Choosing Wisely®

An initiative of the ABIM Foundation

American Academy of Allergy, Asthma & Immunology

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 rhinosinusitis.

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.

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Five More Things Physicians and Patients Should Question

6

Don't rely on antihistamines as first-line treatment in severe allergic reactions.

Epinephrine is the first-line treatment for anaphylaxis. Data indicate that antihistamines are overused as the first-line treatment of anaphylaxis. By definition, anaphylaxis has cardiovascular and respiratory manifestations, which require treatment with epinephrine. Overuse of antihistamines, which do not treat cardiovascular or respiratory manifestations of anaphylaxis, can delay the effective first-line treatment with epinephrine.

Epinephrine should be administered as soon as the diagnosis of anaphylaxis is suspected. Antihistamines are second-line supportive therapy for cutaneous non-life-threatening symptoms (hives), but do not replace epinephrine as the first-line treatment for anaphylaxis.

Fatalities during anaphylaxis have been associated with delayed administration of epinephrine.

7

Don't perform food IgE testing without a history consistent with potential IgE-mediated food allergy.

False or clinically irrelevant positive allergy tests for foods are frequent. Indiscriminate screening results in inappropriate avoidance of foods and wastes healthcare resources. IgE testing for specific foods must be driven by a history of signs or symptoms consistent with an IgE-mediated reaction after eating a particular food. Ordering IgE testing in individuals who do not have a history consistent with or suggestive for food allergy based on history frequently reveals positive tests that are unlikely to be clinically relevant. Testing, when done, should be limited to suspected foods.

The diagnostic utility of IgE testing for specific foods is optimal when a history compatible with or suggestive for the diagnosis of food allergy is present. In the absence of a compatible or suggestive history, the pre-test probability for a diagnosis of food allergy is low and a positive skin or in vitro IgE test does not establish a diagnosis of food allergy. Skin testing or serum testing for specific-IgE to food antigens has excellent sensitivity and high negative predictive value, but has low specificity and low positive predictive value.

Considering that 50 to 90 percent of presumed cases of food allergy do not reflect IgE-mediated (allergic) pathogenesis and may instead reflect food intolerance or symptoms not causally associated with food consumption, ordering panels of food tests leads to many incorrectly identified food allergies and inappropriate recommendations to avoid foods that are positive on testing.

8

Don't routinely order low- or iso-osmolar radiocontrast media or pretreat with corticosteroids and antihistamines for patients with a history of seafood allergy, who require radiocontrast media.

Although the exact mechanism for contrast media reactions is unknown, there is no cause and effect connection with seafood allergy. Consequently there is no reason to use more expensive agents or pre-medication before using contrast media in patients with a history of seafood allergy. A prior history of anaphylaxis to contrast media is an indication to use low- or iso-osmolar agents and pretreat with corticosteroids and antihistamines.

Patients with a history of seafood allergy are not at elevated risk for anaphylaxis from iodinated contrast media. Similarly, patients who have had anaphylaxis from contrast media should not be told that they are allergic to seafood.

Patients with a history of seafood allergy who are labeled as being at greater risk for adverse reaction from contrast infusions experience considerable morbidity from unnecessary precautions – including but not limited to denying them indicated roentgenographic procedures and adverse effects from pretreatment with antihistamine and/or corticosteroid medications.

Regardless of whether these patients truly have IgE-mediated allergies to seafood (crustacean), there is no evidence in the medical literature that indicates they are at elevated risk for anaphylaxis from contrast infusion compared with the history-negative general population.

In a random telephone survey of 5,529 households with a census of 14,948 individuals, seafood allergy was reported by 3.3 percent of survey respondents. According to current U.S. population estimates for 2013, this corresponds to 10,395,000 Americans.

The mechanism for anaphylaxis to radio-iodinated contrast media relates to the physiochemical properties of these media and is unrelated to its iodine content. Further, although delayed-type hypersensitivity (allergic contact dermatitis) reactions to iodine have rarely been reported, IgE-mediated reactions to iodine have not, and neither type of reaction would be related to IgE-mediated shellfish allergy nor to contrast media reactions.Patients with a history of prior anaphylaxis to contrast media are at elevated risk for anaphylactic reaction with re-exposure to contrast media.

Patients with asthma or cardiovascular disease, or who are taking beta blockers, are at increased risk for serious anaphylaxis from radiographic contrast media.

9

Don’t routinely avoid influenza vaccination in egg-allergic patients.

