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The Case Against Fee-for-Service Health Care





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Takeaways

Fee-for-service health care is hurting patients and driving up costs. The lack of accountability in the fee-for-service system allows doctors, hospitals, insurance companies, and pharmaceutical companies to point the finger at one another when things go wrong. The result? Patients are at risk and prices skyrocket. Due to fee-for-service, some patients get too much care, some do not get enough, and others get the wrong care. They all get inflated bills. The United States deserves a better health care system—one that is accountable for quality and costs.

After going to an emergency room in Colorado for a severe pain in her belly, Claire Lang-Ree, a college student, received a bill for nearly \$19,000 that included charges for an "IV push." ¹ The charges included \$700 each time a nurse pumped a drug into Claire intravenously. The drugs helped control the discomfort from what turned out to be a ruptured ovarian cyst, which is not life—threatening but painful. But the extra charges for the IV push are relatively new. In Claire's case, the insurance company blocked the extra charges, but hospitals are increasingly getting paid for them and the rates are going up. ²

An IV push is just one of more than 10,000 medical services for which providers can bill. ³ Since that billing system began in 1966, the number of codes for billable services has tripled. The sheer size and complexity of this system, which is known as fee-for-service medicine, perpetuates itself as providers look for new ways to increase their revenue. It is not, however, tied to improving care for patients because it is based on what providers do, not how patients fare. The lack of accountability of fee-for-service medicine is hurting patients and driving up costs.

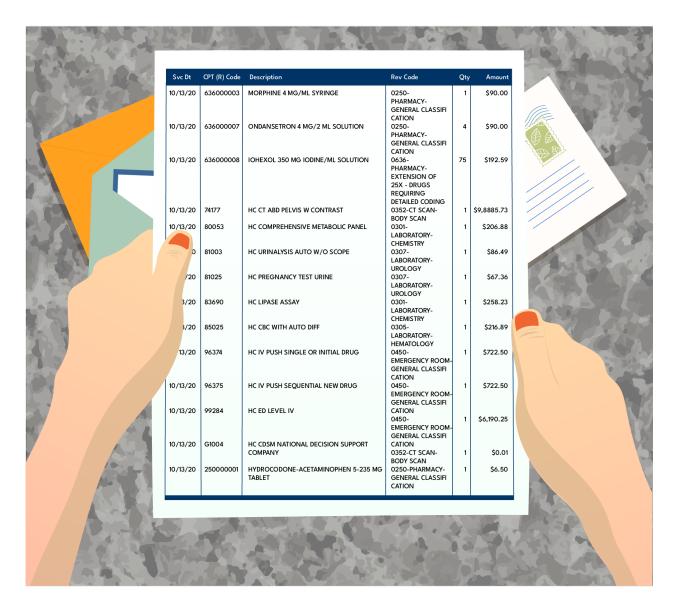
In this report, we look at what the fee-for-service system is and the effects it has on patients and overall costs. We show that the structure of fee-for-service has created incentives that are completely backwards. It creates two sets of major problems: 1) some patients get too much care, some not enough, and others get the wrong care; and 2) it drives up prices because no one is accountable for the outcomes from the care patients receive.

What is Fee-for-Service?

The traditional payment system for health care in the United States is fee-for-service. Specifically, fee-for-service pays doctors, hospitals, nursing homes, and other health care providers separately for each service or health care product they provide. It is how most doctors get paid now. In 2018, it accounted for 70% of their overall revenue. ⁴

But what does it mean to bill for each service or product? Let's take Claire—the hospital billed her for multiple parts of her stay in the emergency room on top of a flat basic rate: the lab tests, a scan, IV drugs, the IV pushes, and \$6.50 for a pill. ⁵ Her health plan blocked most of the separate charges, but hospitals continue to bill separate charges when a patient goes out-of-network for health care or does not have insurance.

A Fee-For-Service Health Care Bill



Source: Colorado patient, Claire Lang-Ree, received this bill for emergency care for belly pain. National Public Radio. https://www.npr.org/sections/health-shots/2021/06/28/1007198777/a-hospital-charged-more-than-700-for-each-push-of-medicine-through-her-iv

* THIRD WAY

While each product or service is billed individually in a fee-for-service system, the maximum price of each line on the bill is calculated by asking two things:

• Why does the person need treatment? Whether a patient seeks care for migraines or diabetes, every symptom and its cause are given a code from a system called the ICD-10. There are over 70,000 different ICD-10 codes, from an acute post-traumatic headache (G44.311) to being struck by a falling object (W20.8xxA). ⁶

