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Waste in the Health Care World: An AHPI/VBID Collaboration

By Tevi Troy, CEO, American Health Policy Institute

America spends more money on health care than any other nation, both in absolute terms and as a percentage of GDP. With all of this spending, the U.S. does not always get better results in health care, and one of the reasons for the inefficiency of U.S. spending is waste. In its ongoing efforts to better understand the U.S. health system and the challenges employers face in covering 177 million Americans, the American Health Policy Institute worked with VBID Health to apply industry research and lessons learned on waste to the health care spending patterns of 35 large, self-insured employers. These 35 companies, which spend about $10 billion collectively in providing health care to about one million individuals, are representative of a cross-section of large U.S. employers, and can therefore provide a window into how much waste exists in a typical large employer health plan.

In applying industry research and lessons learned from the Health Waste Calculator tool to these 35 companies, VBID found approximately $2 billion in wasteful and unnecessary health care spending – approximately 20% of total spending. VBID broke the wasteful spending into four main categories: pharmacy; inpatient; outpatient; and administrative. Pharmacy, which was determined to generate 4% wasteful spending, suffered from problems such as over-prescription and non-adherence to drug regimes. Inpatient, generating 6% wasteful spending, was beset by problems such as medical errors, preventable admissions, and hospital acquired infections. Outpatient, which at 9% generated the highest waste score of the top categories, faced the problems of missed prevention opportunities and defensive medicine. Finally, administration, which at 2% wasteful spending was lower than the other main categories, had to cope with inefficient claims processing and excessive complexity.

In response to these problems, VBID recommended five specific and actionable goals. First, the use of software such as the Health Waste Calculator to assess spending at micro levels on a per-member per-month (PMPM) basis, to develop specific PMPM spending targets, and to assess the results of specific interventions. Second, implementing payment approaches that shift away from fee-for-service medicine in favor of value-based payments. Third, revising plan designs to encourage healthy behavior and discourage unnecessary and inappropriate care. Fourth, using predictive modeling to identify high risk patients by disease type and cost ranking. And finally, that large employers take advantage of their combined purchasing power and economies of scale.

These recommendations would not completely solve the problem of waste in health care, but they would go a long way towards alleviating it. At the heart of this effort is, and should be, a desire to improve patient health. Reducing waste in health care is one essential way we can not only lower costs, but also improve the quality of care in the process. America is unlikely to stop spending large amounts of money on health care. By reducing waste, we can begin to get the value we deserve for all of that spending.

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2016

Using Data-Driven Disruption To Reduce Wasteful Healthcare Spending

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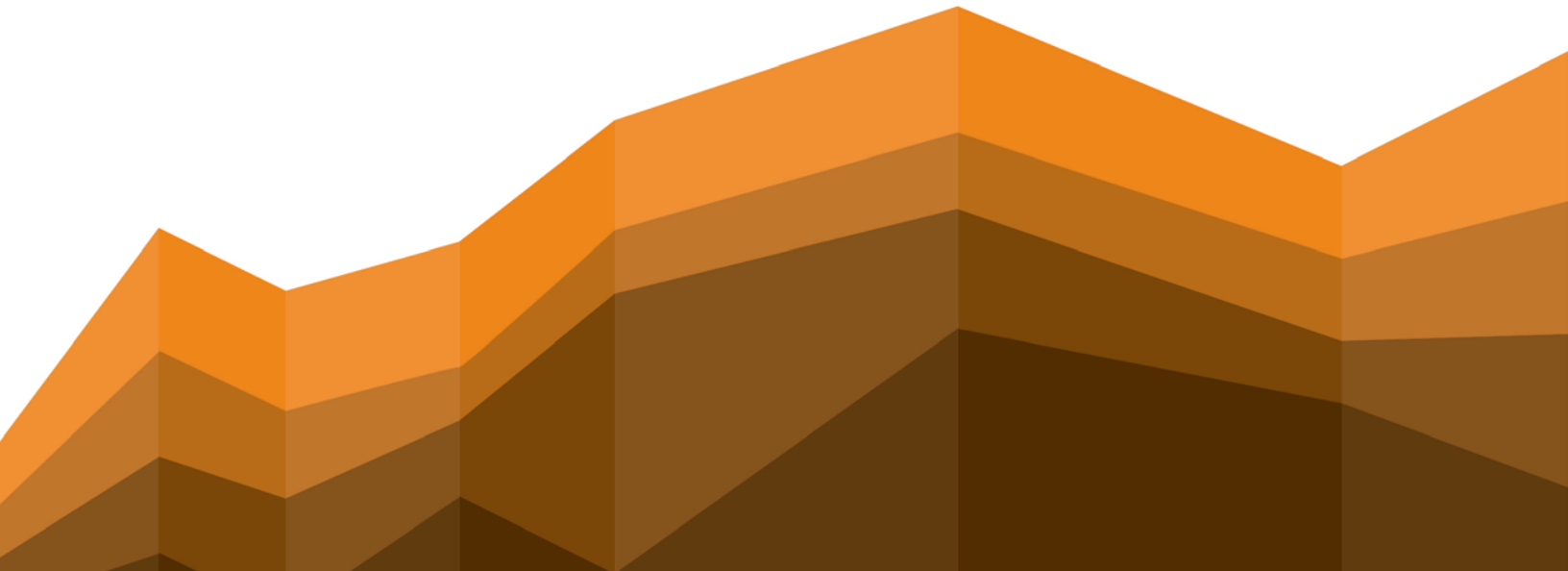

American Health Policy Institute (AHPI) is a non-partisan 501(c)(3) think tank, established to examine the impact of health policy on large employers, and to explore and propose policies that will help bolster the ability of large employers to provide quality, affordable health care to employees and their dependents. The Affordable Care Act has catalyzed a national debate about the future of health care in the United States, and the Institute serves to provide thought leadership grounded in the practical experience of America's largest employers. To learn more, visit americanhealthpolicy.org.

