



NBER Profile  
**Leemore Dafny**

Leemore Dafny is the MBA Class of 1960 Professor of Business Administration at the Harvard Business School. Dafny is also a research associate in the NBER's Aging and Health Care Programs.

Dafny served as the Deputy Director for Healthcare and Antitrust in the Bureau of Economics at the Federal Trade Commission from 2012-13 and currently serves on the Panel of Health Advisers for the Congressional Budget Office. She heads the "New Marketplace" initiative for the New England Journal of Medicine's *Catalyst*, an interdisciplinary multimedia platform to develop and disseminate ideas to improve the functioning of health care systems. Dafny also serves on the editorial boards of the *American Economic Journal: Economic Policy* and the *American Journal of Health Economics*. She is a board member of the

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## The Effect of Low Levels of Blood Lead Lead on Children's Test Scores

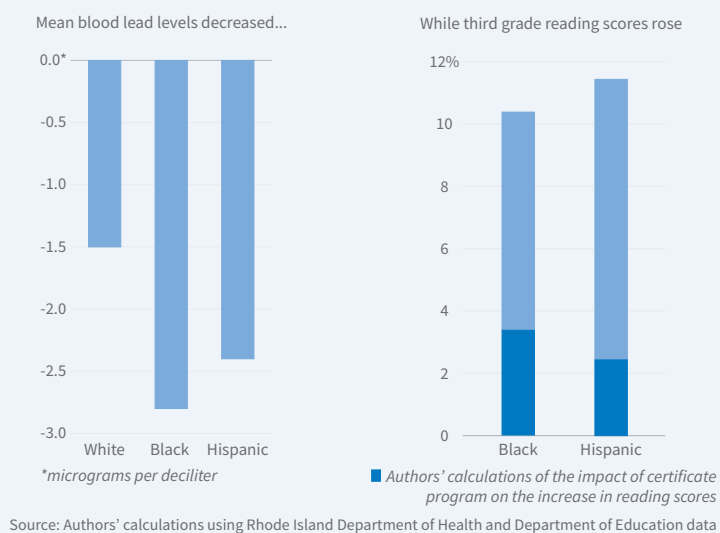
The recent discovery of high levels of lead in the drinking water in Flint, Michigan, and in several urban school districts has focused public attention on the potential harms of blood lead, particularly for children's development.

While child blood lead levels (BLLs) have declined dramatically over the past several decades, estimates suggest that there are still a half a million preschool-aged children in the U.S. with elevated blood lead levels.

Although there is strong epidemiological evidence linking early lead exposure to negative child outcomes, much of this evidence relies on correlations. As children with high BLLs are more likely to come from minority groups, be poor, live in sin-

gle-parent homes, and have less-educated mothers, it is difficult to distinguish the effect of elevated BLLs from these other potentially confounding factors. In addition, much of the exist-

**Improvements in Lead Levels and Children's Future Test Scores**  
Children in Rhode Island, 1997 to 2005

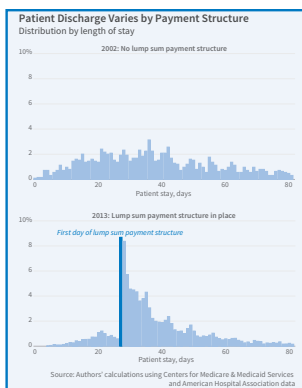


ing evidence is based on children with much higher BLLs than are common today, raising the question of whether exposure to lower levels of lead also negatively affects child outcomes.

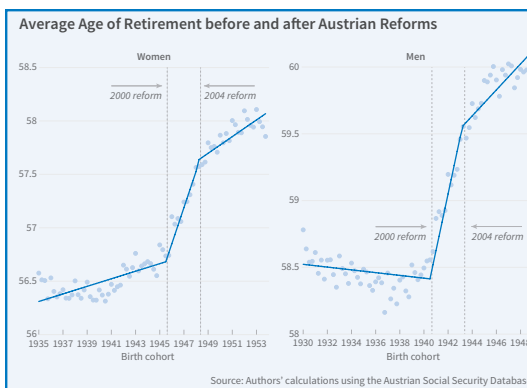
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**Profile** (from page 1)

American Society of Health Economists and the Health Care Cost Institute.