• What procedure is the medical professional performing? Each procedure is then given a number, called CPT and HCPCS Level II codes, to identify what the medical professional is doing (CPT codes) and what they are using (HCPCS Level II codes). There are over 17,000 CPT and HCPCS codes, from a colonoscopy (45378) to a 10 mg injection of chemotherapy (J9355). ⁷

A doctor's office or hospital enters those codes into a medical billing system, which generates the greatest possible amount of money to bill a health plan for the services. When a health plan like Medicare or a private insurer receive the bill, they check to make sure that the procedures line up with the patient's diagnosis code (ICD-10 code) and are not exaggerated or unnecessary. They also make sure the patient has coverage for the services provided. Then the health plan assigns the standard amount they pay for those services. The calculation of that amount differs depending on whether the patient uses Medicare or private insurance.

For those using Medicare, a "fee schedule" generates the cost based on the codes for the medical billing system. This schedule, maintained by the Centers for Medicare and Medicaid Services (CMS) and set by Congress, lists the maximum payment a clinician receives for a specific service from Medicare. ⁸ Medicare then adjusts payments down based on factors such as geography or skill required for a procedure. For example, a service provided in Des Moines, IA will be discounted more than the same service provided in San Francisco, CA because it costs less to practice medicine in Iowa. ⁹

Determining the actual cost for patients with private insurance is opaque. Private health plans negotiate rates for services with hospitals and doctors. When codes are entered into the billing system, the price of that service is the negotiated rate between the health plan and provider for innetwork care. With numerous health plans and medical providers in different markets, those negotiated rates vary widely. A regulation issued under the Trump Administration sought to make the negotiated prices transparent by requiring hospitals to publish online a list of 300 services that patients can use to compare prices before they choose a hospital. ¹⁰ But compliance with the regulation has been very low. ¹¹ Members of Congress and the Administration are pushing to increase the penalties on hospitals not complying. ¹²

The sheer number of codes and billing rules can be onerous and inefficient. To address this, Medicare created the Diagnosis Related Group system (DRGs) in the 1980s to make hospital billing more efficient. DRGs reduced the thousands of inpatient ICD-10 billing codes to about 750 commonly used combinations. ¹³ For example, treating a patient with a hip fracture is DRG 210. Medicare calculates the price of this DRG from the average cost of care for a "typical" patient in that group and then adjusts for a variety of factors such as age and geography. For the patient with a hip fracture, the DRG price would increase if the patient was older, if the care took place in a city with a higher cost of living, or if that patient was diagnosed with a secondary condition like osteoporosis. ¹⁴ While DRGs incentivize hospitals to be more efficient in coordinating care and

controlling costs, they do not extend to most physicians' charges, and therefore don't encourage integration across the health system.

With a set price for the services that goes into care, the fee-for-service system leads to more volume—do more services, get more money regardless of patient outcomes.

Problem #1: Substandard Care for Patients

The structure of fee-for-service has created incentives that are completely backwards. The lack of accountability in the fee-for-service system allows doctors, hospitals, insurance companies, and pharmaceutical companies to point the finger at one another when things go wrong. The result? **Fee-for-service hurts patients and drives up costs**. Due to fee-for-service, some patients get too much care, some do not get enough, and others get the wrong care. Each of these three outcomes is explored further below.

First, some patients get too much care. Physicians report that 20% of medical care is unnecessary, including 22% of prescribed medication, 25% of tests, and 11% of procedures. ¹⁵ This is also called over-treatment or over-testing. That should not be a surprise under the current incentives—when a medical resource is available and profitable, a hospital or doctor is more likely to use that resource. For example, a Dartmouth Atlas Project study found that in regions with more hospital beds, patients are more likely to be admitted to the hospital. Similarly, in regions with more intensive care unit (ICU) beds, more patients will be cared for in the ICU. And more specialty doctors means patients have more specialty visits. ¹⁶

Fundamentally, fee-for-service rewards volume and high prices over quality. While the vast majority of medical doctors work every day to make patients better, the system's incentives are still completely flawed. If a doctor or nurse tries to become more efficient and curb overuse, the system punishes the hospital or office where they work because reimbursements go down. Picture this: A patient comes home from surgery, only to have to return to the hospital to fix a mistake. Under fee-for-service, clinicians and hospitals are paid more for worse outcomes because more care is needed. ¹⁷ To add insult to injury, the patient still pays the bill for that readmission or failed procedure.

