NBER
Bulletin on Aging and Health

NATIONAL BUREAU OF ECONOMIC RESEARCH

2018, No. 1

NBER Profile
Matthew Notowidigdo

Matthew Notowidigdo is an associate professor of economics at Northwestern University and a research associate in the NBER's health care, labor studies, and public economics programs.

Dr. Notowidigdo's research spans a broad set of topics in health and labor economics. His work in health economics has explored the effects of public health insurance on labor supply, the effects of health on the marginal utility of consumption, and the effects of income on health spending. He is currently studying Medicaid managed care with Dr. Craig Garthwaite. Within labor economics, he has studied

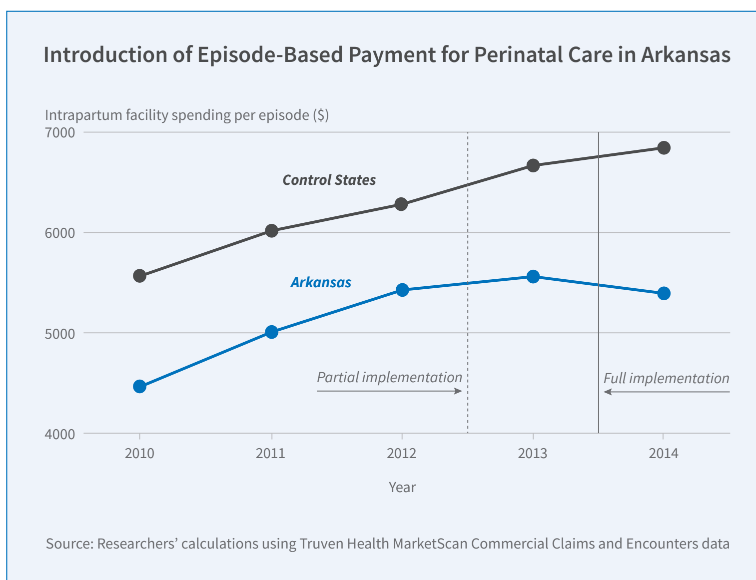
(continued on page 2)

How Episode-Based Payment Affects Health Care Spending

Concerns over high health care spending in the U.S. have created significant interest in reforms that have the potential to lower expenditures. Changes in the structure of payments to health care providers—and more specifically, greater use of population or episode-based payments—are often proposed in this context.

Using episode-based payment (EBP), a spending target is set for an entire episode of care and the primary provider bears part or all of the risk of expenditure beyond this amount. The spending target covers payments to the primary provider and to all other providers involved in the episode. In contrast with fee-for-service (FFS) reimbursement, EBP creates incentives for the primary provider not only to use their own services efficiently, but also to manage the use of other health care services that have traditionally been reimbursed separately.

Despite strong interest in EBP, relatively little is known about how physicians respond to this payment system. The few existing studies of EBP are typically based on small demonstration projects with voluntary physician participation, and thus may not reflect the effects of a large-scale, mandatory EBP system.

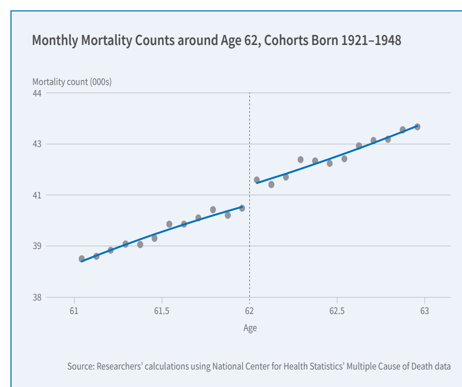


In **Effects of Episode-Based Payment on Health Care Spending and Utilization: Evidence from Perinatal Care in Arkansas** (NBER Working Paper No. 23926) Caitlin Carroll, Michael Chernew, A. Mark Fendrick, Joe Thompson, and Sherri Rose explore the

(continued on page 2)

INSIDE:

- Do Smoking Bans Affect Infant and Child Health?
- The Mortality Effects of Retirement



- NBER Affiliates' Work Appearing in Medical Journals
- Selected Abstracts of NBER Working Papers

Profile *(from page 1)*

unemployment insurance and long-term unemployment.

