Choosing Wisely®

An initiative of the ABIM Foundation

American Academy of Allergy, Asthma & Immunology

www.aaaai.org

Five Things Physicians and Patients Should Question

1 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.

Appropriate diagnosis and treatment of allergies requires specific IgE testing (either skin or blood tests) based on the patient's clinical history. The use of other tests or methods to diagnose allergies is unproven and can lead to inappropriate diagnosis and treatment. Appropriate diagnosis and treatment is both cost effective and essential for optimal patient care.

2 Don't order sinus computed tomography (CT) or indiscriminately prescribe antibiotics for uncomplicated acute rhinosinusitis.

Viral infections cause the majority of acute rhinosinusitis and only 0.5 percent to 2 percent progress to bacterial infections. Most acute rhinosinusitis resolves without treatment in two weeks. Uncomplicated acute rhinosinusitis is generally diagnosed clinically and does not require a sinus CT scan or other imaging. Antibiotics are not recommended for patients with uncomplicated acute rhinosinusitis who have mild illness and assurance of follow-up. If a decision is made to treat, amoxicillin should be first-line antibiotic treatment for most acute rhinosinsutis.

3 Don't routinely do diagnostic testing in patients with chronic urticaria.

In the overwhelming majority of patients with chronic urticaria, a definite etiology is not identified. Limited laboratory testing may be warranted to exclude underlying causes. Targeted laboratory testing based on clinical suspicion is appropriate. Routine extensive testing is neither cost effective nor associated with improved clinical outcomes. Skin or serum-specific IgE testing for inhalants or foods is not indicated, unless there is a clear history implicating an allergen as a provoking or perpetuating factor for urticaria.

4 Don't recommend replacement immunoglobulin therapy for recurrent infections unless impaired antibody responses to vaccines are demonstrated.

Immunoglobulin (gammaglobulin) replacement is expensive and does not improve outcomes unless there is impairment of antigen-specific IgG antibody responses to vaccine immunizations or natural infections. Low levels of immunoglobulins (isotypes or subclasses), without impaired antigen-specific IgG antibody responses, do not indicate a need for immunoglobulin replacement therapy. Exceptions include IgG levels <150mg/dl and genetically defined/suspected disorders. Measurement of IgG subclasses is not routinely useful in determining the need for immunoglobulin therapy. Selective IgA deficiency is not an indication for administration of immunoglobulin.

5 Don't diagnose or manage asthma without spirometry.

Clinicians often rely solely upon symptoms when diagnosing and managing asthma, but these symptoms may be misleading and be from alternate causes. Therefore spirometry is essential to confirm the diagnosis in those patients who can perform this procedure. Recent guidelines highlight spirometry's value in stratifying disease severity and monitoring control. History and physical exam alone may over- or under-estimate asthma control. Beyond the increased costs of care, repercussions of misdiagnosing asthma include delaying a correct diagnosis and treatment.

How This List Was Created

The American Academy of Allergy, Asthma & Immunology (AAAAI) Executive Committee created a task force to lead work on *Choosing Wisely* consisting of board members, the AAAAI President and Secretary/Treasurer and AAAAI participants in the Joint Task Force on Practice Parameters. Through multiple society publications and notifications, AAAAI members were invited to offer feedback and recommend elements to be included in the list. A targeted email was also sent to an extended group of AAAAI leadership inviting them to participate.

The work group reviewed the submissions to ensure the best science in the specialty was included. Based on this additional members were recruited for their expertise. Suggested elements were considered for appropriateness, relevance to the core of the specialty, potential overuse of resources and opportunities to improve patient care. They were further refined to maximize impact and eliminate overlap, and then ranked in order of potential importance both for the specialty and for the public. Finally, the work group chose its top five recommendations which were then approved by the Executive Committee. AAAAI's disclosure and conflict of interest policy can be found at www.aaaai.org.

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About the American Academy of Allergy, Asthma & Immunology

The American Academy of Allergy, Asthma & Immunology (AAAAI) represents allergists, asthma specialists, clinical immunologists, allied health professionals, and others with a special interest in the research and treatment of allergic and immunologic diseases. Established in 1943, the AAAAI has more than 6,500 members in the United States, Canada, and 60 other countries.

For more information or questions, please visit www.aaaai.org.

For more information or to see other lists of Five Things Physicians and Patients Should Question, visit www.choosingwisely.org.

Choosing Wisely®

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American Academy of Family Physicians

AMERICAN ACADEMY OF FAMILY PHYSICIANS

Five Things Physicians and Patients Should Question

1

Don't do imaging for low back pain within the first six weeks, unless red flags are present.

Red flags include, but are not limited to, severe or progressive neurological deficits or when serious underlying conditions such as osteomyelitis are suspected. Imaging of the lower spine before six weeks does not improve outcomes, but does increase costs. Low back pain is the fifth most common reason for all physician visits.

2

Don't routinely prescribe antibiotics for acute mild-to-moderate sinusitis unless symptoms last for seven or more days, or symptoms worsen after initial clinical improvement.

Symptoms must include discolored nasal secretions and facial or dental tenderness when touched. Most sinusitis in the ambulatory setting is due to a viral infection that will resolve on its own. Despite consistent recommendations to the contrary, antibiotics are prescribed in more than 80 percent of outpatient visits for acute sinusitis. Sinusitis accounts for 16 million office visits and $5.8 billion in annual health care costs.

3

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.

DEXA is not cost effective in younger, low-risk patients, but is cost effective in older patients.

4

Don't order annual electrocardiograms (EKGs) or any other cardiac screening for low-risk patients without symptoms.

There is little evidence that detection of coronary artery stenosis in asymptomatic patients at low risk for coronary heart disease improves health outcomes. False-positive tests are likely to lead to harm through unnecessary invasive procedures, over-treatment and misdiagnosis. Potential harms of this routine annual screening exceed the potential benefit.

5

Don't perform Pap smears on women younger than 21 or who have had a hysterectomy for non-cancer disease.

Most observed abnormalities in adolescents regress spontaneously, therefore Pap smears for this age group can lead to unnecessary anxiety, additional testing and cost. Pap smears are not helpful in women after hysterectomy (for non-cancer disease) and there is little evidence for improved outcomes.

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Five More Things Physicians and Patients Should Question

6

Don't schedule elective, non-medically indicated inductions of labor or Cesarean deliveries before 39 weeks, 0 days gestational age.

Delivery prior to 39 weeks, 0 days has been shown to be associated with an increased risk of learning disabilities and a potential increase in morbidity and mortality. There are clear medical indications for delivery prior to 39 weeks and 0 days based on maternal and/or fetal conditions. A mature fetal lung test, in the absence of appropriate clinical criteria, is not an indication for delivery.

7

Avoid elective, non-medically indicated inductions of labor between 39 weeks, 0 days and 41 weeks, 0 days unless the cervix is deemed favorable.

Ideally, labor should start on its own initiative whenever possible. Higher Cesarean delivery rates result from inductions of labor when the cervix is unfavorable. Health care clinicians should discuss the risks and benefits with their patients before considering inductions of labor without medical indications.

8

Don't screen for carotid artery stenosis (CAS) in asymptomatic adult patients.

There is good evidence that for adult patients with no symptoms of carotid artery stenosis, the harms of screening outweigh the benefits. Screening could lead to non-indicated surgeries that result in serious harms, including death, stroke and myocardial infarction.

9

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.

There is adequate evidence that screening women older than 65 years of age for cervical cancer who have had adequate prior screening and are not otherwise at high risk provides little to no benefit.

10

Don't screen women younger than 30 years of age for cervical cancer with HPV testing, alone or in combination with cytology.

There is adequate evidence that the harms of HPV testing, alone or in combination with cytology, in women younger than 30 years of age are moderate. The harms include more frequent testing and invasive diagnostic procedures such as colposcopy and cervical biopsy. Abnormal screening test results are also associated with psychological harms, anxiety and distress.

How This List Was Created (1–5)

The American Academy of Family Physicians (AAFP) list is an endorsement of the five recommendations for Family Medicine previously proposed by the National Physicians Alliance (NPA) and published in the *Archives of Internal Medicine*, as part of its Less is More™ series. The goal was to identify items common in primary care practice, strongly supported by the evidence and literature, that would lead to significant health benefits, reduce risks and harm, and reduce costs. A working group was assembled for each of the three primary care specialties; family medicine, pediatrics and internal medicine. The original list was developed using a modification of the nominal group process, with online voting. The literature was then searched to provide supporting evidence or refute the activities. The list was modified and a second round of field testing was conducted. The field testing with family physicians showed support for the final recommendations, the potential positive impact on quality and cost, and the ease with which the recommendations could be implemented.

More detail on the study and methodology can be found in the *Archives of Internal Medicine* article: The "Top 5" Lists in Primary Care.

How This List Was Created (6–10)

The American Academy of Family Physicians (AAFP) has identified this list of clinical recommendations for the second phase of the *Choosing Wisely* campaign. The goal was to identify items common in the practice of family medicine supported by a review of the evidence that would lead to significant health benefits, reduce risks, harms and costs. For each item, evidence was reviewed from appropriate sources such as evidence reviews from the Cochrane Collaboration, and the Agency for Healthcare Research and Quality. The AAFP's Commission on Health of the Public and Science and Chair of the Board of Directors reviewed and approved the recommendations.

In the case of the first two items on our list – "Don't schedule elective, non-medically indicated inductions of labor or Cesarean deliveries before 39 weeks, 0 days gestational age" and "Don't schedule elective, non-medically indicated inductions of labor between 39 weeks, 0 days and 41 weeks, 0 days unless the cervix is deemed favorable" – we collaborated with the American College of Obstetricians and Gynecologists in developing the final language.

AAFP's disclosure and conflict of interest policy can be found at www.aafp.org.

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About the American Academy of Family Physicians

Founded in 1947, the American Academy of Family Physicians (AAFP) represents 105,900 physicians and medical students nationwide. It is the only medical society devoted solely to primary care. Approximately one in four of all doctor's office visits are made to family physicians. Family medicine's cornerstone is an ongoing, personal patient-physician relationship focused on integrated care.

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For information about health care, health conditions and wellness, please visit the AAFPs award-winning consumer website, www.familydoctor.org.

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American Academy of Hospice and Palliative Medicine

AAHPM

American Academy of Hospice and Palliative Medicine

Five Things Physicians and Patients Should Question

1 Don't recommend percutaneous feeding tubes in patients with advanced dementia; instead, offer oral assisted feeding.

In advanced dementia, studies have found feeding tubes do not result in improved survival, prevention of aspiration pneumonia, or improved healing of pressure ulcers. Feeding tube use in such patients has actually been associated with pressure ulcer development, use of physical and pharmacological restraints, and patient distress about the tube itself. Assistance with oral feeding is an evidence-based approach to provide nutrition for patients with advanced dementia and feeding problems; in the final phase of this disease, assisted feeding may focus on comfort and human interaction more than nutritional goals.

2 Don't delay palliative care for a patient with serious illness who has physical, psychological, social or spiritual distress because they are pursuing disease-directed treatment.

Numerous studies—including randomized trials—provide evidence that palliative care improves pain and symptom control, improves family satisfaction with care and reduces costs. Palliative care does not accelerate death, and may prolong life in selected populations.

3 Don't leave an implantable cardioverter-defibrillator (ICD) activated when it is inconsistent with the patient/family goals of care.

In about a quarter of patients with ICDs, the defibrillator fires within weeks preceding death. For patients with advanced irreversible diseases, defibrillator shocks rarely prevent death, may be painful to patients and are distressing to caregivers/family members. Currently there are no formal practice protocols to address deactivation; fewer than 10% of hospices have official policies. Advance care planning discussions should include the option of deactivating the ICD when it no longer supports the patient's goals.

4 Don't recommend more than a single fraction of palliative radiation for an uncomplicated painful bone metastasis.

As stated in the American Society for Radiation Oncology (ASTRO) 2011 guideline, single-fraction radiation to a previously un-irradiated peripheral bone or vertebral metastasis provides comparable pain relief and morbidity compared to multiple-fraction regimens while optimizing patient and caregiver convenience. Although it results in a higher incidence of later need for retreatment (20% vs. 8% for multi-fraction regimens), the decreased patient burden usually outweighs any considerations of long-term effectiveness for those with a limited life expectancy.

5 Don't use topical lorazepam (Ativan), diphenhydramine (Benadryl), haloperidol (Haldol) ("ABH") gel for nausea.

Topical drugs can be safe and effective, such as topical non-steroidal anti-inflammatory drugs for local arthritis symptoms. However, while topical gels are commonly prescribed in hospice practice, anti-nausea gels have not been proven effective in any large, well-designed or placebo-controlled trials. The active ingredients in ABH are not absorbed to systemic levels that could be effective. Only diphenhydramine (Benadryl) is absorbed via the skin, and then only after several hours and erratically at subtherapeutic levels. It is therefore not appropriate for "as needed" use. The use of agents given via inappropriate routes may delay or prevent the use of more effective interventions.

