WASHINGTON HEALTH ALLIANCE

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First, Do No Harm

Calculating Health Care Waste in Washington State

February 2018

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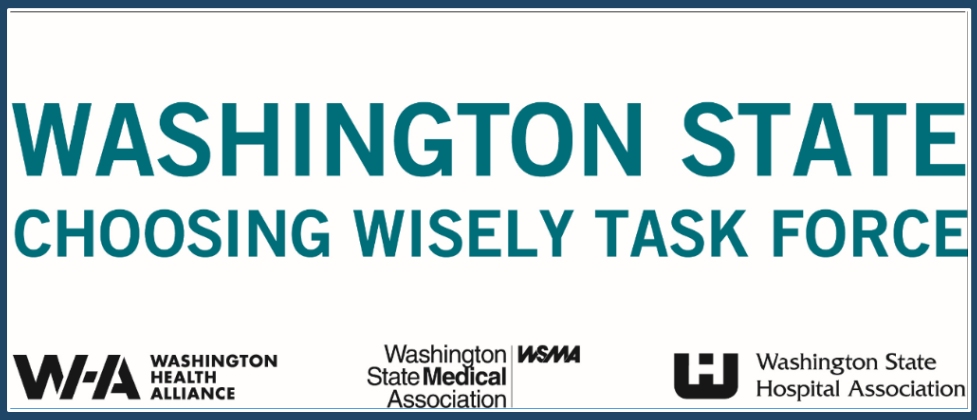
This report has been prepared by the Washington Health Alliance and is associated with the Choosing Wisely® initiative in Washington state.

The Washington State Choosing Wisely Task Force endorsed the publication of this report.



Disclaimer: The results included in this report were generated using the Milliman MedInsight Health Waste Calculator (Calculator) and the All Payer Claims Database of the Washington Health Alliance. The Washington Health Alliance and Milliman make no warranties with regard to the accuracy of the Calculator Intellectual Property or the results generated through the use of the Calculator and Alliance data. Neither Milliman nor the Alliance will be held liable for any damages of any kind resulting in any way from the use of results included in this report.

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About this report

The Washington Health Alliance utilized Milliman's new MedInsight Health Waste Calculator to produce a groundbreaking analysis of waste and low-value health care services, as defined by the national Choosing Wisely® program. The results are striking, showing that just a handful of health care services account for millions of dollars of waste in Washington state. Only two other states in the country have utilized this tool, and only one of them has released results publicly. The public release of the Alliance's Washington state findings will enable a much-needed community dialogue among key stakeholders about low-value care.

Highlights

- This report examined 47 common treatment approaches *known by the medical community to be overused*.
- More than 45% of the health care services examined were determined to be low value (likely wasteful or wasteful).
- Approximately 1.3 million individuals received one of these 47 services; among these individuals, almost one-half (47.9%) received a low value service.
- 36% of spending on the health care services examined went to low value treatments and procedures. This amounts to an estimated $282 million in wasteful spending.
- A "Call to Action" to address overuse includes five important elements.
  - ✓ Overuse must become central to honest discussions of health care value in Washington state.
  - ✓ Clinical leaders must take up the mantle and lead provider efforts to incorporate reduction of overuse into local practice culture.
  - ✓ The concepts of "choosing wisely" and shared decision-making must become the bedrock of provider-patient communications.
  - ✓ We need to keep our collective "foot on the gas" to transition from paying for volume to paying for value in health care.
  - ✓ Value-based provider contracts must include measures of overuse, and not just measures of access and underuse of evidence-based care.

First, do no harm.

"First, do no harm" is one of the principal rules for ethics taught in medical school. It means that it may be better not to do something than to do something that carries the risk of harm to the patient but a less certain chance of benefit. Preventing harms associated with the delivery of health care whenever possible is essential to improving patient safety and patient experience.

Harm to patients can come in multiple forms. While harm is not intentional, it is particularly troublesome when it is a result of care that was unnecessary in the first place. Of paramount importance is **physical harm**; that is, when a medical intervention is the cause of one or more negative consequences for the patient — for example, an infection, overexposure to radiation through unnecessary imaging, a bad reaction to a medication, or an unneeded or duplicative test or procedure that results in even more interventions. There is also **emotional harm**, meaning the worry and anxiety caused by a medical intervention; for example, being prescribed tests and/or procedures that are known to produce high rates of false positives (thereby driving additional interventions). Physical and emotional harm often go hand-in-hand, but emotional harm can occur even without physical harm.

And then there is **financial harm**. In this day and age, when the cost of health care and the advent of high deductible health plans represent a growing financial risk to individuals, "harm" takes on a broader meaning. Health care is becoming more unaffordable, even among those with health insurance. New survey findings from the Kaiser Family Foundation[1] suggest that approximately one-third of adults report someone in their household has had problems paying medical bills in the past year; and among these people, 73% report cutting back spending on food, clothing or basic household items in order to pay medical bills. Nearly half of Americans (45%) say they would have difficulty paying an unexpected $500 medical bill. When so many Americans are having trouble affording health care, eliminating health care services that don't help people and may harm them, including financially, is an ideal place to start making improvements.

While a goal of zero harm is desirable, it is not realistic. What we strive for is substantially reducing the risk of preventable harm. Reducing unnecessary overuse of health care services is one important way to do this.

The result of the "more is always better" culture present in today's health care delivery seems to be: "first, do something." It is time to get back to, "first, do no harm."

[1] https://www.kff.org/health-costs/press-release/polling-data-note-beyond-the-aca-the-affordability-of-insurance-has-been-deteriorating-since-2015/

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What is overuse?

Overuse in health care – also called overtreatment, low-value health care or waste – refers to medical tests and procedures that have been shown to provide little benefit in particular clinical scenarios and in many cases have the potential to cause harm. Overuse occurs when health care is provided *with a higher volume than is appropriate*. "Appropriate" in this context, means health care that is:

- Supported by evidence;
- Truly necessary;
- Not duplicative of other tests or procedures already received; and
- As free from harm as possible.

Some estimates indicate that overuse could account for as much as one-third of total health care *spending* in the United States. These estimates of overuse, while very important, do not begin to quantify the physical, emotional and financial harm to individuals.

Several years ago, the Choosing Wisely campaign was launched by the American Board of Internal Medicine (ABIM) Foundation, when it became apparent that a majority of clinicians, when asked, would share their personal knowledge of or experience with overuse. It became clear, at least to the ABIM Foundation, that overuse is a pervasive problem in health care, with no specialty immune from practices that lead to overuse.

The ABIM Foundation issued a challenge to national medical specialty organizations that represent a wide array of physicians, asking them to identify frequently ordered tests, procedures or treatments in their field whose necessity should be actively questioned – in other words, they were seeking to *identify those things known by the medical profession to be overused, wasteful and potentially harmful*. Today, there are more than 500 specialty society Choosing Wisely recommendations and this is likely just the tip of the iceberg. The Choosing Wisely campaign aims to promote conversations between physicians and patients by helping patients choose evidence-based and appropriate care, based on these recommendations.

In Washington, the Choosing Wisely initiative is ongoing. The Washington Health Alliance (the Alliance) and the Washington State Medical Association (WSMA) received grants from the ABIM Foundation to support the Choosing Wisely campaign in our state. Washington state's flagship project for the initiative is the Choosing Wisely Task Force. This is a unique effort co-sponsored by the Alliance, WSMA and the Washington State Hospital Association that unites 21 medical leaders representing the state's diverse range of health care organizations (see appendix for membership). It is an energized and dedicated working group focused on implementing appropriate and high-value care. The Task Force continues to strategize, focusing on data and actions that are relevant and likely to make a difference in local practices and communities.

What is in this report?

The Washington Health Alliance ran a portion of its All-Payer Claims Database through a new tool called the Health Waste Calculator, including claims data for approximately 2.4 million commercially insured lives in the state of Washington.

Results powered by:

The Health Waste Calculator (Calculator) is a part of the Milliman MedInsight suite of analytic tools. It is software designed to help identify and quantify overused health care services as defined by national initiatives such as the Choosing Wisely campaign and the U.S. Preventive Services Task Force. The tool is groundbreaking insofar as it contributes significant information to the ongoing dialogue about improving quality of care by identifying specific opportunities to reduce overuse of health care services and potential physical, emotional and financial harm to patients.

The underlying algorithms in the Calculator analyze claims data to look at the frequency and cost of common treatment approaches such as prescribing medications, screening, diagnostic testing, preoperative evaluation, and routine monitoring and follow-up known to be overused. The Calculator not only identifies potentially wasteful services but also defines services with a degree of appropriateness for care. The Calculator examines specific areas of care in light of clear recommendations from national medical societies and other nationally vetted sources. Numerous references, studies and global initiatives are evaluated in order to establish the clinical logic in the tool. The Calculator currently includes over 40 measures and there are plans to expand the tool in the coming months and years.