Professor Notowidigdo is coeditor of the *American Economic Journal: Economic Policy* and an associate editor of the *Quarterly Journal of Economics*. He is a faculty fellow at the Institute for Policy Research at Northwestern. He has worked as a consultant for the Boston Red Sox and the Miami Dolphins.

Notowidigdo earned a Ph.D. in Economics, Masters in Engineering, and a B.S. in Computer Science and Economics, all from MIT. Prior to joining the faculty at Northwestern, he taught at the University of Chicago Booth School of Business.

In his free time, Notowidigdo plays golf and enjoys Chicago's incredible dining scene.

*The **Bulletin on Aging and Health** summarizes selected recent Working Papers. It is distributed digitally to economists and other interested persons for informational and discussion purposes. The **Bulletin** is not copyrighted and may be reproduced freely with attribution of source.*

*Working Papers produced as part of the NBER's research program are distributed to make preliminary research results available to economists in the hope of encouraging discussion and suggestions for revision before final publication. Neither Working Papers nor issues of the **Bulletin** are reviewed by the Board of Directors of the NBER.*

*The **Bulletin** is edited by Courtney Coile.*

To access current and past issues electronically, please visit: www.nber.org/aginghealth/

*To sign up to receive new **Bulletin** issues by email, please visit:*

www.nber.org/signup/aginghealth

Episode-Based Payment *(from page 1)*

effects of the first large-scale EBP program that is mandatory for providers.

The context for the study is the Arkansas Health Care Payment Improvement Initiative (APII), a state-wide, multi-payer program with mandatory provider participation that was implemented in 2013. The APII initially covered five types of health care episodes, including perinatal care. Like many modern EBP programs, the APII employs a retrospective payment model, where providers are paid FFS while they oversee episodes, but face reconciliation payments at the end of the year. The provider's annual average spending per episode (adjusted for patient risk factors) is calculated based on episodes for which they served as Principal Accountable Provider (PAP). Each PAP's average episode spending is then deemed to be either commendable, acceptable, or unacceptable based on pre-determined thresholds. PAPs with unacceptable ratings are responsible for half of the spending beyond the acceptable level, while those with commendable ratings can share in half of the savings.

The APII's perinatal care episodes offer an appealing context in which to study EBP for several reasons. First, because of its multi-payer nature and the requirement that providers participate, the APII program covers the vast majority of births in the state. Second, spending on perinatal care is substantial and features large variation in episode costs, offering the potential for sizeable savings. In addition, a perinatal episode typically involves care across a variety of clinical settings, so coordination across providers may be particularly important. The PAP, who is often an obstetrician, may be able to reduce spending by changing the intensity of services they provide (for example, performing fewer caesarean sections), making fewer referrals for outpatient services like laboratory work, or reducing facility spending (for example, by referring patients to lower-priced hospitals or decreasing the length of stay). Finally, the volume of perinatal episodes is linked to births and thus there is essentially no scope for physicians to increase the number of episodes in response to a new payment system.

The researchers construct measures of spending per perinatal episode using claims data for a sample of enrollees in commercial health insurance plans and large self-insured firms. They use data from 2009 through 2014, spanning the period before and after EBP's introduction. As the data do not allow the tracking of spending by provider, the analysis focuses on the system-wide effects of implementing EBP, comparing trends in health spending in Arkansas to those in a group of control states in the South.

The researchers find that in the first full year of EBP implementation, spending per episode declined by 3.8 percent, or $403, in Arkansas relative to the control states. The savings were driven by slower spending growth in Arkansas after EBP implementation, while spending growth continued on a similar trajectory in the control states.

Over 80 percent of these savings stem from a large (6.6 percent) reduction in spending on inpatient facility care. The researchers find that this decline was largely driven by changes in the price of inpatient care rather than in the quantity of care. While unable to test directly for a mechanism underlying this effect, they suggest that a change in referral patterns is a likely cause. Outside of inpatient facility care, the implementation of EBP led to few changes in perinatal care. Declines in physician spending and outpatient spending were small and statistically insignificant, as were changes in utilization, including caesarean section rates and the length of inpatient stays. In terms of quality measures, EBP implementation was associated with improvements in chlamydia screening rates but no other changes.