Of the vaccines that may contain egg protein (measles, mumps, rabies, influenza and yellow fever), measles, mumps and rabies vaccines have at most negligible egg protein; consequently no special precautions need to be followed in egg-allergic patients for these vaccines. Studies in egg-allergic patients receiving egg-based inactivated influenza vaccine have not reported reactions; consequently egg-allergic patients should be given either egg-free influenza vaccine or should receive egg-based influenza vaccine with a 30-minute post-vaccine observation period. Egg-allergic patients receiving the yellow fever vaccine should be skin tested with the vaccine and receive the vaccine with a 30-minute observation period if the skin test is negative. If positive, the vaccine may be given in graded doses with appropriate medical observation.

Egg protein is present in influenza and yellow fever vaccines and in theory could cause reactions in egg-allergic patients. However, in 27 published studies collectively 4,172 patients with egg allergy received 4,729 doses of egg-based inactivated influenza vaccine (IIV) with no cases of anaphylaxis, including 513 with severe egg allergy who uneventfully received 597 doses. The CDC’s Advisory Committee on Immunization Practices recommends that egg-allergic persons receive IIV as a single dose without prior vaccine skin testing and be observed for 30 minutes afterwards for any possible allergic reaction. If the reaction to the ingestion of eggs was hives only, the vaccine can be administered in a primary care setting, whereas if the reaction to the ingestion of eggs was more severe, the vaccine should be administered in an allergist/immunologist’s office. Two new IIVs not grown in eggs have been approved for patients 18 years and older: Flucelvax, prepared from virus propagated in cell culture, and Flublok, recombinant hemagglutinin proteins produced in an insect cell line. For egg-allergic patients 18 years of age and older, either egg-based IIV can be used with the precautions above or egg-free IIV can be used.

Measles and mumps vaccines (and Purified Chick Embryo Cell [PCEC] rabies vaccine) are grown in chick embryo fibroblast cultures and contain negligible or no egg protein. Thus, MMR and PCEC rabies vaccine can be administered to egg-allergic recipients in the usual manner.

Per the Yellow Fever vaccine package insert, egg-allergic recipients should be skin tested with the vaccine prior to administration. If negative, the vaccine can be given in the usual manner, but the patient should be observed for 30 minutes afterward. If the vaccine skin test is positive, the vaccine can be given in graded doses under appropriate medical observation.

10

Don’t overuse non-beta lactam antibiotics in patients with a history of penicillin allergy, without an appropriate evaluation.

While about 10 percent of the population reports a history of penicillin allergy, studies show that 90 percent on more of these patients are not allergic to penicillins and are able to take these antibiotics safely. The main reason for this observation is that penicillin allergy is often misdiagnosed and when present wanes over time in most (but not all) individuals. Patients labeled penicillin-allergic are more likely to be treated with alternative antibiotics (such as vancomycin and quinolones), have higher medical costs, experience longer hospital stays, and are more likely to develop complications such as infections with vancomycin-resistant enterococcus (VRE) and Clostridium difficile.

Evaluation for specific IgE to penicillin can be carried out by skin testing. Ideally, penicillin skin testing should be performed with both major and minor determinants. The negative predictive value of penicillin skin testing for immediate reactions approaches 100 percent, whereas the positive predictive value is between 40 and 100 percent. The usefulness of in vitro tests for penicillin-specific IgE is limited by their uncertain predictive value. They are not suitable substitutes for penicillin skin testing.

By identifying the overwhelming majority of individuals who can safely receive penicillin and penicillin-like drugs, we can improve the appropriateness of antibiotic therapy and clinical care outcomes.

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 ABIM Foundation

The mission of the ABIM Foundation is to advance medical professionalism to improve the health care system. We achieve this by collaborating with physicians and physician leaders, medical trainees, health care delivery systems, payers, policymakers, consumer organizations and patients to foster a shared understanding of professionalism and how they can adopt the tenets of professionalism in practice.

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

About the American Academy of Asthma, Allergy and 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.

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Five Things Physicians and Patients Should Question

1 Don't transfuse more units of blood than absolutely necessary.

Each unit of blood carries risks. A restrictive threshold (7.0-8.0g/dL) should be used for the vast majority of hospitalized, stable patients without evidence of inadequate tissue oxygenation (evidence supports a threshold of 8.0g/dL in patients with pre-existing cardiovascular disease). Transfusion decisions should be influenced by symptoms and hemoglobin concentration. Single unit red cell transfusions should be the standard for non-bleeding, hospitalized patients. Additional units should only be prescribed after re-assessment of the patient and their hemoglobin value.