That overuse hurts patients' health. For example:

- Overuse kills patients. Exposure to more medical treatment means more risk of harm and death.
 The medical overuse of opioids has contributed to thousands of overdose deaths. In 2019, more than 14,000 people died from opioids prescribed by clinicians. ¹⁸ This inefficient and sometimes deadly care costs anywhere from \$270 billion to \$780 billion annually. ¹⁹
- Overuse leads to injury. For example, 34% of knee replacements alone are not needed, which leads to approximately 14,000 patients suffering from infections, blood clots, heart problems, or some other health problem every year because of the procedure. ²⁰

- Overuse causes duplicative care. For example, 20% of adults with an illness report that their doctor ordered a test that had already been done in the past two years. ²¹ Duplicative CT scans unnecessarily expose patients to radiation equal to about 350 X-rays. ²² Unnecessary imaging costs as much as \$11.95 billion a year. ²³
- Overuse has huge social consequences. For example, the overuse of antibiotics causes microbial
 resistance, which puts the patient and population at risk for deadly infections. ²⁴ Overuse of
 antibiotics for viral respiratory infections (which antibiotics cannot cure) alone may cost \$1.1
 billion. ²⁵

Second, some patients do not receive enough care. Also called underuse, patients often do not get enough of the care they need. This takes many forms—from limited access to health care, to an inadequate supply of providers, to unaffordable treatments, to the slow uptake of innovations. ²⁶ It is a huge problem: underuse is four times more common than overuse. ²⁷ It also drives much of the racial and ethnic disparities in health care. ²⁸

Fee-for-service assigns a financial value to every service, which means some services will be worth more than others. Over the past decade, new technologies and high-cost services have been added to the fee schedule, which drives up payments to specialty doctors without increasing the payments for existing services, like primary care. This has led to specialty doctors making 2.5 times more than primary care doctors. ²⁹ That is one key reason for a shortage of primary care doctors and limited access for patients. In the United States, there will be a shortage of between 15,000 and 49,000 primary care doctors in a decade. ³⁰ As the number of primary care doctors decline, the number of primary care visits has also been steadily declining as payment rates have fallen. ³¹ Imagine if a patient with diabetes can't see their primary care doctor to monitor their blood sugar levels—that patient risks facing severe complications like blindness, amputation, and even death.

Further, fee-for-service drives up costs which causes patients with limited financial resources to cut back necessary medical care and medications. One-in-four diabetic patients report using less insulin than prescribed due to the high costs. Underusing insulin increases a patient's risk of severe complications and early death. ³² Those conditions are all far more expensive than taking insulin. Yet, the price many patients pay out-of-pocket for insulin has risen significantly, which is partly due to a complicated pricing system for drugs. ³³ Underusing necessary care hurts patients and causes downstream care to be more common and expensive.

When doctors are not accountable for or paid for the health of their patients, they do little to get them preventive care. In other words, treating sick patients is more profitable than keeping patients healthy. But this is not the doctor's fault. Underuse occurs because of fee-for-service. When construction workers get paid to build a house, that's what they do. They will not manicure the lawn, build a pool, or buy furniture for that house because that's not what they are paid to do. When the payment system only pays for the treatment of illness, that is what the doctor is going to focus on.

That underuse hurts patients and drives up costs. An estimated 45% of patients are not receiving recommended care. ³⁴ This has serious repercussions:

- Underuse kills patients. High blood pressure contributed to nearly a half a million deaths in 2018, yet 30 million people with high blood pressure are not receiving recommended care. ³⁵ The underuse of generic high blood pressure medication costs \$3 billion annually. ³⁶
- Underuse harms patients. Underusing controller medicines, such as an inhaler, costs the health system \$2.5 billion and leads to increased ER use and a lower quality of life for patients. ³⁷
- Underuse of some types of preventive care is harmful and expensive. The underuse of preventive services costs the health care system \$55 billion. ³⁸ For example, patients were screened for colorectal cancer just over 60% of the time. ³⁹ Routine tests and appropriate follow-up could prevent 9,600 deaths a year. ⁴⁰ For Black Americans, the lack of preventive care contributes to higher rates of colorectal cancer and death. ⁴¹

Third, some patients get the wrong care. In these instances, sometimes called misused care, a patient does not fully benefit from a treatment, does not get the right treatment, or experiences errors in their treatment. In a single year, 25%-42% of Medicare patients will receive a low-value or useless test or treatment. ⁴² That means millions of people are receiving drugs they do not need, operations that are not beneficial, and scans and tests that do nothing to fix the problem.

