Call to Action:

Reduce Waste in the US Health Care System and Return the Cost Savings to Patients and the Economy

IHI Leadership Alliance

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Acknowledgments:

The IHI Leadership Alliance is a dynamic collaboration of US health care executives who share a goal to deliver on the full promise of the IHI Triple Aim: better care for individuals, better health for populations, and lower per capita health care costs. Sincere thanks to the IHI team for their ongoing support and thoughtful guidance of this work: Maureen Bisognano, Molly Bogan, Bozwell Bueno, Jill Duncan, and Derek Feeley.

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How to Cite This Document: Macfie H, Leo J. IHI Leadership Alliance. *Call to Action: Reduce Waste in the US Health Care System and Return the Cost Savings to Patients and the Economy*. Boston: Institute for Healthcare Improvement; 2019. (Available at www.ihi.org)

For more than 25 years, the Institute for Healthcare Improvement (IHI) has used improvement science to advance and sustain better outcomes in health and health systems across the world. We bring awareness of safety and quality to millions, accelerate learning and the systematic improvement of care, develop solutions to previously intractable challenges, and mobilize health systems, communities, regions, and nations to reduce harm and deaths. We work in collaboration with the growing IHI community to spark bold, inventive ways to improve the health of individuals and populations. We generate optimism, harvest fresh ideas, and support anyone, anywhere who wants to profoundly change health and health care for the better.
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Foreword

I admit to a constant curiosity about health care costs in the US. We all know the numbers — per capita spending more than double the OECD average, with nothing demonstrable to show, in terms of health outcomes, for all that extra cost. Throughout my time studying the global economics of health care, and in my six years since joining IHI, I have seen high-quality care, delivered reliably and safely. I have also seen waste.

Waste is endemic in health care. And it's not just money that's being wasted. The most precious resources — the workforce's time, spirit, and joy — are being unnecessarily drained by wasteful processes every day. The financial costs — to organizations, towns, cities, states, and most importantly, to citizens and families — are, as this document lays out, stressing the political fabric of the country. No matter how many medical breakthroughs achieved, innovative models of care developed, or transformative new technologies implemented, if we don't remove waste in health care, our health systems cannot thrive.

To reap the benefits of paying for value rather than volume, and to achieve the Triple Aim, we need radical redesign in health care. That's why the IHI Leadership Alliance was formed, and why we began its work by articulating "10 New Rules to Accelerate Health Care Redesign."[1] The tenth rule — Return the money: Give the money from health care savings to other public and private purposes — rests on the reality that there is an abundance of money to be saved and returned. Getting at that money by ridding our health systems of waste remains a significant challenge and an essential goal.

This Call to Action from the IHI Leadership Alliance lays out a logical model for proactively identifying and eliminating waste from our health care systems. It's informed by the collective experience and wisdom of Alliance members. Health system leaders and all who work in health care need to heed this call.

Derek Feeley
President and CEO
Institute for Healthcare Improvement

Executive Summary

The IHI Leadership Alliance believes that eliminating "waste" in health care is essential to providing care at an affordable cost. The Alliance developed the "Trillion Dollar Checkbook," an in-depth analysis of significant and in many cases complex opportunities to reduce waste and cost in the United States health care system. The premise of the Checkbook is that successful waste reduction in the health care system would, in effect, enable writing a "check" back to the American people or repurposing those savings to support essential patient-care services or meet community needs.

Now is the time for health systems and providers to commit to a Call to Action to do our part to reduce waste in the US health care system. In addition, we must make a commitment to leverage our collective voice to advocate for changes through conversation with policy makers in government, the pharmaceutical industry, and health plans, as well as officials and coalition leaders in our states and communities.

The IHI Leadership Alliance has identified three key actions for health care leaders to reduce waste in the US health care system and return the cost savings to patients and the economy.

1. **Endorse local health system adoption of strategies to reduce non-value-added waste.**

2. **Form collaborative partnerships for action** in local, state, and national communities to address more complex waste reduction opportunities.