Results are put into one of three categories, including:

- *Necessary*: Indicates the service was clinically appropriate.
- *Likely Wasteful*: Indicates the need to seriously question the appropriateness of the service.
- *Wasteful*: Indicates the service was very likely unnecessary and should not have occurred.

Results from the *Likely Wasteful* and *Wasteful* categories are combined to report on *Low-Value Services* in this analysis.

The measurement year used for the results in this report includes services delivered between July 2015 and June 2016.

The version of the Calculator used for this analysis includes 47 measures of overuse[2].

The utilization figures shown throughout this report, including number of services and individuals, are based on *actual* utilization. The cost figures in this report are *estimated*, based on Milliman's Consolidated Health Cost Source database for Washington. Estimated costs are based on reference unit prices that represent the average cost of each service (for the commercially insured).

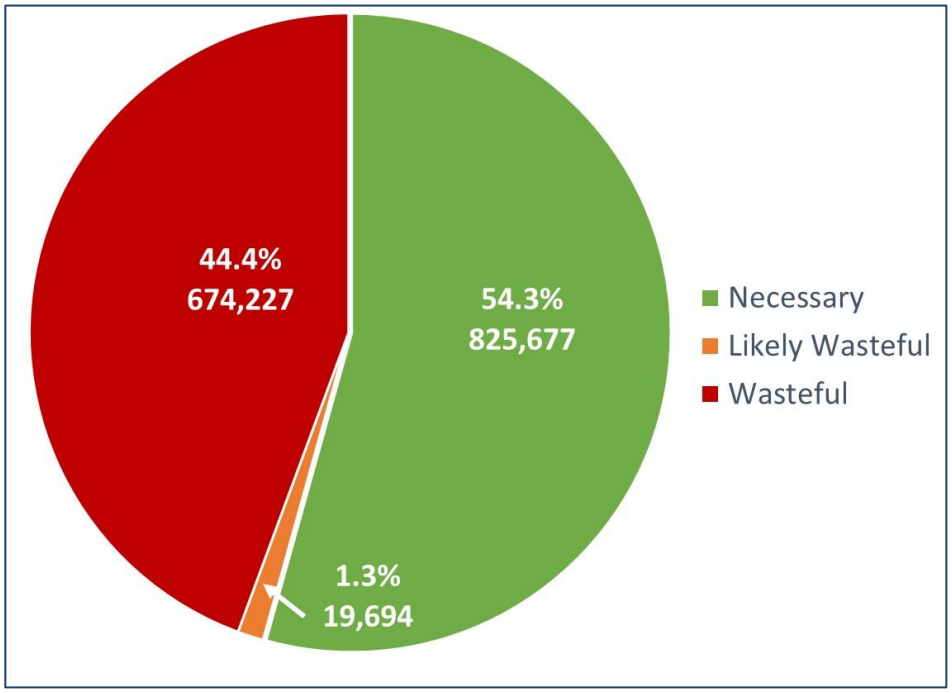
[2] A summary list of the 47 measures is included on page 23-25 of this report.

There are three important things to remember when considering the results.

- The results in this report are based on an analysis of claims data for approximately 2.4 million commercially insured people, and therefore should be viewed as a strong estimate rather than a comprehensive analysis of services received by all Washingtonians during the measurement period. Because of the inherent limitations of using claims data to identify "signs and symptoms," the results should be viewed as directionally accurate, rather than absolutely accurate. Extrapolation of these results to other populations is not advised.
- The estimated costs are only associated with the particular service in question, including professional and facility charges. Estimated costs do not include subsequent unnecessary tests, procedures, treatments, inpatient or post-acute care that resulted from the initial unnecessary intervention. Given this, the estimated costs likely dramatically underestimate the financial impact of overuse.
- The version of the Calculator used for this report includes 47 measures, representing a subset of the total potential areas of overuse in our state. Extrapolation of these results to other types of care is not advised.

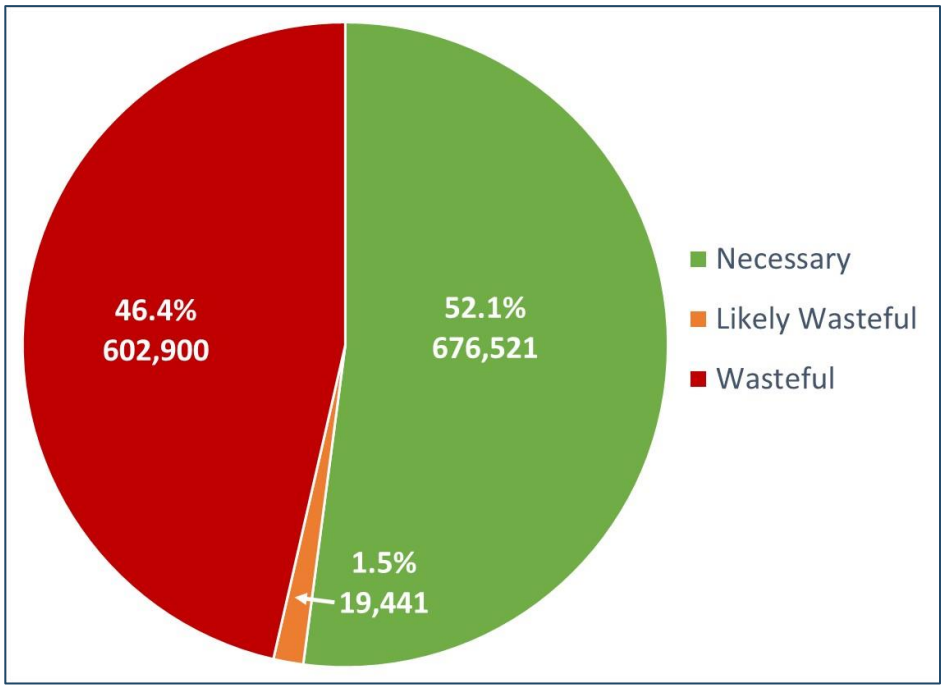
Results from the Health Waste Calculator

The following is a high-level summary of the results **based on the 47 Health Waste Calculator measures** included in this analysis.



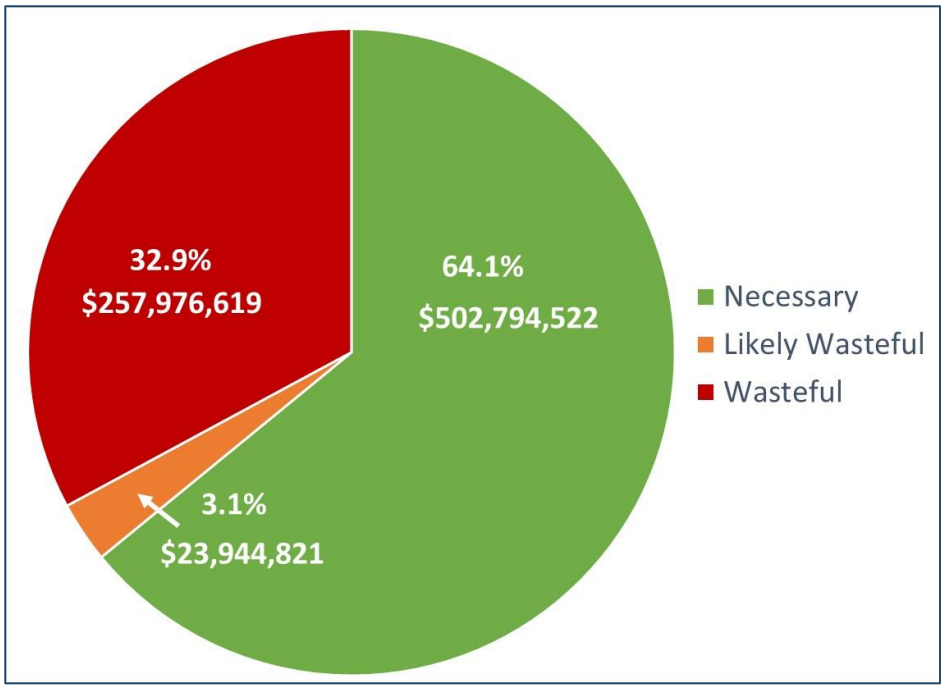
1.52 million
SERVICES
were examined

45.7% of services were determined to be low-value



1,298,862 **INDIVIDUALS** received services

622,341 (47.9%) individuals received low-value services



An estimated $785 million was **SPENT** on services

An estimated $282 million (36%) was spent on low-value services

Targeting key drivers of overuse

Upon further examination of the detailed results in this analysis**, 11 measures (out of 47) account for 93% of the low-value services and 89% of the estimated spend** associated with this analysis. A total of **578,503 individuals received at least one of these 11 low-value services**, or about one quarter of the approximately 2.4 million individuals included in this analysis.

