The Multi-Billion Dollar Drug-Sensitive Spending Opportunity

Jon C. Easter, Kenneth Thorpe

Chronic diseases increase utilization and avoidable drug-sensitive spending, but little is done to optimize medication use and drive value. Value-based approaches to health care financing should shift focus to drug-sensitive spending to balance patient access and quality improvement with cost containment.

A patient’s number of trips to the emergency department (ED) caused by asthma attacks were puzzling, given that she had regular refills of a prescribed asthma control inhaler. This prompted a house call from her care manager. When the care manager asked about the medications, the patient opened a drawer to reveal dozens of inhalers still in their original packaging. Each inhaler represented a month’s worth of medication, multiple missed opportunities, and a new “record” for number of unopened inhalers among the care manager’s colleagues. That other care managers had common experiences underscores a fundamental problem driving both prescription drug and overall health care spending, though the processes of health care occurred as intended: a physician diagnosed the patient and prescribed medications, a pharmacist dispensed the medications, and all were reimbursed for the services and products. After an asthma attack, the patient ended up in the ED and was stabilized, provided additional prescriptions, and discharged to begin the cycle again.

In 2015, more than $400 billion was spent on prescription medicines (retail and physician-administered) [1] and another $32 billion on over-the-counter medicines [2]. With health care spending increasing and stressing budgets, the urgency to do something to curb costs, especially drug costs, mounts. Legitimate concerns about access, affordability, and innovation, however, devolve quickly into divisive battle lines that increase pressure on clinicians and patients alike.

Regardless of whether the unused asthma inhalers the case manager found were the least expensive generic or an expensive brand, any potential value was lost. And spending elsewhere in terms of ED visits, additional services, and additional medicines accumulated. We invest billions in medications for millions of patients but provide little support services or attention to patient outcomes to achieve clinical goals and deliver value on that investment.

The larger opportunity represented to millions of others with manageable chronic conditions centers on lowering drug-sensitive health care spending through medication optimization. Pursuing it, however, requires a different perspective than ones currently dominating debates about prices, costs, and prescription drugs.

The Role of Chronic Disease as a Cost Driver

Increased reliance and spending on prescription drugs and other medical care products and services is driven in large part by the growing prevalence of chronic conditions. In 2014, 6 in 10 adults in America had at least one chronic condition and 4 in 10 had 2 or more [3]. Overall, treating people with chronic conditions accounts for 90 cents of every dollar spent on health care in the United States [3]. Nearly half of all Americans have taken one or more prescriptions in the last 30 days, and nearly 1 in 4 have taken 3 or more [4].

The more chronic conditions a person has, the more their utilization of prescription medicines and services of all types multiplies. The 12% of the population who have 5 or more chronic conditions fill 51 prescriptions a year—over 5 times more than peers with 1 or 2 chronic conditions [3]. With increased utilization comes increased spending, polypharmacy, and complexity of care (see Figure 1).

Although many chronic conditions are preventable and, once diagnosed, highly manageable, health improvement requires that people not only have access to quality health care, but also the understanding and ability to follow through on treatment as recommended. Studies consistently show that approximately half of medications for chronic conditions are not taken as prescribed [5]. This avoidable quality gap has been estimated to cause 125,000 deaths, at least 10% of hospitalizations, and a substantial increase in morbidity [5].

Electronically published February 5, 2018.
Address correspondence to Jon Easter, Center for Medication Optimization through Practice and Policy, UNC Eshelman School of Pharmacy, 2402 Kerr Hall, Campus Box 7574, Chapel Hill, NC 27599 (jceaster@unc.edu).
N C Med J. 2018;79(1):46-50. ©2018 by the North Carolina Institute of Medicine and The Duke Endowment. All rights reserved. 0029-2559/2018/79111
Traditional Approaches to Managing Medication Costs—The Pharmacy Silo

Utilization management has been employed by payers for many years to control spending increases. Yet, increases in health care spending consistently exceed the Gross Domestic Product (GDP) Price Index, and health care now consumes 18% of the US GDP [6].

In managing costs, tactics traditionally segregate health care spending into silos, such as physician, hospital, and pharmacy, and address spending within those silos. On the medical side, traditional cost-control strategies have focused on reducing provider reimbursement, designating and narrowing lists of in-network providers, requiring prior authorization and/or referrals to specialty providers and services, and increasing cost-sharing for consumers.

On the pharmacy side, traditional drug utilization strategies include tiered medication formularies, prior authori-
The increased medical costs associated with overdoses are considerable costs related to opioid use, misuse, and overdoses. This estimate does not include the considerations related to adverse events, underuse, overuse, and misuse of medications that results in avoidable utilization of other health care services.