How This List Was Created

The American Academy of Hospice and Palliative Medicine's (AAHPM) president appointed a special task force to coordinate the development of the Academy's recommendations. Chaired by a member of the Board of Directors who had previously overseen AAHPM's education and training committees, the task force included representatives of the Academy's Quality and Practice Standards Task Force, Research Committee, Ethics Committee, Public Policy Committee and External Awareness Task Force, as well as at-large appointees that represent distinguished leaders in the field. The task force solicited input from AAHPM's 17 Special Interest Groups, and task force members also offered their own suggestions for the list. Considering the potential impact and evidence to support the proposed recommendations, the task force identified seven finalists for which a rationale and evidence base was further developed. All AAHPM members were invited to comment on and rank these seven recommendations. Member feedback informed the task force's final deliberation, which included narrowing the list to the "Five Things" and refining the verbiage of the recommendations. The list was then reviewed and approved by the AAHPM Executive Committee.

AAHPM's disclosure and conflict of interest policy can be found at www.aahpm.org.

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The American Academy of Hospice and Palliative Medicine (AAHPM) is the professional organization for physicians specializing in Hospice and Palliative Medicine. AAHPM's 4,900 members also include nurses and other healthcare providers committed to improving quality of life for patients and families facing life-threatening or serious conditions. AAHPM is dedicated to advancing the discipline of Hospice and Palliative Medicine through professional education and training, development of a specialist workforce, support for clinical practice standards, research and public policy.

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American Academy of Neurology

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Five Things Physicians and Patients Should Question

1 Don't perform electroencephalography (EEG) for headaches.

EEG has no advantage over clinical evaluation in diagnosing headache, does not improve outcomes and increases cost. Recurrent headache is the most common pain problem, affecting 15% to 20% of people.

2 Don't perform imaging of the carotid arteries for simple syncope without other neurologic symptoms.

Occlusive carotid artery disease does not cause fainting but rather causes focal neurologic deficits such as unilateral weakness. Thus, carotid imaging will not identify the cause of the fainting and increases cost. Fainting is a frequent complaint, affecting 40% of people during their lifetime.

3 Don't use opioid or butalbital treatment for migraine except as a last resort.

Opioid and butalbital treatment for migraine should be avoided because more effective, migraine-specific treatments are available. Frequent use of opioid and butalbital treatment can worsen headaches. Opioids should be reserved for those with medical conditions precluding the use of migraine-specific treatments or for those who fail these treatments.

4 Don't prescribe interferon-beta or glatiramer acetate to patients with disability from progressive, non-relapsing forms of multiple sclerosis.

Interferon-beta and glatiramer acetate do not prevent the development of permanent disability in progressive forms of multiple sclerosis. These medications increase costs and have frequent side effects that may adversely affect quality of life.

5 Don't recommend CEA for asymptomatic carotid stenosis unless the complication rate is low (<3%).

Based on studies reporting an upfront surgical complication rate ranging from 2.3% (ACAS) to 3.1% (ACST) among patients undergoing carotid endarterectomy (CEA) for asymptomatic stenosis of >60%, and an absolute risk reduction for stroke or death of roughly 5–6% in the surgical group at 5 years, several specialty societies (Goldstein et al, 2011; Brott et al, 2011; Chaturvedi et al; Ricotta et al) have recommended that surgery for asymptomatic patients should be reserved for those with a perioperative complication risk of <3% and a life expectancy of greater than 3–5 years. The cited 3% threshold for complication rates may be high because more recent studies have reported lower stroke rates with improvements in both surgical (Brott, 2010) and medical (Marquardt) management. However, there are no recent randomized trials comparing these treatments. Given this, the more recent AHA guidelines (Brott 2011) state that it is "reasonable" to perform CEA for asymptomatic patients with >70% stenosis if the surgical complication rate is "low."

Reported complication rates vary widely by location (Kresowik), and are dependent on how complications are tracked (self-report vs. neurologist's evaluation vs. administrative data (Wolff T). Despite calls for rigorous monitoring 15 years ago (Goldstein), most patients will likely need to rely on the surgeon's self-reported rates.

How This List Was Created

The American Academy of Neurology (AAN) established a *Choosing Wisely* Working Group to develop its list of recommendations. Members of this group were selected to broadly represent varying practice settings and neurological subspecialties. Neurologists with methodological expertise in evidence-based medicine and practice guideline development were also included. The working group solicited recommendations from AAN members, which were then rated based upon their judgments of harm and benefit that would result based upon compliance with the recommendation. Based on committee voting and a literature review, candidate recommendations were sent to relevant AAN sections, committees, specialty societies and patient advocacy groups for review and comment. The working group reviewed this feedback and voted on the final Top Five recommendations, which were approved by the AAN Practice Committee and Board of Directors.

AAN's disclosure and conflict of interest policy can be found at www.aan.com.

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About the American Academy of Neurology

With more than 25,000 members, the American Academy of Neurology is the world's largest association of neurologists dedicated to promoting the highest quality patient-centered neurologic care. A neurologist is a doctor with specialized training in diagnosing, treating and managing disorders of the brain and nervous system such as Alzheimer's disease, stroke, Parkinson's disease and epilepsy. The Academy provides valuable resources for neurologists and neuroscience professionals worldwide who look to the Academy for the most comprehensive professional development, career enhancement, and practice improvement opportunities available.

For more information or to see other lists of Five Things Physicians and Patients Should Question, visit www.choosingwisely.org.

Choosing Wisely®

An initiative of the ABIM Foundation

American Academy of Ophthalmology

AMERICAN ACADEMY OF OPHTHALMOLOGY
The Eye M.D. Association

Five Things Physicians and Patients Should Question

1 Don't perform preoperative medical tests for eye surgery unless there are specific medical indications.

For many, preoperative tests are not necessary because eye surgeries are not lengthy and don't pose serious risks. An EKG should be ordered if patients have heart disease. A blood glucose test should be ordered if patients have diabetes. A potassium test should be ordered if patients are on diuretics. In general, patients scheduled for surgery do not need medical tests unless the history or physical examination indicate the need for a test, e.g., the existence of conditions noted above. Institutional policies should consider these issues.

2 Don't routinely order imaging tests for patients without symptoms or signs of significant eye disease.

If patients do not have symptoms or signs of significant disease pathology, 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. Examples of routine imaging include: visual-field testing; ocular coherence tomography (OCT) testing; retinal imaging of patients with diabetes; and neuroimaging or 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.

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

Adenoviral conjunctivitis and bacterial conjunctivitis are different forms of infection that can be diagnosed by the ophthalmologist by clinical signs and symptoms, and if needed, by cultures. Antibiotics are useful for patients with bacterial conjunctivitis, particularly those with moderate to severe bacterial conjunctivitis. However, they are not useful for adenoviral conjunctivitis, and the overuse of antibiotics can lead to the emergence of bacteria that don't respond readily to available treatments. In cases of diagnostic uncertainty, patients may be followed closely to see if their condition resolves on its own, or if further treatment is required.

4 Don't routinely provide antibiotics before or after intravitreal injections.

The routine use of antibiotics before or after intravitreal injections is unnecessary because research has shown that topical antibiotics don't prevent the occurrence of eye infection. The risks of antibiotic eye drops include allergic reactions. The overuse and repeated exposure to antibiotics can lead to the emergence of bacteria that don't respond readily to available treatments. Routine antisepsis is appropriate and important for prevention of eye infection.

5 Don't place punctal plugs for mild dry eye before trying other medical treatments.

Medical treatments to address dry eye are available, such as artificial tears, lubrication and hot, moist compresses. These medical methods, as well as ways to modify the environment, should be tried first to improve dry eye and normalize the tear film before using punctal plugs. If the patient's tear film and eyelids have been treated and dry eye symptoms persist, then punctal plugs can be added.

How This List Was Created

The American Academy of Ophthalmology's Medical Director of Health Policy and Health Policy Committee led the Academy's list development process. Members of the Health Policy Committee initially identified potential recommendations based on relevance, appropriateness and potential for improvement and efficiency. Through society notifications and newsletter notices, other ophthalmic organizations and subspecialty societies and members were invited to offer feedback and recommend ideas to be included in the final recommendations. Health Policy Committee members and the Medical Director of Health Policy reviewed the ideas and supporting evidence, and ranked them in order of potential impact. The top five recommendations were presented to the Academy's Board of Trustees for approval.

The American Academy of Ophthalmology's disclosure and conflict of interest policy can be found at www.aao.org.

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The American Academy of Ophthalmology is the largest national membership association of Eye M.D.s. Eye M.D.s are ophthalmologists, medical and osteopathic doctors who provide comprehensive eye care, including medical, surgical and optical care. Eye M.D.s are dedicated to enhancing the quality of life for every individual they treat by helping each to see his or her best and by protecting their patients' vision and eye health throughout life. More than 90 percent of practicing U.S. Eye M.D.s are Academy members, and the Academy has more than 7,000 international members. Academy members include experts among all sub-specialties of ophthalmology.

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An initiative of the ABIM Foundation

American Academy of Otolaryngology — Head and Neck Surgery Foundation

AMERICAN ACADEMY OF OTOLARYNGOLOGY–HEAD AND NECK SURGERY FOUNDATION

Five Things Physicians and Patients Should Question

1 Don't order computed tomography (CT) scan of the head/brain for sudden hearing loss.

Computed tomography scanning is expensive, exposes the patient to radiation and offers no useful information that would improve initial management. CT scanning may be appropriate in patients with focal neurologic findings, a history of trauma or chronic ear disease.

2 Don't prescribe oral antibiotics for uncomplicated acute tympanostomy tube otorrhea.

Oral antibiotics have significant adverse effects and do not provide adequate coverage of the bacteria that cause most episodes; in contrast, topically administered products do provide coverage for these organisms. Avoidance of oral antibiotics can reduce the spread of antibiotic resistance and the risk of opportunistic infections.

3 Don't prescribe oral antibiotics for uncomplicated acute external otitis.

Oral antibiotics have significant adverse effects and do not provide adequate coverage of the bacteria that cause most episodes; in contrast, topically administered products do provide coverage for these organisms. Avoidance of oral antibiotics can reduce the spread of antibiotic resistance and the risk of opportunistic infections.

4 Don't routinely obtain radiographic imaging for patients who meet diagnostic criteria for uncomplicated acute rhinosinusitis.

Imaging of the paranasal sinuses, including plain film radiography, computed tomography (CT) and magnetic resonance imaging (MRI) is unnecessary in patients who meet the clinical diagnostic criteria for uncomplicated acute rhinosinusitis. Acute rhinosinusitis is defined as up to four weeks of purulent nasal drainage (anterior, posterior or both) accompanied by nasal obstruction, facial pain-pressure-fullness or both. Imaging is costly and exposes patients to radiation. Imaging may be appropriate in patients with a complication of acute rhinosinusitis, patients with comorbidities that predispose them to complications and patients in whom an alternative diagnosis is suspected.

5 Don't obtain computed tomography (CT) or magnetic resonance imaging (MRI) in patients with a primary complaint of hoarseness prior to examining the larynx.

Examination of the larynx with mirror or fiberoptic scope is the primary method for evaluating patients with hoarseness. Imaging is unnecessary in most patients and is both costly and has potential for radiation exposure. After laryngoscopy, evidence supports the use of imaging to further evaluate 1) vocal fold paralysis, or 2) a mass or lesion of the larynx.

How This List Was Created

The American Academy of Otolaryngology—Head and Neck Surgery's (AAO-HNS) Patient Safety and Quality Improvement (PSQI) Committee was charged with developing the Foundation's recommendations for the *Choosing Wisely* campaign. The PSQI Committee initially sought the input of the Specialty Society Advisory Council (SSAC) and requested each member society submit potential topics along with supporting evidence. From those submissions, an initial list of 20 items was distributed to Academy and Foundation committees and the Guidelines Development Task Force (GDTF) for review.

PSQI Committee leadership reviewed feedback from the committees and identified six potential recommendations for inclusion in the campaign. The six topics were selected based on their supporting evidence (for example, clinical practice guidelines), committee support, and the current use (frequency) of the test or procedure. The members of SSAC ranked the six topics, and the top five topics were submitted to the Foundation board for approval.

AAO-HNS' disclosure and conflict of interest policy can be found at www.entnet.org.

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The American Academy of Otolaryngology—Head and Neck Surgery is the world's largest organization representing nearly 12,000 otolaryngologist–head and neck surgeons who treat the ear, nose, throat, and related structures of the head and neck. Medical disorders in this specialty are among the most common affecting patients, young and old. The AAO-HNS Foundation works to advance the art, science, and ethical practice of otolaryngology–head and neck surgery through education, research, and lifelong learning.

