

No-Value Care: A Starting Point to Reduce Wasteful Healthcare Spending

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The utilization of low-value medical care (LVC) services has been a longstanding challenge in the United States. A decade ago, drawing upon medical professionalism to trigger conversations between patients and clinicians about potentially overused services, the [Choosing Wisely](#) campaign recognized more than 600 LVC diagnostic tests, treatments, and services identified by more than 80 professional societies. These clinician-authored recommendations established a foundation for measurement tools widely used by providers and purchasers and were the impetus behind hundreds of implementations to reduce LVC, creating an LVC funding and training infrastructure, producing a cohort of LVC investigators who published scores of peer-reviewed scientific manuscripts providing insight on how best to move the field forward. Despite educational campaigns, an intense research focus and initiatives to curb low-value care, the Choosing Wisely campaign's ambitious goal to substantially reduce LVC utilization has not been fully achieved, as use of, and expenditures on low-value care by private and public payer has [decreased only marginally](#).

One of the reasons for this lack of progress is a lack of a standardized LVC definition that directly addresses that the value of a specific service depends on several factors including interpretation of the available evidence in specific clinical scenarios, as well as patient preferences. Thus, to move this important agenda forward, we propose a precise category of “No-Value Care” (NVC), the designation of which is both actionable and minimizes elements left to interpretation. By our definition, the use of these NVC services in specified populations and specific clinical scenarios does not improve clinical outcomes (at best), and in many cases reduces patient satisfaction and causes harm (at worst). In developing this classification for policymakers and other decision-makers, we considered the following dimensions:

1. identification: what services should not be delivered even if they were free (i.e., no value)?
2. utilization: how often are these no value services delivered?
3. economic impact: how much is spent on these services and subsequently utilized care by payers and consumers on these services?

With these questions in mind, in this article we first put forward a working definition of NVC. We then apply this definition to identify a convenience sample of NVC services from available data sources, demonstrating the feasibility of applying the definition. Finally, for illustrative purposes, we estimate the utilization and costs associated with a subsample of selected services that meet the NVC definition.

DEFINING NO-VALUE CARE

No-Value Care (NVC) can be defined as clinical services and procedures that meet the following criteria:

1. Rigorous evidence demonstrates no clinical benefit or for which the clinical harms outweigh the benefits (i.e., no net benefit) when used in specific clinical circumstances by defined patient populations.
2. No or low patient demand (i.e., patient preference to overcome clinician reluctance to use a no value service)
3. No or low variability in net clinical benefits based on patient characteristics (such as age, sex, disease severity, site of lesion, evolving diagnostic criteria, changes in standard care, time-dependent care, differences in baseline risks, and dose-dependent effects) when used in a specific clinical scenario (see AHRQ's [EPC Methods Guide for clinical heterogeneity](#)).

OPERATIONALIZING NO-VALUE CARE

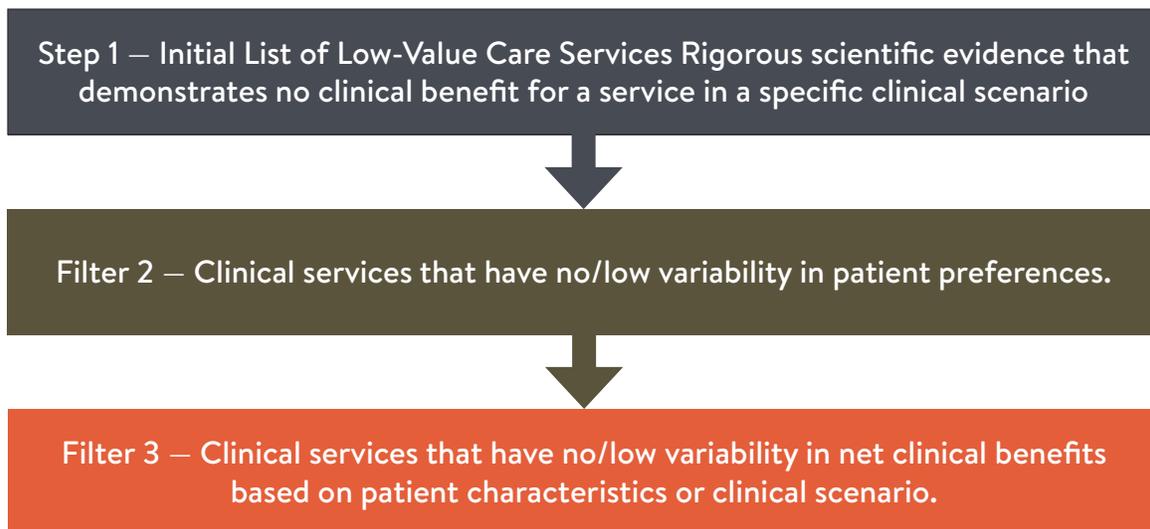
Operationalizing NVC began with anchoring examples to the criteria of the NVC definition:

1. **Rigorous scientific evidence that demonstrates no clinical benefit for a service in a specific clinical scenario.** To decrease the potential for controversy, services designated as NVC have no conflict with expert consensus or clinical guidelines for defined patient populations or override physician-patient decisions about the best treatment for an individual patient should exist. Example: antibacterial agents for viral infection. There is no clinical evidence that demonstrates antibacterial agents will provide clinical benefit to individuals with viral infections.
2. **Clinical services that have no/low variability in patient preferences.** Recognizing that situations arise where patient demand for services may overcome the reluctance of a clinician to prescribe a no-value service. This element minimizes the likelihood of these potential patient-demanded services from consideration.
Example: Imaging for ankle injury for which the individual does not meet criteria for imaging using the Ottawa Ankle Rules. Evidence supports the Ottawa ankle rules as an accurate instrument for excluding fractures of the ankle and mid-foot. The instrument has a sensitivity of almost 100%. A patient who presents with 0 of the symptoms is less than 1% likely to have a fracture. The possibility of patient demand for this no value service - despite rigorous evidence demonstrating no clinical benefit of ankle imaging in certain patient with an injury - led to its exclusion from a no value care designation.
3. **Clinical services that have no/low variability in net clinical benefits based on patient characteristics or clinical scenario.** This element recognizes the need for consistency in the definition of No-Value Care. The service should have little variability in net clinical benefits regardless of patient characteristics and clinical scenarios such as age, sex, disease severity, site of lesion, evolving diagnostic criteria, changes in standard care, time-dependent care, differences in baseline risks, and dose-dependent effects.
Example: Performing cervical cancer screening before the age of 21 years. There are extremely rare clinical situations where the delivery of this service would be deemed not no value.

IDENTIFYING NVC SERVICES FROM AVAILABLE LVC DATA SOURCES

Next, the team identified several LVC services and subjected them to the NVC criteria. Figure 1 provides a visualization of the process of down-selecting potential NVC services from the initial list of LVC services.

FIGURE 1. NO-VALUE CARE FILTERING PROCESS



The process used to identify potentially NVC services involved several steps:

Step 1 – Identify an Initial List of Low-Value Care Services: The sources we used to identify Low-Value Care which may potentially be deemed NVC included those that:

1. Appear in Choosing Wisely
2. Evaluated/published by researchers/academics
3. Appear in MedInsight Waste Calculator
4. Appear as a D-rated service in the USPSTF list
5. Appear in the Northwest dominant quadrant of the Cost-Effectiveness Analysis Registry (meaning the service cost more and worsened health relative to its comparator intervention)

In this feasibility study, 78 low-value services met the first criteria of our NVC definition, rigorous scientific evidence of no clinical benefit for that service. (See Appendix A for a full list of the services).

Step 2 – Filter Through Criteria 2: We then subjected these services (78) to the second criteria of our NVC definition, no or low patient demand. Six services were determined to have variability in patient demand and were removed, resulting in 72 remaining services. (See Appendix A for identification of the services filtered out in step 2)

Services removed were:

- Don't order antibiotics for adenoviral conjunctivitis (pink eye)

- Don't prescribe oral antibiotics for uncomplicated acute tympanostomy tube otorrhea
- The use of brand name drugs when generic equivalents are available
- Don't prescribe or recommend cough and cold medicines for respiratory illnesses in children under four years of age
- Don't prescribe oral antibiotics for members with upper URI or ear infection (acute sinusitis, URI, viral respiratory illness or acute otitis externa)
- Don't schedule elective, non-medical indicated inductions of labor or Cesarean delivers before 39 weeks, 0 days gestational age

Step 3 – Filter Through Criteria 3: Finally, we exposed this final set (72) through the third criteria of our NVC definition, minimal clinical nuance. Thirty-nine additional services were deemed to have varying levels of clinical nuance and were removed from the NVC list. (See Appendix A for identification of the services filtered out in step 3).