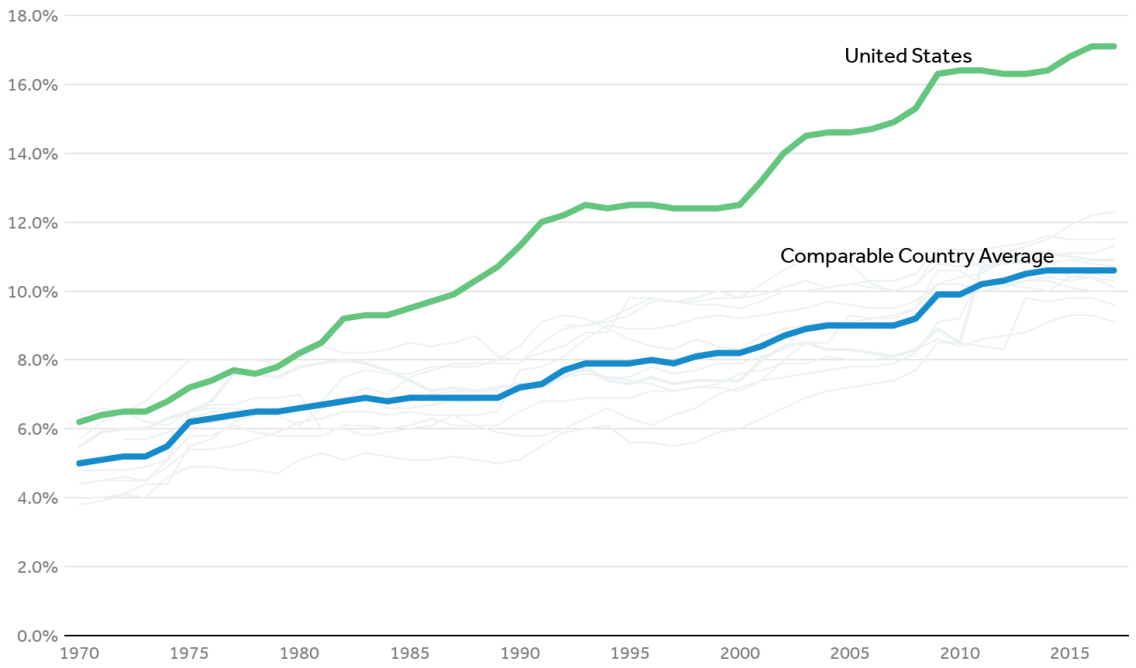
3. **Advocate for health care reforms and redesign** to address systemic regulatory, legislative, and other barriers to repurposing or returning the cost savings to patients and the economy.

Introduction

What is "waste"? In this Call to Action, waste is defined as resources expended in services, money, time, and/or personnel that do not add value for the patient, family, or community. In some cases, this non-value-added waste can even harm patients, adding further cost. Value in health care can be simply defined as quality divided by cost. The inverse of "value" is "waste."

Central to this discussion is the **recognition of the unsustainability of the status quo**, with a disproportionate and ever-increasing percentage of the US gross domestic product (GDP) devoted to health care, predicted by some to reach 20 percent or higher by 2020 to 2025. This proportion is far in excess of health care spending in all other developed countries (see Figure 1).[2]

Figure 1. US Health Consumption Expenditures as a Percent of GDP (1970-2017)



Notes: U.S. values obtained from National Health Expenditure data. Health consumption does not include investments in structures, equipment, or research.

Source: KFF analysis of OECD and National Health Expenditure (NHE) data • Get the data • PNG