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An initiative of the ABIM Foundation

American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN™

Five Things Physicians and Patients Should Question

1 Antibiotics should not be used for apparent viral respiratory illnesses (sinusitis, pharyngitis, bronchitis).

Although overall antibiotic prescription rates for children have fallen, they still remain alarmingly high. Unnecessary medication use for viral respiratory illnesses can lead to antibiotic resistance and contributes to higher health care costs and the risks of adverse events.

2 Cough and cold medicines should not be prescribed or recommended for respiratory illnesses in children under four years of age.

Research has shown these products offer little benefit to young children and can have potentially serious side effects. Many cough and cold products for children have more than one ingredient, increasing the chance of accidental overdose if combined with another product.

3 Computed tomography (CT) scans are not necessary in the immediate evaluation of minor head injuries; clinical observation/Pediatric Emergency Care Applied Research Network (PECARN) criteria should be used to determine whether imaging is indicated.

Minor head injuries occur commonly in children and adolescents. Approximately 50% of children who visit hospital emergency departments with a head injury are given a CT scan, many of which may be unnecessary. Unnecessary exposure to x-rays poses considerable danger to children including increasing the lifetime risk of cancer because a child's brain tissue is more sensitive to ionizing radiation. Unnecessary CT scans impose undue costs to the health care system. Clinical observation prior to CT decision-making for children with minor head injuries is an effective approach.

4 Neuroimaging (CT, MRI) is not necessary in a child with simple febrile seizure.

CT scanning is associated with radiation exposure that may escalate future cancer risk. MRI also is associated with risks from required sedation and high cost. The literature does not support the use of skull films in the evaluation of a child with a febrile seizure. Clinicians evaluating infants or young children after a simple febrile seizure should direct their attention toward identifying the cause of the child's fever.

5 Computed tomography (CT) scans are not necessary in the routine evaluation of abdominal pain.

Utilization of CT imaging in the emergency department evaluation of children with abdominal pain is increasing. The increased lifetime risk for cancer due to excess radiation exposure is of special concern given the acute sensitivity of children's organs. There also is the potential for radiation overdose with inappropriate CT protocols.

How This List Was Created

The American Academy of Pediatrics (AAP) employed a three-stage process to develop its list. Using the Academy's varied online, print and social media communication vehicles, the first stage invited leadership of the Academy's 88 national clinical and health policy-driven committees, councils and sections to submit potential topics via an online survey. The second stage involved expert review and evaluation of the management groups that oversee the functions of the committees, councils and sections. Based on a set of criteria (evidence to document unproven clinical benefit, potential to cause harm, over-prescribed and utilized, and within the purview of pediatrics) a list of more than 100 topics was narrowed down to five. Finally, the list was reviewed and approved by the Academy's Board of Directors and Executive Committee.

AAP's disclosure and conflict of interest policy can be found at www.aap.org.

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About the American Academy Pediatrics

The American Academy of Pediatrics is an organization of 60,000 primary care pediatricians, pediatric medical subspecialists and pediatric surgical specialists dedicated to the health, safety and well-being of infants, children, adolescents and young adults.

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American College of Cardiology

AMERICAN COLLEGE of CARDIOLOGY

Five Things Physicians and Patients Should Question

1 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.

Asymptomatic, low-risk patients account for up to 45 percent of unnecessary "screening." Testing should be performed only when the following findings are present: diabetes in patients older than 40-years-old; peripheral arterial disease; or greater than 2 percent yearly risk for coronary heart disease events.

2 Don't perform annual stress cardiac imaging or advanced non-invasive imaging as part of routine follow-up in asymptomatic patients.

Performing stress cardiac imaging or advanced non-invasive imaging in patients without symptoms on a serial or scheduled pattern (e.g., every one to two years or at a heart procedure anniversary) rarely results in any meaningful change in patient management. This practice may, in fact, lead to unnecessary invasive procedures and excess radiation exposure without any proven impact on patients' outcomes. An exception to this rule would be for patients more than five years after a bypass operation.

3 Don't perform stress cardiac imaging or advanced non-invasive imaging as a pre-operative assessment in patients scheduled to undergo low-risk non-cardiac surgery.

Non-invasive testing is not useful for patients undergoing low-risk non-cardiac surgery (e.g., cataract removal). These types of tests do not change the patient's clinical management or outcomes and will result in increased costs.

4 Don't perform echocardiography as routine follow-up for mild, asymptomatic native valve disease in adult patients with no change in signs or symptoms.

Patients with native valve disease usually have years without symptoms before the onset of deterioration. An echocardiogram is not recommended yearly unless there is a change in clinical status.

5 Don't perform stenting of non-culprit lesions during percutaneous coronary intervention (PCI) for uncomplicated hemodynamically stable ST-segment elevation myocardial infarction (STEMI).

Stent placement in a noninfarct artery during primary PCI for STEMI in a hemodynamically stable patient may lead to increased mortality and complications. While potentially beneficial in patients with hemodynamic compromise, intervention beyond the culprit lesion during primary PCI has not demonstrated benefit in clinical trials to date.

How This List Was Created

The American College of Cardiology (ACC) asked its standing clinical councils to recommend between three and five procedures that should not be performed or should be performed more rarely and only in specific circumstances. ACC staff took the councils' recommendations and compared them to the ACC's existing appropriate use criteria (AUC) and guidelines, choosing items for the five things list that had the tightest inappropriate score in the AUCs and were Class III recommendations in the guidelines. The ACC's Advocacy Steering Committee and Clinical Quality Committee each then reviewed the five items before sending it to the ACC Executive Committee for final review and approval. ACC's disclosure and conflict of interest policy can be found at http://www.cardiosource.org/RWI.

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About the American College of Cardiology:

The American College of Cardiology (ACC) is a 40,000-member nonprofit medical society comprised of physicians, surgeons, nurses, physician assistants, pharmacists and practice managers, and bestows credentials upon cardiovascular specialists who meet its stringent qualifications. The College is a leader in the formulation of health policy, standards and guidelines, and cardiovascular research. The ACC provides professional education and operates national registries for the measurement and improvement of quality care.

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The American College of Obstetricians and Gynecologists

The American College of Obstetricians and Gynecologists
WOMEN'S HEALTH CARE PHYSICIANS

Five Things Physicians and Patients Should Question

1 Don't schedule elective, non-medically indicated inductions of labor or Cesarean deliveries before 39 weeks 0 days gestational age.

Delivery prior to 39 weeks 0 days has been shown to be associated with an increased risk of learning disabilities and a potential increase in morbidity and mortality. There are clear medical indications for delivery prior to 39 weeks 0 days based on maternal and/or fetal conditions. A mature fetal lung test, in the absence of appropriate clinical criteria, is not an indication for delivery.

2 Don't schedule elective, non-medically indicated inductions of labor between 39 weeks 0 days and 41 weeks 0 days unless the cervix is deemed favorable.

Ideally, labor should start on its own initiative whenever possible. Higher Cesarean delivery rates result from inductions of labor when the cervix is unfavorable. Health care practitioners should discuss the risks and benefits with their patients before considering inductions of labor without medical indications.

3 Don't perform routine annual cervical cytology screening (Pap tests) in women 30–65 years of age.

In average risk women, annual cervical cytology screening has been shown to offer no advantage over screening performed at 3-year intervals. However, a well-woman visit should occur annually for patients with their health care practitioner to discuss concerns and problems, and have appropriate screening with consideration of a pelvic examination.

4 Don't treat patients who have mild dysplasia of less than two years in duration.

Mild dysplasia (Cervical Intraepithelial Neoplasia [CIN 1]) is associated with the presence of the human papillomavirus (HPV), which does not require treatment in average risk women. Most women with CIN 1 on biopsy have a transient HPV infection that will usually clear in less than 12 months and, therefore, does not require treatment.

5 Don't screen for ovarian cancer in asymptomatic women at average risk.

In population studies, there is only fair evidence that screening of asymptomatic women with serum CA-125 level and/or transvaginal ultrasound can detect ovarian cancer at an earlier stage than it can be detected in the absence of screening. Because of the low prevalence of ovarian cancer and the invasive nature of the interventions required after a positive screening test, the potential harms of screening outweigh the potential benefits.

How This List Was Created

As a national medical specialty society, the American College of Obstetricians and Gynecologists relies on the input of any number of its committees in the development of various documents. In the case of the items submitted for the *Choosing Wisely*® campaign, input from the following committees was solicited: the Committees on Patient Safety and Quality Improvement; Obstetric Practice; and Gynecologic Practice. A literature search was conducted related to the initial list of approximately ten items. We then sent this list to the College's Executive Board and asked them to select five of the items based on their potential to improve quality and reduce cost. We explained to them that the items were written to avoid complex or clinical terminology, but not at the risk of reducing the value and credibility of the recommendations made. In the case of the first two items on our list – "Don't schedule elective, non-medically indicated inductions of labor or Cesarean deliveries before 39 weeks 0 days gestational age" and "Don't schedule elective, non-medically indicated inductions of labor between 39 weeks 0 days and 41 weeks 0 days unless the cervix is deemed favorable" – we collaborated with the American Academy of Family Physicians in developing the final language.

The College's disclosure and conflict of interest policy can be found at www.acog.org.

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The American College of Obstetricians and Gynecologists
WOMEN'S HEALTH CARE PHYSICIANS

The American College of Obstetricians and Gynecologists (The College), a 501(c)(3) organization, is the nation's leading group of physicians providing health care for women. As a private, voluntary, nonprofit membership organization of approximately 56,000 members, The College strongly advocates for quality health care for women, maintains the highest standards of clinical practice and continuing education of its members, promotes patient education, and increases awareness among its members and the public of the changing issues facing women's health care. The American Congress of Obstetricians and Gynecologists (ACOG), a 501(c)(6) organization, is its companion organization.

For more information, visit www.acog.org.

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American College of Physicians

Five Things Physicians and Patients Should Question

ACP American College of Physicians® INTERNAL MEDICINE | *Doctors for Adults*

1 Don't obtain screening exercise electrocardiogram testing in individuals who are asymptomatic and at low risk for coronary heart disease.

In asymptomatic individuals at low risk for coronary heart disease (10-year risk <10%) screening for coronary heart disease with exercise electrocardiography does not improve patient outcomes.

2 Don't obtain imaging studies in patients with non-specific low back pain.

In patients with back pain that cannot be attributed to a specific disease or spinal abnormality following a history and physical examination (e.g., non-specific low back pain), imaging with plain radiography, computed tomography (CT) scan, or magnetic resonance imaging (MRI) does not improve patient outcomes.

3 In the evaluation of simple syncope and a normal neurological examination, don't obtain brain imaging studies (CT or MRI).

In patients with witnessed syncope but with no suggestion of seizure and no report of other neurologic symptoms or signs, the likelihood of a central nervous system (CNS) cause of the event is extremely low and patient outcomes are not improved with brain imaging studies.

4 In patients with low pretest probability of venous thromboembolism (VTE), obtain a high-sensitive D-dimer measurement as the initial diagnostic test; don't obtain imaging studies as the initial diagnostic test.

In patients with low pretest probability of VTE as defined by the Wells prediction rules, a negative high-sensitivity D-dimer measurement effectively excludes VTE and the need for further imaging studies.

5 Don't obtain preoperative chest radiography in the absence of a clinical suspicion for intrathoracic pathology.

In the absence of cardiopulmonary symptoms, preoperative chest radiography rarely provides any meaningful changes in management or improved patient outcomes.

How This List Was Created

The American College of Physicians (ACP) formed a workgroup of eleven experienced internal medicine physicians with specific skills in the assessment of evidence. Members of this workgroup included physicians who were current members of the ACP Clinical Guidelines Committee, the Education and Publication Committee, the Board of Governors and the Board of Regents, as well as three ACP staff physicians. The group collaboratively identified and narrowed down screening or diagnostic tests commonly used in clinical situations where they are unlikely to provide high value or improve patient outcomes. The results were further reviewed and narrowed by clinically active ACP staff physicians before being placed for review into a randomly selected internal medicine research panel. Representing 1 percent of ACP members, the panel selected five scenarios that represented the greatest potential for overuse or misuse of a diagnostic test leading to low value care. Based upon this process, the final top five scenarios were identified. ACP's disclosure and conflict of interest policy can be found at www.acponline.org.

Sources

1 2011 USPSTF screening for coronary heart disease with electrocardiography (draft) guideline; 2011 AAFP recommendations for preventive services guideline; 2010 ACCF/AHA assessment of cardiovascular risk in asymptomatic adults guideline.