Dafny graduated summa cum laude from Harvard College and earned her Ph.D. in economics from MIT. Prior to joining the Harvard faculty in 2016, Dafny was the Director of Health Enterprise Management and Professor of Strategy at the Kellogg School of Management at Northwestern University. At Kellogg, Professor Dafny won several teaching awards as well as Kellogg's leading research prize, the Stanley Reiter Best Paper award.

Dafny's research examines competitive interactions among payers and providers of health care services, and the intersection of industry and public policy. Current projects include studies of consolidation in the U.S. hospital industry and the kidney dialysis industry, products and pricing on the public health insurance exchanges, copayment coupons for prescription drugs, and the implications of for-profit ownership of insurance companies.

Having recently relocated to Newton, Massachusetts, from the Chicago area, Dafny and her family spend their weekends rediscovering New England and embarking on numerous home improvement projects.

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**Test Scores** (from page 1)

**In Do Low Levels of Blood Lead Reduce Children's Future Test Scores?** (NBER Working Paper No. 22558), researchers [Anna Aizer](#), [Janet Currie](#), [Peter Simon](#), and [Patrick Vivier](#) provide new evidence on this question.

The authors construct a dataset that includes all children born in Rhode Island between 1997 and 2005 whose BLL was tested at least once before age six. Due to the state's rigorous testing regime, most of the children in the sample had multiple BLL tests, allowing for more precise measurement of lead exposure than in many previous studies. The researchers match the information on BLLs to data on third grade test scores.

To surmount concerns about confounding factors, the authors make use of variation in lead exposure that resulted from state lead control policies. These policies included requiring owners of buildings where any child had an elevated BLL to mitigate the lead hazard and requiring all landlords to obtain "lead-safe" certificates in order to rent their properties. As the policies were rolled out in a targeted way, neighborhoods with a higher share of older housing — which were also predominantly African American and poor — experienced the most lead mitigation and the sharpest declines in BLLs. The researchers predict a child's BLL based on the probability that the child's home was certified lead-safe given the child's birth year, neighborhood, and family characteristics, and use this predicted level in the analysis to avoid concerns about the actual BLL being correlated with confounding factors.

The researchers first document that BLLs of children in Rhode Island dropped dramatically between 1997 and 2005, with the largest gains to minority children. The geometric mean BLL of African American and Hispanic children fell by 2.8 and 2.4 micrograms per deciliter, respectively, while the value for white children fell by 1.5 micrograms. This represents a decline of nearly 50 percent

from the 1997 value for African American and Hispanic children.

Next, the authors examine the relationship between BLLs and third grade test scores. They find that a one microgram per deciliter increase in a child's mean BLL measurement is associated with a 3.1 percentage point increase in the probability of being "substantially below proficient" in reading. This effect represents an increase of about 25 percent relative to the average probability of reading at this level (12 percent). The association between BLL and math scores is about two-thirds as large and somewhat less precisely estimated.

Taken together, these results suggest that the lead-safe certificate program, which was targeted at poor and minority census tracts, led to a narrowing of the achievement gap between white and minority children. The researchers estimate that the program accounted for one-third of reading gains for African American children and one-fifth of reading gains for Hispanic children between 1997 and 2005. The gap in test scores between white children and minority children narrowed during this period, and the researchers' findings suggest that the program was responsible for nearly 60 percent of the convergence in the case of African Americans and about 20 percent in the case of Hispanics.

The health and educational gains arising from the lead-safe certification program came at a cost of approximately \$1,900 per child, although the cost per child will fall over time, as future cohorts continue to benefit from the one-time investment in creating lead safe environments. Noting that lead poisoning may be one of the causes of the continuing achievement gap between white and minority children, the researchers conclude, "environmental regulations targeted at hazards that disproportionately impact minority children may have advantages beyond improvements in health."

*The researchers acknowledge funding from the John D. and Catherine T. MacArthur Foundation.*

## Long-Term Care Hospitals Discharge Patients Strategically

Containing costs while providing high-quality health care is a top priority for the Medicare program. Payments to hospitals are an area of particular interest, with \$145 billion spent on reimbursements for inpatient stays in 2015.

Since 1983, Medicare has used a prospective payment system that reimburses hospitals a fixed amount per hospital stay based on the patient's diagnosis at admission (the "diagnosis-related group," or DRG). Such a system may incentivize hospitals to provide care efficiently, since keeping a patient in the hospital longer or providing additional services does not increase reimbursements.