The researchers conclude "our analysis suggests that EBP can be successful on a large scale" although the magnitude of the results also suggest that "system-wide bundled payment may have a modest impact compared to effects seen within smaller, voluntary programs." They note that modern EBP structures such as FFS with reconciliation provide different incentives than traditional, prospective EBP. Finally, they suggest that additional research that explores the effect of EBP in different clinical settings, that tracks behavior of providers over time, and that examines effects on patient outcomes would add to our understanding of the benefits and challenges of bundled payment reform.

The researchers acknowledge funding from the Laura and John Arnold Foundation, the Agency for Healthcare Research and Quality T32 trainee program (Carroll) and the National Science Foundation Graduate Research Fellowship (Carroll). Thompson wishes to disclose his involvement in developing the Arkansas Health Care Payment Improvement Initiative, both as Arkansas Surgeon General and as President of the Arkansas Center for Health Improvement. At least one researcher has disclosed a financial relationship of potential relevance for this research. Further information is available at: www.nber.org/papers/w23926.ack

Do Smoking Bans Affect Infant and Child Health?

Smoking has long been known to generate negative health effects for non-smokers through exposure to secondhand smoke, or environmental tobacco smoke (ETS). Infants born to women who smoke during pregnancy tend to have lower birthweight and are at higher risk for sudden infant death syndrome. In children, ETS exacerbates asthma and is linked to respiratory tract infections and other respiratory symptoms.

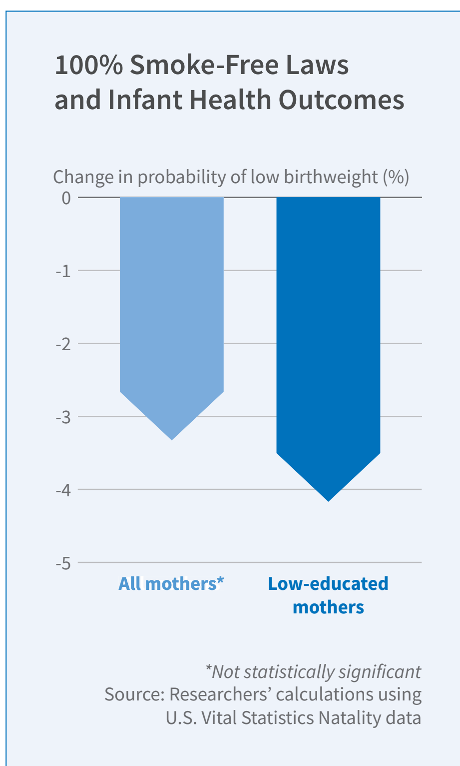
The costs of ETS are a key motivation for public policies that aim to curb smoking, such as cigarette taxes and anti-smoking educational campaigns. Bans on smoking in public places are another potentially potent tool. "100-percent smoke free" laws (SFLs) outlaw smoking anywhere on the premises and typically apply to restaurants, bars, and private workplaces. Currently, about three-quarters of the U.S. population is protected by a SFL at work and two-thirds is protected at bars and restaurants.

While past studies have established the health benefits of smoking bans for adults, there is little evidence regarding their impact on infants and children. If smokers compensate for public bans by smoking more at home, these laws could negatively impact child health. Conversely, if bans encourage smokers to quit or to smoke less at home, there could be health benefits for children.

Researchers Kerry Anne McGeary, Dhaval Dave, Brandy Lipton, and Timothy Roeper take up this question in their paper **Impact of Comprehensive Smoking Bans on the Health of Infants and Children** (NBER Working Paper No. 23995).

The researchers obtain data on infant health outcomes from the Vital Statistics census of births and child health data from the National Health Interview Survey. These data are combined with comprehensive information on state and local SFLs for the period 1990 to 2012 in order to test whether the implementation of a SFL in a given state or locality is associated with a change in infant and child health.

The researchers find that mothers living in areas protected by comprehensive 100% SFLs that apply in workplaces, restaurants, and bars have a 3.3 percent associated decline in the probability that an infant is born with low birth weight, although the effect is not statistically significant. The effect of the law is stronger for babies born to mothers with at most a high school education — for this group, the law's effect is 4.2 percent and is statistically significant. Less educated mothers are three times as likely to smoke during pregnancy than mothers with more education and are more likely to live in neighborhoods with higher prevalence of smoking in general, exposing them to higher levels of ETS.



The effects of SFLs on infant health are only slightly reduced when the researchers control for the mother's own smoking during pregnancy, suggesting that the law's effect is primarily due to reduced exposure to ETS rather than to changes in maternal smoking. The authors also report that the results are larger for married mothers, suggesting that the law may lead to reduced smoking by husbands.