The application of this three-step process resulted in the identification of 33 potential NVC services. (See Appendix A for identification of the 33 specific services).

QUANTIFYING NO-VALUE CARE

To demonstrate that NVC spending estimates were possible, we quantified expenditures on four of the services that appeared in the NVC list that also appeared in a project measuring low-value care by the [Research Consortium in 2020](#) (Figure 2) We find that elimination of these four NVC services would have saved more than a billion dollars in health spending 2015 in the commercial population.

FIGURE 2. EXAMPLES OF NO-VALUE CARE AND ESTIMATED COSTS, COMMERCIAL POPULATION IN 2015

| Description | Estimated Commercial Cost, in millions |
|---|--|
| Don't perform PSA-based screening for prostate cancer in men over 70 | \$66 |
| Don't perform an arthroscopic knee surgery for knee osteoarthritis | \$156 |
| Don't perform MRI of the peripheral joints to routinely monitor inflammatory arthritis | < \$1 |
| Don't order unnecessary cervical cancer (Pap Smear and HPV) in women who have had adequate prior screening and are not otherwise at high risk for cervical cancer | \$782 |
| | \$1,005 |

Findings from this demonstration project clearly show that an operational definition of No Value Care can be used in practice to identify services that have the potential to create substantial headroom to reallocate dollars spent on no-value services to dollars spent on high-value services.

LIMITATIONS

We acknowledge that future efforts to define, identify, and quantify the use of NVC services could and should follow a more rigorous and extensive process. Using qualitative methods of consensus, experts from varying stakeholder perspectives should review, score and agree upon which services should in fact be labeled as No-Value.

MOVING FORWARD

The proposed definition of NVC requires thoughtful discussion and consideration of intended and unintended consequences, but it is time to move beyond discussions of *low-value care* and make it easier for policymakers and decision-makers to identify *No-Value Care*. This demonstration project showed we can operationalize a NVC definition and the resulting list of services could produce meaningful savings, allowing for a re-distribution of those dollars to higher-value care. The next steps to further this work will be to:

- fine-tune the proposed definition of No-Value Care;
- operationalize the definition with additional lists of LVC sources;
- hone a more robust process to filter services;
- filter more services; and
- quantify the cost savings for more services and with more recent data



ABOUT US

The Research Consortium for Health Care Value Assessment is a partnership between Altarum and VBID Health, with funding from the PhRMA Foundation as part of its Value Assessment Initiative, established to promote the pursuit of value in health care delivery in the U.S.

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APPENDIX A. NO-VALUE CARE SERVICES IDENTIFIED

| Description | Removed – Failed Filter 2 Criteria | Removed – Failed Filter 3 Criteria | Identified as Potentially No-Value Care |
|---|------------------------------------|------------------------------------|---|
| 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 | | | X |
| Don't use coronary artery calcium scoring for patients with known coronary artery disease (including stents and bypass grafts) | | | X |
| Don't perform vertebroplasty for osteoporotic vertebral fractures | | | X |
| Don't perform PSA-based screening for prostate cancer in men over 70 | | | X |
| Don't order annual electrocardiograms (EKGs) or any other cardiac screening for low-risk patients without symptoms | | | X |
| Don't order unnecessary 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 | | | X |
| USPSTF recommends against screening for bacterial vaginosis (BV) in pregnant persons who are not at increased risk for preterm delivery. | | | X |
| The USPSTF recommends against screening for pancreatic cancer in asymptomatic adults. | | | X |
| The USPSTF recommends against screening for cervical cancer in women younger than 21 years. | | | X |
| The USPSTF recommends against screening for cervical cancer in women who have had a hysterectomy with removal of the cervix and do not have a history of a high-grade precancerous lesion (ie, cervical intraepithelial neoplasia [CIN] grade 2 or 3) or cervical cancer. | | | X |
| The USPSTF recommends against screening for cervical cancer in women older than 65 years who have had adequate prior screening and are not otherwise at high risk for cervical cancer. | | | X |