Long-term care hospitals (LTCHs), which specialize in treating patients with serious medical conditions who require prolonged care, are also reimbursed by prospective payment. As patients at LTCHs have longer stays, reimbursement rates for LTCHs are higher than those for traditional hospitals, but there is also a reduced rate for "short stay outliers" (SSOs), patients whose stay is less than a pre-specified number of days (where the exact cutoff depends on the DRG). This policy is intended to ensure that only patients who truly require long-term care are admitted to LTCHs. However, this two-tiered payment system creates the possibility that hospitals may strategically extend some patients' stays beyond the cutoff date in order to receive the higher reimbursement rate.

**In Strategic Patient Discharge: The Case of Long-Term Care Hospitals** (NBER Working Paper No. 22598), researchers [Paul Eliason](#), [Paul Grieco](#), [Ryan McDevitt](#), and [James Roberts](#) explore this issue. The researchers use Medicare claims data from 2002–13. They focus on one particular DRG, respiratory system diagnosis with at least 96 hours of ventilator support, which is both the most common and highly reimbursed DRG. They observe over 90,000 patients with this DRG who are subsequently discharged to home or to a nursing facility.

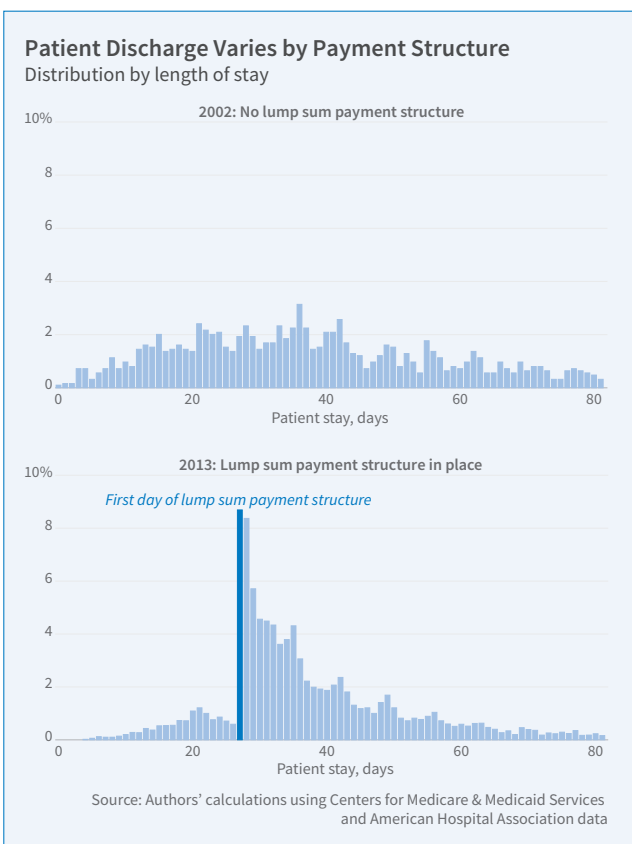
The figure shows the distribution of stay

lengths for patients with this DRG in 2002, before the two-tiered payment system was introduced, and in 2013, after this system had been in place nearly a decade and when the threshold stay length for a higher reimbursement rate was 27 days. In 2002, the share of discharges occurring on any given day is fairly constant, with about 2 percent of patients discharged each day between day 10 and day 40. By contrast, in 2013 there is a sharp spike in discharges once the stay length reaches 27 days. The probability of being discharged immediately after the cutoff date is more than

advances occurred in each of these different DRGs in a way that happened to shift discharges to precisely after their DRGs' SSO thresholds." They report that the spike in discharges at the cutoff date is largest when the patient is discharged to home, where the exact date of release is presumably easier to manipulate; there is no spike at the cutoff date for patients who ultimately die in the LTCH.

The researchers also examine whether the probability of strategic discharge is higher among for-profit hospitals, which may have a stronger incentive to engage in this behavior due to the profit-seeking motive. They find that the ratio of discharges on the cutoff day relative to the day before is twice as high in for-profit hospitals (9.2) as in non-profit hospitals (4.6). They also find that in LTCHs acquired by the two dominant chains, Kindred or Select, the ratio of discharges on the cutoff day relative to the day before rose from 8.7 pre-acquisition to 15.1 post-acquisition, "suggesting that target LTCHs adopt their acquirers' discharge policies." They also find that LTCHs that are co-located with general acute-care hospitals engage in this behavior more, "perhaps because they face fewer barriers for transferring patients across floors in order to maximize Medicare payments."