Turning to child health, the researchers find that 100% SFLs are associated with reductions in respiratory allergies, asthma attacks, ear infections, emergency room visits, and reports of poor health. The effects are larger among children with less educated mothers and children diagnosed with asthma. Finally, the researchers show that SFLs are associated with decreases in smoking in the home for current smokers, especially those with less education, confirming that this is an important mechanism for the law's effects.

Overall, this study indicates that the health benefits of smoking restrictions extend to infants and children, particularly those in low-educated households. The effects of SFLs are largest when the restrictions apply simultaneously to workplaces, bars, and restaurants within a locality and when they do not have any exemptions, such as allowing a designated area for smoking.

The researchers note that currently only 58 percent of the population lives in a locality with such comprehensive bans, suggesting that there is still considerable room for such restrictions to be enacted, generating positive spillovers onto infant and child health. Further, given the strong effects of these bans for children in low-educated households, "cumulative smoking restrictions may play a role in flattening the socioeconomic gradient in infant and child health."

This research is supported by a grant from the National Cancer Institute (1R21CA167578-01).

The Mortality Effects of Retirement

How does retiring affect your health? This question is of interest both to workers who are nearing retirement age and to policymakers who design retirement programs. Retirement is often associated with changes in activity and lifestyle that may affect physical, mental, and cognitive health in a variety of ways. The health effects of retirement may extend to mortality, perhaps the ultimate measure of health.

Studying the health effects of retirement is complicated by the fact that people choose when to retire and some retire because of poor health, so higher mortality rates after retirement might reflect the effect of pre-retirement health. In **The Mortality Effects of Retirement: Evidence from Social Security Eligibility at Age 62** (NBER Working Paper No. 24127), researchers Maria Fitzpatrick and Timothy Moore explore this issue using an approach designed to surmount this challenge.

Social Security benefits are first available starting at age 62, generating a surge in retirements in the month when people reach this age. Any sudden increase in mortality rates after the 62nd birthday can be attributed to this increase in retirement as long as other factors that affect mortality evolve smoothly with age.

Data for the analysis come from the National Center for Health Statistics' Multiple Cause of Death files for the years 1979 to 2012. These data include decedents' dates of birth and death reported to the exact day, allowing the researchers to calculate precisely how long before or after age 62 the death occurred. Pooling across years, the researchers have a sample of over 1.5 million deaths within a narrow range around the 62nd birthday.

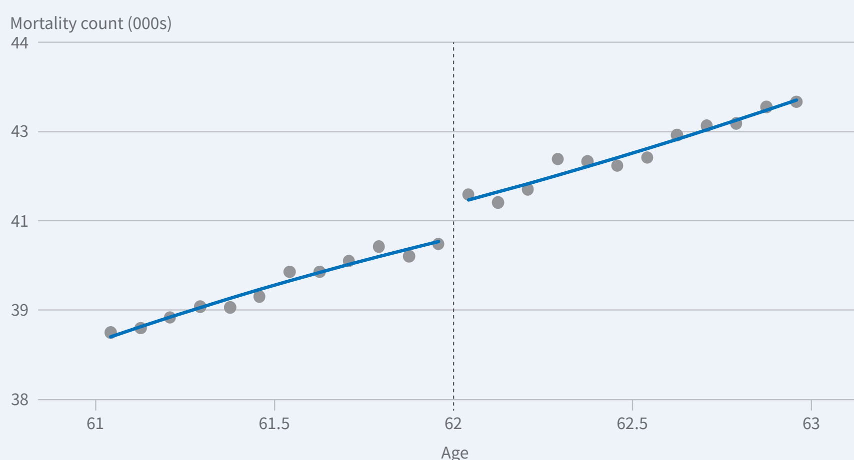
Turning to the results, the researchers find that male mortality increases by about 2 percent at age 62. Over the 34 years they study, this translates into an additional 11,000 deaths in the year after the 62nd birthday. The increase in female mortality is smaller and less statistically significant. Among men, the increase in mortality is larger for unmarried men and men without a high school diploma.

Interestingly, those groups that experience larger mortality effects also experience larger declines in labor force participation at age 62, supporting the idea that labor force exit is the key driver of these results. By contrast, Social Security claiming at age 62 is the same for men and women and there are no distinct changes in health insurance coverage or income at age 62, suggesting a lesser role for these other mechanisms.