2 2009 NICE low back pain guideline; 2008 ACR Appropriateness Criteria® low back pain guideline; 2007 ACP/APS low back pain guideline; 2007 ACOM low back disorders guideline.

3 2010 ACR-ASNR CT of the brain guideline; 2010 NICE transient loss of consciousness guideline; 2000 ECS syncope guideline.

4 2011 ACEP pulmonary embolism guideline; 2008 ESC pulmonary embolism guideline; 2007 AAFP/ACP venous thromboembolism guideline; 2010 SIGN venous thromboembolism guideline.

5 2008 ACR Appropriateness Criteria® for preoperative chest radiography guideline; ASPC patient safety advisory for pulmonary complications of surgery.

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About the American College of Physicians:

The American College of Physicians (ACP) is the largest medical specialty organization and the second-largest physician group in the U.S. ACP's 132,000 members include internal medicine physicians (internists), subspecialists, and medical students. Internists specialize in the prevention, detection, and treatment of illness in adults. ACP's mission is to enhance the quality of health care by fostering excellence and professionalism in medicine. ACP provides information and advocacy for its members in internal medicine and related subspecialties.

For more information or questions, please visit www.acponline.org.

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American College of Radiology

ACR American College of Radiology — Quality is Our Image

Five Things Physicians and Patients Should Question

1 Don't do imaging for uncomplicated headache.

Imaging headache patients absent specific risk factors for structural disease is not likely to change management or improve outcome. Those patients with a significant likelihood of structural disease requiring immediate attention are detected by clinical screens that have been validated in many settings. Many studies and clinical practice guidelines concur. Also, incidental findings lead to additional medical procedures and expense that do not improve patient well-being.

2 Don't image for suspected pulmonary embolism (PE) without moderate or high pre-test probability of PE.

While deep vein thrombosis (DVT) and PE are relatively common clinically, they are rare in the absence of elevated blood d-Dimer levels and certain specific risk factors. Imaging, particularly computed tomography (CT) pulmonary angiography, is a rapid, accurate and widely available test, but has limited value in patients who are very unlikely, based on serum and clinical criteria, to have significant value. Imaging is helpful to confirm or exclude PE only for such patients, not for patients with low pre-test probability of PE.

3 Avoid admission or preoperative chest x-rays for ambulatory patients with unremarkable history and physical exam.

Performing routine admission or preoperative chest x-rays is not recommended for ambulatory patients without specific reasons suggested by the history and/or physical examination findings. Only 2 percent of such images lead to a change in management. Obtaining a chest radiograph is reasonable if acute cardiopulmonary disease is suspected or there is a history of chronic stable cardiopulmonary disease in a patient older than age 70 who has not had chest radiography within six months.

4 Don't do computed tomography (CT) for the evaluation of suspected appendicitis in children until after ultrasound has been considered as an option.

Although CT is accurate in the evaluation of suspected appendicitis in the pediatric population, ultrasound is nearly as good in experienced hands. Since ultrasound will reduce radiation exposure, ultrasound is the preferred initial consideration for imaging examination in children. If the results of the ultrasound exam are equivocal, it may be followed by CT. This approach is cost-effective, reduces potential radiation risks and has excellent accuracy, with reported sensitivity and specificity of 94 percent.

5 Don't recommend follow-up imaging for clinically inconsequential adnexal cysts.

Simple cysts and hemorrhagic cysts in women of reproductive age are almost always physiologic. Small simple cysts in postmenopausal women are common, and clinically inconsequential. Ovarian cancer, while typically cystic, does not arise from these benign-appearing cysts. After a good quality ultrasound in women of reproductive age, don't recommend follow-up for a classic corpus luteum or simple cyst <5 cm in greatest diameter. Use 1 cm as a threshold for simple cysts in postmenopausal women.

How This List Was Created

The American College of Radiology (ACR) initially solicited expert opinion from physician leaders with its Board of Chancellors. A working group was then formed to further identify common clinical scenarios in which imaging may be misused and should be reconsidered. Members of the group included the physician chairs or vice chairs of seven ACR commissions such as Quality and Safety, Appropriateness Criteria and Metrics. An initial list of topics was narrowed down based on the highest potential for improvement, representing a broad range of tests and the availability of strong guidelines. Members then researched specific recommendations and evidentiary statements based on their expertise. Recommendations that were too general or were well covered by other existing measures and initiatives were eliminated to identify the final five things list. ACR's disclosure and conflict of interest policy can be found at www.acr.org.

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About the American College of Radiology:

The mission of the American College of Radiology (ACR) is to serve its 34,000 members in advancing the quality, safety, and science of radiology and radiation oncology. The ACR conducts cutting-edge clinical and socioeconomic research, establishes quality and safety standards and provides continuing education and advocacy for radiologists, radiation oncologists and medical physicists. Since 1923, the ACR has worked to keep medical imaging and radiation oncology safe, effective and accessible for all.

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American College of Rheumatology

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Five Things Physicians and Patients Should Question

1 Don't test ANA sub-serologies without a positive ANA and clinical suspicion of immune-mediated disease.

Tests for anti-nuclear antibody (ANA) sub-serologies (including antibodies to double-stranded DNA, Smith, RNP, SSA, SSB, Scl-70, centromere) are usually negative if the ANA is negative. Exceptions include anti-Jo1, which can be positive in some forms of myositis, or occasionally, anti-SSA, in the setting of lupus or Sjögren's syndrome. Broad testing of autoantibodies should be avoided; instead the choice of autoantibodies should be guided by the specific disease under consideration.

2 Don't test for Lyme disease as a cause of musculoskeletal symptoms without an exposure history and appropriate exam findings.

The musculoskeletal manifestations of Lyme disease include brief attacks of arthralgia or intermittent or persistent episodes of arthritis in one or a few large joints at a time, especially the knee. Lyme testing in the absence of these features increases the likelihood of false positive results and may lead to unnecessary follow-up and therapy. Diffuse arthralgias, myalgias or fibromyalgia alone are not criteria for musculoskeletal Lyme disease.

3 Don't perform MRI of the peripheral joints to routinely monitor inflammatory arthritis.

Data evaluating MRI for the diagnosis and prognosis of rheumatoid arthritis are currently inadequate to justify widespread use of this technology for these purposes in clinical practice. Although bone edema assessed by MRI on a single occasion may be predictive of progression in certain RA populations, using MRI routinely is not cost-effective compared with the current standard of care, which includes clinical disease activity assessments and plain film radiography.

4 Don't prescribe biologics for rheumatoid arthritis before a trial of methotrexate (or other conventional non-biologic DMARDs).

High quality evidence suggests that methotrexate and other conventional non-biologic disease modifying antirheumatic drugs (DMARD) are effective in many patients with rheumatoid arthritis (RA). Initial therapy for RA should be a conventional non-biologic DMARDs unless these are contraindicated. If a patient has had an inadequate response to methotrexate with or without other non-biologic DMARDs during an initial 3-month trial, then biologic therapy can be considered. Exceptions include patients with high disease activity and poor prognostic features (functional limitations, disease outside the joints, seropositivity or bony damage), where biologic therapy may be appropriate first-line treatment.

5 Don't routinely repeat DXA scans more often than once every two years.

Initial screening for osteoporosis should be performed according to National Osteoporosis Foundation recommendations. The optimal interval for repeating Dual-energy X-ray Absorptiometry (DXA) scans is uncertain, but because changes in bone density over short intervals are often smaller than the measurement error of most DXA scanners, frequent testing (e.g., <2 years) is unnecessary in most patients. Even in high-risk patients receiving drug therapy for osteoporosis, DXA changes do not always correlate with probability of fracture. Therefore, DXAs should only be repeated if the result will influence clinical management or if rapid changes in bone density are expected. Recent evidence also suggests that healthy women age 67 and older with normal bone mass may not need additional DXA testing for up to ten years provided osteoporosis risk factors do not significantly change.

How This List Was Created

The American College of Rheumatology (ACR) established a Top 5 Task Force to oversee the creation of its recommendations. As part of this group's work, a multi-stage process combining consensus methodology and literature reviews was used to arrive at the final recommendations. Items were generated by a group of practicing rheumatologists in diverse clinical settings using the Delphi method. Recommendations with high content agreement and perceived prevalence advanced to a survey of ACR members, who comprise more than 90% of the U.S. rheumatology workforce. Based on member input related to content agreement, impact and item ranking, candidate items advanced to literature review. The Top 5 Task Force discussed the items in light of their relevance to rheumatology, level of evidence to support their inclusion, and the member survey results, and drafted the final rheumatology Top 5 list. The list was reviewed by a sample of patients with rheumatic disease and approved by the ACR Board of Directors. For further details regarding these methods, please see the manuscript published in Arthritis Care & Research at www.rheumatology.org/FiveThings.

ACR's disclosure and conflict of interest policy can be found at www.rheumatology.org.

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About the American College of Rheumatology

More than 50 million Americans, including 300,000 children, suffer from arthritis and rheumatic diseases, and rheumatologists are the specialists in the treatment of those diseases. The American College of Rheumatology represents over 8,500 rheumatologists and rheumatology health professionals around the world. The ACR offers its members the support needed to ensure they are able to continue their innovative research and quality patient care.

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American Gastroenterological Association

Five Things Physicians and Patients Should Question

1 For pharmacological treatment of patients with gastroesophageal reflux disease (GERD), long-term acid suppression therapy (proton pump inhibitors or histamine2 receptor antagonists) should be titrated to the lowest effective dose needed to achieve therapeutic goals.

The main identifiable risk associated with reducing or discontinuing acid suppression therapy is an increased symptom burden. It follows that the decision regarding the need for (and dosage of) maintenance therapy is driven by the impact of those residual symptoms on the patient's quality of life rather than as a disease control measure.

2 Do not repeat colorectal cancer screening (by any method) for 10 years after a high-quality colonoscopy is negative in average-risk individuals.

A screening colonoscopy every 10 years is the recommended interval for adults without increased risk for colorectal cancer, beginning at age 50 years. Published studies indicate the risk of cancer is low for 10 years after a high-quality colonoscopy fails to detect neoplasia in this population. Therefore, following a high-quality colonoscopy with normal results the next interval for any colorectal screening should be 10 years following that normal colonoscopy.

3 Do not repeat colonoscopy for at least five years for patients who have one or two small (< 1 cm) adenomatous polyps, without high-grade dysplasia, completely removed via a high-quality colonoscopy.

The timing of a follow-up surveillance colonoscopy should be determined based on the results of a previous high-quality colonoscopy. Evidence-based (published) guidelines provide recommendations that patients with one or two small tubular adenomas with low grade dysplasia have surveillance colonoscopy five to 10 years after initial polypectomy. "The precise timing within this interval should be based on other clinical factors (such as prior colonoscopy findings, family history, and the preferences of the patient and judgment of the physician)."

4 For a patient who is diagnosed with Barrett's esophagus, who has undergone a second endoscopy that confirms the absence of dysplasia on biopsy, a follow-up surveillance examination should not be performed in less than three years as per published guidelines.

In patients with Barrett's esophagus without dysplasia (cellular changes) the risk of cancer is very low. In these patients, it is appropriate and safe to exam the esophagus and check for dysplasia no more often than every three years because if these cellular changes occur, they do so very slowly.

5 For a patient with functional abdominal pain syndrome (as per ROME III criteria) computed tomography (CT) scans should not be repeated unless there is a major change in clinical findings or symptoms.

There is a small, but measurable increase in one's cancer risk from x-ray exposure. An abdominal CT scan is one of the higher radiation exposure x-rays — equivalent to three years of natural background radiation. Due to this risk and the high costs of this procedure, CT scans should be performed only when they are likely to provide useful information that changes patient management.

How This List Was Created

The American Gastroenterological Association (AGA) convened a work group that included members from the Clinical Practice and Quality Management Committee (CPQMC), chair of the Practice Management and Economics Committee (PMEC), the chief medical officer for the AGA Digestive Health Outcomes Registry® and members of the AGA Institute Governing Board. Ideas for the "five things" were solicited from the workgroup for review by the CPQMC, which developed additional topics, resulting in six draft items. The workgroup continued to pare down and refine the list, before submitting a final draft to both the CPQMC and the PMEC for approval. After final refinements were made to simplify language and avoid complex clinical terminology, the final list was submitted to and approved by the AGA Institute Governing Board. AGA's disclosure and conflict of interest policy can be found at www.gastro.org.

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Image Wisely and US Food and Drug Administration. My Medical Imaging History. Access at http://www.radiologyinfo.org/en/safety/ImageWisely/7678_Medical%20Imaging%20History.pdf.

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About the American Gastroenterological Association:

The American Gastroenterological Association (AGA) is the trusted voice of the GI community. Founded in 1897, AGA has grown to include 16,000 members from around the globe who are involved in all aspects of the science, practice and advancement of gastroenterology. The AGA Institute administers the practice, research and educational programs of the organization. Become an AGA fan on Facebook. Join our LinkedIn group. Follow us on Twitter @AmerGastroAssn.