Overall health care spending from poor medication adherence has been estimated at $200–$300 billion, including an avoidable 10 million hospital admissions, 78 million outpatient treatments, 246 million prescriptions, and 4 million ED visits a year [10, 11]. Estimates of avoidable costs from poor adherence are a conservative indication of overall drug-sensitive spending, as maximizing the therapeutic value of any medication regimen depends upon having the right mix of medications with the right dosage for the individual patient. For example, an analysis of a comprehensive medication therapy management program at Fairview Health System found that most of the drug therapy problems encountered related to either the need for additional drug therapy or suboptimal dosing [8]. In other words, the patient was not getting to clinical goals because additional medications were needed or their chronic condition medications were consistently being under dosed.

Considering what we spend on prescription drugs each year, along with the avoidable spending associated with suboptimal therapy, poor medication adherence, adverse events, and related costs, we estimate that the cost of drug-sensitive spending is approximately twice the size of annual drug spending. This estimate does not include the considerable costs related to opioid use, misuse, and overdoses. The increased medical costs associated with overdoses alone are estimated at $12.2 billion a year, with overall costs exceeding $95 billion a year [12].

Paying less for anything of value is universally appealing or appalling, depending on whether you are the purchaser or the provider. Working to derive the greatest value from investments is nonetheless a primary driver in new value-driven approaches to addressing costs and presents opportunities to achieve quality and cost reduction benchmarks by improving collaboration between physician and pharmacist and focusing on drug-sensitive spending.

**Value-Driven Approaches to Managing Overall Health Care Costs**

New value-based payment models require a new care delivery infrastructure for providers to be successful. Value-based payments require a coordinated and connected delivery system that proactively manages populations of patients through integrated, team-based care that meets quality benchmarks and budgetary expectations.

Optimizing medications across care settings can have a dramatic impact on lowering health care spending, particularly for people with multiple chronic diseases and other complex care needs. Identifying patients whose needs are not only complex, but also addressable through better medication management services is a critical component of making value-based payments work. There are numerous examples of medication optimization programs reducing hospital readmissions and improving clinical quality measures. Most of these services, however, are not being reimbursed through traditional fee-for-service payments and need to evolve to being paid for based on the ability to lower the overall costs or medical spend. Within Medicare’s Merit-based Incentive Payment System (MIPS), we estimate that at least 1 in 4 metrics are directly impacted by medication use and provide opportunities to exceed quality goals.

The momentum to pay for health care based on value accelerated with the Centers for Medicare & Medicaid Services’ (CMS) 2016 goal of having half of Medicare’s reimbursements tied to alternative payment models by 2018’s end [13]. Commercial health plans are aggressively pursuing value-based payment models, and approximately half of provider contracts will be value-based next year.

Different reimbursement models for medications are also envisioned. In August 2017, CMS announced “innovative payment arrangements, including outcomes-based pricing models for new and potentially lifesaving treatments,” working with Novartis on an outcomes-based model for an innovative cancer therapy [14]. CMS promised to provide additional guidance on how pharmaceutical companies can work on additional value-based payment arrangements. Other pharmaceutical companies and insurers are entering into outcomes-based contracts for specific medicines that set benchmarks for attaining clinical goals.

Accountable Care Organizations (ACOs) have grown since the implementation of the Affordable Care Act
Robert W. Woodruff professor and chair, director, Center for Medication Optimization learning through broad results dissemination. As such, and scale up, and an evaluation partner who can enable complexity, an iterative approach to implementation terms that build a flexible product pricing model around consensus on performance-based metrics, and contract communication interventions and educational services, areas: an appropriate patient population, wrap-around med health care payers, and life sciences companies.

provider organizations engaged in risk-based contracts, based contracting models. Collaborations should include partnerships around mutually-beneficial pharmaceutical value-there. A key opportunity is to encourage collaborative part medication optimization to achieve value-based care:

We couldn’t agree more. The question is how we get there. A key opportunity is to encourage collaborative part-nerships around mutually-beneficial pharmaceutical value-based contracting models. Collaborations should include provider organizations engaged in risk-based contracts, health care payers, and life sciences companies.

The collaborative framework could be built around 4 areas: an appropriate patient population, wrap-around medication management interventions and educational services, consensus on performance-based metrics, and contract terms that build a flexible product pricing model around achievement of the performance-based metrics. Other key considerations include accounting for regulatory complexity, an iterative approach to implementation and scale up, and an evaluation partner who can enable learning through broad results dissemination. As such, managing the collaborations will likely require a convener organization, such as the Center for Value-Based Purchasing for Pharmaceuticals at the University of Pittsburgh Medical Center.

As we navigate an increasingly complex health care system, we cannot lose sight of the ultimate goal: improving the health and well-being of our patients. By focusing on collabora-tive, patient-centered efforts on managing drug-sensitive spending, we can balance otherwise competing pressures of facilitating patient access and improving quality with lowering health care costs.

Jon C. Easter, BPharm director, Center for Medication Optimization through Practice and Policy (CMOPP), UNC Eshelman School of Pharmacy, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina.

