth Institute for Health Policy and Clinical Practice; assistant professor, Geisel Medical School, Dartmouth College: "Principles of Shared Decision Making in the Context of Accountable Care Organizations"*

***David Powell**, PhD, senior economist, RAND Corporation; faculty member, Pardee RAND Graduate School: "The Origins of the Opioid Crisis and Its Enduring Impacts"*

***Chelsea Shover**, PhD, postdoctoral research fellow, Stanford Medicine: "New Medications for Opioid Use Disorder Are Efficacious in Clinical Trials: Are People Receiving Them in the Real World?"*

***Tuba Tuncel**, PhD, assistant professor of Applied Economics, HEC Montréal, University of Montréal: "Should We Prevent Off-Label Drug Prescriptions? Empirical Evidence from France"*

***Erdal Tekin**, PhD, professor, School of Public Affairs, American University: "The Hidden Cost of Firearm Violence on Pregnant Women and Their Infants"*

Publications

1,100+

studies published in leading journals — including *Health Affairs*, *Journal of the American Medical Association*, *Science* and *American Economic Review* — by Schaeffer Center fellows since 2009

200+

citations of research by Schaeffer Center fellows in government reports and documents since 2009

Journal Articles

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National Academies of Sciences, Engineering and Medicine Participation

Director of Research Darius Lakdawalla is a leading authority in health economics and health policy and serves on a National Academy of Sciences committee addressing sickle cell disease.

National Academy of Medicine

Eileen Crimmins
Elected 2012

Dana Goldman
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Pat Levitt
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National Academy of Sciences

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Daniel McFadden
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Select Committee Participation (including non-Academy committees)

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Committee on Care Interventions for Individuals with Dementia and Their Caregivers, National Academy of Medicine

Sir Angus Deaton
High Level Expert Group on the Measurement of Economic Performance and Social Progress, Organisation for Economic Co-operation and Development (OECD)

Matthew Fiedler
Technical Review Panel, Congressional Budget Office's Health Insurance Simulation Model

Paul Ginsburg
Committee on Emerging Science, Technology, and Innovation in Health and Medicine, National Academy of Medicine

Medicare Payment Advisory Commission

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About the Schools

USC School of Pharmacy

One of the top 10 pharmacy schools nationwide and the highest-ranked private school, the USC School of Pharmacy continues its century-old reputation for innovative programming, practice and collaboration.

The school created the nation's first Doctor of Pharmacy program, the first clinical pharmacy program, the first clinical 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 School of Pharmacy 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. It also is the only school of pharmacy that owns and operates five pharmacies.

The school is home to the D. K. Kim International Center for Regulatory Science at USC and the Center for Quantitative Drug and Disease Modeling, and is a partner in the USC Leonard D. Schaeffer Center for Health Policy & Economics and the USC Center for Drug Discovery and Development. The 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. The school is distinguished by its focus on encouraging innovation, building new research portfolios, increasing diversity and preparing students for the careers of tomorrow.

Vassilios Papadopoulos has served as dean since October 2016.

USC Price School of Public Policy

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.

The school's three pillars — social and healthcare policy, governance and urban development — cut across 16 interdisciplinary research centers and six primary fields of study: health policy and management, public policy, public management, nonprofit leadership, urban planning and real estate development. With interconnected yet distinct disciplines housed under one roof, the Price School brings multiple lenses to bear on critical issues.

Solving societal issues of such complexity requires not only great minds but also great action. USC Price fosters collaboration and partnerships to better understand problems through varied perspectives. The school uses the influence of California and greater Los Angeles as a resource for setting new paradigms. These challenges also call on a new generation of creative thinkers to explore beyond the status quo. The school's graduates go on to shape our world as leaders in government, nonprofit agencies and the private sector.

Jack H. Knott has served as dean of the Price School since 2005.

About the Schaeffer Center

Left to right: Dana Goldman, USC Price School Dean Jack Knott, USC School of Pharmacy Dean Vassilios Papadopoulos and Leonard D. Schaeffer

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

Today's ever-changing health policy landscape requires creative solutions, robust research methods and expertise in a variety of fields. Schaeffer Center fellows excel not only at analyzing the current climate but also in predicting where health trends will lead. A collaboration between the USC Price School of Public Policy and the USC School of Pharmacy, 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 a number of affiliated researchers from other leading universities to solve the pressing challenges in healthcare.

In 2016, the Schaeffer Center partnered with the Brookings Institution to establish the USC-Brookings Schaeffer Initiative for Health Policy. This unique partnership enhances the capacity of both organizations to develop evidence-based solutions to inform policymaking on some of the most pressing healthcare challenges facing the U.S. today — from the future of Medicare to reshaping the Affordable Care Act.

The Schaeffer Center offers the human and technical capacity necessary to conduct breakthrough interdisciplinary research and exceptional policy analysis, with more than 30 distinguished scholars investigating a wide array of topics. This work is augmented by a visiting scholars program and partnerships with other universities that allow outside researchers to benefit from the center's unparalleled infrastructure and data collections. The Schaeffer Center actively engages in developing excellent research skills in new investigators who can become innovators of the future while supporting the next generation of healthcare leaders in creating strong management, team-building and communication skills.

The Schaeffer Center's vision is to be the premier research and educational institution recognized for innovative, independent research that makes significant contributions to policy and health improvement. Its mission is to measurably increase value in health through data-driven policy solutions, research excellence, and private and public sector engagement. With an extraordinary breadth and depth of expertise, the Schaeffer Center has a vital impact on the positive transformation of healthcare.

"Healthcare access, affordability and quality are three issues that the USC Schaeffer Center pursues through interdisciplinary research that are having significant impact on health policy nationwide. We are extremely proud of their extraordinary body of work and look forward to their continuing contributions toward improving the health of the nation."

– **Carol L. Folt,** President,
University of Southern California

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