The 11 measures include the following, in descending order based on volume:

1. Too frequent cervical cancer screening in women
2. Preoperative baseline laboratory studies prior to low-risk surgery
3. Unnecessary imaging for eye disease
4. Annual EKGs or cardiac screening in low risk, asymptomatic individuals
5. Prescribing antibiotics for acute upper respiratory and ear infections
6. PSA screening
7. Population-based screening for OH-Vitamin D deficiency
8. Imaging for uncomplicated low back pain in the first six weeks
9. Preoperative EKG, chest x-ray and pulmonary function testing prior to low risk surgery
10. Cardiac stress testing
11. Imaging for uncomplicated headache

What is interesting about this list is that it combines services that are both lower cost (less than $500) and higher cost (more than $500), dispelling a belief that overuse only refers to a problem of over-utilizing expensive testing, imaging, etc. In fact, the problem of overuse is also one of excessive utilization of unnecessary low-cost services. When looked at individually, low-cost services don't seem to be much of a driver, but when looked at collectively, they add up to a big problem.[3]

Pages 12-22 include a report for each of these 11 measures, with a brief summary of information drawn from the MedInsight Health Waste Calculator Clinical Guidelines. These guidelines provide a description of each measure, definitions, background information, detail about the population included, as well as information on calculating the degree of certainty and exclusions. Each measure also includes references and information regarding the strength of the evidence.

[3] The Health Waste Calculator was used in the state of Virginia as well and they found similar results that are detailed in an October 2017 Health Affairs article: https://www.healthaffairs.org/doi/abs/10.1377/hlthaff.2017.0385

Call to Action

With the potential for patient harm looming large and health care spending approaching 20% of the country's gross national product, we simply cannot afford to continue on this path of overuse and waste. It is past time to take action and there are steps that we can take as a community to dramatically reduce utilization of health care services that the medical profession itself has called into question. Here are five important action steps:

1. **Overuse must become central to honest discussions of health care value in Washington state**. Appropriateness must be a criterion for high quality. The continual overuse of low-value health care services carries with it the potential for harm to patients – physical, emotional and financial. We cannot achieve high value in health care if patients are being harmed by overuse.

2. **Clinical leaders and medical specialty societies in the state of Washington must take up the mantle and lead provider efforts to incorporate reduction of overuse into local practice culture**. Physicians play a critical role in initiating conversations about appropriate care with patients and also with other clinicians. Choosing Wisely is about doing the right thing for patients and avoiding care that could harm them. Using tools such as electronic medical records and electronic order entry are important ways to systematize appropriate care at the point of care. Some areas of overuse, such as the ordering of preoperative tests, have become overly routine and are not carefully reviewed for appropriateness.

3. **The concepts of "choosing wisely" and shared decision-making must become the bedrock of provider-patient communications**. Patients need *objective* information, based on evidence and well-vetted clinical guidelines, to help them understand treatment choices and their risks and benefits – this includes doing nothing and taking a wait-and-see approach. The cost of different treatment choices must be made known to patients BEFORE things are done so that patients have an opportunity to factor their ability to pay into the equation. Patients need the opportunity to express their preference(s) and to have them respected.

4. **We need to keep our collective "foot on the gas" to transition from paying for volume to paying for value**. We must remove (or at a minimum, substantially reduce) payment incentives for providers to "do more" and instead incentivize provider organizations to prioritize quality, reduction of harm, superb patient experience and management of total cost – in short, value. Public and private purchasers have an essential role to play in demanding this transition. Effective purchaser-payer partnerships with aligned messaging on dramatically reducing overuse will create a clearer "customer signal" for the delivery system.

5. **Value-based provider contracts must include measures of overuse, and not just measures of access and underuse**. We cannot clearly identify opportunities for improving value unless we are looking at overuse along with other important measures. Measuring total cost of care is essential, but it is insufficient to drive targeted reductions in overuse. Starting with recommendations from the Choosing Wisely campaign just makes sense – they are health care services *known by the medical profession to be overused*. These are medical tests and procedures that have been shown to provide little to no benefit in many cases and have the potential to cause physical, emotional and financial harm.

Too frequent cervical cancer screening in women

This measure is based on Choosing Wisely recommendations from the American College of Obstetricians and Gynecologists and the American Academy of Family Physicians and is consistent with recommendations from the U.S. Preventive Services Task Force.

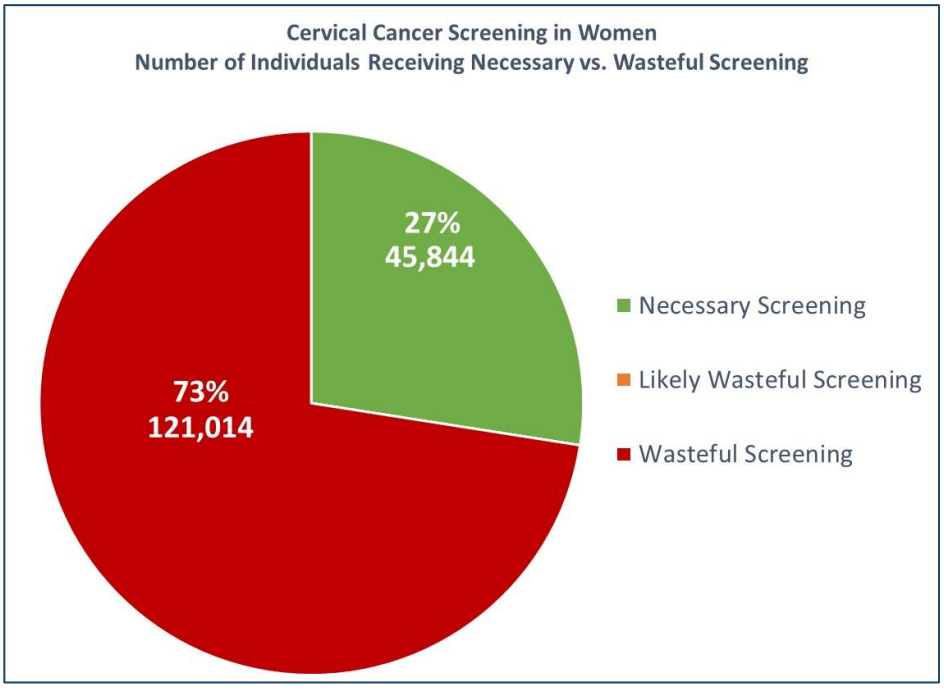
While there are multiple nationally vetted recommendations regarding cervical cancer screening pertaining to women of different ages and clinical circumstances, this measure focuses specifically on a recommendation to avoid too frequent (annual) cervical cancer screening for average risk women 21-65 years of age.

Pre-cancerous changes of the cervix lead to cervical cancer. But progression of these changes to invasive cancer is slow. There is sufficient evidence to suggest that too frequent testing does not add clinical value and is considered wasteful. Observed but benign abnormalities can lead to unnecessary anxiety, additional testing and excessive cost.

This measure identifies unnecessary (too frequent) cervical cancer screening (Pap smear and HPV test) in all women who have had adequate prior screening and are not otherwise at high risk for cervical cancer as wasteful.

All individuals with HIV have been excluded from this analysis. More frequent screening in women who are at high risk of cervical cancer (high grade precancerous lesion or cervical cancer or women who are immunocompromised) or with abnormal Pap smear have been identified as necessary.

Results from the Health Waste Calculator



**2 individuals fell into the "Likely Wasteful" category, representing .001% of the total. These are not included in the chart.*

In this analysis, a total of 166,860* women received annual cervical cancer screening for an estimated cost of $25.8 million.

73% of these women received wasteful (too frequent) cervical cancer screening for an estimated cost of $19 million.

Unnecessary preoperative baseline lab studies

This measure is based on Choosing Wisely recommendations from the American Society of Anesthesiologists and the American Academy of Ophthalmology.