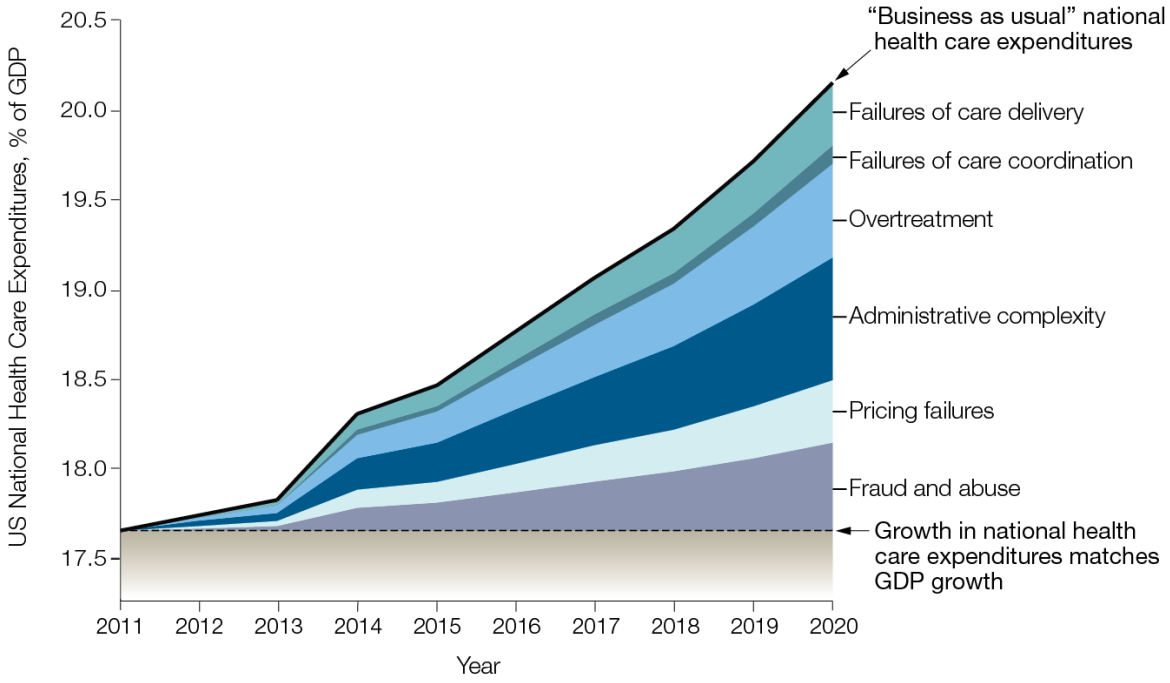
Peterson-Kaiser Health System Tracker

It is worth noting that some of those countries spend comparatively more on social services — that is, by investing upstream in health and wellness, they may avert disease burden and costs down the line. Also critical is the recognition that a significant proportion of health care spending is wasteful; and, unfortunately, that some of this waste generates income for providers, health care industry vendors, health systems, and health plans, which reinforces barriers to change.

In 2012, Berwick and Hackbarth delineated six categories or "wedges" of waste in health care and assigned ranges of potential costs to each: failures of care delivery, failures of care coordination, overtreatment, administrative complexity, pricing failures, and fraud and abuse.[2] Together, as of 2012, these six forms of waste were estimated to account for the majority of a predicted 2.5 percent

increase in national health expenditures in the US by 2020, from a baseline of 17.7 percent to 20.2 percent of GDP (see Figure 2).[3] They concluded that "if the United States is to reconstruct a health care industry that is both affordable and relentlessly focused on meeting the needs of every single patient and family, **waste reduction (that is, the removal of non-value-added practices in all their forms) is the best strategy by far.**"

Figure 2. Proposed "Wedges" Model for US Health Care, With Theoretical Spending Reduction Targets for Six Categories of Waste



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The Case for Reducing Non-Value-Added Waste

What is "**non-value-added waste**"? Everything health care providers do can be divided into two categories. The first adds value for the customer — in this case the patient, their family, employer, health plans/payers — that they would be willing to pay for. The second does not add value for the customer. This second category is, quite simply, waste. For example, in the Lean management literature, seven types of waste are typically identified, including wait times.[4] If a patient is in a "waiting room" but is using that time to participate in education or adding information to their medical record, that time spent could be considered to add value, especially if the patient is informed in advance how such activities help with their care. However, if the patient is simply waiting, because the health care team is running behind, or they've accepted that the norm is "patients always wait," then that patient is denied the opportunity to use their time for something that matters and is more valuable to them.

First and foremost, this Call to Action is driven by mission and vision. The IHI Leadership Alliance vision points to the need for better care and better health at an affordable cost. **Most health care institutions have a mission to improve the health and wellness of the communities they serve. There is a business case for reducing waste as well.** With the advent of "accountable care," where more institutions and providers are assuming upside and downside risk for the cost of care, the total cost of care becomes an even more important factor (see Table 1).

Table 1. Examples of Stakeholder "Gains" from Reducing Waste and Cost in Health Care

Patients and Families	• Reduce both physical and psychological harm caused by non-value-added waste (e.g., unnecessary tests or treatments, poor transitions in care) • "Return the money": Cost savings are passed on to patients (less out of pocket) • Less wasted time waiting
Community	• Reduce overall costs of health care to the community • More resources to invest in other needed community infrastructure and activities • Beneficial taxation implications • Reduce costs to employers, enabling them to be more competitive in a local and global marketplace
Providers	• More effective use of limited resources • Provide care that truly helps • Reduce claims liability • Improve joy and satisfaction in work
Health Systems	• Pursue value and the Triple Aim: better care for individuals, better health for populations, and lower per capita cost • Conserve use of precious resources, allowing investment in activities that promote health • Reduce claims liability
Health Plans, Payers	• Increase marketability • Improve cost structure
Government	• Reduce non-value-added spending • Reduce administrative bureaucracy • Reduce national debt

The continued upward trend in health care expenditures in the US is unsustainable for patients, who typically have an average of $1,500 to $2,000 in their bank accounts; for provider organizations, which face ever-declining operating margins; for employers, who are struggling to cover an increasing burden of health benefit costs; and for local, state, and federal governments, which must choose between health care coverage and other important social and community programs that promote the safety, security, and welfare of the population. The immense cost of health care has stressed the social, economic, and political fabric of the US.