Finally, the researchers estimate a model of discharge behavior and use it to simulate several alternative payment policies. They project that removing the sharp increase in payments at the SSO threshold would reduce reimbursements by \$18.9 million for the nine most common DRGs, as LTCHs would respond by discharging patients sooner. As the researchers conclude, "because the current reimbursement formula provides a large jump in payments for patients who stay past a certain threshold, LTCHs respond to these financial incentives by keeping patients until right after they reach this point. [These] findings suggest that LTCHs keep patients too long as a result of this payment scheme, resulting in needless costs for Medicare and an untold burden for patients."



seven times higher than the probability of being discharged just before the cutoff, 10.2 vs. 1.4 percent. The probability remains elevated for about a week after the cutoff, while discharge rates before day 27 are much lower in 2013 than they were in 2002.

This pattern is unlikely to result from medical advances, particularly given that other DRGs experienced the same pattern of an emerging spike in discharges at their own cutoffs; as the researchers note, "it is even more unlikely that any coincident medical

## How Does Raising the Early Retirement Age Affect Retirement Decisions?

The long-term fiscal challenge facing the U.S. Social Security system ensures that policy makers will continue to discuss possible reforms to the system. One frequently mentioned policy is raising the normal (or full) retirement age (NRA), the age at older workers are entitled to their regular pension benefit, without any reduction for early claiming. This age is legislated to rise slowly over time in the U.S., from age 65 to age 67, but some have proposed that the NRA be increased further or indexed to longevity. Any such change would represent a benefit cut relative to promised benefits and would generate financial savings for the system.

The early retirement age (ERA) is the age at which benefits are first available—currently age 62 in the U.S. If the NRA was to be raised, policy makers would need to decide whether to raise the ERA as well. Changes to the ERA offer less scope for financial savings, since the rate at which benefits are reduced for early claiming in the U.S. is set such that a typical retired worker would receive approximately the same lifetime benefits regardless of when she claims. Yet raising the ERA may have important effects on retirement decisions, since many older workers now retire and claim at the ERA and have little in the way of financial assets that could be used to finance consumption during any gap between retirement and the start of Social Security benefit receipt.

In *The Effects of the Early Retirement Age on Retirement Decisions* (NBER Working Paper No. 22561), researchers [Dayanand Manoli](#) and [Andrea Weber](#) examine the effects of raising the ERA on older workers' retirement decisions in Austria. The Austrian example is a useful one to

explore for several reasons. First, pension reforms in Austria in 2000 and 2004 raised the ERA in multiple steps, providing a useful natural experiment to study; by contrast, the U.S. has not changed its ERA in over fifty years. In addition, detailed administrative data from Austria allow the researchers to examine pension claims and job exits for a large sample of workers.

Austrian workers with at least 15 years of contributions to the pension system (where years of unemployment, military service, or parental or sickness leave may also count towards the requirement) are eligible to receive an old age pension at the NRA of 65 for men and 60 for women. Prior to

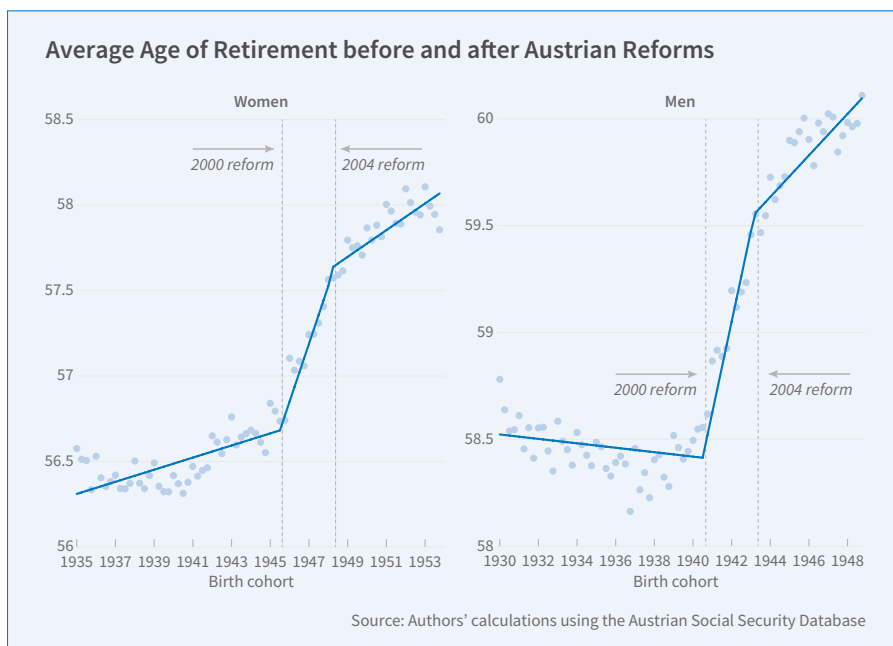
for individuals with very long careers—the ERA remained at age 60 for men with 45 years of contributions and 55 for women with 40 years of contributions. The reforms thus created incentives for those with short contribution years (too few to qualify for the exception) to delay retirement until the new ERA and for those with long contribution years to delay retirement until they could qualify for the original ERA.