Value Based Insurance Design (VBID) Health specializes in designing and promoting health benefits plans that get more health out of every healthcare dollar spent by aligning patients' out-of-pocket costs, such as copayments and deductibles, with the value of health services. By reducing barriers to high-value treatments (through lower costs to patients) and discouraging low-value treatments (through higher costs to patients), these plans can improve health outcomes. VBID Health provides consulting services to large healthcare purchasers in both the private and public sectors. To learn more, visit www.vbidhealth.com.

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Abstract

Despite the laudable goals of the Affordable Care Act (ACA), to increase patient access, lower healthcare costs, and improve outcomes, wasteful spending for healthcare services remains an intractable problem. Given these concerns, the American Health Policy Institute (AHPI) and VBID Health collaborated on an analysis of wasteful spending of 35 large, self-insured employers based in the United States. This study concludes that over $2 billion of employer healthcare spending is wasteful and unnecessary, out of total spending of approximately $10 billion. One objective of this effort is to draw a distinction between high value and low value healthcare services in order to reduce or eliminate wasteful spending. Another goal is to reduce inefficiencies in healthcare delivery and financing, thereby producing greater value. Studies indicate that reductions in wasteful spending resulting in lower costs can also lead to higher quality care. This analysis lays the groundwork for accomplishing these objectives.

Introduction

The American Health Policy Institute (AHPI) seeks to address member issues around the cost of healthcare in the United States, and specifically how large employers can maximize the value of their healthcare purchasing dollars. It is not only important to understand it, but AHPI seeks to provide practical solutions to the critical issues faced by its members related to healthcare purchasing.

VBID Health and its data analytics subcontractor, FluidEDGE Consulting, have used sample utilization and cost data provided by AHPI to estimate wasteful spending for a population of large employers. This will be a high level overview using summary data, and not a detailed analysis of claims data. VBID Health normally applies a proprietary software system, called the Health Waste Calculator (HWC), using medical and pharmacy claims data to identify and quantify wasteful spending. In the absence of claims data, we use lessons learned from other HWC clients, along with research data cited in this report, to estimate wasteful spending and cost-savings opportunities.

Study Parameters

AHPI provided VBID Health with summary cost and utilization data from 35 de-identified companies. These companies comprised a total of approximately 1 million enrolled employees representing $9.8 billion of total healthcare spending. VBID Health utilized existing studies of wasteful and unnecessary healthcare spending to develop its measures from among the following resources:

- Harvard Business Review (HBR)[1]
- The National Academy of Medicine, formerly Institute of Medicine (IOM)[2]
- Pricewaterhouse Coopers “The Price of Excess” (PWC)[3]
- Midwest Business Group on Health “Cost of Poor Quality” (MBGH)[4]
- Dartmouth Atlas[5]
- Milliman Medical Index[6]

Study methodologies and resultant findings varied considerably across these studies. Each was a ‘macro’ level study, with conclusions about generalized levels of wasteful spending which are not directly applicable to ‘micro’ levels of spending for a specific employer. The HBR study cited above was titled “How the US Can Reduce Wasteful Spending in Healthcare By $1 Trillion,” published in October 2015 and based on the original research and analysis conducted by Dr. Donald M. Berwick and Andrew D. Hackbarth.[7] This study concludes that 35% of total spending is estimated to be wasteful, divided into four major categories as shown in the chart on the following page.

Types of Waste in U.S. Health Care Spending

CATEGORY	DESCRIPTION	PERCENT OF HEALTH CARE SPENDING
CLINICAL WASTE	Spending that could be reduced with better prevention or higher-quality initial care; replacing services with less-resource-intensive alternatives; or improving processes by standardizing best practices	14%
ADMINISTRATIVE COMPLEXITY	Spending that could be eliminated with simpler, more-standardized processes for billing and collections, credentialing, compliance, and oversight	9%
EXCESSIVE PRICES	Overspending resulting from paying high prices charged by inefficient suppliers (including providers), which could be eliminated by tying prices to efficiency, outcomes, and a fair profit	5%
FRAUD AND ABUSE	Spending associated with illicit schemes to extract payments for the illegitimate delivery of health care services	7%

NOTE THE THREE DESCRIPTIONS OF CLINICAL WASTE ARE AN AGGREGATION OF BERWICK AND HACKBARTH'S ORIGINAL ANALYSIS.
SOURCE "ELIMINATING WASTE IN U.S. HEALTH CARE," BY DONALD M. BERWICK AND ANDREW D. HACKBARTH, 2012

In comparison to the references above, VBID Health takes a more conservative approach to estimating waste with an eye toward finding realistic opportunities to reduce costs. Leading medical experts agree that 30 percent or more of health spending is considered wasteful, not providing any benefits to patients.[8] Again, in the absence of claims data, these are not precise measures, but we used the macro studies cited above and lessons learned from the early adopters of the HWC to develop the AHPI model of wasteful spending and potential savings. Our report includes a detailed description of the HWC and its application to our findings, along with the methodology and references for developing the AHPI potential savings model.