2 Don't transfuse red blood cells for iron deficiency without hemodynamic instability.

Blood transfusion has become a routine medical response despite cheaper and safer alternatives in some settings. Pre-operative patients with iron deficiency and patients with chronic iron deficiency without hemodynamic instability (even with low hemoglobin levels) should be given oral and/or intravenous iron.

3 Don't routinely use blood products to reverse warfarin.

Patients requiring reversal of warfarin can often be reversed with vitamin K alone. Prothromobin complex concentrates or plasma should only be used for patients with serious bleeding or requiring emergency surgery.

4 Don't perform serial blood counts on clinically stable patients.

Transfusion of red blood cells or platelets should be based on the first laboratory value of the day unless the patient is bleeding or otherwise unstable. Multiple blood draws to recheck whether a patient's parameter has fallen below the transfusion threshold (or unnecessary blood draws for other laboratory tests) can lead to excessive phlebotomy and unnecessary transfusions.

5 Don't transfuse O negative blood except to O negative patients and in emergencies for women of child bearing potential with unknown blood group.

O negative blood units are in chronic short supply due in part to overutilization for patients who are not O negative. O negative red blood cells should be restricted to: (1) O negative patients; or (2) women of childbearing potential with unknown blood group who require emergency transfusion before blood group testing can be performed.

How This List Was Created

Recommendations were drafted by a work group led by AABB Director Jeannie Callum, MD. Ten draft statements were edited by the AABB Clinical Transfusion Medicine Committee, chaired by Aaron Tobian, MD. In order to identify the top five statements, a random sampling of AABB physician members working in the field of transfusion medicine in hospitals, as well as all members of AABB's Clinical Transfusion Medicine Committee, were asked to rate the 10 draft statements. On a Likert scale, participants were asked to "indicate the importance of including each of the following transfusion-related statements in the *Choosing Wisely* campaign promoting the appropriate use of health care resources." The final top five statements were approved by the AABB Board of Directors.

AABB's disclosure and conflict of interest policy can be found at www.aabb.org.

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About the AABB

AABB is a not-for-profit association representing individuals and institutions involved in the field of transfusion medicine and cellular therapies. The association is committed to improving health by delivering standards, accreditation and professional educational programs that focus on optimizing patient and donor care and safety. AABB membership consists of approximately 1,800 institutions and 8,000 professional individuals, including roughly 1,600 physicians.

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The Endocrine Society and
American Association of Clinical Endocrinologists

Five Things Physicians and Patients Should Question

1 Avoid routine multiple daily self-glucose monitoring in adults with stable type 2 diabetes on agents that do not cause hypoglycemia.

Once target control is achieved and the results of self-monitoring become quite predictable, there is little gained in most individuals from repeatedly confirming. There are many exceptions, such as for acute illness, when new medications are added, when weight fluctuates significantly, when A1c targets drift off course and in individuals who need monitoring to maintain targets. Self-monitoring is beneficial as long as one is learning and adjusting therapy based on the result of the monitoring.

2 Don't routinely measure 1,25-dihydroxyvitamin D unless the patient has hypercalcemia or decreased kidney function.

Many practitioners become confused when ordering a vitamin D test. Because 1,25-dihydroxyvitamin D is the active form of vitamin D, many practitioners think that measuring 1,25-dihydroxyvitamin D is an accurate means to estimate vitamin D stores and test for vitamin D deficiency, which is incorrect. Current Endocrine Society guidelines recommend screening for vitamin D deficiency in individuals at risk for deficiency.

Serum levels of 1,25-dihyroxyvitamin D have little or no relationship to vitamin D stores but rather are regulated primarily by parathyroid hormone levels, which in turn are regulated by calcium and/or vitamin D. In vitamin D deficiency, 1,25-dihydroxyvitamin D levels go up, not down.

Unregulated production of 1,25-dihydroxyvitamin D (i.e., sarcoidosis, granulomatous diseases) is an uncommon cause of hypercalcemia; this should be suspected if blood calcium levels are high and parathyroid hormone levels are low and confirmed by measurement of 1,25-dihydroxyvitamin D. The enzyme that activates vitamin D is produced in the kidney, so blood levels of 1,25-dihydroxyvitamin D are sometimes of interest in patients on dialysis or with end-stage kidney disease. There are few other circumstances, if any, where 1,25-dihydroxyvitamin D testing would be helpful.