That misuse harms patients and drives up costs. Misuse of care is at best a waste of money and at worst life-threatening to a patient. For example:

- Misuse kills patients. More than 250,000 people die each year in the U.S. from medical errors, making it the third leading cause of death before the pandemic according to Johns Hopkins researchers. ⁴³ Misuse costs the health system between \$73 and \$98 billion a year. ⁴⁴
- Misuse causes people to stay in the hospital and worry for no reason. Over half of CT scans for hospitalized patients have a finding unrelated to the reason for the scan, but only 7% of those findings are medically significant and can often be investigated outside of the hospital. ⁴⁵ Yet, most doctors pursue those abnormalities despite additional trauma and costs to the patient. In a survey of patients that had incidental findings tested, 68% had psychological harm, 16% had physician harm, and 58% experienced a financial burden. ⁴⁶
- Misused care has downstream costs. The United States spent \$450 million per year on a prostate
 test that is not recommended by the federal body responsible for determining which screenings
 are evidence-based preventive health measures. Nearly 75% of this bill came from downstream
 biopsies and related complications. 47

Problem #2: Inflated Prices

Just as fee-for-service distorts patient care, it also drives up prices. For effective competition, health care purchasers—consumers, employers, and insurance plans—need to compare the price and quality of providers to benefit from choices about their care and providers. But in the face of bills for more than 10,000 kinds of services, health care purchasers have little chance of demanding better value. No one could shop for a car if you first had to buy all the parts and assemble it yourself.

Fee-for-service has four separate but compounding problems that drive up health care prices:

- 1. Lack of transparency. A patient going into surgery has no idea how many 15-minute segments of an anesthesiologist's time they will need, but that is how they will be billed. The price of health care is not transparent because purchasers cannot compare the price for a complete set of services billed under fee-for-service.
- 2. No accountability for outcomes. Under fee-for-service, no single health professional is responsible for the results as measured by the outcome for the patients and the total cost of care. It is like a professional sports team without a coach and general manager. The clinicians may be the best in the world, but if no one oversees the team, the care is not coordinated and the costs are out of control. That problem also applies to all drugs and medical devices that can sometimes reduce costs by replacing expensive medical procedures performed by providers, but not if the providers come up with new ways to bill for care. Although drugs constitute less than one-sixth of overall costs, their prices continually creep up in part because they are billed separately. 48 Further, clinicians often use drugs without knowing the costs and usually do not have any responsibility for restraining drug costs.
- 3. Provider pricing power. Hospitals and medical practices have been rapidly combining throughout the nation. Theoretically, that could help with the problem of no one overseeing a patient's care, but not if fee-for-service drives the underlying incentives in health care. Instead, the consolidation gives providers more leverage to charge higher prices and increase the ways to bill creatively for services like the IV push charges highlighted at the beginning of this report. Unlike Medicare and Medicaid, the prices in the fee schedule are not regulated in the commercial market, where prices are determined through negotiation between doctors and insurers. That means if there is only one hospital or only one insurer in a region, they essentially get to dictate the price. For example, health care costs in the state of New York are up to 2.7 times higher at some hospitals because of their market power. ⁴⁹
- 4. *Mounting administrative costs*. A system that requires a line item for each service and records to justify the charges increases the administrative burden on the physician and on the health system. Repetitive disputes between providers and health plans over medically necessary care further add to the administrative burdens. ⁵⁰

The lack of transparency and accountability have compounded the problem of provider pricing power and rising administrative costs. Without a big change in the fee-for-service payment,

whatever minimal benefits of competition that exist today in health care will completely erode.

Conclusion

Experts on the right and left agree: our health care system is a mess because the incentives are wrong. ⁵¹ The key source of the problem is fee-for-service payments to physicians, hospitals, nursing homes, and other health care providers, which bill separately for each service or health care product they provide. This structure has created a series of perverse incentives and utter lack of accountability. As a result, fee for service hurts patients and drives up costs.

Patients, families, and taxpayers deserve better. By understanding what fee-for-service is and the harm it inflicts, policymakers can then consider alternatives under development by public and private health plans. The nation must move to a system that rewards value, not volume. A move toward value-based payments could drive down costs, vastly improve the quality of care, and ensure a far more equitable system.