| Description | Removed – Failed Filter 2 Criteria | Removed – Failed Filter 3 Criteria | Identified as Potentially No-Value Care |
|---|------------------------------------|------------------------------------|---|
| The USPSTF recommends against screening with resting or exercise electrocardiography (ECG) to prevent cardiovascular disease (CVD) events in asymptomatic adults at low risk of CVD events. | | | X |
| The USPSTF recommends against screening for ovarian cancer in asymptomatic women who are not known to have a high-risk hereditary cancer syndrome. | | | X |
| The USPSTF recommends against the use of estrogen alone for the primary prevention of chronic conditions in postmenopausal women who have had a hysterectomy. | | | X |
| The USPSTF recommends against the use of combined estrogen and progestin for the primary prevention of chronic conditions in postmenopausal women. | | | X |
| The USPSTF recommends against screening for thyroid cancer in asymptomatic adults. | | | X |
| The USPSTF recommends against routine serologic screening for genital herpes simplex virus (HSV) infection in asymptomatic adolescents and adults, including those who are pregnant. | | | X |
| The USPSTF recommends against screening for chronic obstructive pulmonary disease (COPD) in asymptomatic adults. | | | X |
| The USPSTF recommends against screening for testicular cancer in adolescent or adult men. | | | X |
| Spinal Fusions | | | X |
| Proton beam therapy for prostate cancer | | | X |
| Don't recommend screening for breast, colorectal or prostate cancer if life expectancy is estimated to be less than 10 years. | | | X |
| Don't screen for carotid artery stenosis (CAS) in asymptomatic adult patients. | | | X |
| Avoid echocardiograms for preoperative/ perioperative assessment of patients with no history or symptoms of heart disease. | | | X |
| Don't use inferior vena cava (IVC) filters routinely in patients with acute VTE. | | | X |

| Description | Removed – Failed Filter 2 Criteria | Removed – Failed Filter 3 Criteria | Identified as Potentially No-Value Care |
|--|------------------------------------|------------------------------------|---|
| Don't prescribe nonsteroidal anti-inflammatory drugs (NSAIDs) in individuals with hypertension or heart failure or CKD of all causes, including diabetes | | | X |
| 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 | | | X |
| 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 | | | X |
| Don't order unnecessary screening for colorectal cancer in adults older than age 50 years | | | X |
| 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 | | | X |
| Don't perform population based screening for 25-OH-Vitamin D deficiency | | | X |
| Don't perform an arthroscopic knee surgery for knee osteoarthritis | | | X |
| Don't perform MRI of the peripheral joints to routinely monitor inflammatory arthritis | | | X |
| Don't recommend more than a single fraction of palliative radiation for uncomplicated painful bone metastasis | | X | |
| Don't perform voiding cystourethrogram (VCUG) routinely in first febrile urinary tract infection (UTI) in children aged 2-24 months | | X | |
| Don't perform advanced sperm function testing, such as sperm penetration or hemizona assays, in the initial evaluation of the infertile couple | | X | |
| Don't perform a postcoital test (PCT) for the evaluation of infertility | | X | |
| Don't prescribe antidepressants as monotherapy in patients with bipolar I disorder | | X | |