Serum 25-hydroxyvitamin D levels may be overused, but when trying to assess vitamin D stores or diagnose vitamin D deficiency (or toxicity), 25-hydroxyvitamin D is the correct test.

3 Don't routinely order a thyroid ultrasound in patients with abnormal thyroid function tests if there is no palpable abnormality of the thyroid gland.

Thyroid ultrasound is used to identify and characterize thyroid nodules, and is not part of the routine evaluation of abnormal thyroid function tests (over- or underactive thyroid function) unless the patient also has a large goiter or a lumpy thyroid. Incidentally discovered thyroid nodules are common. Overzealous use of ultrasound will frequently identify nodules, which are unrelated to the abnormal thyroid function, and may divert the clinical evaluation to assess the nodules, rather than the thyroid dysfunction. Imaging may be needed in thyrotoxic patients; when needed, a thyroid scan, not an ultrasound, is used to assess the etiology of the thyrotoxicosis and the possibility of focal autonomy in a thyroid nodule.

4 Don't order a total or free T3 level when assessing levothyroxine (T4) dose in hypothyroid patients.

T4 is converted into T3 at the cellular level in virtually all organs. Intracellular T3 levels regulate pituitary secretion and blood levels of TSH, as well as the effects of thyroid hormone in multiple organs; a normal TSH indicates an adequate T4 dose. Conversion of T4 to T3 at the cellular level may not be reflected in the T3 level in the blood. Compared to patients with intact thyroid glands, patients taking T4 may have higher blood T4 and lower blood T3 levels. Thus the blood level of total or free T3 may be misleading (low normal or slightly low); in most patients a normal TSH indicates a correct dose of T4.

5 Don't prescribe testosterone therapy unless there is biochemical evidence of testosterone deficiency.

Many of the symptoms attributed to male hypogonadism are commonly seen in normal male aging or in the presence of comorbid conditions. Testosterone therapy has the potential for serious side effects and represents a significant expense. It is therefore important to confirm the clinical suspicion of hypogonadism with biochemical testing. Current guidelines recommend the use of a total testosterone level obtained in the morning. A low level should be confirmed on a different day, again measuring the total testosterone. In some situations, a free or bioavailable testosterone may be of additional value.

How This List Was Created

Members of The Endocrine Society (Society) along with representatives of the American Association of Clinical Endocrinologists (AACE) formed a joint task force to identify tests or procedures which should only be used in specific circumstances. The task force identified several items for possible inclusion. Subsequent discussions compared the evidence supporting each item, the value of the recommendation to practitioners and the potential for cost savings. Members of the Society's Clinical Affairs Core Committee and AACE leadership also reviewed the initial list. Using the above criteria, the task force voted for their top five recommendations from the original list. The Society's Council and AACE's Board of Directors approved the final list for submission to the *Choosing Wisely*® campaign.

The Endocrine Society and AACE disclosure and conflict of interest policies can be found at www.endo-society.org and www.aace.com respectively.

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About the ABIM Foundation

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

ABIM FOUNDATION®

About The Endocrine Society

Founded in 1916, The Endocrine Society is the world's oldest, largest, and most active organization devoted to research on hormones and the clinical practice of endocrinology. The Society is an international body with more than 16,000 members from over 100 countries, and represents the full range of disciplines associated with endocrinologists: clinicians, researchers, educators, fellows and students, industry professionals and health professionals who are involved in the field of endocrinology. Our members are dedicated to the research and treatment of the full range of endocrine disorders: diabetes, reproduction, infertility, osteoporosis, thyroid disease, obesity/lipids, growth hormone, pituitary tumors and adrenal insufficiency.

Visit The Endocrine Society at www.endo-society.org.

THE ENDOCRINE SOCIETY®

About the American Association of Clinical Endocrinologists

The American Association of Clinical Endocrinologists (AACE) represents more than 6,500 endocrinologists in the United States and abroad. AACE is the largest association of clinical endocrinologists in the world. The majority of AACE members are certified in endocrinology, diabetes and metabolism and concentrate on the treatment of patients with endocrine and metabolic disorders including diabetes, thyroid disorders, osteoporosis, growth hormone deficiency, cholesterol disorders, hypertension and obesity.

Visit our site at www.aace.com.