The patient's journey is for a lifetime, and health care providers are but visitors in their life and care: We are not the whole story. And **when we, at every level of the health care system, tolerate waste, we create a rising burden** of out-of-pocket costs, delays in care, and side-effects that harm the patient's care and life experience.

Stories help make these issues come alive. For example, Ron (not his real name) is now 97, but when he was a vibrant 87, he underwent needless prostate-specific antigen (PSA) testing that resulted in the diagnosis of low-grade prostate cancer. After undergoing a battery of diagnostic tests, biopsies, and treatments — some quite painful — Ron was left with long-term complications requiring multiple further procedures, worry, loss of productivity, and (by his own description) lower quality of life than if he'd been left undiagnosed. In fact, the US Preventive Services Task Force recommends against PSA-based screening for prostate cancer in men 70 years and older unless certain clinical considerations are met.[5] Statistics suggest that the "treatments" Ron received occurred for a condition that would not have caused him harm. The multiple tests and treatments, the time and loss of productivity, and the painful complications — with need for yet further treatment — all constitute waste. For all of his time spent and for all the harm he suffered, Ron received no value.

With the limited disposable income of the average US family, coupled with patients increasingly facing "surprise billing," **debt and personal bankruptcy from health care are on the rise — for both patients and health care's own workforce.** Articles published by *Modern Healthcare* describe how patients can be faced with large out-of-network bills and "opaque bureaucracy," especially when they need emergent care or are cared for by providers who are not contracted with the patient's health plan.[6,7]

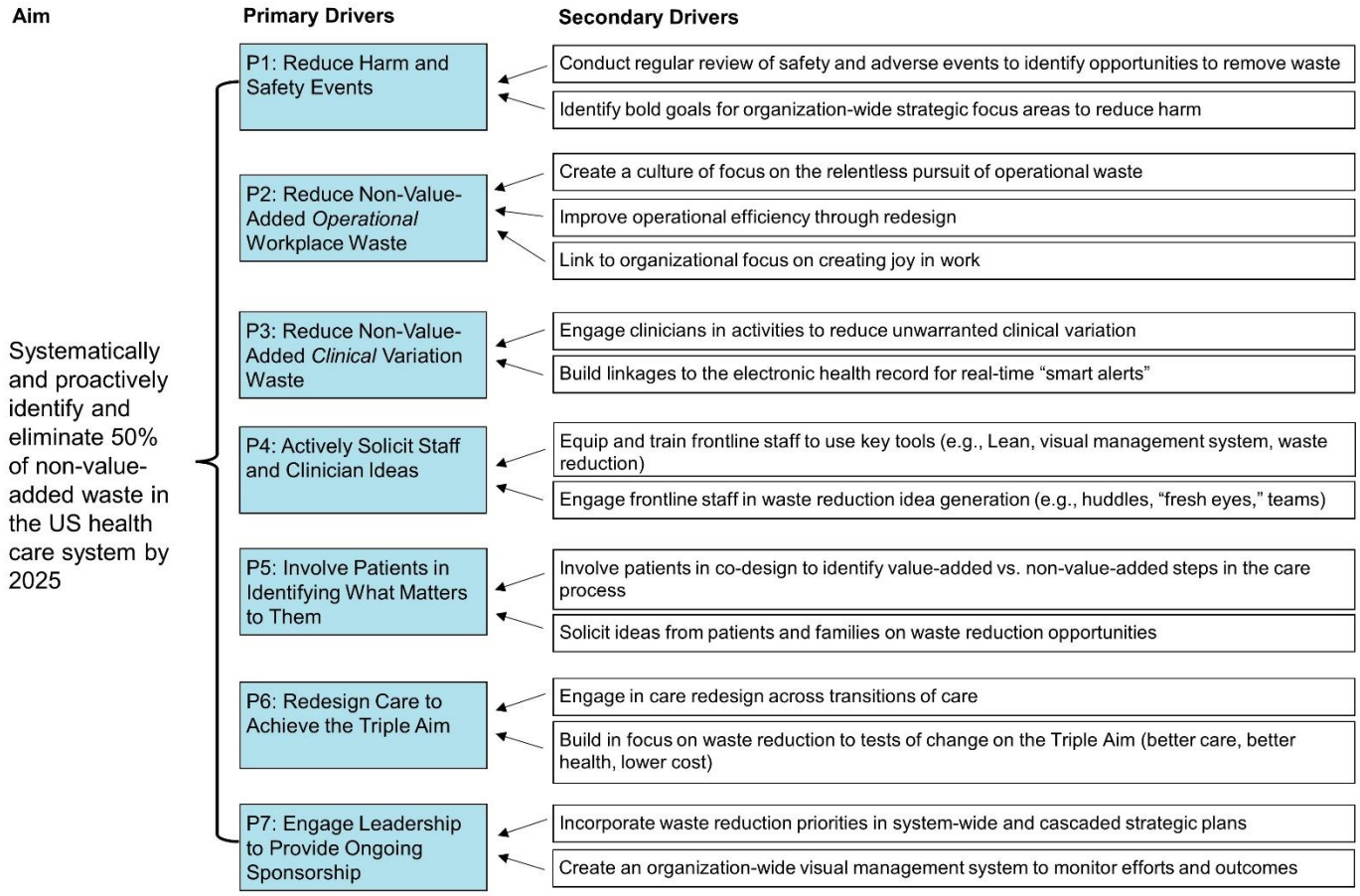
Finally, the following prediction should alarm us all: By Centers for Medicare & Medicaid Services estimates, if the current rise in health care expense is left unchecked, given the increasing number of older adults entering Medicare, the Medicare Hospital Insurance Trust Fund could be insolvent by 2026.[8] Thus, to sustain Medicare would require an ever-larger debt burden, with interest payments placed on our children and their children.