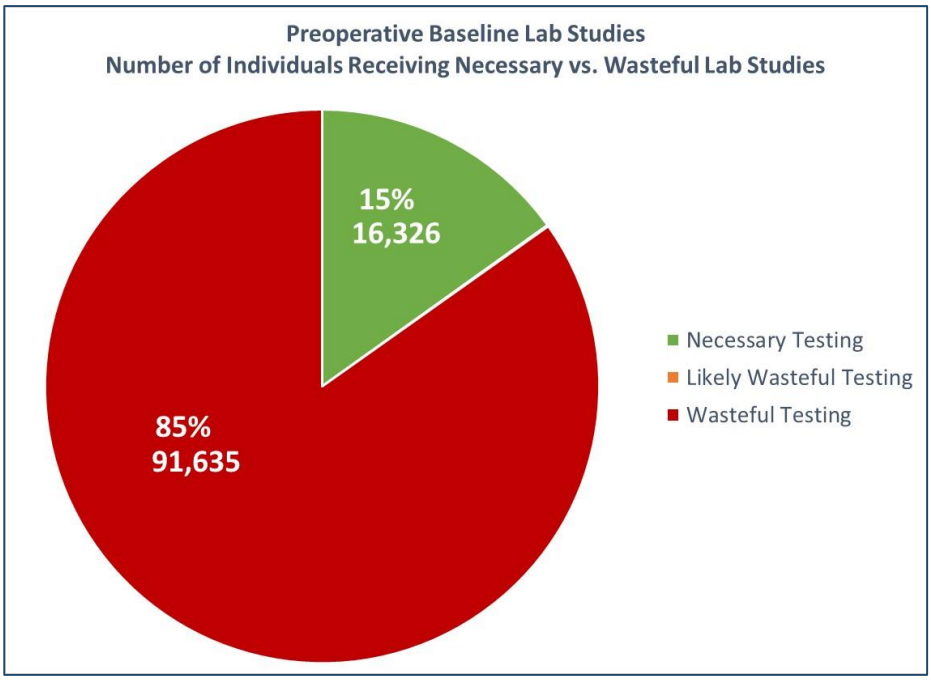
For many, preoperative lab testing is not necessary because some types of surgery are not lengthy and do not pose serious risks. Patients scheduled for surgery do not need preoperative lab tests unless the individual's history or physical examination indicate specific, existing risk factors and/or systemic disease (e.g., heart disease). Routine preoperative lab tests in asymptomatic patients do not make an important contribution to perioperative assessment and management. What is considered wasteful is when baseline studies are indiscriminately ordered for asymptomatic patients who are undergoing low-risk surgery. These types of tests traditionally include a complete blood panel, basic or comprehensive metabolic panel, urine testing and/or coagulation studies when blood loss is expected to be minimal.

This measure identifies baseline lab studies in individuals who do not have evidence of significant systemic disease performed 30 days or fewer prior to undergoing an elective low-risk surgery as wasteful.

A number of conditions are excluded from this measure, for example:

- all services where the low-risk surgery falls on or one day after the evaluation and management visit for emergency care, observation or urgent care visit;
- diagnoses of endocrine, liver or renal disorders within 180 days;
- history of anemia or history suggestive of recent blood loss within 180 days; or
- diagnosis of coagulation disorders up to two years prior.

Results from the Health Waste Calculator



In this analysis, a total of 108,037* individuals received preoperative lab studies prior to low-risk surgery for an estimated cost of $105 million.

85% of these individuals received wasteful preoperative lab studies for a total estimated cost of $86 million.

**76 individuals fell into the "Likely Wasteful" category, representing 0.1% of the total. These individuals are not represented in the chart but are included in the total estimated spend for unnecessary care.*

Imaging for eye disease

This measure is based on Choosing Wisely recommendations from the American Academy of Ophthalmology and the American Association of Pediatric Ophthalmology and Strabismus.

If patients do not have symptoms or signs of significant eye disease, then clinical imaging tests are not generally needed because a comprehensive history and physical examination will usually reveal if eye disease is present or is getting worse. A comprehensive eye exam is recommended at different intervals on the basis of risk factors for eye disease, such as ethnicity, known diabetes and age.

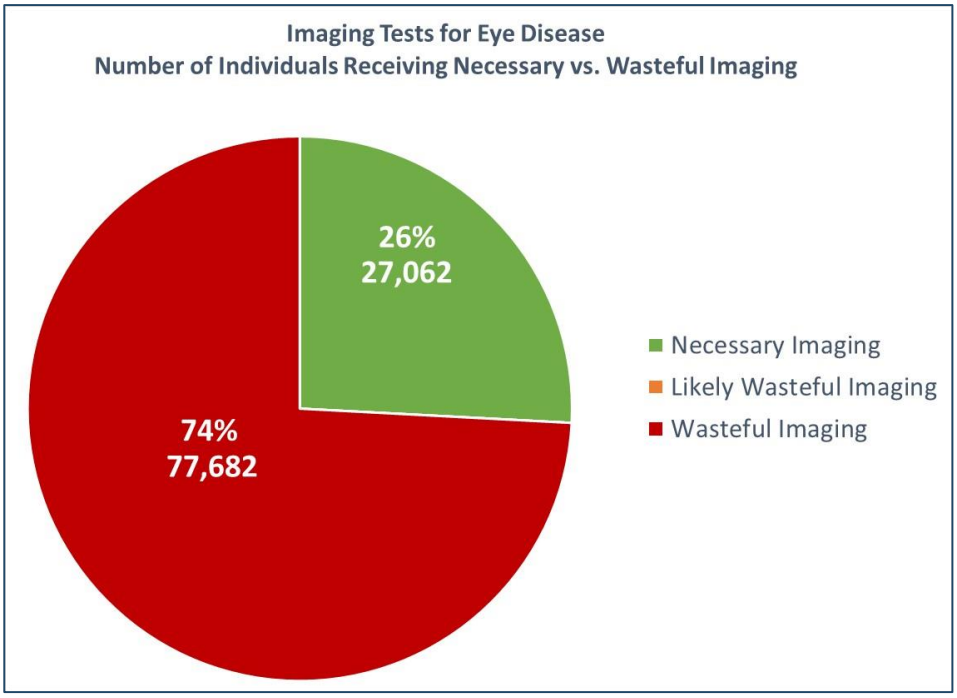
Examples of routine eye imaging include: visual-field testing; optical coherence tomography (OCT) testing; retinal imaging of patients with diabetes; and fundus photography. If symptoms or signs of disease are present, then imaging tests may be needed to evaluate further and to help in treatment planning. Eye imaging is only recommended as additional testing based on the findings from a comprehensive eye exam.

This measure identifies eye imaging tests (posterior and anterior optical coherence tomography, fundus photography, visual field testing, external or internal eye photographs) in the absence of significant eye disease as wasteful. In this analysis, less than four percent of patients who received eye imaging had a diagnosis of diabetes.

For significant eye disease (for example, neoplasms of eye, choroidal detachment, optic atrophy, glaucoma, diabetic retinopathy, macular degeneration etc.), where imaging is considered medically necessary and appropriate, imaging is identified as “necessary.”

Because *symptoms and signs* are difficult to identify in claims databases, this measure looks at coded diagnosis, by test. Neuroimaging is not considered in this measure.

Results from the Health Waste Calculator



In this analysis, a total of 104,744 individuals received imaging for eye disease for an estimated cost of $46.4 million.

74% of these individuals received wasteful eye imaging for an estimated cost of $33.8 million.

Annual EKGs or cardiac screening

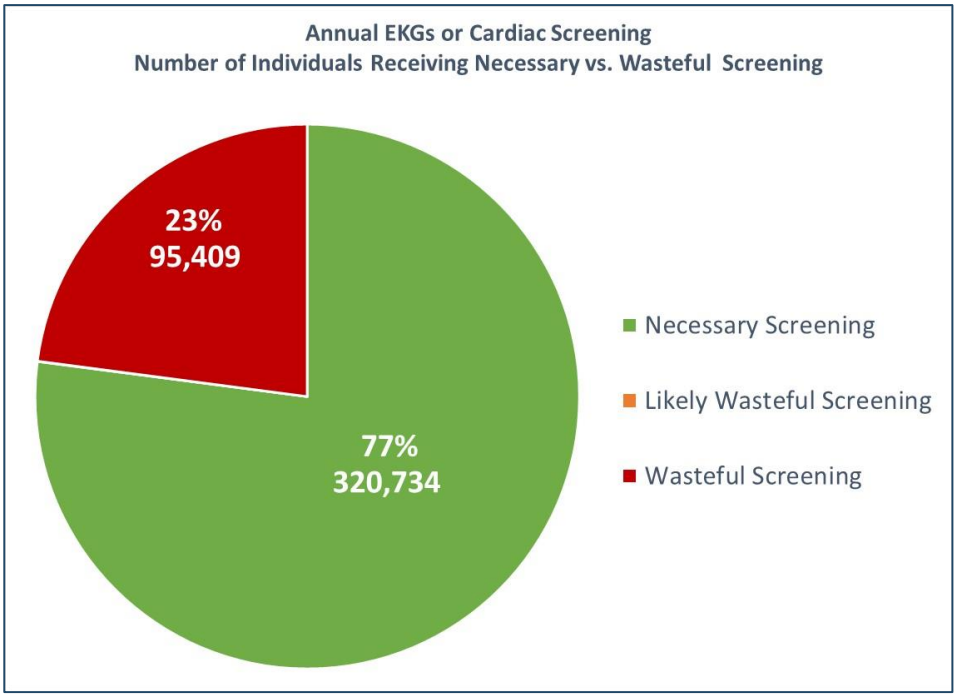
This measure is based on a Choosing Wisely recommendation from the American Academy of Family Physicians.