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 Dermatology

Excellence In Dermatology™

Five Things Physicians and Patients Should Question

1

Don't prescribe oral antifungal therapy for suspected nail fungus without confirmation of fungal infection.

Approximately half of nails with suspected fungus do not have a fungal infection. As other nail conditions, such as nail dystrophies, may look similar in appearance, it is important to ensure accurate diagnosis of nail disease before beginning treatment. By confirming a fungal infection, patients are not inappropriately at risk for the side effects of antifungal therapy, and nail disease is correctly treated.

2

Don't perform sentinel lymph node biopsy or other diagnostic tests for the evaluation of early, thin melanoma because they do not improve survival.

Patients with early, thin melanoma, such as melanoma in situ, T1a melanoma or T1b melanoma ≤ 0.5mm, have a very low risk of the cancer spreading to the lymph nodes or other parts in the body. Further, patients with early, thin melanoma have a 97 percent five year survival rate which also indicates a low risk of the cancer spreading to other parts of the body. As such, the performance of sentinel lymph node biopsy is unnecessary.

Additionally, baseline blood tests and radiographic studies (e.g., chest radiographs, CT scans and PET scans) are not the most accurate tests for the detection of cancer that is spreading as they have high false-positive rates. These tests have only shown benefit when performed as indicated for suspicious signs and symptoms based on the patient's history and physical exam.

3

Don't treat uncomplicated, non-melanoma skin cancer less than one centimeter in size on the trunk and extremities with Mohs micrographic surgery.

In healthy individuals, the use of Mohs micrographic surgery for low-risk small (< 1cm), superficial or non-aggressive (based on appearance under a microscope) squamous cell carcinomas and basal cell carcinomas is inappropriate for skin cancers on the trunk and extremities. In these areas of the body, the clinical benefits of this specialized surgical procedure do not exceed the potential risks. It is important to note that Mohs micrographic surgery may be considered for skin cancers appearing on the hands, feet, ankles, shins, nipples or genitals, as they have been shown to have a higher risk for recurrence or require additional surgical considerations.

4

Don't use oral antibiotics for treatment of atopic dermatitis unless there is clinical evidence of infection.

The presence of high numbers of the Staphylococcus aureus (Staph) bacteria on the skin of children and adults with atopic dermatitis (AD) is quite common. While it is widely believed that Staph bacteria may play a role in causing skin inflammation, the routine use of oral antibiotic therapy to decrease the amount of bacteria on the skin has not been definitively shown to reduce the signs, symptoms (e.g., redness, itch) or severity of atopic dermatitis. In addition, if oral antibiotics are used when there is not an infection, it may lead to the development of antibiotic resistance. The use of oral antibiotics also can cause side effects, including hypersensitivity reactions (exaggerated immune responses, such as allergic reactions). Although it can be difficult to determine the presence of a skin infection in atopic dermatitis patients, oral antibiotics should only be used to treat patients with evidence of bacterial infection in conjunction with other standard and appropriate treatments for atopic dermatitis.

5

Don't routinely use topical antibiotics on a surgical wound.

The use of topical antibiotics on clean surgical wounds has not been shown to reduce the rate of infection compared to the use of non-antibiotic ointment or no ointment. Topical antibiotics can aggravate open wounds, hindering the normal wound healing process. When topical antibiotics are used in this setting, there is a significant risk of developing contact dermatitis, a condition in which the skin becomes red, sore or inflamed after direct contact with a substance, along with the potential for developing antibiotic resistance. Only wounds that show symptoms of infection should receive appropriate antibiotic treatment.

How This List Was Created

The American Academy of Dermatology (AAD) is strongly committed to dermatologists serving as effective stewards of limited health care resources by assisting patients in making informed health care decisions. As such, the AAD leadership created a workgroup to develop this list with specific skills and expertise in evidence based research, public health quality and payer policy. Members of this workgroup include dermatologists who are current members of the Academy's Board of Directors, Council on Science and Research, Council on Government Affairs, Health Policy and Practice, Research Agenda Committee, Clinical Guidelines Committee, Access to Dermatology Care Committee, Patient Safety and Quality Committee, Resource-Based Relative Value Scale Committee and the Workgroup on Innovative Payment Delivery. The workgroup identified areas to be included on this list based on the greatest potential for overuse/misuse, quality improvement and availability of strong evidence based research as defined by the recommended criteria listed below. The recommended list was reviewed and approved by the AAD Council on Science and Research and the AAD Board of Directors.