A Framework for Reducing Waste

In their 2006 article on clinical cost containment, Bisognano and Nolan noted that the broad aim of improving the value of any product or service can be divided into three categories as suggested by Noriaki Kano: eliminating quality problems, reducing costs (waste), and expanding the customer's expectation.[9]

The IHI Leadership Alliance recognizes that many health care organizations are committed to reducing waste, and yet there is still much more to do and learn from one another. The Alliance Waste Workgroup began its analysis of opportunities for waste reduction in health care, described in the "Trillion Dollar Checkbook,"[10] by first developing a driver diagram. The diagram articulates an audacious aim — **"Systematically and proactively identify and eliminate 50 percent of non-value-added waste in the US health care system by 2025"** — along with seven primary drivers (noted as P1 through P7) that will lead to attaining this aim, and secondary drivers or tactics that enable each primary driver (see Figure 3).[11] Together, the driver diagram and the Checkbook create a broad strategic framework for reducing non-value-added waste in health care.

Figure 3. Driver Diagram for Reducing Waste and Cost in the US Health Care System



The seven primary drivers foster action to reduce harm, reduce operational waste, reduce clinical waste, solicit staff and clinician ideas, involve patients in identifying what matters to them, redesign care to achieve the Triple Aim, and engage leadership (local, regional, and national) to sponsor the strategic work to reduce waste. It's important to note that primary driver "P7: Engage Leadership to Provide Ongoing Sponsorship" is an essential component of the other six drivers; leadership commitment is needed to provide the resources and strategic prioritization to the overall waste reduction work. P7 includes two secondary drivers:

- Incorporate waste reduction priorities in system-wide and cascaded strategic plans.
- Create an organization-wide visual management system to monitor efforts and outcomes.

In our view, a willingness to face the tough questions is fundamental to this work. Do we value the health of our patients and the nation more than our own individual and institutional profitability? As health care institutions and providers meaningfully reduce preventable waste, **at some point we will likely encounter situations in which lowering avoidable expenses will involve reducing income**. For example, while lowering infection rates typically reduces both harm to the patient and the expense of treatment, other changes, such as reducing C-section rates, may reduce revenue depending on the payer. However, as organizations shift their focus from volume to value, reducing financial waste allows the organization and the health care industry to allocate resources where they are most needed, as well as to participate in sharing in the total cost of care reduction.

Central to achieving the driver diagram's audacious aim is the need to **create opportunities for managers, staff, and clinicians at every level of the organization, as well as patients and families, to participate in reducing waste.** Patients and frontline staff are surrounded by waste in health care every day; we need to leverage their experience and expertise to identify non-value-added waste. Gaining access to and receiving coaching to use tools to eliminate that waste can foster joy in work and renew passion to heal. This, in turn, can jumpstart the generation of greater solutions for waste reduction as well as the buy-in to make the necessary changes.

Table 2 highlights specific improvement ideas for waste reduction for six of the primary drivers (P1 through P6) and the estimated financial impact on the US economy, described in more detail in the "Trillion Dollar Checkbook."[10] Some waste reduction ideas are "easy" (i.e., within the control of health systems to address), although if they were truly easy they would already be solved; other ideas are complex and require bolder approaches.