TOPICS

HEALTH CARE COSTS 61

ENDNOTES

- 1. Bichell, Rae Ellen. "A Hospital Charged More Than \$700 For Each Push of Medicine Through Her IV." National Public Radio, 28 Jun. 2021, hospital-charged-more-than-700-for-each-push-of-medicine-through-her-iv. Accessed 30 Jun. 2021.
- **2.** Bichell, Rae Ellen. "A Hospital Charged More Than \$700 For Each Push of Medicine Through Her IV." *National Public Radio*, 28 Jun. 2021, www.npr.org/sections/health-shots/2021/06/28/1007198777/a-hospital-charged-more-than-700-for-each-push-of-medicine-through-her-iv. Accessed 30 Jun. 2021.
- **3.** "CPT Codes, Then and Now." *American Medical Association*, 4 Aug. 2015, <u>www.ama-assn.org/practice-management/cpt/cpt-codes-then-and-now</u>. Accessed 8 Jul. 2021.
- **4.** Rama, Apoorva. "Policy Research Perspectives: Payment and Delivery in 2018: Participation in Medical Homes and Accountable Care Organizations on the Rise While Fee-for-Service Revenue Remains Stable." *American Medical Association*, Aug. 2019, www.ama-assn.org/sites/ama-assn.org/files/corp/media-browser/public/health-policy/prp-medical-home-aco-payment.pdf. Accessed 7 Jul. 2021.
- **5.** Bichell, Rae Ellen. "A Hospital Charged More Than \$700 For Each Push of Medicine Through Her IV." National Public Radio, 28 Jun. 2021, hospital-charged-more-than-700-for-each-push-of-medicine-through-her-iv. Accessed 30 Jun. 2021.
- 6. "ICD-10 Documentation Example." American Academy of Professional Coders (AAPC), www.aapc.com/icd-10/icd-10-documentation-example.aspx. Accessed 8 Jul. 2021; "ICD-10-CM Structure." Centers for Medicare and Medicaid Services, www.cms.gov/Outreach-and-Education/Outreach/NPC/Downloads/Slides-from-the-0114,14-ICD10-Basics-Video.pdf. Accessed 8 Jul. 2021.
- "Free 2020/2021 HCPCS Codes." HCPCS Data, www.hcpcsdata.com/Codes. Accessed 8 Jul. 2021; Maccariella%u2011Hafeyand, Pat. "CPT Coding: A Look at What's Coming in 2019." Health Information Associates, 19 Nov. 2018, www.hiacode.com/education/a-look-at-whats-coming-in-2019-for-cpt/. Accessed 8 Jul. 2021; "What is HCPCS?" American Academy of Professional Coders, www.aapc.com/resources/medical-coding/hcpcs.aspx. Accessed 8 Jul. 2021.
- **8.** United State, Department of Health and Human Services, Centers for Medicare and Medicaid Services. "Fee Schedules General Information," 2 Mar. 2021. www.cms.gov/index.php/Medicare/Medicare/Medicare-Fee-for-Service-Payment/FeeScheduleGenInfo/index. 8 Jul. 2021.
- 9. United States, Department of Health and Human Services, Centers for Medicare and Medicaid Services. "FY 2021 Wage Index Home Page: Tables 2, 3, 4A and 4B,"

 www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/AcuteInpatientPPS/Wage-Index-Files-Items/FY2021-Wage-Index-Home-Page. Accessed 8 Jul. 2021.