The figure shows the average age at which Austrian workers of different quarterly birth cohorts left their job. The data focuses on those workers who are ineligible for the ERA exemption. Prior to the reform, the average retirement age was rising slowly over time for women and falling slightly for men. After the 2000 reform, the average retirement age rose by about one year for women and by more than one year for men during the brief phase-in period. Once the 2004 reform was passed the average retirement age continued to rise, though at a somewhat slower rate, as might be expected based on the more leisurely implementation of additional ERA increases. There is a very similar pattern in the average pension claiming age by birth cohort.

Overall, the researchers find that a one-year increase in the ERA leads

to a 0.4 year increase in the average retirement age and a 0.5 year increase in the average pension claiming age. They note that the magnitude of their findings is similar to some recent evidence from the U.S. that looked at increases in the NRA. They conclude, “[these] results highlight that the ERA is an important reference point for retirement decisions.”

*The researchers acknowledge funding from the Social Security Administration through the NBER Retirement Research Center and from the Austrian Science Fund (NRN Labor Economics and the Welfare State).*



recent reforms, the system allowed individuals with 35 years of contributions to claim pension benefits at an ERA of 60 for men and 55 for women.

The first reform in 2000 raised the ERA by 18 months for both men and women, with increases of two months for each quarterly birth cohort. A subsequent reform in 2004 increased the ERA by a further six months, to age 62 for men and 57 for women, with smaller increases of one month per quarterly cohort. The reform also set a timetable for the ERA to converge to the NRA by 2017. An exception to these ERA increases was made

## NBER Affiliates' Work Appearing in Medical Journals

### State Legal Restrictions and Prescription-Opioid Use among Disabled Adults

*E. Meara, J. R. Horwitz, W. Powell, L. McClelland, W. Zhou, A. J. O'Malley, and N. E. Morden*, *New England Journal of Medicine*, 375, July 2016, pp. 44–53.

This study examines how U.S. state laws restricting opioid prescriptions affected opioid abuse and overdose. The researchers found no evidence that various controlled-substance laws reduced abuse rates.

### Effect of Medicaid Coverage on ED Use — Further Evidence from Oregon's Experiment

*A. N. Finkelstein, S. L. Taubman, H. L. Allen, B. J. Wright, and K. Baicker*, *New England Journal of Medicine*, 375, October 2016, pp. 1505–07.

In an extension of the Oregon Health Insurance Experiment, this paper investigates whether an increase in emergency department (ED) visits after Medicaid receipt is replaced, over time, by physician office visits. The researchers found that the increase in ED use did not dissipate over the first two years of Medicaid coverage. Furthermore, they found no evidence that ED visits were substituted for primary care.

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. To facilitate access to these papers, each issue of the *Bulletin on Aging and Health* now includes a list of recent papers published by NBER researchers in medical journals.

### Sex Differences in Physician Salary in U.S. Public Medical Schools

*A. B. Jena, A. R. Olenski, and D. M. Blumenthal*, *JAMA Internal Medicine*, 176(9), September 2016, pp. 1294–1304.

This paper studies whether salary differences exist between male and female academic physicians. The researchers observed a significant pay gap: female physicians' salaries were about \$20,000 lower than male physicians after adjusting for various factors. However, the findings varied depending on specialty and rank; for instance, female full professors' salaries were comparable to their male counterparts.

### Medicaid Expansion Did Not Result in Significant Employment Changes or Job Reductions in 2014

*A. Gooptu, A. Moriya, K. Simon, and B. Sommers*, *Health Affairs*, 35(1), January 2016, pp. 111–18.