The Health Waste Calculator (HWC)

The HWC is an analytical tool jointly developed by VBID Health and Milliman that is used to quantify and report on potentially wasteful healthcare expenditures. The ongoing challenge of increasing efficiency in healthcare spending requires improvements in the way we collect, analyze, and report key data elements. HWC was developed to address this challenge.

The HWC incorporates a set of algorithms that process claims or electronic health record data to quantify potentially wasteful services. These algorithms are based on certain national initiatives and research to identify wasteful services, including the Choosing Wisely program of the American Board of Internal Medicine (ABIM)[9] Foundation, the U.S. Preventive Services Task Force, and other sources. The net result is a software tool, the HWC, that can add significant value to existing cost and quality reporting capabilities, specifically those efforts designed for efficiency and effectiveness measurement.

The use of the Choosing Wisely criteria is a distinguishing characteristic of the HWC because of the important role played by the ABIM Foundation. Since 2012, the Foundation has met with various specialty medical societies to advance the national dialogue on ways to avoid wasteful or unnecessary medical tests, treatments, and procedures. Over seventy specialty medical societies have provided recommendations about appropriateness of care based on a patient's individual situation.

The ABIM Foundation also publishes lists of "Things Providers and Patients Should Question" in order to help guide the doctor-patient dialogue over what care is needed, desired, and appropriate. Furthermore, ABIM Foundation has teamed with Consumer Reports to educate patients through patient friendly materials that talk about 'best' care and highlight questions that patients should ask their doctors. This information is built into the HWC algorithms.

Using medical and pharmacy claims data, billing, or electronic medical record data, the HWC applies these algorithms to identify potentially wasteful services. The system not only identifies potentially inefficient services but also defines the services with a degree of appropriateness for care:

- A ***wasteful*** score, flags a cause for concern as the service should not have been delivered.
- A ***likely to be wasteful*** score, indicates the need to question the appropriateness of service rendered.
- A ***necessary*** score, suggests appropriate services were administered by the health care provider.

One early adopter of the HWC is the Washington Health Alliance (formerly Puget Sound Health Alliance) which brings together patients, providers, and purchasers to reduce overuse, underuse, and misuse of healthcare services. The Washington State Choosing Wisely Task Force was formed in 2013 to begin applying data analytics to address this issue. Some early findings[10] that raise significant concerns about the cost and quality of care include the following:

- 21% of patients statewide with uncomplicated headaches received a potentially unnecessary CT or MRI scan.
- 26% of patients statewide with sinus infections are receiving antibiotics.
- 20% of patients statewide with uncomplicated low back pain had a potentially unnecessary imaging within six weeks of diagnosis.
- Women are receiving Pap tests too frequently, though results have improved over time.
- Unexplained variations exist in treatment patterns by geography (at the county level).

Another early adopter is the Virginia Center for Health Innovation, which operates a statewide 'All Payers Claims Database' (APCD). A recent report called "Successes of Virginia's SIM Design"[11] produced the following ranking of wasteful spending using the HWC and based on the Choosing Wisely criteria:

Rank by Cost	Waste Measure	Wasteful Services (#)	Wasteful Spending ($)	Rank by Frequency
1	Annual EKGs or Cardiac Screening	99,668	$39,613,510	**3**
2	Routine PAP in Women 21 - 65	150,761	$29,487,580	**2**
3	NSAIDs for Hypertension, Heart Failure, Chronic Kidney Disease	42,955	$18,650,429	**5**
4	Antibiotics for Acute Rhinosinusitis	158,903	$16,740,830	**1**
5	Prostate-Specific Antigen (PSA)	81,767	$11,849,435	**4**

The HWC reporting package includes Milliman benchmarks for spending efficiency in order to establish spending targets, improve the comparative analysis process, and upgrade spending efficiency. Milliman' s summary of findings from the Virginia Center for Health Innovation and other early adopters of the HWC methodology yield the following results from the initial 43 waste measures:

- 20% of members are exposed to one or more wasteful services.
- 36% of designated services were deemed to be wasteful.
- 2.4% of total claims dollars, or $11.94 per member per month (PMPM) of an estimated $497.50 PMPM of total claims are wasted.

The 2016 HWC Development Roadmap is shown in Attachment I to this report, including a complete list of the waste measures currently in place and under development. The above measures of waste are small in comparison to the macro studies previously cited. However, these measures are based on the initial 43 HWC measures, up through Version 4.0 of the software development. These measures will increase as more algorithms are developed and additional measures are released. Significantly, the HWC allows users to move from the macro to the micro level in the important process of quantifying and reducing wasteful spending.

AHPI Potential Savings Model

Based on existing research, VBID Health developed the AHPI potential savings model using conservative estimates of wasteful spending for each of the spending categories in the AHPI data survey: pharmacy, inpatient, outpatient, professional services, and administration. De-identified data was collected from 35 employers and adjusted in order to correct for either zero dollars in a field or differences between either dollars or values entered into the same field. For a few employers, the detail did not sum to the totals and appropriate corrections were made.