- **10.** Muoio, Dave. "CMS sent out warnings to hospitals failing at price transparency. Some still aren't sure where they land." *Fierce Healthcare*, 10 May 2021, www.fiercehealthcare.com/hospitals/cms-sent-out-its-first-wave-warnings-to-hospitals-noncompliant-its-new-price-transparency. Accessed 6 Aug. 2021.
- **11.** Henderson, Morgan and Morgane C. Mouslim. "Low Compliance from Big Hospitals on CMS's Hospital Price Transparency Rule." *Health Affairs*, 16 Mar. 2021. www.healthaffairs.org/do/10.1377/hblog20210311.899634/full/. Accessed 8 Jul. 2021.
- "Bipartisan E&C Health Leaders Urge HHS to Enforce Hospital Transparency Rule." Press Release, House of Representatives Committee on Energy and Commerce, 13 Apr. 2021, https://energycommerce.house.gov/newsroom/press-releases/bipartisan-ec-health-leaders-urge-hhs-to-enforce-hospital-transparency-rule. Accessed 6 Aug. 2021; Muchmore, Shannon. "CMS pitches stiffening price transparency fines, halting end of inpatient-only list." Healthcare Dive, 20 July 2021, https://energycommerce.house.gov/newsroom/press-releases/bipartisan-ec-health-leaders-urge-hhs-to-enforce-hospital-transparency-rule. Accessed 6 Aug. 2021; Muchmore, Shannon. "CMS pitches stiffening price transparency-fines-halting-end-of-inpatient-o/603610/. Accessed 6 Aug. 2021.
- **13.** "MS DRG Changes 2019 Recap and 2020 Look Ahead." *Besler*, 2019, www.slideshare.net/beslerconsulting/ms-drg-changes-for-2020-173392086. Accessed 8 Jul. 2021.
- **14.** Cubanski, Juliette, *et al.* "A Primer on Medicare: Key Facts About the Medicare Program and the People it Covers." *Kaiser Family Foundation*, 20 March 2015, www.kff.org/report-section/a-primer-on-medicare-how-does-medicare-pay-providers-in-traditional-medicare/. Accessed 8 Jul. 2021.
- **15.** Lyu, Heather *et al.* "Overtreatment in the United States." *PLOS ONE*, 24 Mar. 2017, www.ncbi.nlm.nih.gov/pmc/articles/PMC5587107/. Accessed 8 Jul. 2021.
- **16.** Pearl, Robert. "Healthcare's Dangerous Fee-For-Service Addiction." *Forbes*, 25 Sept. 2017, www.forbes.com/sites/robertpearl/2017/09/25/fee-for-service-addiction/#692c3e87c8ad. Accessed 8 Jul. 2021.
- **17.** Latkovic, Tom. "The Trillion Dollar Prize: Using Outcomes-based Payment to Address the US Healthcare Financing Crisis." *McKinsey and Company*, Feb. 2013, https://healthcare.mckinsey.com/trillion-dollar-prize-using-outcomes-based-payment-address-us-healthcare-financing-crisis/. Accessed 8 Jul. 2021.
- **18.** United States, Department of Health and Human Services, Centers for Disease Control. "Prescription Opioid Overdose Death Maps," 24 Mar. 2021, www.cdc.gov/drugoverdose/deaths/prescription/maps.html. Accessed 8 Jul. 2021.
- 19. Brownlee, Shannon *et al.* "Evidence for Overuse of Medical Services Around the World." *Lancet*, 8 Jul. 2017, www.ncbi.nlm.nih.gov/pmc/articles/PMC5708862/. Accessed 8 Jul. 2021; Elshaug, Adam. "Combating Overuse and Underuse in Health Care." *The Commonwealth Fund*, 23 Feb. 2017, www.commonwealthfund.org/publications/journal-article/2017/feb/combating-overuse-and-underuse-health-care. Accessed 8 Jul. 2021.
- **20.** Brownlee, Shannon *et al.* "Evidence for Overuse of Medical Services Around the World." *Lancet*, 8 Jul. 2017, www.ncbi.nlm.nih.gov/pmc/articles/PMC5708862/. Accessed 8 Jul. 2021.