In terms of the causes of death, the clearest increases after age 62 are in deaths due to traffic accidents, chronic obstructive pulmonary disease, and lung cancer, which collectively account for nearly half of the increase in male mortality. These findings are consistent with other studies that find an increase in deaths from these causes after job loss and an increase in smoking at age 62.

Finally, to probe the validity of their approach, the researchers look for an increase in mortality at other age thresholds and find that it appears only at age 62. They also show that there was no increase in mortality at age 62 in the era when Social Security benefits were first available at age 65.

The researchers caution that it is not possible to discern from their analysis whether the increase in mortality persists or compounds over the long term, nor whether the increase in mortality translates into broader changes in health. They also note that heightened mortality risks may be offset by welfare gains related to stopping work. Thus, their findings are one input in a larger discussion regarding the optimal timing of retirement.



This research was supported by a grant from the Alfred P. Sloan Foundation and a Steven H. Sandell Grant from the Center for Retirement Research at Boston College.

NBER Affiliates' Work Appearing in Medical Journals

Many NBER-affiliated researchers publish some of their findings in medical journals that do not allow pre-publication distribution. This makes it impossible to include these papers in the NBER working paper series. This is a partial listing of recent papers in this category.

The High and Rising Costs of Obesity to the U.S. Health Care System
A. Biener, J. Cawley, and C. Meyerhoefer, Journal of General Internal Medicine, *32(Supplement 1), April 2017, pp. 6–8.*

Mortality in Rural China Declined as Health Insurance Coverage Increased, but No Evidence the Two Are Linked
M. Zhou, S. Liu, M. K. Bundorf, K. Eggleston, and S. Zhou, Health Affairs, *36(9), September 2017, (Published online).*

De-Adoption and Exnovation in the Use of Carotid Revascularization: Retrospective Cohort Study
K. Bekelis, J. Skinner, D. Gottlieb, and P. Goodney, BMJ, *359, October 2017, (Published online).*

Avoidable Hospital Admissions from Diabetes Complications in Japan, Singapore, Hong Kong, and Communities outside Beijing
J. Quan, H. Zhang, D. Pang, B. K. Chen, J. M. Johnston, W. Jian, Z. Y. Lau, T. Iizuka, G. M. Leung, H. Fang, K. B. Tan, and K. Eggleston, Health Affairs, *36(11), November 2017, (Published online).*

Prevalence and Trends in Lifetime Obesity in the U.S., 1988 –2014
A. Stokes, Y. Ni, and S. H. Preston, American Journal of Preventive Medicine, *53(5), November 2017, pp. 567–75.*

Socioeconomic Background and Commercial Health Plan Spending
A. T. Chien, J. P. Newhouse, L. I. Iezzoni, C. R. Petty, S. T. Normand, and M. A. Schuster, Pediatrics, *140(5), November 2017, (Published online).*

Risk Adjustment with an Outside Option
J. P. Newhouse, Journal of Health Economics, *56, December 2017, pp. 256–8.*

Firearms and Accidental Deaths: Evidence from the Aftermath of the Sandy Hook School Shooting
P. B. Levine and R. McKnight, Science, *358(6368), December 2017, pp. 1324-8.*

The Uninsured Do Not Use the Emergency Department More — They Use Other Care Less
R. A. Zhou, K. Baicker, S. Taubman, and A. N. Finkelstein, Health Affairs, *36(12), December 2017, (Published online).*

The Effect of Medicaid on Medication Use among Poor Adults: Evidence from Oregon
K. Baicker, H. L. Allen, B. J. Wright, and A. N. Finkelstein, Health Affairs, *36(12), December 2017, (Published online).*

Infant Health and Future Childhood Adversity
N. E. Reichman, H. Corman, K. Noonan, and M. E. Jiménez, Maternal and Child Health Journal, *December 2017, pp. 1-9.*

Geographic Variation in Opioid and Heroin Involved Drug Poisoning Mortality Rates
C. J. Ruhm, American Journal of Preventive Medicine, *53(6), December 2017, pp. 845-53.*