| Description | Removed – Failed Filter 2 Criteria | Removed – Failed Filter 3 Criteria | Identified as Potentially No-Value Care |
|---|------------------------------------|------------------------------------|---|
| Vertebroplasty and kyphoplasty | | X | |
| 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 | | X | |
| Don't obtain brain imaging studies (CT or MRI) in the evaluation of simple syncope and a normal neurological examination | | X | |
| Don't order antibiotics for adenoviral conjunctivitis (pink eye) | X | | |
| Don't prescribe oral antibiotics for uncomplicated acute tympanostomy tube otorrhea | X | | |
| Branded drugs when identical generics are available | X | | |
| Don't routinely do diagnostic testing in patients with chronic urticaria | | X | |
| Don't perform imaging of the carotid arteries for simple syncope without other neurologic symptoms | | X | |
| Don't order computed tomography (CT) scan of the head/brain for sudden hearing loss | | X | |
| Don't routinely obtain radiographic imaging for patients who meet diagnostic criteria for uncomplicated acute rhinosinusitis | | X | |
| Don't perform routine head CT scans for emergency room visits for severe dizziness. | | X | |
| Don't prescribe or recommend cough and cold medicines for respiratory illnesses in children under four years of age | X | | |
| Don't prescribe oral antibiotics for members with upper URI or ear infection (acute sinusitis, URI, viral respiratory illness or acute otitis externa) | X | | |
| Don't place peripherally inserted central catheters (PICC) in stage III-V CKD patients without consulting nephrology | | X | |

| Description | Removed – Failed Filter 2 Criteria | Removed – Failed Filter 3 Criteria | Identified as Potentially No-Value Care |
|---|------------------------------------|------------------------------------|---|
| Don't perform coronary angiography in patients without cardiac symptoms unless high-risk markers present | | X | |
| USPSTF recommends against routine screening for AAA with ultrasonography in women who have never smoked and have no family history of AAA. | | X | |
| USPSTF recommends against routine screening for asymptomatic bacteriuria in nonpregnant adults | | X | |
| USPSTF recommends against the routine use of risk-reducing medications, such as tamoxifen, raloxifene, or aromatase inhibitors in women who are not at increased risk for breast cancer | | X | |
| The USPSTF recommends against routine risk assessment, genetic counseling, or genetic testing for women whose personal or family history or ancestry is not associated with potentially harmful BRCA1/2 gene mutations. | | X | |
| Don't obtain preoperative chest radiography in the absence of a clinical suspicion for intrathoracic pathology. | | X | |
| Don't perform neuroimaging studies in patients with stable headaches that meet criteria for migraine. | | X | |
| Avoid recommending knee arthroscopy as initial/management for patients with degenerative meniscal tears and no mechanical symptoms. | | X | |
| Don't perform PET, CT, and radionuclide bone scans in the staging of early prostate cancer at low risk for metastasis. | | X | |
| Avoid using stress echocardiograms on asymptomatic patients who meet "low risk" scoring criteria for coronary disease. | | X | |
| Don't do work up for clotting disorder (order hypercoagulable testing) for patients who develop first episode of deep vein thrombosis (DVT) in the setting of a known cause. | | X | |
| Don't initiate routine evaluation of carotid artery disease prior to cardiac surgery in the absence of symptoms or other high-risk criteria. | | X | |

| Description | Removed – Failed Filter 2 Criteria | Removed – Failed Filter 3 Criteria | Identified as Potentially No-Value Care |
|--|------------------------------------|------------------------------------|---|
| Prior to cardiac surgery, there is no need for pulmonary function testing in the absence of respiratory symptoms. | | X | |
| Don't schedule elective, non-medical indicated inductions of labor or Cesarean deliveries before 39 weeks, 0 days gestational age | X | | |
| Don't do imaging for low back pain within the first six weeks, unless red flags are present | | X | |
| Don't do imaging for uncomplicated headache | | X | |
| Don't perform electroencephalography (EEG) for headaches | | X | |
| 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 | | X | |
| Don't routinely order imaging tests for patients without symptoms or signs of significant eye disease | | X | |
| Don't order computed tomography (CT) head imaging in children 1 month to 17 years of age unless indicated | | X | |
| 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 | | X | |
| Don't perform Computed tomography (CT) scans in the routine evaluation of abdominal pain | | X | |
| Don't perform revascularization without prior medical management for renal artery stenosis | | X | |
| The USPSTF recommends against daily supplementation with 400 IU or less of vitamin D and 1000 mg or less of calcium for the primary prevention of fractures in community-dwelling, postmenopausal women. | | X | |
| The USPSTF recommends against vitamin D supplementation to prevent falls in community-dwelling adults 65 years or older. | | X | |
| The USPSTF recommends against the use of β-carotene or vitamin E supplements for the prevention of cardiovascular disease or cancer. | | X | |