- **21.** Burns, Megan, Mary Beth Dyer, and Michael Bailit. "Reducing Overuse and Misuse." *Robert Wood Johnson Foundation*, Jan. 2014, www.shvs.org/wp-content/uploads/2014/11/RWJF SHVS ReducingOveruseMisuse.pdf. Accessed 8 Jul. 2021.
- **22.** Bogdanich, Walt and Jo Craven McGinty. "Medicare Claims Show Overuse for CT Scanning." *New York Times*, 17 Jun. 2011, www.nytimes.com/2011/06/18/health/18radiation.html. Accessed 8 Jul. 2021.
- **23.** Jackson, Whitney L. "What Can Radiologists Really Do About Unnecessary Imaging?" *Diagnostic Imaging*, 15 Jan. 2015, www.diagnosticimaging.com/reimbursement/what-can-radiologists-really-do-about-unnecessary-imaging. Accessed 8 Jul. 2021.
- **24.** Hoyt, Alia. "Which Medical Services Are Overused and Underused?" *How Stuff Works*, 19 Jan. 2017, health.howstuffworks.com/medicine/healthcare/which-medical-services-are-overuse-underused.htm. Accessed 8 Jul. 2021.
- **25.** Van Houten, C.B. *et al.* "Observational Multi-Centre, Prospective Study to Characterize Novel Pathogen-and Host-related Factors in Hospitalized Patients with Lower Respiratory Tract Infections and/or Sepsis—the "TAILORED-Treatment" Study." *BMC Infectious Diseases*, https://bmcinfectdis.biomedcentral.com/articles/10.1186/s12879-018-3300-9. Accessed 8 Jul. 2021.
- **26.** Brownlee, Shannon *et al.* "Evidence for Overuse of Medical Services Around the World." *Lancet*, 8 Jul. 2017, www.ncbi.nlm.nih.gov/pmc/articles/PMC5708862/. Accessed 8 Jul. 2021.
- **27.** McGlynn, Elizabeth *et al.* "The Quality of Health Care Delivered to Adults in the United States." *The New England Journal of Medicine*, 26 June 2003, www.nejm.org/doi/full/10.1056/NEJMsa022615#t=article. Accessed 8 Jul. 2021.
- **28.** Ayanian, John Z. "The Costs of Racial Disparities in Health Care." Harvard Business Review, 1 Oct. 2015, https://hbr.org/2015/10/the-costs-of-racial-disparities-in-health-care. Accessed 6 Aug. 2021; DeMeester, Rachel et al. Solving Disparities Through Payment and Delivery System Reform: A Program to Achieve Health Equity." Health Affairs, Jun. 2017, https://www.healthaffairs.org/doi/10.1377/hlthaff.2016.0979. Accessed 6 Aug. 2021.
- **29.** Steinwald, Bruce *et al.* "Medicare Graduate Medical Education Funding is Not Addressing the Primary Care Shortage: We Need a Radically Different Approach." *Brookings Institute*, 3 Dec. 2018, https://www.brookings.edu/research/medicare-graduate-medical-education-funding-is-not-addressing-the-primary-care-shortage-we-need-a-radically-different-approach/. Accessed 8 Jul. 2021.
- **30.** Kacik, Alex. "Primary-care Visits Dropped 18% from 2012 to 2016." *Modern Healthcare*, 15 Nov. 2018, www.modernhealthcare.com/article/20181115/NEWS/181119962/primary-care-visits-dropped-18-from-2012-to-2016. Accessed 8 Jul. 2021.

- 31. Kacik, Alex. "Physician Fee Schedule Reform Needed to Bridge Primary-care Gap." Modern Healthcare, 6 Dec. 2018, www.modernhealthcare.com/article/201811206/NEWS/181209949/physician-fee-schedule-reform-needed-to-bridge-primary-care-gap. Accessed 8 Jul. 2021; Kacik, Alex. "Primary-care Visits Dropped 18% from 2012 to 2016." Modern Healthcare, 15 Nov. 2018, www.modernhealthcare.com/article/20181115/NEWS/181119962/primary-care-visits-dropped-18-from-2012-to-2016. Accessed 8 Jul. 2021. McGlynn, Elizabeth et al. "The Quality of Health Care Delivered to Adults in the United States." The New England Journal of Medicine, 26 June 2003, www.nejm.org/doi/full/10.1056/NEJMsa022615#t=article. Accessed 8 Jul. 2021.
- **32.** Teare, Kendall. "One in Four Patients Say They've Skimped on Insulin Because of High Cost." *Yale News*, 3 Dec. 2018, https://news.yale.edu/2018/12/03/one-four-patients-say-theyve-skimped-insulin-because-high-cost. Accessed 8 Jul. 2021.
- **33.** Entis, Laura. "Why Does Medicine Cost So Much? Here's How Drug Prices Are Set." *Time*, 9 Apr. 2019, https://time.com/5564547/drug-prices-medicine/. Accessed 6 Aug. 2021.
- **34.** McGlynn, Elizabeth *et al.* "The Quality of Health Care Delivered to Adults in the United States." *The New England Journal of Medicine*, 26 June 2003, www.nejm.org/doi/full/10.1056/NEJMsa022615#t=article. Accessed 8 Jul. 2021.
- **35.** United States, Department of Health and Human Services, Centers for Disease Control. "Facts about Hypertension." 8 Sept. 2020, www.cdc.gov/bloodpressure/facts.htm. Accessed 8 Jul. 2021.
- **36.** Delaune, Jules, and Wendy Everett, eds. "Waste and Inefficiency in the U.S. Health Care System." *New England Healthcare Institute*, Feb. 2008, www.nehi-us.org/publications/13-waste-and-inefficiency-in-the-u-s-health-care-system-clinical-care/view. Accessed 8 Jul. 2021.
- **37.** Delaune, Jules, and Wendy Everett, eds. "Waste and Inefficiency in the U.S. Health Care System." *New England Healthcare Institute*, Feb. 2008, www.nehi-us.org/publications/13-waste-and-inefficiency-in-the-u-s-health-care-system-clinical-care/view. Accessed 8 Jul. 2021.
- **38.** Snow, Richard and Lauren McKown. "Value-based Payments and Primary Care." *Primary Care Reports*, 1 Sep. 2017, www.reliasmedia.com/articles/141334-value-based-payments-and-primary-care. Delaune, Jules, and Wendy Everett, eds. "Waste and Inefficiency in the U.S. Health Care System." *New England Healthcare Institute*, Feb. 2008, www.nehi-us.org/publications/13-waste-and-inefficiency-in-the-u-s-health-care-system-clinical-care/view. Accessed 8 Jul. 2021.
- **39.** Hall, Ingrid *et al.* "Patterns and Trends in Cancer Screening in the United States." *Centers for Disease Control and Prevention*, 26 Jul. 2018, www.cdc.gov/pcd/issues/2018/17_0465.htm. Accessed 8 Jul. 2021.
- **40.** "Effective Care." Dartmouth Atlas and Center for the Evaluative Clinical Sciences, 15 Jan. 2007, www.dartmouthatlas.org/atlases-and-reports/. Accessed 8 Jul. 2021.
- **41.** Chan, Andrew. "Racial Disparities and Early-onset Colorectal Cancer: A Call to Action. *Harvard Health Publishing: Harvard Medical School*, 17 Mar. 2021, www.health.harvard.edu/blog/racial-disparities-and-early-onset-colorectal-cancer-a-call-to-action-202103172411. Accessed 6 Aug. 2021.