Certain measures of waste may be applied to a single AHPI spending category, and others cut across all categories. For example, the Institute of Medicine[12] describes wasteful spending that cuts across all of the categories, specifically for unnecessary services ($210 billion or 7.5% of total spending), inefficient care ($130 billion representing 4.6%), and fraud ($75 billion representing 2.7%). Excess pricing and excessive profits are another driver of wasteful spending that cuts across

all of the areas of analysis.[13] The results of our analysis are shown in the table below, followed by a description by category of how model estimates were developed:

Spending Category	Estimated Wasteful Spending (as a % of Total)	Primary Factors
Pharmacy	4%	Over prescribing of antibiotics; drug misuse; excessive pricing; fraud and abuse
Inpatient	6%	Preventable hospital readmissions; medical errors and hospital acquired infections; overuse; excessive pricing; fraud and abuse
Outpatient	9%	Treatment of chronic illness (diabetes, asthma, CHF, depression); unnecessary ER visits; defensive medicine; missed prevention opportunities; excessive pricing; fraud and abuse
Professional		
Administration	2%	Inefficient claims processing; TPA pricing levels; operational complexity; ineffective use of IT

Pharmacy—4% wasteful spending

It is critically important to understand and properly manage costs for prescription drugs because it is a fast growing expense category where we do not want to be "penny wise and pound foolish". The goal is to reduce medication errors[14] and overuse of antibiotics, while continuing to take advantage of pharmaceutical breakthroughs leading to cost-effective alternatives to expensive inpatient care. Specific references used to develop our estimate of wasteful pharmacy spending are:

- $100 billion from non-adherence to drug regimens, representing 3.3% of spending, reported by PWC[15] and $1 billion from over prescribing of antibiotics.
- Overuse of antibiotics of $5 billion (.3% of spending) and up to $300 billion from drug misuse, reported by MBGH[16].
- Published information on the rate and cost of medication errors leading to harm or potential adverse drug events varies greatly, up to $26 billion.[17]

Inpatient—6% wasteful spending

Wasteful spending for inpatient care occurs for medical treatments that can be safely performed in outpatient settings. Once patients are hospitalized, there is a level of waste that results from medical errors, hospital acquired infections, and other failures of the system leading to extended stays, unnecessary readmissions, and other complications. We specifically cite the following:

- The Leapfrog Group reports that employers pay approximately $8000 per hospital admission for errors, injuries, accidents, and infections, or 5.79% of total health care expenses lost to medical errors.[18]
- The PWC report cites preventable hospital readmissions ($25 billion or .83%); medical errors ($17 billion or .56%); hospital acquired infections ($3 billion, <1%).
- Overuse of inpatient care and preventable hospital acquired infections constitute $18 billion in waste of 1.2% of spending.[19]

Outpatient and Professional Services—9% wasteful spending

VBID Health combined these two categories of spending in the AHPI data summaries because the research and literature did not lend itself to distinguishing waste in these areas. Major areas of wasteful spending were the inappropriate treatment of chronic illness, unnecessary and inappropriate use of emergency room care, and defensive medicine. The vast majority of micro level measures of

waste in the HWC algorithms are for outpatient and professional care. Specific citations are as follows:

- Wasteful spending reported by MBGH for treatment of diabetes ($132 billion, 8.8%), depression ($80 billion, 5.3%), asthma ($18 billion, 1.2%), and congestive heart failure ($25 billion, 1.7%)
- Missed prevention opportunities reported by the IOM report ($55 billion, 1.9%)
- The PWC report includes references to waste for defensive medicine ($210 billion or 7% of total spending) and unnecessary ER visits ($14 billion or .46%).

Administration—2% wasteful spending

The administrative component of healthcare spending is complex and can be inefficient and expensive. The additional cost from excessive pricing and fraud/abuse were calculated back into the other categories. Since the cost of administration as a percentage of total spending is lower for larger employers, we conservatively reduced our estimates of waste using the following studies:

- Inefficient claims processing representing $210 billion or 7% (PWC).
- Staff turnover, operational complexity, ineffective use of information technology representing $88 billion or 2.9% (PWC).
- Administrative complexity, $248 billion or 8.9% of total spending (HBR).

VBID Health would normally consider factors such as 'missed prevention opportunities' and 'non-adherence to drug regimens' as inefficiency and not waste, but these factors are included in most of the above referenced studies. Our results include these measures and are presented both in terms of total spending (dollars) and spending per member per month (PMPM).

The table below summarizes total healthcare spending for the 35 companies participating in the AHPI study, segregated by active employees (currently enrolled in a health benefits plan) and retirees not yet eligible for Medicare benefits. (Note: Data collected on Medicare spending was not uniform across employers and therefore excluded from this report). The model previously reviewed, using estimates of waste as a percentage of total spending, was applied and yielded total estimated waste (and potential savings) of just over $2 billion.