### Little Change Seen in Part-Time Employment as a Result of the Affordable Care Act

*A. Moriya, T. Selden, and K. Simon*, *Health Affairs*, 35(1), January 2016, pp. 119–23.

### Dependent Coverage under the ACA and Medicaid Coverage for Childbirth

*Y. Akosa Antwi, A. Carroll, J. Ma, and K. Simon*, *New England Journal of Medicine*, 374, January 2016, pp. 194–96.

### Emergency Care Use and the Medicare Hospice Benefit for Individuals with Cancer with a Poor Prognosis

*Z. Obermeyer, A. C. Clarke, M. Makar, J. D. Schuur, and D. M. Cutler*, *Journal of the American Geriatrics Society*, 64(2), February 2016, pp. 323–29.

### Short-Term Outcomes for Medicare Beneficiaries after Low-Acuity Visits to Emergency Departments and Clinics

*M. Niedzwiecki, K. Baicker, M. Wilson, D. M. Cutler, and Z. Obermeyer*, *Medical Care*, 54(5), May 2016, pp. 498–503.

### Economic Approaches to Estimating Benefits of Regulations Affecting Addictive Goods

*D. M. Cutler, A. I. Jessup, D. S. Kenkel, and M. A. Starr*, *American Journal of Preventive Medicine*, 50(5), May 2016, pp. S20–26.

### Hospital Prescribing of Opioids to Medicare Beneficiaries

*A. B. Jena, D. Goldman, and P. Karaca-Mandic*, *JAMA Internal Medicine*, 176(7), July 2016, pp. 990–97.

### Cost-Effectiveness and Cost-Utility Analyses of Hospital-Based Home Care Compared to Hospital-Based Care for Children Diagnosed with Type 1 Diabetes; A Randomised Controlled Trial; Results after Two Years' Follow-Up.

*I. Tiberg, B. Lindgren, A. Carlsson, and I. Hallström*, *BMC Pediatrics*, 16(94), July 2016.

Where Do Freestanding Emergency Departments Choose to Locate? A National Inventory and Geographic Analysis in Three States  
*J. D. Schuur, O. Baker, J. Freshman, M. Wilson, and D. M. Cutler, Annals of Emergency Medicine, July 2016.*

Changing Polygenic Penetrance on Phenotypes in the 20th Century among Adults in the U.S. Population  
*D. Conley, T. M. Laidley, J. D. Boardman, and B. W. Domingue, Scientific Reports, 6(30348), July 2016.*

Adverse Inpatient Outcomes during the Transition to a New Electronic Health Record System: Observational Study  
*M. L. Barnett, A. Mehrotra, and A. B. Jena, BMJ, 354(3835), July 2016.*

Surgeon Specialization and Operative Mortality in United States: Retrospective Analysis  
*N. R. Sabni, M. Dalton, D. M. Cutler, J. D. Birkmeyer, and A. Chandra, BMJ, 354 (3571), July 2016.*

The Effect of an Increased Minimum Wage on Infant Mortality and Birth Weight  
*K. A. Komro, M. D. Livingston, S. Markowitz, and A. C. Wagenaar, American Journal of Public Health, 106(8), August 2016, pp. 1514–16.*

A Cost-Effectiveness Analysis of Pre-Exposure Prophylaxis for the Prevention of HIV among Los Angeles County Men Who Have Sex with Men  
*E. F. Drabo, J. W. Hay, R. Vardavas, Z. R. Wagner, and N. Sood, Clinical Infectious Diseases, 63(6), August 2016.*

The Impact of Patient-Centered Medical Homes on Safety Net Clinics  
*L.-H. Chu, Y.-C. Lee, J. N. Sayles, and N. Sood, American Journal of Managed Care, 22(8), August 2016, pp. 532–38.*

The Effect of HIV and the Modifying Effect of Anti-Retroviral Therapy (ART) on Body Mass Index (BMI) and Blood Pressure Levels in Rural South Africa  
*A. B. Feigl, D. E. Bloom, G. Danaei, D. Pillay, J. A. Salomon, F. Tanser, and T. W. Barnighausen, PLoS ONE, 11(8), August 2016.*

Vital Directions for Health and Health Care: An Initiative of the National Academy of Medicine  
*V. J. Dzau, M. McClellan, and J. M. McGinnis, JAMA, 316(7), August 2016, pp. 711–12.*