There is little evidence that detection of coronary artery stenosis (abnormal narrowing in a blood vessel) in asymptomatic patients at low risk for coronary heart disease (CHD) improves health outcomes. False positive test results are likely to lead to harm through unnecessary invasive procedures, over-treatment and misdiagnosis. While patients at higher risk for CHD *may potentially* benefit more than low risk adults, the potential harms of this routine annual screening exceed the potential benefit.

This measure identifies use of annual electrocardiograms (EKGs) and any other cardiac screening for low-risk individuals without symptoms as wasteful.

In this measure, a number of clinical circumstances are identified that indicate cardiac screening tests are "necessary;" for example, individuals with high-risk markers for CHD within two years, or the presence of two or more risk factors suggestive of intermediate CHD. In addition, a few of the cardiac screening tests may also be indicated for other inflammatory conditions such as arthritis, joint pains or myositis (inflammation of muscles); when these conditions are present, the services have been excluded from this analysis.

Results from the Health Waste Calculator



In this analysis, a total of 416,225* individuals received annual EKGs or cardiac screening for an estimated cost of $199 million.

23% of these individuals received wasteful annual EKGs or cardiac screening for an estimated cost of $40 million.

*82 individuals fell into the "Likely Wasteful" category, representing .02% of the total. These individuals are not represented in the chart but are included in the total estimated spend for unnecessary care.

Antibiotics for acute upper respiratory and ear infections

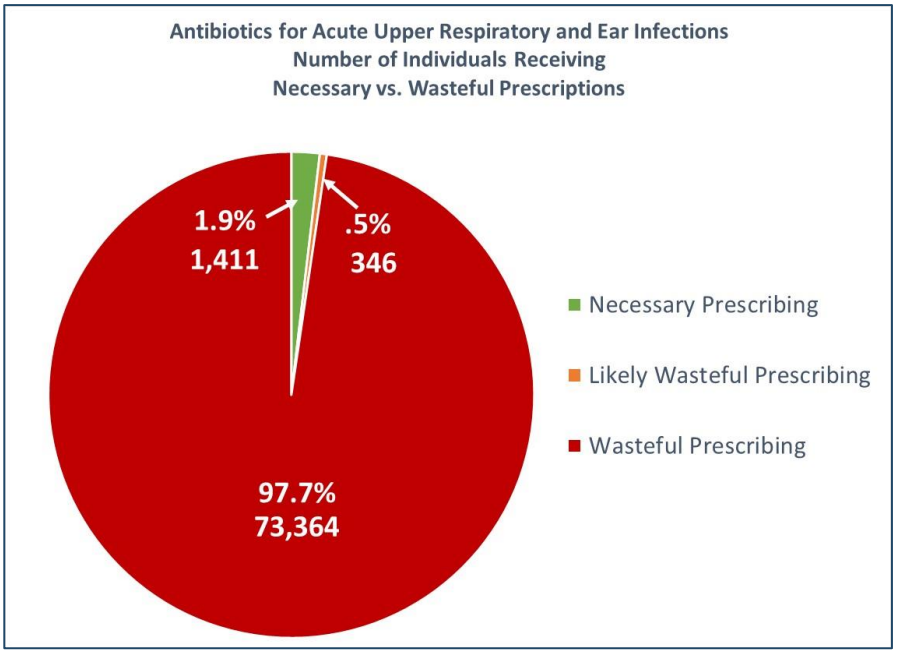
This measure is based on Choosing Wisely recommendations from the American Academy of Pediatrics, the Infectious Disease Society of America, the American Academy of Allergy, Asthma & Immunology, the American Academy of Family Physicians, and the American College of Emergency Physicians.

Acute Upper Respiratory Infections (URI) are a common reason for patients to visit their doctor, urgent care or emergency room. An acute URI might include rhinosinusitis (i.e., a sinus infection) or a viral respiratory illness such as a bad head cold. Most patients with acute URIs do not require antibiotics. Viral infections cause the vast majority of acute URIs and resolve in about two weeks without treatment. Likewise, oral antibiotics are not recommended for uncomplicated acute external otitis (inflammation of the ear canal, also known as an earache). Despite consistent recommendations to the contrary, antibiotics are prescribed far too often. The problem is that antibiotics do not work for viral infections, can cause many side effects and have potentially severe complications. Therefore, they should only be taken when necessary AND when the condition is determined to be caused by bacterial infection, against which antibiotics will actually work. Inappropriate antibiotic use is contributing to the development of antibiotic-resistant infections which has become a significant public health concern in the United States and around the world.

This measure identifies use of oral antibiotics for members with URI or ear infection (acute sinusitis, URI, viral respiratory illness or acute otitis externa) as wasteful, except in specific circumstances.

All instances of antibiotic prescriptions on or within seven days after the diagnosis of URI or ear infection are identified as wasteful. Antibiotics prescribed under the following circumstances are considered "necessary:" individuals with (a) persistent symptoms of *complicated* acute rhinosinusitis within 10 days prior to the diagnosis of URI; (b) acute otitis externa and underlying middle ear disease, and (c) malignant otitis externa. Individuals with the presence of comorbid (immunocompromised, cancers etc.) or competing conditions (cellulitis, tonsillitis, pneumonia etc.) are excluded from the measure.

Results from the Health Waste Calculator



In this analysis, a total of 75,121 individuals received antibiotics for rhinosinusitis or acute external otitis for an estimated cost of $2.3 million.

98% of these individuals received antibiotics unnecessarily for an estimated cost of $2.3 million.

Prostate-Specific Antigen (PSA) screening for prostate cancer

This measure is based on the Choosing Wisely recommendation from the American Academy of Preventive Medicine and is consistent with recommendations from the U.S. Preventive Services Task Force.

Routine PSA-based screening for prostate cancer is not recommended for men who do not have signs and symptoms of prostate cancer or who are not at high risk for prostate cancer (for example, due to strong family history or related cancers). PSA-based screening often produces false-positive results leading to unnecessary anxiety, decreased quality of life, and additional testing, including biopsies.

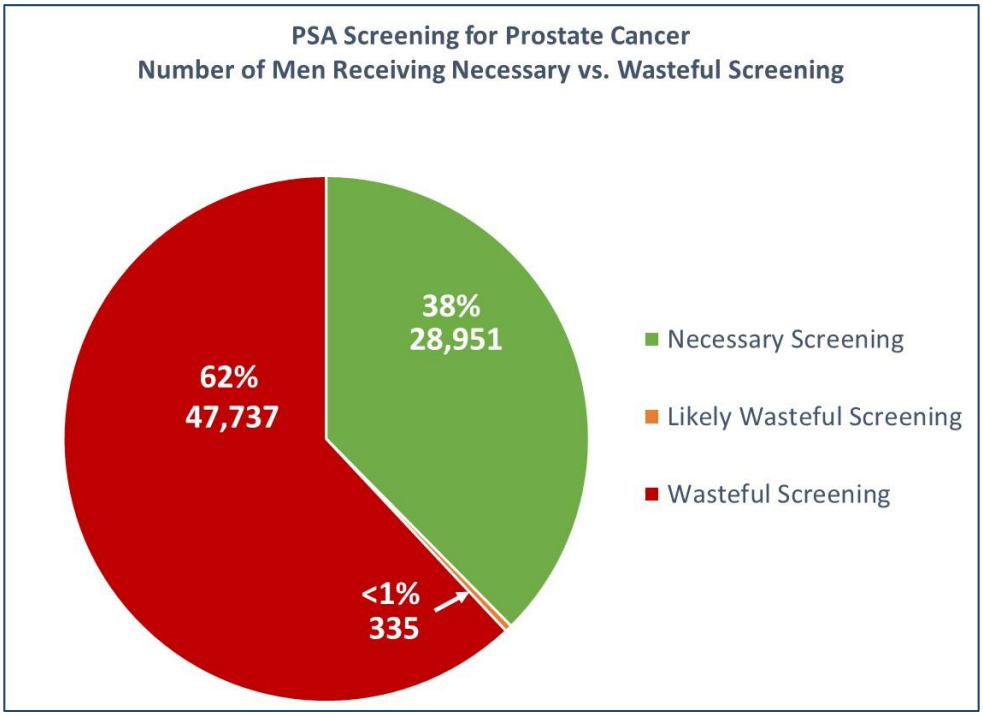
This measure identifies prostate specific antigen (PSA) based screening for prostate cancer in asymptomatic men as wasteful.