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American Geriatrics Society

AGS Geriatrics Healthcare Professionals

Leading Change. Improving Care for Older Adults.

Five Things Physicians and Patients Should Question

1 Don't recommend percutaneous feeding tubes in patients with advanced dementia; instead offer oral assisted feeding.

Careful hand-feeding for patients with severe dementia is at least as good as tube-feeding for the outcomes of death, aspiration pneumonia, functional status and patient comfort. Food is the preferred nutrient. Tube-feeding is associated with agitation, increased use of physical and chemical restraints and worsening pressure ulcers.

2 Don't use antipsychotics as first choice to treat behavioral and psychological symptoms of dementia.

People with dementia often exhibit aggression, resistance to care and other challenging or disruptive behaviors. In such instances, antipsychotic medicines are often prescribed, but they provide limited benefit and can cause serious harm, including stroke and premature death. Use of these drugs should be limited to cases where non-pharmacologic measures have failed and patients pose an imminent threat to themselves or others. Identifying and addressing causes of behavior change can make drug treatment unnecessary.

3 Avoid using medications to achieve hemoglobin A1c <7.5% in most adults age 65 and older; moderate control is generally better.

There is no evidence that using medications to achieve tight glycemic control in older adults with type 2 diabetes is beneficial. Among non-older adults, except for long-term reductions in myocardial infarction and mortality with metformin, using medications to achieve glycated hemoglobin levels less than 7% is associated with harms, including higher mortality rates. Tight control has been consistently shown to produce higher rates of hypoglycemia in older adults. Given the long timeframe to achieve theorized microvascular benefits of tight control, glycemic targets should reflect patient goals, health status, and life expectancy. Reasonable glycemic targets would be 7.0 – 7.5% in healthy older adults with long life expectancy, 7.5 – 8.0% in those with moderate comorbidity and a life expectancy < 10 years, and 8.0 – 9.0% in those with multiple morbidities and shorter life expectancy.

4 Don't use benzodiazepines or other sedative-hypnotics in older adults as first choice for insomnia, agitation or delirium.

Large scale studies consistently show that the risk of motor vehicle accidents, falls and hip fractures leading to hospitalization and death can more than double in older adults taking benzodiazepines and other sedative-hypnotics. Older patients, their caregivers and their providers should recognize these potential harms when considering treatment strategies for insomnia, agitation or delirium. Use of benzodiazepines should be reserved for alcohol withdrawal symptoms/delirium tremens or severe generalized anxiety disorder unresponsive to other therapies.

5 Don't use antimicrobials to treat bacteriuria in older adults unless specific urinary tract symptoms are present.

Cohort studies have found no adverse outcomes for older men or women associated with asymptomatic bacteriuria. Antimicrobial treatment studies for asymptomatic bacteriuria in older adults demonstrate no benefits and show increased adverse antimicrobial effects. Consensus criteria has been developed to characterize the specific clinical symptoms that, when associated with bacteriuria, define urinary tract infection. Screening for and treatment of asymptomatic bacteriuria is recommended before urologic procedures for which mucosal bleeding is anticipated.

How This List Was Created

The American Geriatrics Society (AGS) established a work group chaired by the Vice Chair of Clinical Practice and Models of Care Committee (CPMC). Work group members were drawn from that committee, as well as the Ethics, Ethnogeriatrics and Quality and Performance Measurement (QPMC) committees. AGS members were invited to submit feedback and recommendations as to what they thought should be included in the list via an electronic survey. The workgroup first narrowed the list down to the top 10 potential tests or procedures. The workgroup then reviewed the evidence and sought expert advice to further refine the list to five recommendations, which were then reviewed and approved by the AGS Executive Committee and the Chairs/Vice Chairs of CPMC, Ethics and QPMC.

AGS' disclosure and conflict of interest policy can be found at www.americangeriatrics.org.

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To learn more about the ABIM Foundation, visit www.abimfoundation.org.

About the American Geriatrics Society

The American Geriatrics Society (AGS) works to improve the health, independence and quality of life of all older people. Our geriatrics health professional members work together to provide interdisciplinary, patient- and family-centered team care to older adults. The society also works to bring the knowledge and expertise of geriatrics health professionals to the public via www.healthinaging.org.

To learn more about the AGS, please visit www.americangeriatrics.org.

For more information or to see other lists of Five Things Physicians and Patients Should Question, visit www.choosingwisely.org.

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American Society of Clinical Oncology

ASCO®

American Society of Clinical Oncology

Five Things Physicians and Patients Should Question

The American Society of Clinical Oncology (ASCO) is a medical professional oncology society committed to conquering cancer through research, education, prevention, and delivery of high-quality patient care. ASCO recognizes the importance of evidence-based cancer care and making wise choices in the diagnosis and management of patients with cancer. After careful consideration by experienced oncologists, ASCO highlights five categories of tests, procedures and/or treatments whose common use and clinical value are not supported by available evidence. These test and treatment options should not be administered unless the physician and patient have carefully considered if their use is appropriate in the individual case. As an example, when a patient is enrolled in a clinical trial, these tests, treatments, and procedures may be part of the trial protocol and therefore deemed necessary for the patient's participation in the trial.

1 Don't use cancer-directed therapy for solid tumor patients with the following characteristics: low performance status (3 or 4), no benefit from prior evidence-based interventions, not eligible for a clinical trial, and no strong evidence supporting the clinical value of further anti-cancer treatment.

- Studies show that cancer directed treatments are likely to be ineffective for solid tumor patients who meet the above stated criteria.
- Exceptions include patients with functional limitations due to other conditions resulting in a low performance status or those with disease characteristics (e.g., mutations) that suggest a high likelihood of response to therapy.
- Implementation of this approach should be accompanied with appropriate palliative and supportive care.

2 Don't perform PET, CT, and radionuclide bone scans in the staging of early prostate cancer at low risk for metastasis.

- Imaging with PET, CT, or radionuclide bone scans can be useful in the staging of specific cancer types. However, these tests are often used in the staging evaluation of low-risk cancers, despite a lack of evidence suggesting they improve detection of metastatic disease or survival.
- Evidence does not support the use of these scans for staging of newly diagnosed low grade carcinoma of the prostate (Stage T1c/T2a, prostate-specific antigen (PSA) <10 ng/ml, Gleason score less than or equal to 6) with low risk of distant metastasis.
- Unnecessary imaging can lead to harm through unnecessary invasive procedures, over-treatment, unnecessary radiation exposure, and misdiagnosis.

3 Don't perform PET, CT, and radionuclide bone scans in the staging of early breast cancer at low risk for metastasis.

- Imaging with PET, CT, or radionuclide bone scans can be useful in the staging of specific cancer types. However, these tests are often used in the staging evaluation of low-risk cancers, despite a lack of evidence suggesting they improve detection of metastatic disease or survival.
- In breast cancer, for example, there is a lack of evidence demonstrating a benefit for the use of PET, CT, or radionuclide bone scans in asymptomatic individuals with newly identified ductal carcinoma in situ (DCIS), or clinical stage I or II disease.
- Unnecessary imaging can lead to harm through unnecessary invasive procedures, over-treatment, unnecessary radiation exposure, and misdiagnosis.

4 Don't perform surveillance testing (biomarkers) or imaging (PET, CT, and radionuclide bone scans) for asymptomatic individuals who have been treated for breast cancer with curative intent.

- Surveillance testing with serum tumor markers or imaging has been shown to have clinical value for certain cancers (e.g., colorectal). However for breast cancer that has been treated with curative intent, several studies have shown there is no benefit from routine imaging or serial measurement of serum tumor markers in asymptomatic patients.
- False-positive tests can lead to harm through unnecessary invasive procedures, over-treatment, unnecessary radiation exposure, and misdiagnosis.

5 Don't use white cell stimulating factors for primary prevention of febrile neutropenia for patients with less than 20 percent risk for this complication.

- ASCO guidelines recommend using white cell stimulating factors when the risk of febrile neutropenia, secondary to a recommended chemotherapy regimen, is approximately 20 percent and equally effective treatment programs that do not require white cell stimulating factors are unavailable.
- Exceptions should be made when using regimens that have a lower chance of causing febrile neutropenia if it is determined that the patient is at high risk for this complication (due to age, medical history, or disease characteristics).

Abbreviations

CT, computed tomography; DCIS, ductal carcinoma in situ; PET, positron emission tomography; PSA, prostate-specific antigen.

How This List Was Created

The American Society of Clinical Oncology (ASCO) has had a standing Cost of Cancer Care Task Force since 2007. The role of the Task Force is to assess the magnitude of rising costs of cancer care and develop strategies to address these challenges. In response to the 2010 New England Journal of Medicine article by Howard Brody, MD, "Medicine's Ethical Responsibility for Health Care Reform – the Top Five List," a subcommittee of the Cost of Cancer Care Task Force began work to identify common practices in oncology that were both common as well as lacking sufficient evidence for widespread use. Upon joining the *Choosing Wisely* campaign, the members of the subcommittee conducted a literature search to ensure the proposed list of items were supported by available evidence in oncology; ultimately the proposed Top Five list was approved by the full Task Force. The initial draft list was then presented to the ASCO Clinical Practice Committee, a group composed of community-based oncologists as well as the presidents of the 48 state/regional oncology societies in the United States. Advocacy groups were also asked to weigh in to ensure the recommendations would achieve the dual purpose of increasing physician-patient communication and changing practice patterns. A plurality of more than 200 clinical oncologists reviewed, provided input and supported the list. The final Top Five list in oncology was then presented to, discussed and approved by the Executive Committee of the ASCO Board of Directors and published in the Journal of Clinical Oncology. ASCO's disclosure and conflict of interest policies can be found at www.asco.org.

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About the American Society of Clinical Oncology:

The American Society of Clinical Oncology (ASCO) is the world's leading professional organization representing physicians who care for people with cancer. With more than 30,000 members, ASCO is committed to improving cancer care through scientific meetings, educational programs and peer-reviewed journals. ASCO is supported by its affiliate organization, the Conquer Cancer Foundation, which funds ground-breaking research and programs that make a tangible difference in the lives of people with cancer. ASCO's membership is comprised of clinical oncologists from all oncology disciplines and sub-specialties including medical oncology, therapeutic radiology, surgical oncology, pediatric oncology, gynecologic oncology, urologic oncology, and hematology; physicians and health care professionals participating in approved oncology training programs; oncology nurses; and other health care practitioners with a predominant interest in oncology.

For more information, please visit www.asco.org.

For more information or to see other lists of Five Things Physicians and Patients Should Question, visit www.choosingwisely.org.

Choosing Wisely®

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American Society for Clinical Pathology

ASCP American Society for Clinical Pathology

Five Things Physicians and Patients Should Question

1 Don't perform population based screening for 25-OH-Vitamin D deficiency.

Vitamin D deficiency is common in many populations, particularly in patients at higher latitudes, during winter months and in those with limited sun exposure. Over the counter Vitamin D supplements and increased summer sun exposure are sufficient for most otherwise healthy patients. Laboratory testing is appropriate in higher risk patients when results will be used to institute more aggressive therapy (e.g., osteoporosis, chronic kidney disease, malabsorption, some infections, obese individuals).

2 Don't perform low risk HPV testing.

National guidelines provide for HPV testing in patients with certain abnormal Pap smears and in other select clinical indications. The presence of high risk HPV leads to more frequent examination or more aggressive investigation (e.g., colposcopy and biopsy). There is no medical indication for low risk HPV testing (HPV types that cause genital warts or very minor cell changes on the cervix) because the infection is not associated with disease progression and there is no treatment or therapy change indicated when low risk HPV is identified.

3 Avoid routine preoperative testing for low risk surgeries without a clinical indication.

Most preoperative tests (typically a complete blood count, Prothrombin Time and Partial Prothomboplastin Time, basic metabolic panel and urinalysis) performed on elective surgical patients are normal. Findings influence management in under 3% of patients tested. In almost all cases, no adverse outcomes are observed when clinically stable patients undergo elective surgery, irrespective of whether an abnormal test is identified. Preoperative testing is appropriate in symptomatic patients and those with risks factors for which diagnostic testing can provide clarification of patient surgical risk.

4 Only order Methylated Septin 9 (SEPT9) to screen for colon cancer on patients for whom conventional diagnostics are not possible.

Methylated Septin 9 (SEPT9) is a plasma test to screen patients for colorectal cancer. Its sensitivity and specificity are similar to commonly ordered stool guaiac or fecal immune tests. It offers an advantage over no testing in patients that refuse these tests or who, despite aggressive counseling, decline to have recommended colonoscopy. The test should not be considered as an alternative to standard diagnostic procedures when those procedures are possible.