AHPI Measures of Waste and Potential Savings (in Dollars)

Health Spending	Total $ Spending (000)		Estimated Wasted $ (000)		Target $ Spending (000)	
	Active	Pre-Med. Ret.	Active	Pre-Med. Ret.	Active	Pre-Med. Ret.
Pharmacy	$1,431,308	$270,999	$330,660	$57,595	$1,100,648	$213,404
Inpatient	$2,025,596	$355,284	$495,990	$86,393	$1,529,606	$268,891
Outpatient & Prof.	$4,174,410	$771,784	$743,784	$129,590	$3,430,626	$642,194
Admin.	$635,179	$41,818	$165,330	$28,798	$469,849	$13,020
TOTAL	$8,266,493	$1,439,885	$1,735,764	$302,376	$6,530,729	$1,137,509
ESTIMATED WASTE AND POTENTIAL SAVINGS: $2.04 Billion						

In addition to reviewing total spending, VBID Health created per member per month (PMPM) values for each employer (claims/members) in each of the spending categories, as well as for total spending. VBID Health summarized this data for all employers in order to establish the total gross dollar cost and resulting PMPM values. In order to enhance the accuracy of the results, VBID Health then utilized a subset of available employer data by service category to improve the baseline PMPM values. From this subset, VBID Health further applied these PMPM values to total member months, thereby establishing adjusted line item level values. The net results on a PMPM basis are shown below. Note that in the last two columns, measures of wasteful spending are summarized both as a percentage of total spending (per the AHPI Potential Savings Model) and within each spending category.

AHPI Measures of Waste and Potential Savings (PMPM)

Health Spending	Spending PMPM		Estimated Waste PMPM		Wasteful Spending (%)	
	Active	Pre-Med. Ret.	Active	Pre-Med. Ret.	% of Total	% By Category
Pharmacy	$62.36	$120.02	$14.41	$25.51	4%	23%
Inpatient	$88.25	$157.35	$21.61	$38.26	6%	24%
Outpatient & Prof.	$181.87	$341.81	$32.42	$57.40	9%	18%
Admin.	$27.67	$18.52	$7.20	$12.75	2%	29%
TOTAL	$360.15	$637.70	$75.63	$133.92	21%	N/A

Recommendations—Initial Steps to Reduce Waste

Strategies to effectively mitigate waste remain elusive despite numerous studies pointing toward wasteful healthcare spending representing 30% to 40% of the total. Future efforts to mitigate waste must lead to meaningful change, most likely through a process of 'data-driven disruption'.

A concerted effort in disruptive management can lead to desired changes to the health care status quo. The good news is that such an effort is a 'win-win' for employers and their employees. Reducing waste bends the health care cost curve without cost-shifting to employees, while at the same time improving health status and worker productivity. The bad news is that wasteful spending is someone's income (primarily the providers of low value care) and employers can expect push back on any efforts that can reduce someone's income. But, solutions to rising healthcare costs do exist[20], and we conclude our report with certain practical recommendations about potential solutions:

- Informatics and Data Warehousing. Efforts to identify, quantify, and reduce wasteful spending starts with effective data analysis and reporting. Data based on a percentage of total spending is interesting but not very useful. ***We recommend use of software such as the Health Waste Calculator to assess spending at micro levels on a PMPM basis, to develop specific PMPM spending targets, and to assess the results of specific interventions.*** Plan sponsors should aggregate claims data into reports and scorecards that provide rapid indicators of successes and opportunities for improvement.

- Value-Based Payments. ***We recommend implementing payment approaches that shift away from fee-for-service medicine in favor of value-based payments.*** Data on episodes of care are leading to payment reforms for specialties such as maternity, orthopedics, and cardiology.

Employ the application of data to identify high value providers and modify provider contracting accordingly (e.g., narrow networks, centers of excellence). Payment reform must be accompanied by increased transparency, along with useful tools such as bundled payments and reference pricing.

- Plan Design to Optimize Efficiency. It is critically important to align financial incentives between patients, providers, and the purchaser of care. In concert with value-based payments discussed above, ***we recommend revisions to plan designs to encourage healthy behavior and discourage unnecessary and inappropriate care.*** A so-called 'High Value Health Plan' pays more for high value services and pays less (or nothing) for low or no value care.

- Predictive Modeling and Risk Scoring. An important goal is to maintain the well-being of healthy employees and identification of those at-risk employees for whom proactive case management may be appropriate. ***We recommend that employers use predictive modeling to identify high risk patients by disease type and cost ranking.*** Risk scores are created for each patient and often applied as a normalization tool for provider analysis. Reinsurance firms can leverage these tools to assist in high cost case management which will reduce the impact on a self-insured employer's overall costs (e.g., stop-loss reinsurance).

- Administrative Efficiency. A significant portion of wasteful spending is the result of operational inefficiencies, excessive pricing, fraud and abuse, and other factors. ***We recommend that large employers take advantage of their combined purchasing power and economies of scale.*** Where possible, we would encourage developing shared services, group purchasing (e.g., TPA, Centers of Excellence), adoption of best practices, and other benefits of scale.

There is no 'one size fits all' solution to excessive healthcare spending. Using the tools discussed above and others, a customized solution is available to virtually any plan sponsor willing to disrupt the status quo consistent with their specific opportunities and constraints. When enough employers engage accordingly, our country will find its way to a healthier future, financially and otherwise.

About the Authors

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MedInsight Waste Calculator

Milliman

MedInsight

OVERVIEW

The MedInsight Health Waste Calculator is an analytical tool that provides actionable data to support healthcare quality, efficiency, and effectiveness reporting. The calculator brings together clinical expertise and powerful data analytics, allowing health care managers to target and reduce wasteful spending.

Our comprehensive measures are developed and constantly refined to provide the most innovative and up-to-date healthcare analytics by Milliman healthcare experts and our partners at VBID Health, Mike Chernew, Ph. D and Mark Fendrick, MD.