- Supported by available scientific evidence (e.g., existing AAD appropriate use criteria and/or existing AAD clinical guidelines)
- Strongest consensus inappropriate score from the AAD Appropriate Use Criteria (AUC)
- Strong (wording/level of evidence) recommendations from the guidelines about discouraged practice
- Greatest potential for improvement in outcomes for patients
- Greatest potential for overuse/misuse by physicians

AAD's disclosure and conflict of interest policy can be found at www.aad.org.

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About the American Academy of Dermatology

Headquartered in Schaumburg, IL, the American Academy of Dermatology (AAD), founded in 1938, is the largest, most influential and most representative of all dermatologic associations. With a membership of more than 17,000 physicians worldwide, the Academy is committed to: advancing the diagnosis and medical, surgical and cosmetic treatment of the skin, hair and nails; advocating high standards in clinical practice, education and research in dermatology; and supporting and enhancing patient care for a lifetime of healthier skin, hair and nails.

For more information, visit www.aad.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 Academy of Family Physicians

AMERICAN ACADEMY OF FAMILY PHYSICIANS

Fifteen 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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American Academy of Family Physicians

AMERICAN ACADEMY OF FAMILY PHYSICIANS

Fifteen 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.

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Fifteen Things Physicians and Patients Should Question

11

Don't prescribe antibiotics for otitis media in children aged 2–12 years with non-severe symptoms where the observation option is reasonable.

The "observation option" refers to deferring antibacterial treatment of selected children for 48 to 72 hours and limiting management to symptomatic relief. The decision to observe or treat is based on the child's age, diagnostic certainty and illness severity. To observe a child without initial antibacterial therapy, it is important that the parent or caregiver has a ready means of communicating with the clinician. There also must be a system in place that permits reevaluation of the child.

12

Don't perform voiding cystourethrogram (VCUG) routinely in first febrile urinary tract infection (UTI) in children aged 2–24 months.

The risks associated with radiation (plus the discomfort and expense of the procedure) outweigh the risk of delaying the detection of the few children with correctable genitourinary abnormalities until their second UTI.

13

Don't routinely screen for prostate cancer using a prostate-specific antigen (PSA) test or digital rectal exam.

There is convincing evidence that PSA-based screening leads to substantial over-diagnosis of prostate tumors. Many tumors will not harm patients, while the risks of treatment are significant. Physicians should not offer or order PSA screening unless they are prepared to engage in shared decision making that enables an informed choice by patients.

14

Don't screen adolescents for scoliosis.

There is no good evidence that screening asymptomatic adolescents detects idiopathic scoliosis at an earlier stage than detection without screening. The potential harms of screening and treating adolescents include unnecessary follow-up visits and evaluations due to false positive test results and psychological adverse effects.

15

Don't require a pelvic exam or other physical exam to prescribe oral contraceptive medications.

Hormonal contraceptives are safe, effective and well-tolerated for most women. Data do not support the necessity of performing a pelvic or breast examination to prescribe oral contraceptive medications. Hormonal contraception can be safely provided on the basis of medical history and blood pressure measurement.

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.

How This List Was Created (11–15)

The American Academy of Family Physicians (AAFP) has identified this list of clinical recommendations for the third 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 the Cochrane Collaboration, the Agency for Healthcare Research and Quality and other sources. The AAFP's Commission on Health of the Public and Science and Board of Directors reviewed and approved the recommendations.

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

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2 Center for Disease Control and Prevention (CDC), Cochrane, and Annals of Internal Medicine.

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Choosing Wisely®

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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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About the ABIM Foundation

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

About the American Academy of Hospice and Palliative Medicine

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.

For more information, visit www.aahpm.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 Academy of Neurology

AMERICAN ACADEMY OF NEUROLOGY®

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.

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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; optical 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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American Academy of Orthopaedic Surgeons

AAOS

American Academy of Orthopaedic Surgeons

Five Things Physicians and Patients Should Question

1 Avoid performing routine post-operative deep vein thrombosis ultrasonography screening in patients who undergo elective hip or knee arthroplasty.

Since ultrasound is not effective at diagnosing unsuspected deep vein thrombosis (DVT) and appropriate alternative screening tests do not exist, if there is no change in the patient's clinical status, routine post-operative screening for DVT after hip or knee arthroplasty does not change outcomes or clinical management.

2 Don't use needle lavage to treat patients with symptomatic osteoarthritis of the knee for long-term relief.

The use of needle lavage in patients with symptomatic osteoarthritis of the knee does not lead to measurable improvements in pain, function, 50-foot walking time, stiffness, tenderness or swelling.