Primary Stroke Center Hospitalization for Elderly Patients with Stroke: Implications for Case Fatality and Travel Times  
*K. Bekelis, N. J. Marth, K. Wong, W. Zhou, J. D. Birkmeyer, and J. Skinner, JAMA Internal Medicine, 176(9), September 2016, pp. 1361–68.*

Early Impact of Medicare Accountable Care Organizations on Cancer Surgery Outcomes  
*L. A. Herrel, E. C. Norton, S. R. Hawken, Z. Ye, B. K. Hollenbeck, and D. C. Miller, Cancer, 122(17), September 2016, pp. 2739–46.*

Low-Value Health Care Services in a Commercially Insured Population  
*R. O. Reid, B. Rabideau, and N. Sood, JAMA Internal Medicine, 176(10), October 2016, pp. 1567–71.*

## Abstracts of Selected Recent NBER Working Papers

w22515

[Do Hospital-Owned Skilled Nursing Facilities Provide Better Post-Acute Care Quality?](#)

Momotazur Rahman, Edward Norton, David Grabowski

As hospitals are increasingly held accountable for patients' post-discharge outcomes under new payment models, hospitals may choose to acquire skilled nursing facilities (SNFs) to better manage these outcomes. This raises the question of whether patients discharged to hospital-based SNFs have better outcomes. In unadjusted comparisons, hospital-based SNF patients have much lower Medicare utilization in the 180 days following discharge relative to freestanding SNF patients. We solved the problem of differential selection into hospital-based and freestanding SNFs by using differential distance from home to the nearest hospital with a SNF relative to the distance from home to the nearest hospital without a SNF as an instrument. We found that hospital-based SNF patients spent roughly 5 more days in the community and 6 fewer days in the SNF in the 180 days following their original hospital discharge with no significant effect on mortality or hospital readmission.

w22538

[The More We Die, The More We Sell? A Simple Test of the Home-Market Effect](#)

Arnaud Costinot, Dave Donaldson, Margaret Kyle, Heidi Williams

The home-market effect, first hypothesized by Linder (1961) and later formalized by Krugman (1980), is the idea that countries with larger demand for some products at home tend to have larger sales of the same products abroad. In this paper, we develop a simple test of the home-market effect using detailed drug sales data from the global pharmaceutical industry. The core of our empirical strategy is the observation that a country's exogenous demographic composition can be used as a predictor of the diseases that its inhabitants are most likely to die from and, in turn, the drugs that they are most likely to demand. We find that the correlation between predicted home demand and sales abroad is positive and greater than the correlation between predicted home demand and purchases from abroad. In short, countries tend to be net sellers of the drugs that they demand the most, as predicted by Linder (1961) and Krugman (1980).

w22542

[Are Publicly Insured Children Less Likely to be Admitted to Hospital than the Privately Insured \(and Does It Matter?\)](#)

Diane Alexander, Janet Currie

There is continuing controversy about the extent to which publicly insured children are treated differently than privately insured children, and whether differences in treatment matter. We show that on average, hospitals are less likely to admit publicly insured children than privately insured children who present at the ER and the gap grows during high flu weeks, when hospital beds are in high demand. This pattern is present even after controlling for detailed diagnostic categories and hospital fixed effects, but does not appear to have any effect on measurable health outcomes such as repeat ER visits and future hospitalizations. Hence, our results raise the possibility that instead of too few publicly insured children being admitted during high flu weeks, there are too many publicly and privately insured children being admitted most of the time.

w22568

[Legal Access to Alcohol and Criminality](#)

Benjamin Hansen, Glen Waddell

Previous research has found strong evidence that legal access to alcohol is associated with sizable increases in criminality. We revisit this relationship using the census of judicial records on criminal charges filed in Oregon Courts, the ability to separately track crimes involving firearms, and to track individuals over time. We find that crime increases at age 21, with increases mostly due to assaults lacking in premeditation, and alcohol-related nuisance crimes. We find no evident increases in rape or robbery. Among those with no prior criminal records, increases in crime are 50 percent larger; still larger for the most socially costly crimes of assault and drunk driving. This suggests that deterring criminality through increased punishments would likely prove difficult.

w22582

[Direct-to-Consumer Advertising and Online Search](#)