The sources we are leveraging our measures from include:

- Choosing Wisely (from the ABIM Foundation)
- US Preventive Services Task Force Grade D Recommendations (recommendations against the service), for which there is moderate to high certainty that the service has no net benefit or that the harms outweigh the benefits
- The American Medical Association's Physician Consortium for Performance Improvement
- The United Kingdom's National Institute for Health and Care Excellence (NICE) Recommendations on High Quality Care
- Medical Specialty Society Guidelines
- Numerous high-quality, evidence-based research papers, such as these recent publications:
    - Schwartz AL, Chernew ME, Landon BE, McWilliams J. Changes in Low-Value Services in Year 1 of the Medicare Pioneer Accountable Care Organization Program. JAMA Intern Med. Published online September 21, 2015
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RATIONALE FOR DEVELOPING THE MEASURES

Milliman and VBID Health continue to research and add to our growing list of over 450 measures in our research pipeline. We are striving to identify at least 2 measures per medical society. We also have themes in our release such as version 4's focus on pre-operative testing. In general, the prioritization of our measures are based on the criteria listed below:

- High prevalence rate or incidence of the wasteful events as reported in different publications;
- High cost impact due to the wasteful events;
- Representation of different specialties or clinical conditions;
- Representation of different types of services (e.g., preventive screening tests and diagnostic tests and prescription of drugs); and
- Representation of relevant measures for different age groups (children, adults, elderly, or all population), as well as gender-specific measures.

HEALTH WASTE CALCULATOR PRODUCTION MEASURES			
Waste Headline	**Waste Short Description**	**Waste Mnemonic**	**Software Version**
Antibiotics for Acute Rhinosinusitis	Don't indiscriminately prescribe antibiotics for uncomplicated acute rhinosinusitis.	AI01b	v1
Coronary Artery Calcium Scoring for Known CAD	Don't use coronary artery calcium scoring for patients with known coronary artery disease (including stents and bypass grafts).	SCCT01	v1
Headache Image	Don't do imaging for uncomplicated headache.	ACR01	v1
Immunoglobulin G/ immunoglobulin E Testing	Don't perform unproven diagnostic tests, such as immunoglobulin G (IgG) testing or an indiscriminate battery of immunoglobulin E (IgE) tests, in the evaluation of allergy.	AI02	v1
Lower Back Pain Image	Don't do imaging for low back pain within the first six weeks, unless red flags are present.	AFP02	v1
PSA	Don't perform PSA-based screening for prostate cancer in all men regardless of age.	URG01	v1
Radiographic Imaging for Uncomplicated Acute Rhinosinusitis	Don't routinely obtain radiographic imaging for patients who meet diagnostic criteria for uncomplicated acute rhinosinusitis.	AOHN04	v1
Routine Annual Stress Testing	Don't perform routine annual stress testing after coronary artery revascularization.	NMMI02	v1
Stress Cardiac Imaging or Advanced Non-Invasive Imaging	Don't perform stress cardiac imaging or advanced non-invasive imaging in the initial evaluation of patients without cardiac symptoms unless high-risk markers are present.	AC01	v1
Annual EKGs or Cardiac Screening	Don't order annual electrocardiograms (EKGs) or any other cardiac screening for low-risk patients without symptoms.	AFP05	v2
Antibiotics for Adenoviral Conjunctivitis	Don't order antibiotics for adenoviral conjunctivitis (pink eye).	AO03	v2
Colonoscopy	Don't order unnecessary screening for colorectal cancer in adults older than age 50 years.	GE01	v2
CT Head/Brain for Sudden Hearing Loss	Don't order computed tomography (CT) scan of the head/brain for sudden hearing loss.	AOHN01	v2
CT Scans for Pediatric Headache	Don't perform computed tomography scans on children being treated for headache.	AAP06	v2
Dexa	Don't use dual-energy x-ray absorptiometry (DEXA) screening for osteoporosis in women younger than 65 or men younger than 70 with no risk factors.	AFP03	v2
Diagnostics Chronic Urticaria	Don't routinely do diagnostic testing in patients with chronic urticaria.	AI03	v2
Echocardiography as Routine Follow-Up	Don't perform echocardiography as routine follow-up for mild, asymptomatic native valve disease in adult patients with no change in signs or symptoms.	AC02	v2
ED CT Scans for Dizziness	Don't perform routine head CT scans for emergency room visits for severe dizziness.	JH001	v2
Electroencephalography (EEG) for Headaches	Don't perform electroencephalography (EEG) for headaches.	AN01	v2
Exercise Electrocardiogram	Don't obtain screening exercise electrocardiogram testing in individuals who are asymptomatic and at low risk for coronary heart disease.	ACPY02	v2
Imaging of the Carotid Arteries for Simple Syncope	Don't perform imaging of the carotid arteries for simple syncope without other neurologic symptoms.	AN02	v2
Neuroimaging in a Child with Simple Febrile Seizure	Don't perform Neuroimaging (CT, MRI) in a child with simple febrile seizure.	AP04	v2
NSAIDs for Hypertension, Heart Failure, or CKD	Don't prescribe nonsteroidal anti-inflammatory drugs (NSAIDS) in individuals with hypertension or heart failure or CKD of all causes, including diabetes.	SNP04	v2
Oral Antibiotics for Uncomplicated Acute External Otitis	Don't prescribe oral antibiotics for uncomplicated acute external otitis.	AOHN03	v2
Pap Smear Hysterectomy	Don't perform Pap smears on women with previous hysterectomy.	AFP04	v2
Pap Smear Under 21	Don't perform Pap smears on women younger than 21.	AFP01	v2