5 Don't use bleeding time test to guide patient care.

The bleeding time test is an older assay that has been replaced by alternative coagulation tests. The relationship between the bleeding time test and the risk of a patient's actually bleeding has not been established. Further, the test leaves a scar on the forearm. There are other reliable tests of coagulation available to evaluate the risks of bleeding in appropriate patient populations.

How This List Was Created

The American Society for Clinical Pathology (ASCP) list was developed under the leadership of the chair of ASCP's Institute Advisory Committee and Past President of ASCP. Subject matter and test utilization experts across the fields of pathology and laboratory medicine were included in this process for their expertise and guidance. The review panel examined hundreds of options based on both the practice of pathology and evidence available through an extensive review of the literature. The laboratory tests targeted in our recommendations were selected because they are tests that are performed frequently; there is evidence that the test either offers no benefit or is harmful; use of the test is costly and it does not provide higher quality care; and, eliminating it or changing to another test is within the control of the clinician. The final list is not exhaustive (many other tests/procedures were also identified and were also worthy of consideration), but the recommendations, if instituted, would result in higher quality care, lower costs, and more effective use of our laboratory resources and personnel.

ASCPs' disclosure and conflict of interest policy can be found at www.ascp.org.

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Founded in 1922 in Chicago, the American Society for Clinical Pathology (ASCP) is a medical professional society with more than 100,000 member board-certified anatomic and clinical pathologists, residents and fellows, laboratory professionals, and students. ASCP provides excellence in education, certification, and advocacy on behalf of patients, pathologists, and laboratory professionals.

For more information, visit www.ascp.org.

For more information or to see other lists of Five Things Physicians and Patients Should Question, visit www.choosingwisely.org.

Choosing Wisely®

An initiative of the ABIM Foundation

American Society of Echocardiography

ASE American Society of Echocardiography

Five Things Physicians and Patients Should Question

1 Don't order follow up or serial echocardiograms for surveillance after a finding of trace valvular regurgitation on an initial echocardiogram.

Trace mitral, tricuspid and pulmonic regurgitation can be detected in 70% to 90% of normal individuals and has no adverse clinical implications. The clinical significance of a small amount of aortic regurgitation with an otherwise normal echocardiographic study is unknown.

2 Don't repeat echocardiograms in stable, asymptomatic patients with a murmur/click, where a previous exam revealed no significant pathology.

Repeat imaging to address the same question, when no pathology has been previously found and there has been no clinical change in the patient's condition, is not indicated.

3 Avoid echocardiograms for preoperative/perioperative assessment of patients with no history or symptoms of heart disease.

Perioperative echocardiography is used to clarify signs or symptoms of cardiovascular disease, or to investigate abnormal heart tests. Resting left ventricular (LV) function is not a consistent predictor of perioperative ischemic events; even reduced LV systolic function has poor predictive value for perioperative cardiac events.

4 Avoid using stress echocardiograms on asymptomatic patients who meet "low risk" scoring criteria for coronary disease.

Stress echocardiography is mostly used in symptomatic patients to assist in the diagnosis of obstructive coronary artery disease. There is very little information on using stress echocardiography in asymptomatic individuals for the purposes of cardiovascular risk assessment, as a stand-alone test or in addition to conventional risk factors.

5 Avoid transesophageal echocardiography (TEE) to detect cardiac sources of embolization if a source has been identified and patient management will not change.

Tests whose results will not alter management should not be ordered. Protocol-driven testing can be useful if it serves as a reminder not to omit a test or procedure, but should always be individualized to the particular patient. While TEE is safe, even the small degree of risk associated with a procedure is not justified if there is no expected clinical benefit.

How This List Was Created

The American Society of Echocardiography (ASE) identified these interventions after careful review of evidence and clinical guidelines. In particular, ASE's cardiovascular care experts reviewed the ACCF/ASE/AHA/ASNC/HFSA/HRS/SCAI/SCCM/SCCT/SCMR 2011 Appropriateness Use Criteria for Echocardiography (AUC), which was published in March 2011. ASE's cardiovascular care scenarios were chosen based on the highest likelihood of improving patient care and reducing inappropriate test use. Leaders in the organization transformed the scenarios into plain language and produced the clinical explanations for each procedure.

ASE's disclosure and conflict of interest policy can be found at www.asecho.org.

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To learn more about the ABIM Foundation, visit www.abimfoundation.org.

About the American Society of Echocardiography

As the largest global organization for cardiovascular ultrasound imaging, the American Society of Echocardiography (ASE) is the leader and advocate, setting clinical standards and guidelines with a commitment to improving the practice for better patient outcomes. ASE is devoted to ensuring patient access to excellence in the practice of Echocardiography around the world. Echocardiography provides an exceptional view of the cardiovascular system to safely and cost-effectively enhance patient care. Full text of ASE's guidelines is available at www.asecho.org/guidelines.

For more information about ASE, visit www.asecho.org. For patient-specific information on the practice of echocardiography, visit www.seemyheart.org.

For more information or to see other lists of Five Things Physicians and Patients Should Question, visit www.choosingwisely.org.

Choosing Wisely®

An initiative of the ABIM Foundation

American Society of Nephrology

ASN LEADING THE FIGHT AGAINST KIDNEY DISEASE

Five Things Physicians and Patients Should Question

1

Don't perform routine cancer screening for dialysis patients with limited life expectancies without signs or symptoms.

Due to high mortality among end-stage renal disease (ESRD) patients, routine cancer screening—including mammography, colonoscopy, prostate-specific antigen (PSA) and Pap smears—in dialysis patients with limited life expectancy, such as those who are not transplant candidates, is not cost effective and does not improve survival. False-positive tests can cause harm: unnecessary procedures, overtreatment, misdiagnosis and increased stress. An individualized approach to cancer screening incorporating patients' cancer risk factors, expected survival and transplant status is required.

2

Don't administer erythropoiesis-stimulating agents (ESAs) to chronic kidney disease (CKD) patients with hemoglobin levels greater than or equal to 10 g/dL without symptoms of anemia.

Administering ESAs to CKD patients with the goal of normalizing hemoglobin levels has no demonstrated survival or cardiovascular disease benefit, and may be harmful in comparison to a treatment regimen that delays ESA administration or sets relatively conservative targets (9–11 g/dL). ESAs should be prescribed to maintain hemoglobin at the lowest level that both minimizes transfusions and best meets individual patient needs.

3

Avoid nonsteroidal anti-inflammatory drugs (NSAIDS) in individuals with hypertension or heart failure or CKD of all causes, including diabetes.

The use of NSAIDS, including cyclo-oxygenase type 2 (COX-2) inhibitors, for the pharmacological treatment of musculoskeletal pain can elevate blood pressure, make antihypertensive drugs less effective, cause fluid retention and worsen kidney function in these individuals. Other agents such as acetaminophen, tramadol or short-term use of narcotic analgesics may be safer than and as effective as NSAIDs.

4

Don't place peripherally inserted central catheters (PICC) in stage III–V CKD patients without consulting nephrology.

Venous preservation is critical for stage III–V CKD patients. Arteriovenous fistulas (AVF) are the best hemodialysis access, with fewer complications and lower patient mortality, versus grafts or catheters. Excessive venous puncture damages veins, destroying potential AVF sites. PICC lines and subclavian vein puncture can cause venous thrombosis and central vein stenosis. Early nephrology consultation increases AVF use at hemodialysis initiation and may avoid unnecessary PICC lines or central/peripheral vein puncture.

5

Don't initiate chronic dialysis without ensuring a shared decision-making process between patients, their families, and their physicians.

The decision to initiate chronic dialysis should be part of an individualized, shared decision-making process between patients, their families, and their physicians. This process includes eliciting individual patient goals and preferences and providing information on prognosis and expected benefits and harms of dialysis within the context of these goals and preferences. Limited observational data suggest that survival may not differ substantially for older adults with a high burden of comorbidity who initiate chronic dialysis versus those managed conservatively.

How This List Was Created

The American Society of Nephrology (ASN) maintains a Quality and Patient Safety (QPS) Task Force that advances ASN's commitment to providing high-quality care to patients and to raising awareness of patient safety issues for all professionals administering care to kidney patients. Each of ASN's 10 advisory groups contributes expertise to the task force to ensure it addresses all areas of nephrology practice, and the society's president, public policy board and council also provide insights. The QPS task force centered its focus on five items most likely to positively impact and influence optimal patient care. The final list of five items was unanimously approved by the ASN public policy board and council. ASN's disclosure and conflict of interest policy can be found at www.asn-online.org.

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To learn more about the ABIM Foundation, visit www.abimfoundation.org.

About the American Society of Nephrology:

The American Society of Nephrology (ASN) represents nearly 14,000 professionals committed to curing kidney disease. The *Choosing Wisely* campaign reflects ASN's commitment to the highest quality care for the millions of kidney patients worldwide. ASN provides the most highly regarded education in kidney medicine, supports key kidney research, and advocates daily for policies that improve patients' lives and equip professionals to help those with kidney disease achieve the highest quality of life.

For more information or questions, please visit www.asn-online.org.

For more information or to see other lists of Five Things Physicians and Patients Should Question, visit www.choosingwisely.org.

Choosing Wisely®

An initiative of the ABIM Foundation

American Society of Nuclear Cardiology

Five Things Physicians and Patients Should Question

1 Don't perform stress cardiac imaging or coronary angiography in patients without cardiac symptoms unless high-risk markers are present.

Asymptomatic, low-risk patients account for up to 45 percent of inappropriate stress testing. Testing should be performed only when the following findings are present: diabetes in patients older than 40 years old, peripheral arterial disease, and greater than 2 percent yearly coronary heart disease event rate.

2 Don't perform cardiac imaging for patients who are at low risk.

Chest pain patients at low risk of cardiac death and myocardial infarction (based on history, physical exam, electrocardiograms and cardiac biomarkers) do not merit stress radionuclide myocardial perfusion imaging or stress echocardiography as an initial testing strategy if they have a normal electrocardiogram (without baseline ST-abnormalities, left ventricular hypertrophy, pre-excitation, bundle branch block, intra-ventricular conduction delay, paced rhythm or on digoxin therapy) and are able to exercise.

3 Don't perform radionuclide imaging as part of routine follow-up in asymptomatic patients.

Performing stress radionuclide imaging in patients without symptoms on a serial or scheduled pattern (e.g., every one to two years or at a heart procedure anniversary) rarely results in any meaningful change in patient management. This practice may lead to unnecessary invasive procedures and excess radiation exposure without any proven impact on patients' outcomes. An exception to this rule would be for patients more than five years after a bypass operation.

4 Don't perform cardiac imaging as a pre-operative assessment in patients scheduled to undergo low- or intermediate-risk non-cardiac surgery.

Non-invasive testing is not useful for patients undergoing low-risk non-cardiac surgery or with no cardiac symptoms or clinical risk factors undergoing intermediate-risk non-cardiac surgery. These types of testing do not change the patient's clinical management or outcomes and will result in increased costs. Therefore, it is not appropriate to perform cardiac imaging procedures for non-cardiac surgery risk assessment in patients with no cardiac symptoms, clinical risk factors or who have moderate to good functional capacity.

5 Use methods to reduce radiation exposure in cardiac imaging, whenever possible, including not performing such tests when limited benefits are likely.

The key step to reduce or eliminate radiation exposure is appropriate selection of any test or procedure for a specific person, in keeping with medical society recommendations, such as appropriate use criteria. Health care providers should incorporate new methodologies in cardiac imaging to reduce patient exposure to radiation while maintaining high-quality test results.

How This List Was Created

The American Society of Nuclear Cardiology (ASNC) appointed a writing group of content experts to identify five areas in which to make recommendations. Areas were selected for the evidence-based data available to direct provider decision-making and the potential for improving patient selection and care by eliminating inappropriate testing. Specific recommendations were drafted for each subject area, accompanied by peer-reviewed literature citations. These recommendations were reviewed by the ASNC Quality Assurance Committee and Board of Directors prior to submission to the *Choosing Wisely* campaign. ASNC's disclosure and conflict of interest policy can be found at www.asnc.org.

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About the American Society of Nuclear Cardiology:

The American Society of Nuclear Cardiology (ASNC) is the voice of more than 4,500 physicians, technologists and scientists dedicated to the science and practice of nuclear cardiology. Since 1993, ASNC has been establishing the standard for excellence in cardiovascular imaging through the development of clinical guidelines, professional education and research development.

For more information or questions, please visit www.asnc.org.

For more information or to see other lists of Five Things Physicians and Patients Should Question, visit www.choosingwisely.org.