Matthew Chesnes, Ginger Zhe Jin

Beginning in 1997, the Food and Drug Administration (FDA) allowed television advertisements to make major statements about a prescription drug, while referring to detailed drug information on the internet (FDA 1997; 2015). The hope was that consumers would seek additional information online to fully understand the risks and benefits of taking the medication. To better understand the effects of the policy, we analyze direct-to-consumer advertising (DTCA) and search engine click-through data on a set of drugs over a three-year period. Regression analysis shows that advertising on a prescription drug serves to increase the frequency of online search and subsequent clicks for that drug, as well as search for other drugs in the same class. We find the relationship between DTCA and search is stronger for younger drugs, for those drugs that treat acute conditions, those drugs that are less likely to be covered by insurance, and those whose searcher population tends to be older. These findings suggest that DTCA motivates consumers to search online for drug information, but the magnitude of the effect is heterogeneous and potentially associated with clicks on websites that are more promotional in nature.

**w22600**

**Hospital Network Competition and Adverse Selection: Evidence from the Massachusetts Health Insurance Exchange**

Mark Shepard

Health insurers increasingly compete on their covered networks of medical providers. Using data from Massachusetts' pioneer insurance exchange, I find substantial adverse selection against plans covering the most prestigious and expensive "star" hospitals. I highlight a theoretically distinct selection channel: these plans attract consumers loyal to the star hospitals and who tend to use their high-price care when sick. Using a structural model, I show that selection creates a strong incentive to exclude star hospitals but that standard policy solutions do not improve net welfare. A key reason is the connection between selection and moral hazard in star hospital use.

**w22610**

**Substance Abuse Treatment Centers and Local Crime**

Samuel Bondurant, Jason Lindo, Isaac Swensen

In this paper we estimate the effects of expanding access to substance-abuse treatment on local crime. We do so using an identification strategy that leverages variation driven by substance-abuse-treatment facility openings and closings measured at the county level. The results indicate that substance-abuse-treatment facilities reduce both violent and financially motivated crimes in an area, and that the effects are particularly pronounced for relatively serious crimes. The effects on homicides are documented across three sources of homicide data.

**w22666**

**A Doctor Will See You Now: Physician-Patient Relationships and Clinical Decisions**

Erin Johnson, M. Marit Rehavi, David C. Chan, Jr., Daniela Carusi

We estimate the effect of physician-patient relationships on clinical decisions in a setting where the treating physician is as good as randomly assigned. OBs are 25% (4 percentage points) more likely to perform a C-section when delivering patients with whom they have a pre-existing clinical relationship (their "own patients") than when delivering patients with whom they had no prior relationship. OBs' decisions are consistent with receiving greater disutility from their own patients' difficult labors. After a string of difficult labors, OBs are more likely to perform C-sections on their own patients, and this can explain the entire own patient effect.

**w22684**

**Do Savings Increase in Response to Salient Information about Retirement and Expected Pensions?**

Mathias Dolls, Philipp Doerrenberg, Andreas Peichl, Holger Stichnoth

How can retirement savings be increased? We explore a unique policy change in the context of the German pension system to study this question. As of 2004, the German pension authority started to send out annual letters providing detailed and comprehensible information about the pension system and individual expected pension payments. This reform did not change the level of pensions, but only manipulated the knowledge about and salience of expected pension payments. Using German tax return data, we exploit two discontinuities in the age cutoffs of receiving such a letter to study their effects on private retirement savings. Our results show that the letters increase private retirement savings. The effects are fairly sizable and persistent over several years. We further show that the letter increases labor earnings, and that the increase in savings partly crowds out charitable donations. Moreover, we present evidence suggesting that both information and salience drive the savings effect. Our paper adds to a recent literature showing that policies that go beyond the traditional neoclassical reasoning can be powerful to increase savings rates.

**w22690**

**Economic Conditions and Mortality: Evidence from 200 Years of Data**

David M. Cutler, Wei Huang, Adriana Lleras-Muney

Using data covering over 100 birth-cohorts in 32 countries, we examine the short- and long-term effects of economic conditions on mortality. We find that small, but not large, booms increase contemporary mortality. Yet booms from birth to age 25, particularly those during adolescence, lower adult mortality. A simple model can rationalize these findings if economic conditions differentially affect the level and trajectory of both good and bad inputs into health. Indeed, air pollution and alcohol consumption increase in booms. In contrast, booms in adolescence raise adult incomes and improve social relations and mental health, suggesting these mechanisms dominate in the long run.

**Additional NBER Working Papers on Health and Aging**

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