HEALTH WASTE CALCULATOR PRODUCTION MEASURES			
WASTE HEADLINE	**WASTE SHORT DESCRIPTION**	**WASTE MNEMONIC**	**SOFTWARE VERSION**
Radionuclide Imaging	Don't perform radionuclide imaging as part of routine follow-up in asymptomatic patients.	SNC01	v2
Routine Pap in Women 21–65 Years of Age	Don't perform routine annual cervical cytology screening (Pap tests) in women 21–65 years of age.	COGY02	v2
Syncope Image	Don't obtain brain imaging studies (CT or MRI) in the evaluation of simple syncope and a normal neurological examination.	ACPY01	v2
Antidepressants Monotherapy in Bipolar Disorder	Don't prescribe antidepressants as monotherapy in patients with bipolar I disorder.	DOR85	v4
Arthroscopic Lavage and Debridement for Knee Osteoarthritis	Don't perform arthroscopy with lavage and/or debridement in patients with a primary diagnosis of symptomatic osteoarthritis of the knee.	DOR21	v4
Cervical Cancer Screen in Women Over 65 Years	Don't screen women older than 65 years of age for cervical cancer who have had adequate prior screening and are not otherwise at high risk for cervical cancer.	AFP07	v4
Cough and Cold Medicines in Children Under 4 Years	Don't prescribe or recommend cough and cold medicines for respiratory illnesses in children under four years of age.	AP02	v4
CT for Kidney Stones	Don't order CT scans in those suspected with kidney stones prior to an ultrasound.	URA06	v4
Inductions of Labor or Cesarean Deliveries before 39 Weeks	Don't schedule elective, non-medically indicated inductions of labor or Cesarean deliveries before 39 weeks, 0 days gestational age.	COGY01	v4
MRI for Inflammatory Arthritis	Don't perform MRI of the peripheral joints to routinely monitor inflammatory arthritis.	ACRH03	v4
Oral Antibiotics for Uncomplicated Acute Tympanostomy Tube Otorrhea	Don't prescribe oral antibiotics for uncomplicated acute tympanostomy tube otorrhea.	AOHN02	v4
Postcoital Test for Infertility	Don't perform a postcoital test (PCT) for the evaluation of infertility.	ASRM03	v4
Preoperative Baseline Laboratory Studies	Don't obtain baseline laboratory studies in patients without significant systemic disease (ASA I or II) undergoing low-risk surgery – specifically complete blood count, basic or comprehensive metabolic panel, coagulation studies when blood loss (or fluid shifts) is/are expected to be minimal.	ASA01a	v4
Preoperative Cardiac Echocardiography or Stress Testing	Don't obtain baseline diagnostic cardiac testing (trans-thoracic/esophageal echocardiography – TTE/TEE) or cardiac stress testing in asymptomatic stable patients with known cardiac disease (e.g., CAD, valvular disease) undergoing low or moderate risk non-cardiac surgery.	ASA02	v4
Preoperative ECG, Chest X Ray, and PFT	Don't obtain ECG, chest X rays or Pulmonary function test in patients without significant systemic disease (ASA I or II) undergoing low-risk surgery.	ASA01b	v4
Screening for 25-OH-Vitamin D Deficiency	Don't perform population based screening for 25-OH-Vitamin D deficiency.	SCP01	v4
Sperm Function Testing	Don't perform advanced sperm function testing, such as sperm penetration or hemizona assays, in the initial evaluation of the infertile couple.	ASRM02	v4

Q4 2016 RELEASE – SCHEDULED MEASURES (SCHEDULED)			
WASTE HEADLINE	**WASTE SHORT DESCRIPTION**	**WASTE MNEMONIC**	**SOFTWARE VERSION**
Coronary Angiography for Patients without Cardiac Symptoms	Don't perform coronary angiography in patients without cardiac symptoms unless high-risk markers present.	SNUC01	v5
CT for Abdominal Pain	Don't perform Computed tomography (CT) scans in the routine evaluation of abdominal pain.	AP05	v5
Imaging Tests for Eye Disease	Don't routinely order imaging tests for patients without symptoms or signs of significant eye disease.	AO02	v5
Revascularization versus Medical Therapy for Renal-Artery Stenosis	Don't perform revascularization without prior medical management for renal artery stenosis.	DOR124	v5

Q4 2016 RELEASE – SCHEDULED MEASURES (SCHEDULED)			
Waste Headline	**Waste Short Description**	**Waste Mnemonic**	**Software Version**

Note Q4 2016 and Q1 2017 Release is dedicated to ICD10 research, code update and research update in addition to new measure development.