Association between Medicare Expenditure Growth and Mortality Rates in Patients with Acute Myocardial Infarction: A Comparison from 1999 through 2014
D. S. Likosky, J. Van Parys, W. Zhou, W. B. Borden, M. C. Weinstein, and J. S. Skinner, AMA Cardiology, *December 2017, (Published online).*

Regional Variation of Computed Tomographic Imaging in the United States and the Risk of Nephrectomy
H. G. Welch, J. S. Skinner, F. R. Schroeck, W. Zhou, and W. C. Black, JAMA Internal Medicine, *December 2017, (Published online).*

Insurers' Response to Selection Risk: Evidence from Medicare Enrollment Reforms
F. Decarolis and A. Guglielmo, Journal of Health Economics, *56, December 2017, pp. 383–96.*

Effect of Medicaid Expansions of 2014 on Overall and Early-Stage Cancer Diagnoses
A. Soni, K. Simon, J. Cawley, and L. Sabik, American Journal of Public Health, *108(2), January 2018, pp. 216–8.*

Pass-Through of a Tax on Sugar-Sweetened Beverages at the Philadelphia International Airport
J. Cawley, D. Willage, and D. Frisvold, JAMA, 319(3), January 2018, pp. 305–6.

Abstracts of Selected Recent NBER Working Papers

w23839
Longitudinal Determinants of End-of-Life Wealth Inequality
James M. Poterba, Steven F. Venti, David A. Wise

This paper examines inequality in end-of-life wealth and the factors that contribute to individuals reaching this life stage with few financial resources. It analyzes repeated cross-sections of the Health and Retirement Study, as well as a small longitudinal sample of individuals observed both at age 65 and shortly before death. Most of those who die with little wealth had little wealth at retirement. There is strong persistence over time in the bottom tail of the wealth distribution, but the probability of having low wealth increases slowly with age after age 65. Those with low lifetime earnings are much more likely to report low wealth at retirement, and to die with little wealth, than their higher-earning contemporaries. The onset of a major medical condition and the loss of a spouse increase in the probability of falling into the low wealth category at advanced ages, although these factors appear to contribute to wealth decline for only a small fraction of those who had modest wealth at age 65 but low wealth at the time of death.

w23862
The Impact of State Medical Marijuana Laws on Social Security Disability Insurance and Workers' Compensation Benefit Claiming
Johanna Catherine Maclean, Keshar M. Ghimire, Lauren Hersch Nicholas

We study the effect of state medical marijuana laws (MMLs) on Social Security Disability Insurance (SSDI) and Workers' Compensation (WC) claiming. We use data on benefit claiming drawn from the 1990 to 2013 Current Population Survey coupled with a differences-in-differences design. We find that passage of an MML increases SSDI, but not WC, claiming on both the intensive and extensive margins. Post-MML the propensity to claim SSDI increases by 0.27 percentage points (9.9%) and SSDI benefits increase by 2.6%. We identify heterogene-ity by age and the manner in which states regulate medical marijuana. Our findings suggest an unintended consequence of MMLs: increased reliance on costly social insurance programs among working age adults.

w23871
Does Multispecialty Practice Enhance Physician Market Power?
Laurence C. Baker, M. Kate Bundorf, Daniel P. Kessler

In markets for health services, vertical integration — common ownership of producers of complementary services — may have both pro- and anti-competitive effects. Despite this, no empirical research has examined the consequences of multispecialty physician practice — a com-mon and increasing form of vertical integration — for physician prices. We use data on 40 million commercially insured individuals from the Health Care Cost Institute to construct indices of the price of a standard office visit to general-practice and specialist physicians for the years 2008–12. We match this to measures of the characteristics of physician practices and physician markets based on Medicare Part B claims, ag-gregating physicians into practices based on their receipt of payments under a common Taxpayer Identification Number. Holding fixed the degree of competition in their own specialty, we find that generalist physicians charge higher prices when they are integrated with specialist physicians, and that the effect of integration is larger in uncompetitive specialist markets. We find the same thing in the reciprocal setting — specialist prices are higher when they are integrated with generalists, and the effect is stronger in uncompetitive generalist markets. Our results suggest that multispecialty practice has anticompetitive effects.