Kenneth Thorpe, PhD Robert W. Woodruff professor and chair, Department of Health Policy and Management, Rollins School of Public Health; chair, Partnership to Fight Chronic Disease, Emory University, Atlanta, Georgia.

Acknowledgments Candace DeMatteis, JD, MPH, is a Health Policy Consultant for the Center for Medication Optimization through Practice and Policy at the UNC Eshelman School of Pharmacy. Candace’s expertise about the burden of chronic disease on our society and the opportunity to positively impact “drug-sensitive” spending was much appreciated. Potential conflicts of interest. J.C.E and K.T. have no relevant conflicts of interest.

References
1. Centers for Medicare & Medicaid Services. National health expenditures fact sheet. CMS website. https://www.cms.gov/research -statistics-data-and-systems/statistics-trends-and-reports/nation alhealthexpenddata/nhe-fact-sheet.html. Published June 14, 2017. Accessed November 21, 2017.
2. Consumer Healthcare Products Association. OTC retail sales 1964-2016. CHPA website. https://www.cpha.org/OTCRe tailSales.aspx. Accessed November 21, 2017.
3. Buttorff C, Ruder T, Bauman M. Multiple Chronic Conditions in the United States. Santa Monica, CA: RAND Corporation, 2017. https://www.rand.org/pubs/tools/TL221.html. Accessed November 21, 2017.
4. National Center for Health Statistics. Therapeutic drug use. CDC website. https://www.cdc.gov/nchs/fastats/drug-use-therapeutic.htm. Published May 3, 2017. Accessed November 21, 2017.
5. Viswanathan M, Golin CE, Jones CD, et al. Interventions to improve adherence to self-administered medications for chronic diseases in the United States. Ann Intern Med. 2012;157(11):785-795.
6. Hartman M, Martin AB, Espinosa N, Catlin A, The National Health Expenditure Accounts Team. National health care spending in 2016: spending and enrollment growth slow after initial coverage expansions. Health Aff (Millwood). 2018;37(1):150-160.
7. Maciejewski ML, Bryson CL, Perkins M, et al. Increasing copayments and adherence to diabetes, hypertension, and hyperlipidemic medications. Am J Manag Care. 2010;16(1):e20-e34.
8. Ramallo de Oliveira D, Brummel AR, Miller DB. Medication therapy management: 10 years of experience in a large integrated health care system. J Manag Care Pharm. 2010;16(3):185-195.
9. Johnson TJ, Stahl-Moncada S. Medicaid prescription formulary restrictions and arthritis treatment costs. Am J Public Health. 2008;98(7):1300-1305.
10. American Pharmacists Association. Study finds $200 billion in avoidable health care costs. APhA website. http://www.pharmacist.c om/study-finds-200-billion-avoidable-health-care-costs. Published June 21, 2013. Accessed November 21, 2017.
11. The Network for Excellence in Health Innovation. Improving Medication Adherence: A $290 Billion Opportunity. Boston, MA: Network for Excellence in Health Innovation; 2011. https://www.nehi.net/bendthecurve/sup/documents/Medication_Adherence_Brief.pdf.
12. Rhyan CN. The Potential Societal Benefit of Eliminating Opioid Overdoses, Deaths, and Substance Abuse Disorders Exceeds $95 Billion per Year. Ann Arbor, MI: Altarum Institute; 2017. https://altarum.org/sites/default/files/uploaded-publication-files/Research-Brief_Opioid-Epidemic-Economic-Burden.pdf. Accessed November 21, 2017.

13. Burwell SM. Building a system that works: the future of health care. Health Affairs website. https://www.healthaffairs.org/do/10.1377/hblog20161212.057877/full/. Published December 12, 2016. Accessed January 9, 2018.

14. Centers for Medicare & Medicaid Services. CMS: innovative treatments call for innovative payment models and arrangements. CMS website. https://www.cms.gov/Newsroom/MediaReleaseDatabase/Press-releases/2017-Press-releases-items/2017-08-30-2.html. Published August 30, 2017. Accessed November 21, 2017.

15. De Lisle K, Litton T, Brennan A, Muhlestein D. The 2017 ACO survey: what do current trends tell us about the future of accountable care? Health Affairs website. https://www.healthaffairs.org/do/10.1377/hblog20171021.165999/full/. Published October 4, 2017. Accessed January 9, 2018.

16. American Pharmacists Association. Written Testimony of Thomas E. Menighan, Executive Vice President and CEO, Before the U.S. Senate Committee on Health, Education, Labor & Pensions. The Cost of Prescription Drugs: How the Drug Delivery System Affects What Patients Pay, Part II. Washington, DC: American Pharmacists Association; 2017. https://www.help.senate.gov/imo/media/doc/Menighan.pdf. Accessed January 9, 2018.