Table 2. Reducing Non-Value-Added Waste in Health Care: Drivers, Specific Improvement Ideas, and Estimated Financial Impact

Primary Drivers	Secondary Drivers	Examples of Specific Improvement Ideas to Reduce Waste *(Estimated financial impact on US economy in 2018 dollars, in $m [millions] or $b [billions])*
P1: Reduce Harm and Safety Events	• Conduct regular review of safety and adverse events to identify opportunities to remove waste • Identify bold goals for organization-wide strategic focus areas to reduce harm	• Infections *(est. $6.2b — including $2b surgical site infection, $1.4b central line-associated bloodstream infection, $21.9m catheter-associated urinary tract infection, $1.9b ventilator-associated pneumonia, $850m Clostridium difficile infection)* • Sepsis *(est. $4.6b to $5.7b)* • Medication Safety *(est. $14.7b to $20.7b)* • Opioid Use *(est. $11.1b to $18.4b — including $2.3b opioid poisoning events, $8.8b to $16.1b chronic opioid use)* • Overdiagnosis *(est. $33.7b — including $2b breast cancer, $8b hypertension, $11b pre-diabetes, $12.5b asthma, $269m Clostridium difficile testing)* • Staff Injuries *(est. $1.4b)* • Hospital-Acquired Conditions *(est. $6.4b to $9.1b — including $3.1b to $4b pressure ulcers, $1.5b to $3b venous thromboembolism, $1.8b to $2.1b falls)* • Maternal and Child Health *(est. $926.6m to $1.3b — including $5.2m obstetric adverse events, $87.1m to $222.2m nulliparous, term, singleton, vertex C-section, $1.1b malpractice claims)* • Delirium *(est. $14.8b to $59.1b)*