w23989

Therapeutic Translation in the Wake of the Genome

Manuel I. Hermosilla, Jorge A. Lemus

The completion of the Human Genome Project ("HGP") led many scientists to predict a swift revolution in human therapeutics. Despite large advances, however, this revolution has been slow to materialize. We investigate the hypothesis that this slow progress may stem from the large amounts of biological complexity unveiled by the Genome. Our test relies on a disease-specific measure of biological complexity, constructed by drawing on insights from Network Medicine (Barabasi et al., 2011). According to this measure, more complex diseases are those associated with a larger number of genetic associations, or with higher centrality in the Human Disease Network (Goh et al., 2007). With this measure in hand, we estimate the rate of translation of new science into early stage drug innovation by focusing on a leading type of genetic epidemiological knowledge (Genome-Wide Association Studies), and employing standard methods for the measurement of R&D productivity. For less complex diseases, we find a strong and positive association between cumulative knowledge and the amount of innovation. This association weakens as complexity increases, becoming statistically insignificant at the extreme. Our results therefore suggest that biological complexity is in part responsible for the slower-than-expected unfolding of the therapeutical revolution set in motion by the HGP.

w24002

Medicaid and Financial Health

Kenneth Brevoort, Daniel Grodzicki, Martin B. Hackmann

This paper investigates the effects of the Medicaid expansion provision of the Affordable Care Act (ACA) on households' financial health. Our findings indicate that, in addition to reducing the incidence of unpaid medical bills, the reform provided substantial indirect financial benefits to households. Using a nationally representative panel of 5 million credit records, we find that the expansion reduced unpaid medical bills sent to collection by $3.4 billion in its first two years, prevented new delinquencies, and improved credit scores. Using data on credit offers and pricing, we document that improvements in households' financial health led to better terms for available credit valued at $520 million per year. We calculate that the financial benefits of Medicaid double when considering these indirect benefits in addition to the direct reduction in out-of-pocket expenditures.

w24008

Older Americans Would Work Longer If Jobs Were Flexible

John Ameriks, Joseph S. Briggs, Andrew Caplin, Minjoon Lee, Matthew D. Shapiro, Christopher Tonetti

Older Americans, even those who are long retired, have strong willingness to work, especially in jobs with flexible schedules. For many, labor force participation near or after normal retirement age is limited more by a lack of acceptable job opportunities or low expectations about finding them than by unwillingness to work longer. This paper establishes these findings using an approach to identification based on strategic survey questions (SSQs) purpose-designed to complement behavioral data. These findings suggest that demand-side factors are important in explaining late-in-life labor market behavior and may be the most appropriate target for policy aimed at promoting working longer.

w24035

Identifying Sources of Inefficiency in Health Care

Amitabh Chandra, Douglas O. Staiger

In medicine, the reasons for variation in treatment rates across hospitals serving similar patients are not well understood. Some interpret this variation as unwarranted, and push standardization of care as a way of reducing allocative inefficiency. However, an alternative interpretation is that hospitals with greater expertise in a treatment use it more because of their comparative advantage, suggesting that standardization is misguided. We develop a simple economic model that provides an empirical framework to separate these explanations. Estimating this model with data on treatments for heart attack patients, we find evidence of substantial variation across hospitals in both allocative inefficiency and comparative advantage, with most hospitals overusing treatment in part because of incorrect beliefs about their comparative advantage. A stylized welfare-calculation suggests that eliminating allocative inefficiency would increase the total benefits from this treatment by about a third.

w24038

Service-level Selection: Strategic Risk Selection in Medicare Advantage in Response to Risk Adjustment

Sungchul Park, Anirban Basu, Norma Coe, Fahad Khalil

The Centers for Medicare and Medicaid Services (CMS) has phased in the Hierarchical Condition Categories (HCC) risk adjustment model during 2004–06 to more accurately estimate capitated payments to Medicare Advantage (MA) plans to reflect each beneficiary's health status. However, it is debatable whether the CMS-HCC model has led to strategic evolutions of risk selection. We examine the competing claims and analyze the risk selection behavior of MA plans in response to the CMS-HCC model. We find that the CMS-HCC model reduced the phenomenon that MA plans avoid high-cost beneficiaries in traditional Medicare plans, whereas it led to increased disenrollment of high-cost beneficiaries, conditional on illness severity, from MA plans. We explain this phenomenon in relation to service-level selection. First, we show that MA plans have incentives to effectuate risk selection via service-level selection, by lowering coverage levels for services that are more likely to be used by beneficiaries who could be unprofitable under the CMS-HCC model. Then, we empirically test our theoretical prediction that compared to the pre-implementation period (2001–03), MA plans have raised copayments disproportionately more for services needed by unprofitable beneficiaries

than for other services in the post-implementation period (2007–09). This induced unprofitable beneficiaries to voluntarily dis-enroll from their MA plans. Further evidence supporting this selection mechanism is that those dissatisfied with out-of-pocket costs were more likely to dis-enroll from MA plans. We estimate that such strategic behavior led MA plans to save $5.2 billion by transferring the costs to the federal government.