All instances of PSA screening testing in men in the absence of specific indications, is identified as “wasteful.”

PSA screening in men with prostate cancer or risk of recurrence of prostate cancer is considered “necessary” in this measure.

PSA screening in men who have clinical conditions and risk factors for prostate cancer will be considered “likely wasteful” as some of the risk factors such as two or more first-degree relatives with prostate cancer before age 65, black ancestry etc. cannot be determined through claims data. Presence of symptoms alone also does not warrant PSA testing since there is no convincing evidence this is beneficial.

Results from the Health Waste Calculator



In this analysis, a total of 77,023 men received PSA-based screening for an estimated cost of $16.8 million.

62% of these men received wasteful PSA testing for an estimated cost of $9.9 million.

Population-based screening for OH-Vitamin D deficiency

This measure is based on the Choosing Wisely recommendation from the American Society of Clinical Pathology and is consistent with the recommendations of the U.S. Preventive Services Task Force.

Vitamin D is important for a person's body to absorb calcium and promote healthy bone growth. Vitamin D is naturally found in a number of foods and it is also added to foods and drinks. The body also makes Vitamin D when the skin is exposed to the sun.

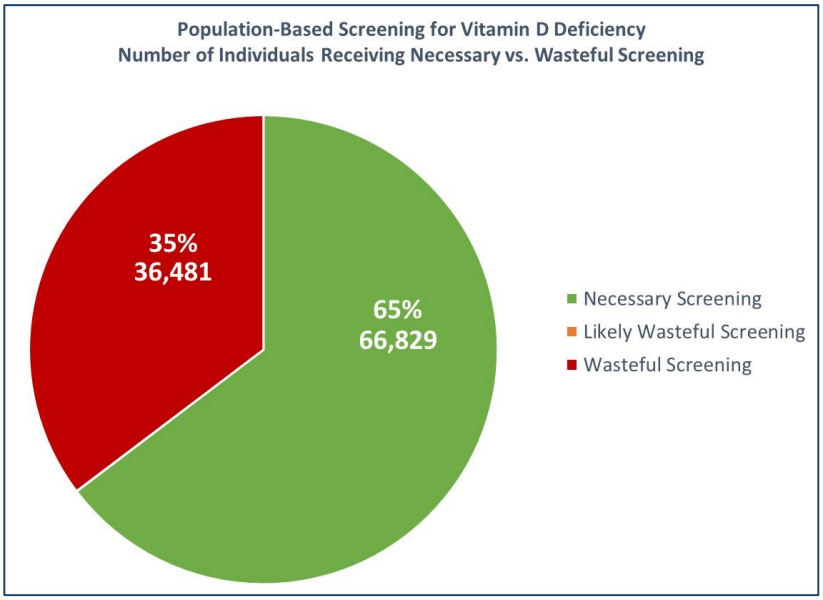
Most persons in the United States are sufficient in Vitamin D, based on Vitamin D thresholds established by the Institute of Medicine. But, prompted by news reports of Vitamin D's benefits and a perception that they don't have enough of it, an increasing number of consumers have been asking doctors to test their Vitamin D levels and medical practice culture in many areas is embracing the need for population-based screening for Vitamin D deficiency.

The U.S. Preventive Services Task Force has concluded that current evidence is insufficient to assess the balance of benefits and harms of screening for Vitamin D deficiency in asymptomatic adults. Because of the uncertainties about how to define Vitamin D deficiency with a blood test and about the accuracy of current screening tests, performing the screening test may suggest that some people are Vitamin D deficient when they are actually healthy. These people may get Vitamin D treatment when they do not need it.

This measure identifies population-based screening for Vitamin D in the absence of risk factors as wasteful.

There are numerous clinical conditions requiring Vitamin D testing and these are identified as "necessary" in this measure. These include clinically documented disease or conditions which are specifically associated with Vitamin D deficiency.

Results from the Health Waste Calculator



In this analysis, a total of 103,332 individuals were screened for Vitamin D deficiency for an estimated cost of $35.5 million.

35% of these individuals received wasteful screening for Vitamin D deficiency for an estimated cost of $12 million.

*22 individuals fell into the "Likely Wasteful" category, representing .02% of the total. These individuals are not represented in the chart but are included in the total estimated spend for unnecessary screening.

Imaging for low back pain

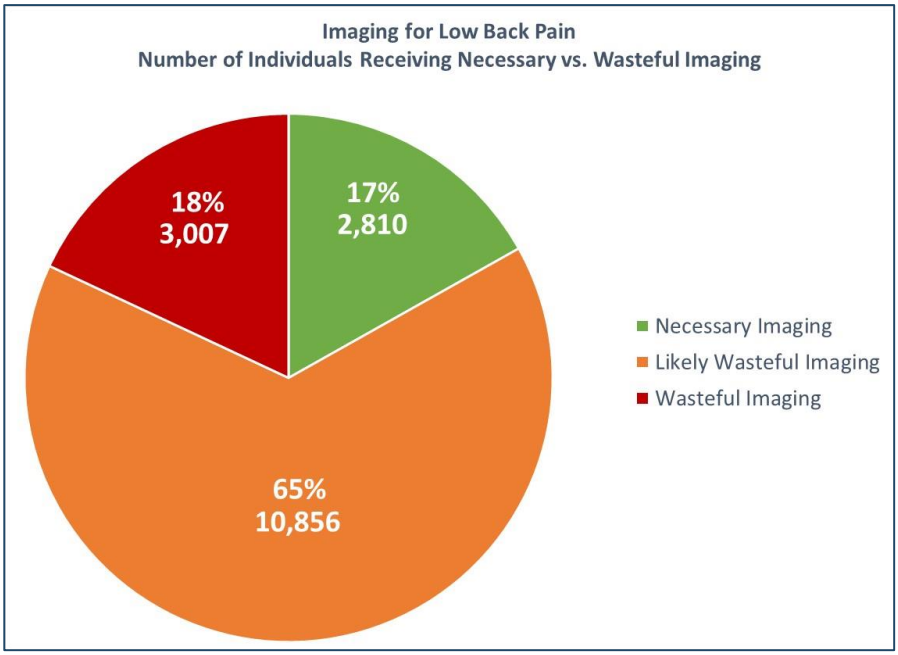
This measure is based on Choosing Wisely recommendations from the American Academy of Family Physicians, the American Society of Anesthesiologists – Pain Management, the American Academy of Physical Medicine and Rehabilitation, and the American Chiropractic Association.

Back pain is among the most common medical conditions and is one of the top reasons for adult visits to physicians. Most adults experience low back pain at least once in their lifetime. It can be quite painful and can limit physical activity. The evaluation of low back pain by a medical provider should include a complete, focused medical history looking for "red flags," which include (but are not limited to) severe or progressive neurologic problems, fever, trauma and indications of a serious underlying problem (e.g., malignancy). In the absence of these "red flags," there is strong evidence that most patients recover from low back pain within six weeks and that imaging of the lumbar spine before six weeks does not improve outcomes for the patient. In fact, clinical experts agree that the potential harm associated with premature imaging in patients with low back pain outweighs the benefits; imaging can reveal anatomic abnormalities that are unassociated with the pain-–but the identification of the abnormalities can lead to unnecessary treatment, including additional imaging and surgery, driving up costs and increasing the risk of harm to patients.

This measure identifies use of imaging (X-ray, CT and MRI) in patients with low back pain within 42 days of a diagnosis of low back pain as wasteful.

Only the costs of imaging and professional fees for radiology are included in this measure.

Results from the Health Waste Calculator



In this analysis, a total of 16,673 individuals received imaging for low back pain for an estimated cost of $4.8 million.

83% of these individuals received wasteful and likely wasteful imaging for an estimated cost of $4 million.

"Necessary imaging" includes MRI for patients with neurologic deficits or other serious underlying conditions or in those ≥70 years old.

"Likely wasteful imaging" includes X-ray lumbar spine and CT lumbar spine without contrast in patients with neurologic deficits or other serious underlying conditions or in those ≥70 years old.

"Wasteful imaging" includes X-ray, MRI and CT of uncomplicated acute low back pain with no neurologic deficits or underlying conditions in those < 70 years old.

Preoperative EKG, chest x-ray and pulmonary function testing

This measure is based on Choosing Wisely recommendations from the American Society of Anesthesiologists, the American College of Radiology, and the American Academy of Ophthalmology.

Anesthesiologists perform preoperative assessment on all patients undergoing surgery in order to identify any disease or risk factors that could have an impact on surgical outcomes and to plan accordingly. *Indiscriminate, routine* preoperative testing in asymptomatic patients does not make an important contribution to perioperative assessment; the ordering of preoperative tests should be selective based on existing risk and level of invasiveness of the surgery.