3 Don't use glucosamine and chondroitin to treat patients with symptomatic osteoarthritis of the knee.

Both glucosamine and chondroitin sulfate do not provide relief for patients with symptomatic osteoarthritis of the knee.

4 Don't use lateral wedge insoles to treat patients with symptomatic medial compartment osteoarthritis of the knee.

In patients with symptomatic osteoarthritis of the knee, the use of lateral wedge or neutral insoles does not improve pain or functional outcomes. Comparisons between lateral and neutral heel wedges were investigated, as were comparisons between lateral wedged insoles and lateral wedged insoles with subtalar strapping. The systematic review concludes that there is only limited evidence for the effectiveness of lateral heel wedges and related orthoses. In addition, the possibility exists that those who do not use them may experience fewer symptoms from osteoarthritis of the knee.

5 Don't use post-operative splinting of the wrist after carpal tunnel release for long-term relief.

Routine post-operative splinting of the wrist after the carpal tunnel release procedure showed no benefit in grip or lateral pinch strength or bowstringing. In addition, the research showed no effect in complication rates, subjective outcomes or patient satisfaction. Clinicians may wish to provide protection for the wrist in a working environment or for temporary protection. However, objective criteria for their appropriate use do not exist. Clinicians should be aware of the detrimental affects including adhesion formation, stiffness and prevention of nerve and tendon movement.

How This List Was Created

The American Academy of Orthopaedic Surgeons (AAOS) routinely develops evidence-based clinical practice guidelines as valuable tools to advance the physician-patient communications process and enhance the diagnosis and treatment of musculoskeletal conditions. AAOS physician volunteer work groups develop evidence-based clinical practice guidelines to serve as an educational tool based on an assessment of the current scientific and clinical information and accepted approaches to treatment. The most recent approved clinical practice guidelines have been published in the *Journal of Bone and Joint Surgery*. AAOS staff, led by the medical director, conducted a review of the approved clinical practice guidelines previously developed by the work groups and selected a variety of topics frequently used in orthopaedic surgical practice. After input from the orthopaedic specialty society leaders and approval from the AAOS Presidential Leadership and Board of Directors, the final five topics were selected for this campaign. The AAOS disclosure and conflict of interest policy can be found at www.aaos.org.

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The American Academy of Orthopaedic Surgeons (AAOS) is proud to be a partner in the *Choosing Wisely*® campaign. As the premier provider of education for orthopaedic surgeons and allied health professionals, the Academy champions the interests of patients and advances the highest quality of bone and joint health. The more than 37,000 orthopaedic surgeon members aim to increase people's quality of life by improving mobility, reducing pain and returning patients to their jobs and hobbies.

The AAOS has been a leader in developing quality improvement and safety programs—from the "Sign Your Site" campaign aimed at eliminating wrong-site surgery to the introduction of evidence-based clinical practice guidelines and appropriate use criteria to enhance the diagnosis and treatment of musculoskeletal conditions. By partnering in the *Choosing Wisely* campaign, the AAOS hopes to facilitate dialogue between patients and physicians about appropriately using diagnostic and therapeutic interventions and avoiding those that are unnecessary.

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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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About the American Academy of Otolaryngology—Head and Neck Surgery and Its Foundation

AMERICAN ACADEMY OF OTOLARYNGOLOGY–HEAD AND NECK SURGERY
Empowering physicians to deliver the best patient care

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.

For more information, visit www.entnet.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 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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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 Association for Pediatric Ophthalmology and Strabismus

aapos

American Association for Pediatric Ophthalmology and Strabismus

Five Things Physicians and Patients Should Question

1 Don't put asymptomatic children in weak reading glasses.

Low "farsightedness" is a normal finding in children. Children can easily focus to see at near, with their large accommodative reserve. If the reading glasses prescription is low (less than +2.00 diopters), their innate ability to focus can be used to see clearly at both distance and near. If the eyes are not crossed, prescription of weak glasses is generally not necessary.

2 Annual comprehensive eye exams are unnecessary for children who pass routine vision screening assessments.

Early childhood vision screening done as part of routine well-child care accurately identifies most children with significant eye problems that are otherwise asymptomatic. Annual comprehensive eye examinations increase financial costs, a child's absence from school and parental time away from work, with no evidence that the comprehensive exam detects asymptomatic vision problems better than timely, methodical and recurrent screening efforts. Comprehensive eye exams are appropriate for children who do not pass a vision screening.