w24042
Family Health Behaviors
Itzik Fadlon, Torben Heien Nielsen

This paper studies how health behaviors and investments are shaped through family spillovers. Leveraging administrative health care data, we identify the effects of health shocks to individuals on their family members' consumption of preventive care and health-related behaviors. Our identification strategy utilizes the timing of shocks to construct counterfactuals for affected households using households that experience the same shock but a few years in the future. We find that spouses and adult children immediately increase their health investments and improve their health behaviors in response to family shocks, and that these effects are both significant and persistent. Notably, we show that these spillover effects are far-reaching and cascade to siblings, stepchildren, sons and daughters in-law, and even "close" coworkers. While some responses are consistent with learning new information about one's own health, evidence from cases where shocks are likely uninformative points to salience as a major operative explanation. Our results underscore the importance of one's family and social network for models of health behaviors and have potential implications for policies that aim to improve population health.

w24100
The Effect of Primary Care Visits on Health Care Utilization: Findings from a Randomized Controlled Trial
Cathy J. Bradley, David Neumark, Lauryn Saxe Walker

We conducted a randomized controlled trial, enrolling low-income uninsured adults to determine whether cash incentives are effective at encouraging a primary care provider (PCP) visit, and at lowering utilization and spending. Subjects were randomized to four groups: untreated controls, and one of three incentive arms with incentives of $0, $25, or $50 for visiting a PCP within six months of group assignment. Compared to the untreated controls, subjects in the incentive groups were more likely to have a PCP visit in the initial six months. They had fewer ED visits in the subsequent six months, but outpatient visits did not decline. We also used the exogenous variation generated by the experiment to obtain causal evidence on the effects of a PCP visit. We observed modest reductions in emergency department use and increased outpatient use, but no reductions in overall spending.

w24226
The Power of Working Longer
Gila Bronshtein, Jason Scott, John B. Shoven, Sita N. Slavov

This paper compares the relative strengths of working longer vs. saving more in terms of increasing a household's affordable, sustainable standard of living in retirement. Both stylized households and actual households from the Health and Retirement Study are examined. We assume that workers commence Social Security benefits when they retire. The basic result is that delaying retirement by 3-6 months has the same impact on the retirement standard of living as saving an additional one-percentage point of labor earnings for 30 years. The relative power of saving more is even lower if the decision to increase saving is made later in the work life. For instance, increasing retirement saving by one percentage point ten years before retirement has the same impact on the sustainable retirement standard of living as working a single month longer. The calculations of the relative power of working longer and saving more are done for a wide range of realized rates of returns on saving, for households with different income levels, and for singles as well as married couples. The results are quite invariant to these circumstances.

w24229
What Do Workplace Wellness Programs Do? Evidence from the Illinois Workplace Wellness Study
Damon Jones, David Molitor, Julian Reif

Workplace wellness programs cover over 50 million workers and are intended to reduce medical spending, increase productivity, and improve well-being. Yet, limited evidence exists to support these claims. We designed and implemented a comprehensive workplace wellness program for a large employer with over 12,000 employees, and randomly assigned program eligibility and financial incentives at the individual level. Over 56 percent of eligible (treatment group) employees participated in the program. We find strong patterns of selection: during the year prior to the intervention, program participants had lower medical expenditures and healthier behaviors than non-participants. However, we do not find significant causal effects of treatment on total medical expenditures, health behaviors, employee productivity, or self-reported health status in the first year. Our 95% confidence intervals rule out 78 percent of previous estimates on medical spending and absenteeism. Our selection results suggest these programs may act as a screening mechanism: even in the absence of any direct savings, differential recruitment or retention of lower-cost participants could result in net savings for employers.

NBER Working Papers on Health and Aging

A complete list of all NBER Working Papers, with searchable abstracts is available at www.nber.org/papers.html.