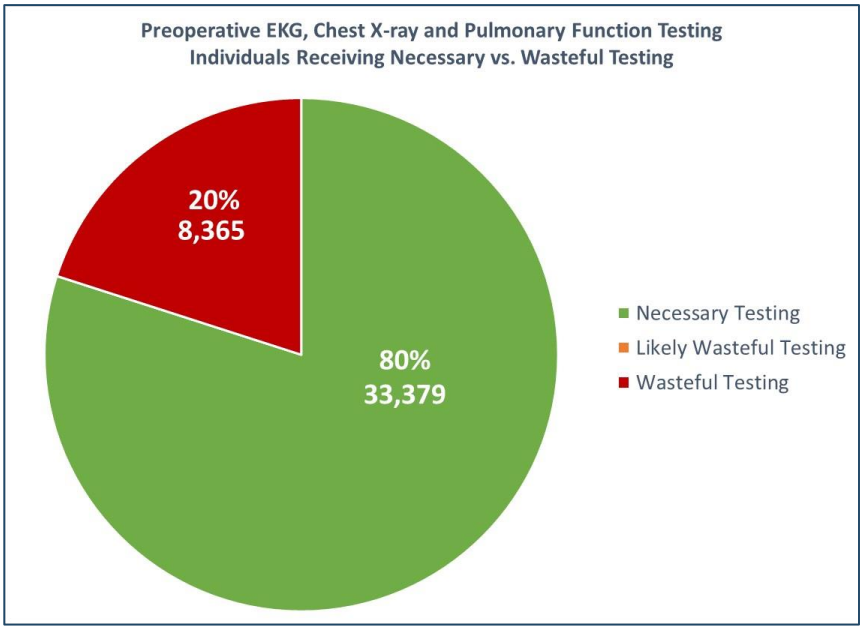
This measure identifies individuals without significant systemic disease who received preoperative EKG, chest X-ray and pulmonary function testing performed 30 days or fewer prior to a low-risk surgery as wasteful.

Low-risk procedures include various endoscopic and laparoscopic surgeries, minor gynecology, orthopedic, ophthalmology and urological procedures including superficial surgeries.

All instances of EKG, chest X-ray or pulmonary function testing performed within 30 days prior to low-risk surgery in the absence of indications are identified as "wasteful."

Specific indications for EKG, such as cardiovascular risk factors, new signs or symptoms of cardiovascular disease; indications for chest x-ray such as signs or symptoms suggesting new or unstable cardiopulmonary disease; indications for pulmonary function testing such as chronic obstructive pulmonary disease (COPD), and congestive heart failure were considered "necessary." Services where the low-risk surgery falls on or one day after an evaluation and management visit for emergency care, observation or urgent care visit are excluded from this analysis.

Results from the Health Waste Calculator



In this analysis, a total of 41,747 individuals received preoperative EKGs, chest X-rays or pulmonary function tests for an estimated cost of $41.4 million.

20% of these individuals received wasteful preoperative testing for an estimated cost of $6.4 million.

*3 individuals fell into the "Likely Wasteful" category, representing .007% of the total. These individuals are not represented in the chart but are included in the total estimated spend for unnecessary preoperative testing.

Cardiac stress testing

This measure is based on Choosing Wisely recommendations from the American College of Cardiology, the American Society of Echocardiography and the American Society of Nuclear Cardiology.

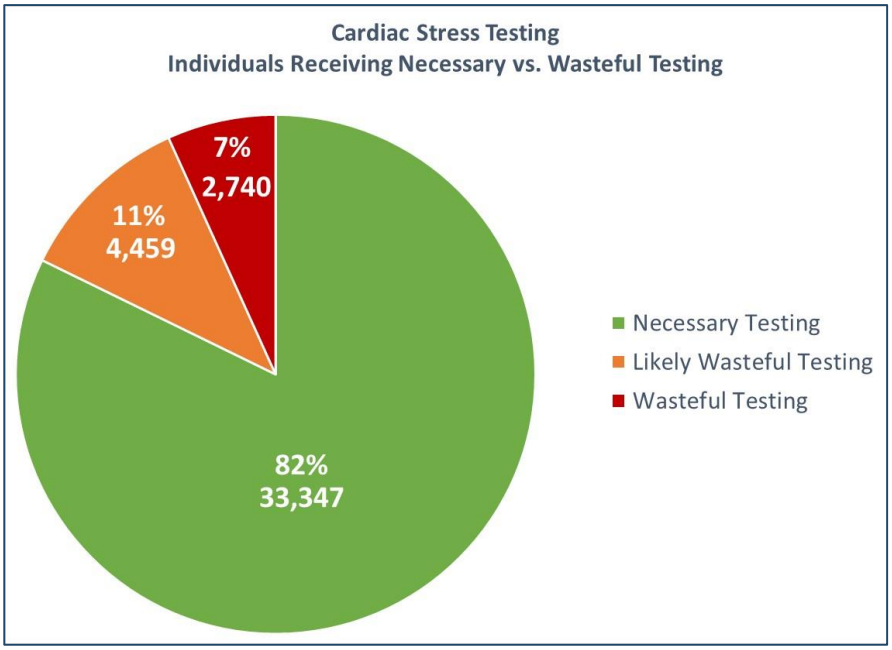
Cardiac stress testing should be used in symptomatic patients to assist in the diagnosis of obstructive coronary artery disease or when certain other clinical findings are present. However, performing stress cardiac imaging or advanced non-invasive imaging on a serial or scheduled pattern (e.g., every one to two years) is not recommended for patients without symptoms. The practice of routine cardiac stress testing in asymptomatic patients may lead to unnecessary invasive procedures and excess radiation exposure.

This measure identifies cardiac stress testing (including stress electrocardiogram, echocardiography and advanced cardiac testing) as wasteful, except in specific clinical circumstances.

The eligible population includes individuals 18 years and older.

In this measure, there are a number of clinical circumstances identified that indicate cardiac stress testing is "necessary;" *for example*, (1) individuals with acute cardiac symptoms or ventricular tachycardia who undergo stress EKG, stress radionuclide imaging, or stress echocardiography; (2) individuals with cardiac conditions (such as heart failure, ventricular fibrillation, abnormal EKG findings, and coronary stenosis) who undergo stress radionuclide imaging, stress echo or stress CMR, or (3) individuals with heart failure who had stress EKG testing prior to the initiation of cardiac rehabilitation.

Results from the Health Waste Calculator



In this analysis, a total of 40,546 individuals received cardiac stress testing for an estimated cost of $197 million.

18% of these individuals received wasteful and likely wasteful cardiac stress testing for an estimated cost of $33.4 million.

Imaging for uncomplicated headache

This measure is based on a Choosing Wisely recommendation from the American College of Radiology.

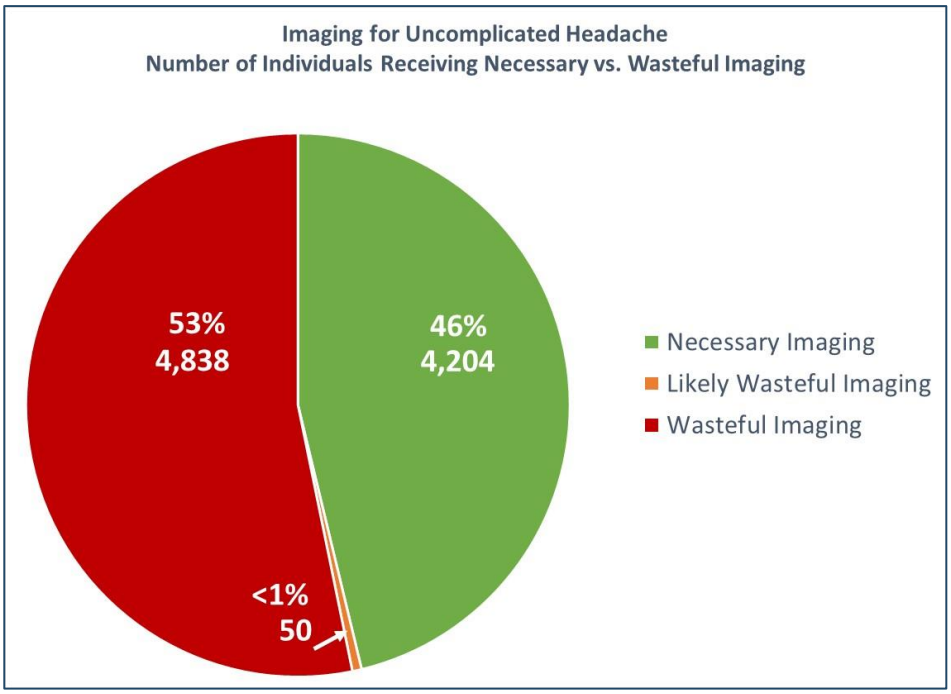
Headache is a very common problem among patients presenting to primary care. Headache is often misdiagnosed or mistreated. Several studies have confirmed that imaging *for isolated headache unaccompanied by other neurologic findings* does not contribute to better management of the patient. These low-yield studies are more likely to result in false positives that lead to additional medical procedures and expense, neither of which improve patient well-being.