- **42.** Gawande, Atul. "Overkill." *The New Yorker*, 11 May 2015, www.newyorker.com/magazine/2015/05/11/overkill-atul-gawande. Accessed 8 Jul. 2021.
- 43. "Study Suggests Medical Errors Now Third Leading Cause of Death in the U.S." Johns Hopkins Medicine, 3 May 2016,
 www.hopkinsmedicine.org/news/media/releases/study_suggests_medical_errors_now_third_leading_cause_of_death_in_the_us. Accessed 8 Jul. 2021.
- **44.** Andel, Charles *et al.* "The Economics of Health Care Quality and Medical Errors." *Journal of Health Care Finance*, Fall 2012, www.ncbi.nlm.nih.gov/pubmed/23155743. Accessed 8 Jul. 2021.
- **45.** 'Incidental Findings' from Scans Challenge Efforts to Reduce Health Care Costs." *Johns Hopkins Medicine*, 8 May 2017,
 https://www.hopkinsmedicine.org/news/media/releases/incidental_findings_from_scans_challenge_eff
 orts_to_reduce_health_care_costs_. Accessed 8 Jul. 2021.
- **46.** "What to do About Incidental Findings." Harvard Health Publishing, 1 Jan. 2020, healthy/what-to-do-about-incidental-findings. Accessed 8 Jul. 2021.
- **47.** Ganguli, Ishani. "How One Medical Checkup Can Snowball into a 'Cascade' Of Tests, Causing More Harm Than Good." *The Washington Post*, 5 Jan. 2020, www.washingtonpost.com/health/how-one-medical-checkup-can-snowball-into-a-cascade-of-tests-causing-more-harm-than-good/2020/01/03/0c8024fc-20eb-11ea-bed5-880264cc91a9_story.html. Accessed 8 Jul. 2021.
- **48.** "A Look at Drug Spending in the U.S." *Pew*, 28 Aug. 2018. <u>www.pewtrusts.org/en/research-and-analysis/fact-sheets/2018/02/a-look-at-drug-spending-in-the-us</u>. Accessed 8 Jul. 2021.
- **49.** Gorman Actuarial. "Why Are Hospital Prices Different? An Examination of New York Hospital Reimbursement." *New York State Health Foundation*, 18 Dec. 2016, https://nyshealthfoundation.org/resource/an-examination-of-new-york-hospital-reimbursement/. Accessed 8 Jul. 2021.
- **50.** "Reinventing Utilization Management (UM) to Bring Value to the Point of Care: How an Automated Exception-Based Approach Can Make UM More Efficient and Effective. *Healthcare IT News*, 18 Sep. 2018, www.healthcareitnews.com/news/reinventing-utilization-management-um-bring-value-point-care. Accessed 8 Jul. 2021.
- **51.** Rivlin, Alice M. and Sheila Burke. "Preserving The Bipartisan Commitment to Health Care Delivery System Reform." *Health Affairs*, 18 May 2017. www.healthaffairs.org/do/10.1377/hblog20170518.060168/full/. Accessed 8 Jul. 2021.