Choosing Wisely®

An initiative of the ABIM Foundation

American Urological Association

Five Things Physicians and Patients Should Question

1 A routine bone scan is unnecessary in men with low-risk prostate cancer.

Low-risk patients (defined by using commonly accepted categories such as American Urological Association and National Comprehensive Cancer Network guidelines) are unlikely to have disease identified by bone scan. Accordingly, bone scans are generally unnecessary in patients with newly diagnosed prostate cancer who have a PSA <20.0 ng/mL and a Gleason score 6 or less unless the patient's history or clinical examination suggests bony involvement. Progression to the bone is much more common in advanced local disease or in high-grade disease that is characterized by fast and aggressive growth into surrounding areas such as bones or lymph nodes.

2 Don't prescribe testosterone to men with erectile dysfunction who have normal testosterone levels.

While testosterone treatment is shown to increase sexual interest, there appears to be no significant influence on erectile function, at least not in men with normal testosterone levels. The information available in studies to date is insufficient to fully evaluate testosterone's efficacy in the treatment of men with erectile dysfunction who have normal testosterone levels.

3 Don't order creatinine or upper-tract imaging for patients with benign prostatic hyperplasia (BPH).

When an initial evaluation shows only the presence of lower urinary tract symptoms (LUTS), if the symptoms are not significantly bothersome to the patient or if the patient doesn't desire treatment, no further evaluation is recommended. Such patients are unlikely to experience significant health problems in the future due to their condition and can be seen again if necessary. [While the patient can often tell the provider if the symptoms are bothersome enough that he desires additional therapy, another possible option is to use a validated questionnaire to assess symptoms. For example, if the patient completes the International Prostate Symptom Scale (IPSS) and has a symptom score of 8 or greater, this is considered to be "clinically" bothersome.]

4 Don't treat an elevated PSA with antibiotics for patients not experiencing other symptoms.

It had previously been suggested that a course of antibiotics might lead to a decrease in an initially raised PSA and reduce the need for prostate biopsy; however, there is a lack of clinical studies to show that antibiotics actually decrease PSA levels. It should also be noted that a decrease in PSA does not indicate an absence of prostate cancer. There is no information available on the implications of deferring a biopsy following a decrease in PSA.

5 Don't perform ultrasound on boys with cryptorchidism.

Ultrasound has been found to have poor diagnostic performance in the localization of testes that cannot be felt through physical examination. Studies have shown that the probability of locating testes was small when using ultrasound, and there was still a significant chance that testes were present even after a negative ultrasound result. Additionally, ultrasound results are complicated by the presence of surrounding tissue and bowel gas present in the abdomen.

How This List Was Created

The American Urological Association (AUA) established a committee to review evidence from the association's guidelines and identify potential topics for nomination to the AUA's *Choosing Wisely* list. The committee reviewed a number of recommendations and through a consensus process identified the five tests or procedures that should be questioned. These recommendations were reviewed and approved by the AUA Board of Directors.

AUA's disclosure and conflict of interest policy can be found at www.auanet.org.

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About the American Urological Association

Founded in 1902 and headquartered near Baltimore, Maryland, the American Urological Association is a leading advocate for the specialty of urology, and has more than 18,000 members throughout the world. The AUA is a premier urologic association, providing invaluable support to the urologic community as it fosters the highest standards of urologic care through education, research and formulation of health policy.

For information, visit www.auanet.org.

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Choosing Wisely®

An initiative of the ABIM Foundation

Society of Cardiovascular Computed Tomography

SOCIETY OF CARDIOVASCULAR COMPUTED TOMOGRAPHY

Five Things Physicians and Patients Should Question

1 Don't use coronary artery calcium scoring for patients with known coronary artery disease (including stents and bypass grafts).

Coronary artery calcium scoring is used for evaluation of individuals without known coronary artery disease and offers limited incremental prognostic value for individuals with known coronary artery disease, such as those with stents and bypass grafts.

2 Don't order coronary artery calcium scoring for preoperative evaluation for any surgery, irrespective of patient risk.

No evidence exists to support the diagnostic or prognostic potential of coronary artery calcium scoring in individuals in the preoperative setting. This practice may add costs and confound professional guideline-based evaluations.

3 Don't order coronary artery calcium scoring for screening purposes on low risk asymptomatic individuals except for those with a family history of premature coronary artery disease.

Net reclassification of risk by coronary artery calcium scoring, when added to clinical risk scoring, is least effective in low risk individuals.

4 Don't routinely order coronary computed tomography angiography for screening asymptomatic individuals.

Coronary computed tomography angiography findings of coronary artery disease stenosis severity rarely offer incremental discrimination over coronary artery calcium scoring in asymptomatic individuals.

5 Don't use coronary computed tomography angiography in high risk* emergency department patients presenting with acute chest pain.

To date, randomized controlled trials evaluating use of coronary computed tomography angiography for individuals presenting with acute chest pain in the emergency department have been limited to low or low-intermediate risk individuals.

* *Risk defined by the Thrombolysis In Myocardial Infarction (TIMI) risk score for unstable angina/acute coronary syndromes.*

How This List Was Created

The Society of Cardiovascular Computed Tomography (SCCT) formed a committee panel made up of expert members of its existing Guidelines Committee and Publications and Statements Committee that would be dedicated to recommending between five and 10 questions that should be considered when ordering Coronary CT angiography and coronary artery calcium scoring. The panel reviewed and referred to SCCT's existing and published guidelines, appropriate use criteria and support statements. Once questions were chosen, the list was referred to the SCCT Board of Directors, which then reviewed the draft list, offered feedback and narrowed the questions down to the five most important consideration points through online voting. The draft was returned to the working group panel, which fleshed out the chosen recommendations and cited its supporting evidence from currently published literature. The SCCT's Board of Directors and Executive Board each then reviewed the final five items and implemented another round of edits before voting for final review and approval.

SCCT's bylaws and its disclosure and conflict of interest policy can be found at www.scct.org.

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About the Society of Cardiovascular Computed Tomography

SOCIETY OF CARDIOVASCULAR COMPUTED TOMOGRAPHY

The Society of Cardiovascular Computed Tomography (SCCT) is the professional society devoted exclusively to cardiovascular computed tomography (CCT), representing physicians, scientists and technologists advocating for research, education and clinical excellence in the use of CCT. With an expanding global membership, it is acknowledged and recognized as the representative and advocate for research, education, and clinical excellence in the use of cardiovascular computed tomography. SCCT's mission includes fostering optimal clinical effectiveness of CCT through professional education, establishment of standards for quality assurance and professional training, and development of evidence-based guidelines for its use to enhance patient care and improve the quality of cardiovascular medical practice. SCCT also serves as an advocate for cardiovascular CT in all interactions with the health care industry, medical policy development and reimbursement organizations.

Learn more at: www.SCCT.org.

For more information or to see other lists of Five Things Physicians and Patients Should Question, visit www.choosingwisely.org.

Choosing Wisely®

An initiative of the ABIM Foundation

Society of Hospital Medicine – **Adult Hospital Medicine**

shm Society of Hospital Medicine

Five Things Physicians and Patients Should Question

1 Don't place, or leave in place, urinary catheters for incontinence or convenience or monitoring of output for non-critically ill patients (acceptable indications: critical illness, obstruction, hospice, perioperatively for <2 days for urologic procedures; use weights instead to monitor diuresis).

Catheter Associated Urinary Tract Infections (CAUTIs) are the most frequently occurring health care acquired infection (HAI). Use of urinary catheters for incontinence or convenience without proper indication or specified optimal duration of use increases the likelihood of infection and is commonly associated with greater morbidity, mortality and health care costs. Published guidelines suggest that hospitals and long-term care facilities should develop, maintain and promulgate policies and procedures for recommended catheter insertion indications, insertion and maintenance techniques, discontinuation strategies and replacement indications.

2 Don't prescribe medications for stress ulcer prophylaxis to medical inpatients unless at high risk for GI complications.

According to published guidelines, medications for stress ulcer prophylaxis are not recommended for adult patients in non-ICU settings. Histamine-2 receptor antagonists (H2RAs) and proton-pump inhibitors (PPIs), commonly used to treat stress ulcers, are associated with adverse drug events and increased medication costs, and commonly enhance susceptibility to community-acquired nosocomial pneumonia and Clostridium difficile. Adherence to therapeutic guidelines will aid health care providers in reducing treatment of patients without clinically important risk factors for gastrointestinal bleeding.

3 Avoid transfusions of red blood cells for arbitrary hemoglobin or hematocrit thresholds and in the absence of symptoms of active coronary disease, heart failure or stroke.

The AABB recommends adhering to a restrictive transfusion strategy (7 to 8 g/dL) in hospitalized, stable patients. The AABB suggests that transfusion decisions be influenced by symptoms as well as hemoglobin concentration. According to a National Institutes of Health Consensus Conference, no single criterion should be used as an indication for red cell component therapy. Instead, multiple factors related to the patient's clinical status and oxygen delivery should be considered.

4 Don't order continuous telemetry monitoring outside of the ICU without using a protocol that governs continuation.

Telemetric monitoring is of limited utility or measurable benefit in low risk cardiac chest pain patients with normal electrocardiogram. Published guidelines provide clear indications for the use of telemetric monitoring in patients which are contingent upon frequency, severity, duration and conditions under which the symptoms occur. Inappropriate use of telemetric monitoring is likely to increase cost of care and produce false positives potentially resulting in errors in patient management.

5 Don't perform repetitive CBC and chemistry testing in the face of clinical and lab stability.

Hospitalized patients frequently have considerable volumes of blood drawn (phlebotomy) for diagnostic testing during short periods of time. Phlebotomy is highly associated with changes in hemoglobin and hematocrit levels for patients and can contribute to anemia. This anemia, in turn, may have significant consequences, especially for patients with cardiorespiratory diseases. Additionally, reducing the frequency of daily unnecessary phlebotomy can result in significant cost savings for hospitals.

How This List Was Created

The Society of Hospital Medicine (SHM) created a *Choosing Wisely*® subcommittee comprised of representatives of the Hospital Quality and Patient Safety committee and included diverse representation of academic, community and adult hospitalists. SHM committee members submitted 150 recommendations for consideration, which were discussed for frequency of occurrence, the uniqueness of the tests and treatments and whether the cost burden for a specific test or treatment proved to be significant, narrowing the list to 65 items. The *Choosing Wisely* subcommittee ranked these items and a survey was sent to all SHM members to arrive at 11 recommendations, of which the final five were determined utilizing the Delphi method. SHM's Board approved the final recommendations.

SHM's disclosure and conflict of interest policy can be found at www.hospitalmedicine.org/industry.

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Choosing Wisely®

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Society of Hospital Medicine – **Pediatric Hospital Medicine**

shm
Society of Hospital Medicine

Five Things Physicians and Patients Should Question

1 Don't order chest radiographs in children with uncomplicated asthma or bronchiolitis.

National guidelines articulate a reliance on physical examination and patient history for diagnosis of asthma and bronchiolitis in the pediatric population. Multiple studies have established limited clinical utility of chest radiographs for patients with asthma or bronchiolitis. Omission of the use of chest radiography will reduce costs, but not compromise diagnostic accuracy and care.

2 Don't routinely use bronchodilators in children with bronchiolitis.

Published guidelines do not advocate the routine use of bronchodilators in patients with bronchiolitis. Comprehensive reviews of the literature have demonstrated that the use of bronchodilators in children admitted to the hospital with bronchiolitis has no effect on any important outcomes. There is limited demonstration of clear impact of bronchodilator therapy upon the course of disease. Additionally, providers should consider the potential impact of adverse events upon the patient.

3 Don't use systemic corticosteroids in children under 2 years of age with an uncomplicated lower respiratory tract infection.

Published guidelines recommend that corticosteroid medications not be used routinely in the management of bronchiolitis. Furthermore, additional studies in patients with other viral lower respiratory tract infections have failed to demonstrate any benefits.

4 Don't treat gastroesophageal reflux in infants routinely with acid suppression therapy.

Antireflux therapy has been demonstrated to have no effect in reducing the symptoms of grastroesophageal reflux disease (GERD) in children. Concerns regarding the use of proton-pump inhibitor therapy in infants include an inability to definitively diagnose pediatric patients according to the established criteria of GERD, lack of documented efficacy of acid suppression therapy in infants and the potential adverse effects associated with acid suppression therapy.

5 Don't use continuous pulse oximetry routinely in children with acute respiratory illness unless they are on supplemental oxygen.

The utility of continuous pulse oximetry in pediatric patients with acute respiratory illness is not well established. Use of continuous pulse oximetry has been previously associated with increased admission rates and increased length of stay. The clinical benefit of pulse oximetry is not validated or well documented.