This measure identifies unnecessary use of imaging in patients with uncomplicated headache.

The eligible population for this measure includes individuals that are aged 18 and older with a diagnosis of uncomplicated headache. Uncomplicated headache is defined as low to moderate severity pain anywhere in the region of the head and neck in the absence of positive neurological symptoms or systemic illness.

Imaging is recommended for certain clinical conditions, e.g., sudden onset of severe headache or unilateral headache, suspected carotid or vertebral dissection, seizures and epilepsy, headache with hearing loss, or new headache in patients older than 60, pregnant patients, or patients with suspected meningitis/encephalitis, stroke or symptoms of stroke.

Results from the Health Waste Calculator



In this analysis, a total of 9,092 individuals received imaging for uncomplicated headache for an estimated cost of $12.6 million.

53% of these individuals received wasteful imaging for uncomplicated headache for an estimated cost of $6.7 million.

"Necessary imaging" CT, CTA, MRA, and MRI for patients older than 60 years or for those with complicated headache (severe headache, sudden onset of unilateral headache, suspected carotid or vertebral dissection, Ipsilateral Horner's syndrome, immunodeficiency, pregnancy, or suspected meningitis/encephalitis etc.).

"Wasteful imaging" is ordered for diagnosis of uncomplicated headache.

Appendix

The following is a list of the 47 Choosing Wisely recommendations (measures) included in the Health Waste Calculator at the time that this report was completed (short summary description included). The list is organized by category for ease of reference but is not listed in any priority order, although the "top 11" discussed in this report are in bold and noted first in each category):

Common Treatments (Prescribing)

1. **Don't indiscriminately prescribe antibiotics for uncomplicated acute URI.**
2. Don't order antibiotics for adenoviral conjunctivitis (pink eye).
3. Don't prescribe oral antibiotics for uncomplicated acute tympanostomy tube otorrhea.
4. Don't prescribe oral antibiotics for uncomplicated acute external otitis.
5. Don't prescribe or recommend cough and cold medicines for respiratory illnesses in children under four years of age.

Screening Tests

6. **Don't perform routine annual cervical cytology screening (Pap tests) in women 21-65 years of age.**
7. **Don't order annual electrocardiograms (EKGs) or any other cardiac screening for low-risk patients without symptoms.**
8. **Don't perform PSA-based screening for prostate cancer in all men regardless of age.**
9. **Don't perform population based screening for 25-OH-Vitamin D deficiency.**
10. Don't obtain screening exercise electrocardiogram testing in individuals who are asymptomatic and at low risk for coronary heart disease.
11. 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.
12. Don't perform Pap tests on women younger than 21.
13. Don't perform PAP tests on women with previous hysterectomy.
14. 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.
15. Don't order unnecessary screening for colorectal cancer in adults older than age 50 years.
16. Don't perform coronary angiography in patients without cardiac symptoms unless high-risk markers present.

Diagnostic Testing

17. **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.**
18. **Don't do imaging for uncomplicated headache.**
19. **Don't do imaging for low back pain within the first six weeks, unless red flags are present.**
20. **Don't routine order imaging tests for patients without symptoms or signs of significant eye disease.**
21. Don't perform computed tomography (CT) scans on children being treated for headache.
22. Don't obtain brain imaging studies (CT or MRI) in the evaluation of simple syncope and a normal neurological examination.
23. Don't perform imaging of the carotid arteries for simple syncope without other neurologic symptoms.
24. 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.
25. Don't routinely do diagnostic testing in patients with chronic urticaria (hives).
26. Don't perform electroencephalography (EEG) for headaches.
27. Don't order computed tomography (CT) scans of the head/brain for sudden hearing loss.
28. Don't routinely obtain radiographic imaging for patients who meet diagnostic criteria for uncomplicated acute rhinosinusitis.
29. Don't perform Neuroimaging (CT, MRI) in a child with simple febrile seizure.
30. Don't perform advanced sperm function testing, such as sperm penetration or hemizona assays, in the initial evaluation of the infertile couple.
31. Don't perform a postcoital test (PCT) for the evaluation of infertility
32. Don't perform routine head CT scans for emergency room visits for severe dizziness.
33. Don't use coronary artery calcium scoring for patients with known coronary artery disease (including stents and bypass grafts).
34. Don't order CT scans of the abdomen and pelvis in young otherwise healthy emergency department patients (age <50) with known histories of kidney stones, or ureterolithiasis, presenting with symptoms consistent with uncomplicated renal colic.
35. Don't perform computed tomography (CT) scans in the routine evaluation of abdominal pain.

Preoperative Evaluation

36. **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.**
37. **Don't obtain EKG, chest X rays or Pulmonary function test in patients without significant systemic disease (ASA I or II) undergoing low-risk surgery.**
38. 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.

Routine Follow-up/Monitoring

39. Don't perform echocardiography as routine follow-up for mile, asymptomatic native valve disease in adult patients with no change in signs or symptoms.
40. Don't perform MRI of the peripheral joints to routinely monitor inflammatory arthritis.
41. Don't perform routine annual stress testing after coronary artery revascularization.
42. Don't perform radionuclide imaging as part of routine follow-up in asymptomatic patients.

Disease Approach

43. Don't prescribe nonsteroidal anti-inflammatory drugs (NSAIDS) in individuals with hypertension, heart failure or CKD of all causes, including diabetes.
44. Don't schedule elective, non-medically indicated inductions of labor or Cesarean deliveries before 39 weeks, 0 days gestational age.
45. Don't perform an arthroscopic knee surgery for knee osteoarthritis.
46. Don't prescribe antidepressants as monotherapy in patients with bipolar I disorder.
47. Don't perform revascularization without prior medical management for renal artery stenosis.

Washington State Choosing Wisely Task Force

The Washington State Choosing Wisely Task Force, a group of 21 clinician leaders from around Washington state, champions and disseminates the principles and resources of Choosing Wisely. This exceptional group of leaders is committed to ensuring safe, high-value care for patients in Washington state by significantly reducing health care overuse and waste. They strive to change behaviors and create measurable improvement through education, building practice models and frameworks, and developing resources for providers and health care systems. The Choosing Wisely Task Force is co-sponsored by the Washington Health Alliance, the Washington State Medical Association and the Washington State Hospital Association.

Choosing Wisely Task Force members

- Chair: Matt Handley, MD, Kaiser Permanente Washington
- David Buchholz, MD, Premera Blue Cross
- Andrea Carter, MD, Samaritan Health
- Marisa D'Angeli, MD, Washington State Department of Health
- Christopher Dale, MD, MPH, Swedish Medical Group
- Tanny Davenport, MD, MMM, Signal Health
- Connie Davis, MD, Skagit Regional Health
- Scott Foster, MD, MPH, PeaceHealth Medical Group
- Kent Hu, MD, MPH, The Everett Clinic
- Camille Johnson, MD, Virginia Mason Medical Center
- Dan Kent, MD, UnitedHealthcare Community Plan
- Gary Knox, MD, MultiCare Rockwood Clinic
- Scott Kronlund, MD, Northwest Physicians Network
- Pat Kulpa, MD, Regence BlueShield
- Francis Mercado, MD, CHI Franciscan Health System
- Randy Moseley, MD, Confluence Health
- Scott Ramsey, MD, PhD, Fred Hutchinson Cancer Research Center
- John Robinson, MD, SM, First Choice Health
- Pam Sheffield, MD, University of Washington (UW) Medicine
- Jae Sim, MD, Edmonds Family Medicine
- John Vassal, MD, Qualis Health

WASHINGTON HEALTH ALLIANCE

ABOUT THE ALLIANCE

The Washington Health Alliance is a place where stakeholders work collaboratively to transform Washington state's health care system for the better. The Alliance brings together organizations that share a commitment to drive change in our health care system by offering a forum for critical conversation and aligned efforts by stakeholders: purchasers, providers, health plans, consumers and other health care partners. The Alliance believes strongly in transparency and offers trusted and credible reporting of progress on measures of health care quality and value. The Alliance is a nonpartisan 501(c)(3) nonprofit with more than 185 member organizations. A cornerstone of the Alliance's work is the Community Checkup, a report to the public comparing the performance of medical groups, hospitals and health plans and offering a community-level view on important measures of health care quality (www.wacommunitycheckup.org).

For more about the Alliance:
www.WashingtonHealthAlliance.org

For the Community Checkup report:
www.WACommunityCheckup.org