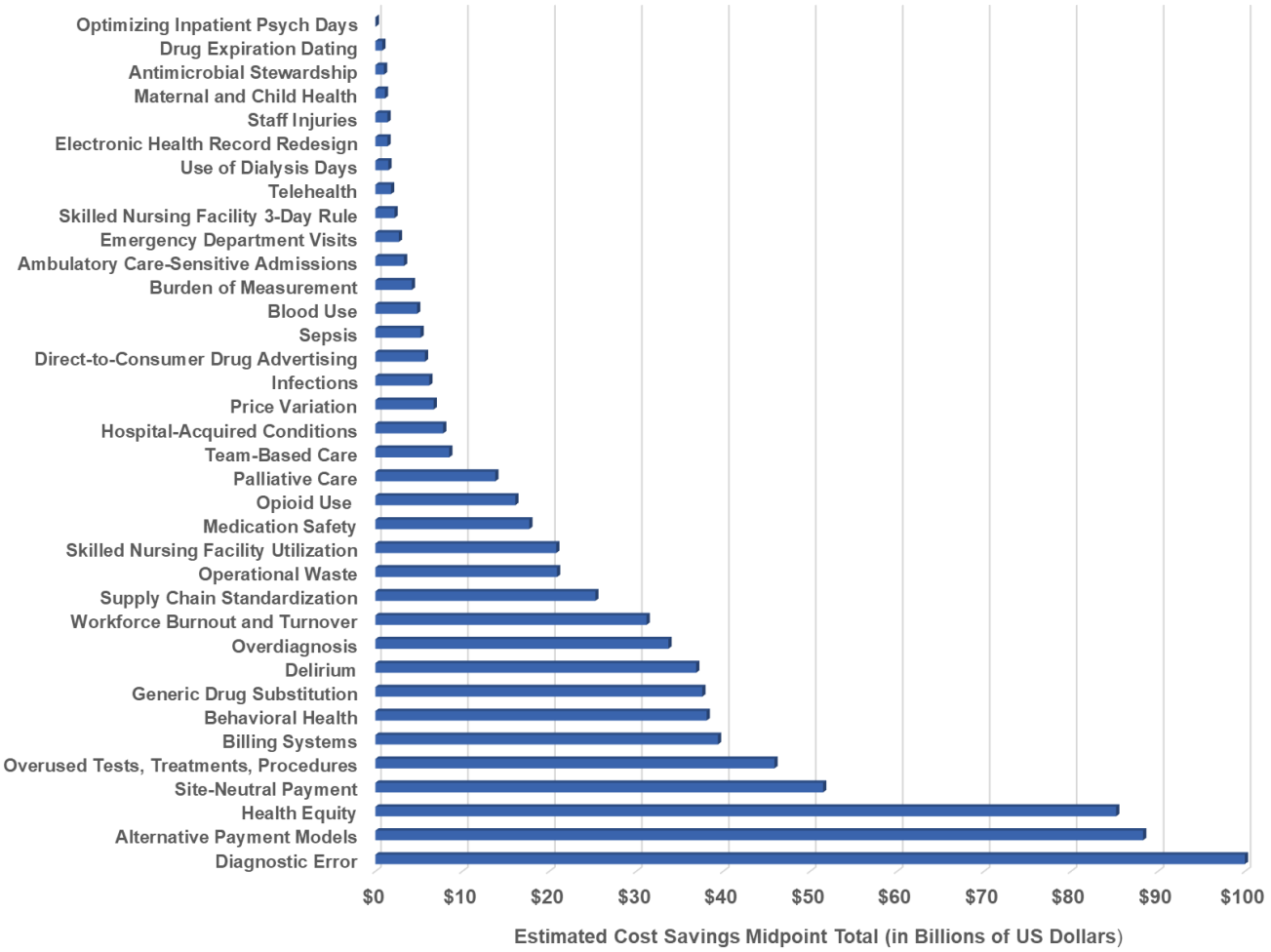
Primary Drivers	**Secondary Drivers**	**Examples of Specific Improvement Ideas to Reduce Waste** *(Estimated financial impact on US economy in 2018 dollars, in $m [millions] or $b [billions])*
P2: Reduce Non-Value-Added *Operational* Workplace Waste	• Create a culture of focus on the relentless pursuit of operational waste • Improve operational efficiency through redesign • Link to organizational focus on creating joy in work	• Drug Expiration Dating *(est. $790.1m)* • Billing Systems *(est. $30.6b to $48.1b)* • Team-Based Care *(est. $8.5b)* • Price Variation *(est. $1.3b to $12.1b)* • Burden of Measurement *(est. $4.2b)* • Electronic Health Record Redesign *(est. $1.5b)* • Supply Chain Standardization *(est. $25.3b)*
P3: Reduce Non-Value-Added *Clinical* Workplace Waste	• Engage clinicians in activities to reduce unwarranted clinical variation • Build linkages to the electronic health record (EHR) for real-time "smart alerts"	• Antimicrobial Stewardship *(est. $0.9b to $1.1b)* • Blood Use *(est. $3.6b to $5.9b)* • Diagnostic Error *(est. $100b)* • Overuse of Medical Tests, Treatments, and Procedures *(est. $45.9b)* • Generic Drug Substitution *(est. $37.6b)* • Direct-to-Consumer Drug Advertising *(est. $4.3b to $7.2b)*
P4: Actively Solicit Staff and Clinician Ideas	• Involve patients in co-design to identify value-added vs. non-value-added steps in care processes • Solicit ideas from patients and families on waste reduction opportunities	• Operational Waste *(est. $20.9b)* • Workforce Burnout and Turnover *(est. $29.9b to $32.4b — including $7.4b to $9.9b nurses, $22.5b physicians)*
P5: Involve Patients in What Matters Most to Them	• Involve patients in co-design to identify value-added vs. non-value-added steps in care processes • Solicit ideas from patients and families on waste reduction opportunities	• Palliative Care *(est. $12.9b to $14.7b — including $5.5b to $7.3b in-hospital, $7.4b ambulatory services)* • Telehealth *(est. $1.8b)* • Emergency Department Visits *(est. $2.5b to $3b)*

Primary Drivers	**Secondary Drivers**	**Examples of Specific Improvement Ideas to Reduce Waste** *(Estimated financial impact on US economy in 2018 dollars, in $m [millions] or $b [billions])*
P6: Redesign Care to Achieve the Triple Aim (better care, better health, lower cost)	• Engage in care redesign across transitions of care • Build in focus on waste reduction to tests of change on the Triple Aim	• Skilled Nursing Facility Utilization (vs. home-based care) *(est. $12.6b to $28.9b)* • Skilled Nursing Facility 3-Day Rule *(est. $1b to $3.4b)* • Behavioral Health *(est. $38.1b)* • Alternative Payment Models *(est. $64.7b to $111.8b — including $15b to $29b Medicare, $24.2b to $40.4b individual commercial health plans, $25.5b to $42.5b family commercial health plans)* • Health Equity *(est. $82.3b to $88b — including $3b to $8.7b homelessness, $13.1b access to food assistance, $66.2b racial disparities)* • Use of Dialysis Days *(est. $1.5b)* • Optimizing Inpatient Psychiatric Days *(est. $42.4m to $70.7m)* • Ambulatory Care-Sensitive Hospital Admissions *(est. $1.6b to $4.9b)* • Site-Neutral Payment *(est. $41.5b to $61.4b — including $38.2b to $55.6b commercial payers, $3.3b to $5.8b Medicare)*

Call to Action: Three Key Actions to Reduce Waste and Return the Cost Savings to Patients and the Economy

The specific improvement ideas referenced in Table 2 can be summarized in a Pareto chart in terms of potential financial impact (see Figure 4), based on estimated cost savings described in the Checkbook. Some ideas are more complex and require whole-system change, whereas others are more locally controlled.