How This List Was Created

A Delphi panel of pediatric hospital medicine physicians with wide geographic representation was convened by the Society of Hospital Medicine (SHM). The panel developed an initial list of 20 items with input from colleagues at each of the panelists' home institutions, which was then discussed and reduced to 11 items via consensus of the panel. A comprehensive literature review was undertaken for these 11 items, while they were concurrently circulated on the electronic listservs of SHM's Pediatric Committee and the American Academy of Pediatrics' Section on Hospital Medicine. The collated comments along with the results of the evidence review were then presented to the members of the panel.

Two rounds of Delphi voting took place via electronic submission of votes by the panel. Validity and feasibility of each item was assessed by the Delphi panel on a nine-point scale for each of the 11 items and the mean of each item was obtained. The aggregate score of the means of validity and feasibility decided the final five items. These recommendations were then submitted to the SHM Board for review and approval.

SHM's disclosure and conflict of interest policy can be found at www.hospitalmedicine.org/industry.

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Choosing Wisely®

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Society of Nuclear Medicine and Molecular Imaging

SNMMI SOCIETY OF NUCLEAR MEDICINE AND MOLECULAR IMAGING

Five Things Physicians and Patients Should Question

1 Don't use PET/CT for cancer screening in healthy individuals.

- The likelihood of finding cancer in healthy adults is extremely low (around 1%), based on studies using PET/CT for screening.
- Imaging without clear clinical indication is likely to identify harmless findings that lead to more tests, biopsy or unnecessary surgery.

2 Don't perform routine annual stress testing after coronary artery revascularization.

- Routine annual stress testing in patients without symptoms does not usually change management.
- This practice may lead to unnecessary testing without any proven impact on patient management.

3 Don't use nuclear medicine thyroid scans to evaluate thyroid nodules in patients with normal thyroid gland function.

- Nuclear medicine thyroid scanning does not conclusively determine whether thyroid nodules are benign or malignant.
- Cold nodules on thyroid scans will still require biopsy.
- Nuclear medicine thyroid scans are useful to evaluate the functional status of thyroid nodules in patients who are hyperthyroid.

4 Avoid using a computed tomography angiogram to diagnose pulmonary embolism in young women with a normal chest radiograph; consider a radionuclide lung study ("V/Q study") instead.

- When the clinical question is whether or not pulmonary emboli are present, a V/Q study can provide the answer with lower overall radiation dose to the breast than can CTA, even when performed with a breast shield.

5 Don't use PET imaging in the evaluation of patients with dementia unless the patient has been assessed by a specialist in this field.

- Without objective evidence of dementia, the potential benefit of PET is unlikely to justify the cost or radiation risk.
- Dementia subtypes have overlapping patterns in PET imaging. Clinical evaluation and imaging often provide additive information and should be assessed together to make a reliable diagnosis and to plan care.
- For β-amyloid PET imaging, it is not currently known what a positive PET result in a cognitively normal person means; this method is not established for an individual prediction.

How This List Was Created

The president of the Society of Nuclear Medicine and Molecular Imaging (SNMMI) appointed a Steering Committee, led by the president-elect, to develop the "Top 5" list. This committee solicited input from five SNMMI clinical specialty councils (cardiovascular, brain, nuclear oncology, general nuclear medicine, pediatric) and our PET Center of Excellence. A task force made up of the Steering Committee and specialty council/center leadership convened, and its members also provided recommendations. The Steering Committee reviewed and ranked the submissions and presented the five highest-ranked statements to the SNMMI Board of Directors and House of Delegates.

SNMMI's disclosure and conflict of interest policy can be obtained by contacting the organization (email@snmmi.org).

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About the Society of Nuclear Medicine and Molecular Imaging

The Society of Nuclear Medicine and Molecular Imaging (SNMMI) is a nonprofit scientific and professional organization dedicated to the science, technology and practical application of nuclear medicine and molecular imaging, with the ultimate goal of improving human health. Founded in 1960, SNMMI represents more than 19,000 nuclear medicine and molecular imaging professionals worldwide.

For more information about nuclear medicine and molecular imaging, please visit SNMMI's consumer website, www.discoverMI.org.

For more information or to see other lists of Five Things Physicians and Patients Should Question, visit www.choosingwisely.org.

Choosing Wisely®

An initiative of the ABIM Foundation

The Society of Thoracic Surgeons

Five Things Physicians and Patients Should Question

1 Patients who have no cardiac history and good functional status do not require preoperative stress testing prior to non-cardiac thoracic surgery.

- Functional status has been shown to be reliable for prediction of perioperative and long-term cardiac events. In highly functional asymptomatic patients, management is rarely changed by preoperative stress testing. It is therefore appropriate to proceed with the planned surgery without it.

Unnecessary stress testing can be harmful because it increases the cost of care and delays treatment without altering surgical or perioperative management in a meaningful way. Furthermore, low-risk patients who undergo preoperative stress testing are more likely to obtain additional invasive testing with risks of complications.

Cardiac complications are significant contributors to morbidity and mortality after non-cardiac thoracic surgery, and it is important to identify patients preoperatively who are at risk for these complications. The most valuable tools in this endeavor include a thorough history, physical exam and resting EKG. Cardiac stress testing can be an important adjunct in this evaluation, but it should only be used when clinically indicated.

2 Don't initiate routine evaluation of carotid artery disease prior to cardiac surgery in the absence of symptoms or other high-risk criteria.

- Carotid stenosis with symptoms (stroke or transient ischemic attacks [TIA]) is a known risk for cardiovascular accident and appropriate for preoperative testing.
- The presence of a carotid bruit does not equate to an increased risk of stroke after cardiac surgery.
- Patients with carotid stenosis have a higher rate of cerebrovascular complications after cardiac surgery, but there is no evidence that prophylactic or concomitant carotid surgery decreases this rate of complications in asymptomatic patients.

ACC/AHA 2011 guidelines for coronary artery bypass graft surgery indicate carotid artery duplex scanning is reasonable in selected patients who are considered to have high-risk features. However, this was based on a consensus and a low level of evidence. In addition, a recent consensus report from the United Kingdom questioned whether neurologic sequellae developing in cardiac surgery patients with asymptomatic carotid disease are due to the carotid artery disease or rather act as a surrogate for an increased stroke risk from atherosclerotic issues with the aorta.

The Northern Manhattan Stroke Study concluded that carotid auscultation had poor sensitivity and positive predictive value for carotid stenosis and so decisions on obtaining carotid duplex studies should be considered based on symptoms or risk factors rather than findings on auscultation.

3 Don't perform a routine pre-discharge echocardiogram after cardiac valve replacement surgery.

- Pre-discharge cardiac echocardiography is useful after cardiac valve repair. It provides information regarding the integrity of the repair and allows the opportunity for early identification of problems that may need to be addressed surgically during the index hospitalization. Unlike valve repair, there is a lack of evidence that supports the routine use of cardiac echocardiography pre-discharge after cardiac valve replacement.
- Scenarios that would justify the use of pre-discharge cardiac echocardiography include: inability to perform intraoperative transesophageal echocardiography, clinical signs and symptoms worrisome for valvular malfunction or infection, or a large pericardial effusion.

4

Patients with suspected or biopsy proven Stage I NSCLC do not require brain imaging prior to definitive care in the absence of neurologic symptoms.

- The incidence of occult brain metastasis in Stage I lung cancer is low (<3%) and so routine brain imaging results in increased costs, delays in therapy and rarely changes patient management.
- False-positive studies occur in up to 11% of patients resulting in further invasive testing or incorrect over staging, with potentially tragic effects on treatment decisions and outcomes.

Some clinicians perform routine screening by brain magnetic resonance imaging (MRI) or computed tomography (CT) scans to rule out occult brain metastasis in asymptomatic patients prior to surgical resection of early stage lung cancer. This practice of routine screening for occult brain metastases has not been evaluated by a randomized clinical trial and may not be cost-effective or medically necessary.

Pooled data from retrospective studies that included a comprehensive clinical evaluation demonstrated that only 3% of patients who have a negative neurologic evaluation present with intracranial metastasis. One study, limited to Stage I patients, reported a prevalence of 1.3%. The joint statement of the American Thoracic Society and the European Respiratory Society did not advocate preoperative imaging of the brain in patients with NSCLC who present without neurologic symptoms, and the current National Comprehensive Cancer Network (NCCN) non-small cell lung cancer guidelines do not recommend preoperative brain imaging for asymptomatic patients with Stage IA non-small cell lung carcinoma.

5

Prior to cardiac surgery, there is no need for pulmonary function testing in the absence of respiratory symptoms.

- PFTs can be helpful in determining risk in cardiac surgery, but patients with no pulmonary disease are unlikely to benefit and do not justify testing.
- Symptoms attributed to cardiac disease that are respiratory in nature should be better characterized with PFTs.

Risk models for cardiac surgery developed from review of The Society of Thoracic Surgeons Adult Cardiac Surgery Database incorporate a variable for chronic lung disease. Only recently have actual FEV1 and DLCO data been collected in the database. In the absence of respiratory symptoms or suggestive medical history, pulmonary function testing is quite unlikely to change patient management or assist in risk assessment. Although some data are beginning to emerge about preoperative pulmonary rehabilitation prior to cardiac surgery for patients with even mild to moderate obstructive disease, this does not directly extrapolate to asymptomatic patients.

How This List Was Created

The Society of Thoracic Surgeons (STS) list development process was led by the First Vice-President, and involved input from multiple workforces, including the Workforce on Adult Cardiac and Vascular Surgery, Workforce on General Thoracic Surgery, and Workforce on Evidence Based Surgery, and was staffed by STS' Director of Quality. The initial 17 recommendations from these Workforces were narrowed down to eight based upon frequency, clinical guidelines and potential impact. STS leadership approved these eight recommendations for presentation to members in an online survey. The results of the survey, as well as research and systematic literature review by the Workforce on Evidence Based Surgery, were presented to the STS Executive Committee, which approved the five final recommendations.

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About The Society of Thoracic Surgeons

Founded in 1964, The Society of Thoracic Surgeons (STS) is an international not-for-profit organization representing more than 6,500 cardiothoracic surgeons, researchers and other health care professionals who are part of the cardiothoracic surgery team. STS members are dedicated to ensuring the best possible outcomes for surgeries of the heart, lung and esophagus, as well as other surgical procedures within the chest.

For more information about cardiothoracic surgery procedures, visit www.sts.org/patients.

For more information or to see other lists of Five Things Physicians and Patients Should Question, visit www.choosingwisely.org.

Choosing Wisely®

An initiative of the ABIM Foundation

Society for Vascular Medicine

Five Things Physicians and Patients Should Question

1 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.

Lab tests to look for a clotting disorder will not alter treatment of a venous blood clot, even if an abnormality is found. DVT is a very common disorder, and recent discoveries of clotting abnormalities have led to increased testing without proven benefit.

2 Don't reimage DVT in the absence of a clinical change.

Repeat ultrasound images to evaluate "response" of venous clot to therapy does not alter treatment.

3 Avoid cardiovascular testing for patients undergoing low-risk surgery.

Pre-operative stress testing does not alter therapy or decision-making in patients facing low-risk surgery.

4 Refrain from percutaneous or surgical revascularization of peripheral artery stenosis in patients without claudication or critical limb ischemia.

Patients without symptoms will not benefit from attempts to improve circulation. No evidence exists to support improving circulation to prevent progression of disease. There is no proven preventive benefit, only symptomatic benefit.

5 Don't screen for renal artery stenosis in patients without resistant hypertension and with normal renal function, even if known atherosclerosis is present.

Performing surgery or angioplasty to improve circulation to the kidneys has no proven preventive benefit, and shouldn't be considered unless there is evidence of symptoms, such as elevated blood pressure or decreased renal function.

How This List Was Created

The Society for Vascular Medicine (SVM) looked to the leadership of its Board of Trustees and input from its members to develop the list of five things physicians and patients should question. Suggestions from SVM members were solicited through an e-mail blast, and a second e-mail was sent to the SVM Board of Trustees seeking volunteers and suggestions.

A committee, consisting of four members of the Board of Trustees, narrowed an initial list down to seven recommendations. The full Board of Trustees voted on the recommendations using the Delphi method of choice, arriving at the five that became SVM's list as part of the *Choosing Wisely*® campaign.

SVM's disclosure and conflict of interest policy can be found at www.vascularmed.org.

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About the Society for Vascular Medicine

The Society for Vascular Medicine (SVM) is a nonprofit medical society comprised of physicians, surgeons, nurses, physician assistants, nurse practitioners, and vascular interventionists. For nearly 25 years, one of the goals of the Society has been to maintain high standards of clinical vascular medicine. The Society believes that optimal vascular care is best accomplished by the collegial interaction of a community of vascular professionals working with the patient. The Society recognizes the importance of individuals with diverse backgrounds in achieving ideal standards of research and clinical practice. The society believes that partnerships between patients and health care providers are crucial to improving vascular health, achieving better outcomes and lowering health care costs.

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