Q1 2017 RELEASE – SCHEDULED MEASURES (TENTATIVE)			
Waste Headline	**Waste Short Description**	**Waste Mnemonic**	**Software Version**
Antibiotics Before or After Intravitreal Injections	Don't routinely provide antibiotics before or after intravitreal injections.	AO04	v6
Antibiotics for Apparent Viral Respiratory Illnesses (Pharyngitis, Bronchitis)	Don't prescribe antibiotics for apparent viral respiratory illnesses (pharyngitis, bronchitis).	AP01	v6
Bleeding Time	Don't use bleeding time test to guide patient care. (Bleeding time test is obsolete.)	SCP05	v6
Cerclage in Women with Short Cervix	Don't place a cerclage in women with short cervix who are pregnant with twins.	SMFM02	v6
Palliative Radiation	Don't recommend more than a single fraction of palliative radiation for an uncomplicated painful bone metastasis.	HPM03	v6
PFT Prior to Cardiac Surgery	Don't recommend pulmonary function testing prior to cardiac surgery, in the absence of respiratory symptoms.	STHS05	v6
Vertebroplasty for Osteoporotic Vertebral Fractures	Don't perform vertebroplasty for osteoporotic vertebral fractures.	DOR121	v6
Vision Therapy for Patients with Dyslexia	Don't recommend vision therapy for patients with dyslexia.	AAPOS03	v6
Imaging Studies after a First Febrile Urinary Tract Infection in Young Children	Don't perform voiding cystourethrogram (VCUG) routinely in first febrile urinary tract infection (UTI) in children aged 2–24 months	DOR28	v6
PICC Stage III–V CKD	Don't place peripherally inserted central catheters (PICC) in stage III–V CKD patients without consulting nephrology.	SNP01	v6

Q2 2017 RELEASE – SCHEDULED MEASURES (TENTATIVE)			
Waste Headline	**Waste Short Description**	**Waste Mnemonic**	**Software Version**
Proton beam therapy for prostate cancer	Don't routinely recommend proton beam therapy for prostate cancer outside of a prospective clinical trial or registry.	ASRO04	v7
Total or free T3 level	Don't order a total or free T3 level when assessing levothyroxine (T4) dose in hypothyroid patients.	AACE04	v7
Surgical deactivation of migraine trigger points	Don't recommend surgical deactivation of migraine trigger points outside of a clinical trial.	AHS03	v7
Oral antibiotics for treatment of atopic dermatitis	Don't use oral antibiotics for treatment of atopic dermatitis unless there is clinical evidence of infection.	AAD04	v7
Homocysteine testing for CVD	Don't order Homocysteine testing for preventing cardiovascular events in those with known cardiovascular disease.	JAMA04	v7
PTH for CKD	Don't order PTH measurement for patients with stage 1-3 CKD.	JAMA06	v7
Carotid endarterectomy in asymptomatic patients	Don't perform a carotid endarterectomy in asymptomatic patients or for patients without a history of stroke or TIA and without stroke, TIA, or focal neurological symptoms noted in claim.	JAMA08	v7
X-ray for diagnosis of plantar fasciitis/heel pain	Don't order imaging for diagnosis of plantar fasciitis	ACOE03	v7

Q2 2017 RELEASE – SCHEDULED MEASURES (TENTATIVE)			
Waste Headline	**Waste Short Description**	**Waste Mnemonic**	**Software Version**
Surgery for a torn meniscus	Don't perform arthroscopic partial meniscectomy for degenerative meniscal tear in middle aged patients without symptoms of knee pain.	NEJM01	v7

Q3 2017 RELEASE – SCHEDULED MEASURES (TENTATIVE)			
Waste Headline	**Waste Short Description**	**Waste Mnemonic**	**Software Version**
Antipsychotic medications as a first-line	Don't routinely prescribe an antipsychotic medication to treat behavioral and emotional symptoms of childhood mental disorders in the absence of approved or evidence supported indications.	APA03	v8
Heavy metal screening tests	Don't order heavy metal screening tests to assess non-specific symptoms in the absence of excessive exposure to metals.	ACMT03	v8
Post-operative splinting	Don't use post-operative splinting of the wrist after carpal tunnel release for long-term relief.	AAOS05	v8
Electromyography (EMG) and nerve conduction studies	Don't use electromyography (EMG) and nerve conduction studies (NCS) to determine the cause of axial lumbar, thoracic or cervical spine pain.	NASS04	v8
Thorax CT	Don't order CT Thorax "combined studies" (i.e., CT Thorax with and without contrast).	CMMS01	v8
Inherited thrombophilia evaluation for women	Don't do an inherited thrombophilia evaluation for women with histories of pregnancy loss, intrauterine growth restriction (IUGR), preeclampsia and abruption	SMFM01	v8
Routine and follow-up mammograms	Avoid performing routine and follow-up mammograms of reconstructed breasts after mastectomies	ASPS03	v8
Routine diagnostic laparoscopy for unexplained infertility	Don't perform routine diagnostic laparoscopy for the evaluation of unexplained infertility.	ASRM01	v8
Thrombophilia testing	Don't routinely order thrombophilia testing on patients undergoing a routine infertility evaluation.	ASRM04	v8
Antihistamines or decongestants for otitis media	Don't prescribe antihistamines or decongestants for otitis media with effusion.	NQF04	v8
Systemic corticosteroids	Don't prescribe systemic corticosteroids for otitis media with effusion.	NQF05	v8
Hypercoagulability testing	Don't order hypercoagulability testing for patients with DVT.	JAMA05	v8
PCI for stable coronary disease	Don't do a percutaneous coronary intervention with balloon angioplasty or stent placement for stable coronary disease	JAMA07	v8

Note Q4 2017 Release is dedicated to ICD10 research, code update and research update.