Figure 4. Rank-Ordered Opportunities to Remove Waste in the US Health Care System Based on Estimated Cost Savings



Based on these opportunities, the IHI Leadership Alliance identified three key actions for health care leaders to reduce non-value-added waste in the US health care system and return the cost savings to patients and the economy.

Key Action 1:

Endorse local health system adoption of strategies to reduce non-value-added waste.

- Prioritize key drivers and projects by potential impact on patients and finances as well as by complexity of implementation. Organizations can begin by choosing one or a few items whose implementation is simpler — thereby building systematic local approaches to identifying and eliminating waste and maintaining gains.

- Adopt a Lean or other improvement approach to address the necessary evolution of mindset, methods, and management systems to focus waste reduction efforts at the point of care delivery — making the relentless search for and elimination of waste an integral part of the organization's DNA.

- Provide strategic and budgetary support for waste reduction efforts, including thoughtful engagement of Chief Financial Officers (CFOs). This support will entail upfront investment in the development of value improvement skills and the will to produce substantial long-term gains. Finance leaders are key partners in this work and they may identify waste that clinicians miss or are not aware of. Partnering with CFOs will also enhance the success of efforts such as promoting and adopting site-neutral payment, which may challenge traditional revenue streams but can be favorable for self-insured health care organizations, direct-to-employer contracting, and other value-based models. A successful approach to tackling these major sources of waste will require navigating the balance of long-term gain with short-term loss. It is also important to seek opportunities for creative contracting for value and shared savings.

Key Action 2:

Form collaborative partnerships for action in local, state, and national communities to address more complex waste reduction opportunities.

IHI Leadership Alliance leaders are calling on health systems and other stakeholders to join together to address complex, deeply embedded, inherently wasteful structures and processes in the US health care system. Through various kinds of collaboratives — local, national (such as through IHI), and other regional or global partnerships — health systems can take on complex forms of waste such as social and economic barriers to reducing health care costs. Examples of promising efforts include alternative payment models, partnerships with post-acute care providers, enhanced predictive analytics, and longer-term solutions such as addressing billing waste, equity, and behavioral health reforms.

Key Action 3:

Advocate for health care reforms and redesign to address systemic regulatory, legislative, and other barriers to repurposing or returning the cost savings to patients and the economy.

In order to address the most complex forms of waste, legislative changes are needed. In some cases, policy actually drives waste. For example, the Skilled Nursing Facility (SNF) 3-Day Rule mandates that a Medicare patient be admitted to an acute care hospital for three days before being admitted to a SNF, even if the patient does not require acute care. While patients should not be indiscriminately admitted to a SNF, this requirement is in many cases excessive, representing a form of non-value-added waste inadvertently created through regulation. Other such forms of complex waste in terms of avoidable costs include addressing social determinants of health and billing complexity. The needed redesign will take the collaborative efforts of providers, policy makers, and regulatory and legislative bodies.

Conclusion

Waste in the US health care system is real, of monumental and quantifiable magnitude, and stands in the way of sustainability of health care for all and achievement of the Triple Aim. This Call to Action and "Trillion Dollar Checkbook" companion document have undertaken to identify many forms of waste systematically and specifically, to quantify the potential savings that await both local and unified approaches to addressing these issues, and to develop a broad strategic framework to achieve the aim of driving out non-value-added waste in health care.

Our aspiration is that this approach will intrigue and inspire health care organizations, broader coalitions and collaborative partnerships, payers, and governmental agencies to act on this imperative issue. For this effort to bear fruit, it will require a concerted and coordinated effort in the relentless, thoughtful, and strategic pursuit of eliminating waste.

Now is the time for health systems and providers to commit to a Call to Action to do our part to reduce waste in the US health care system. The examples of improvement ideas to reduce waste highlighted in this document and in the "Trillion Dollar Checkbook" are certainly not exhaustive, and we invite organizations to contribute additional ideas.

To be sure, the work to identify and reduce waste is difficult. The absolute necessity of pursuing this work for the sake of better and more affordable care for all patients, and current and future generations, is equally certain.

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