3 Don't recommend vision therapy for patients with dyslexia.

Dyslexia is a language-based learning disorder in which a person has trouble understanding written words. This occurs because the brain has a problem distinguishing and separating the sounds in spoken words, called a phonological deficit. Dyslexia is not due to a vision disorder. Children with dyslexia do not have any more visual problems than children without dyslexia. Vision therapy does not work for this population because the eyes are not the problem.

4 Don't routinely order imaging for all patients with double vision.

Many people with double vision, or diplopia, want a CT scan or MRI to see if it is caused by a brain tumor or other serious problem. Much of the time, following a comprehensive eye evaluation, neither test is necessary. The most common causes of double vision are refractive error, dry eyes, cataract and non-neurologic eye misalignment, all readily diagnosed by a complete exam. Only a minority of cases of diplopia result from problems within the brain.

5 Don't order retinal imaging tests for children without symptoms or signs of eye disease.

Retinal imaging, such as taking a photograph or obtaining an Ocular Coherence Tomography (OCT) image of the back of a child's eye, can be useful for documenting or following known retinal or optic nerve pathology. These imaging studies should not be obtained routinely for documentation of normal ocular anatomy in asymptomatic children.

How This List Was Created

The President and the Executive Vice President of the American Association for Pediatric Ophthalmology and Strabismus met with its Board of Directors. These 10 pediatric ophthalmologists leading the American Association for Pediatric Ophthalmology and Strabismus then generated a list of 10 potential topics. Each individual ranked the topics and the top five recommendations were chosen. Each recommendation was sent to a recognized expert in that specific area or to a committee of experts to complete the template. The American Association for Pediatric Ophthalmology and Strabismus disclosure and conflict of interest policies can be found at www.aapos.org.

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About the American Association for Pediatric Ophthalmology and Strabismus

The American Association for Pediatric Ophthalmology and Strabismus (AAPOS) is the flagship specialty organization for pediatric ophthalmologists in the U.S. with more than 1,500 U.S. and international members. AAPOS's mission is to enhance the quality of health care by fostering excellence and professionalism in pediatric ophthalmology and adult strabismus. AAPOS provides information and advocacy for its members in ophthalmology, pediatrics and related subspecialties.

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Choosing Wisely®

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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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American College of Chest Physicians
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Five Things Physicians and Patients Should Question

1 Don't perform computed tomography (CT) surveillance for evaluation of indeterminate pulmonary nodules at more frequent intervals or for a longer period of time than recommended by established guidelines.

Clinical practice guidelines for pulmonary nodule evaluation (such as those issued by the Fleischner Society or the American College of Chest Physicians) suggest that intensity of surveillance should be guided by the likelihood of malignancy. In patients with no prior history of cancer, solid nodules that have not grown over a 2-year period have an extremely low risk of malignancy (although longer follow-up is suggested for ground-glass nodules). Similarly, intensive surveillance (e.g., repeating CT scans every 3 months for 2 years or more) has not been shown to improve outcomes such as lung cancer mortality. Meanwhile, extended or intensive surveillance exposes patients to increased radiation and prolonged uncertainty.

2 Don't routinely offer pharmacologic treatment with advanced vasoactive agents approved only for the management of pulmonary arterial hypertension to patients with pulmonary hypertension resulting from left heart disease or hypoxemic lung diseases (Groups II or III pulmonary hypertension).

Evidence and clinical practice guidelines have not established benefits of vasoactive agents (e.g., prostanoids, phosphodiesterase inhibitors, endothelin antagonists) for patients with pulmonary hypertension resulting from left heart disease or hypoxemic lung diseases. Moreover, the use of these agents may cause harm in certain situations and incurs substantial cost and resource utilization. Patients should be carefully assessed (including at a minimum right heart catheterization, echocardiography, chest CT, six minute walk test and pulmonary function testing) to confirm that they have symptomatic pulmonary arterial hypertension prior to having approved agents initiated.

3 For patients recently discharged on supplemental home oxygen following hospitalization for an acute illness, don't renew the prescription without assessing the patient for ongoing hypoxemia.

Hypoxemia often resolves after recovery from an acute illness, and continued prescription of supplemental oxygen therapy incurs unnecessary cost and resource use. At the time that supplemental oxygen is initially prescribed, a plan should be established to re-assess the patient no later than 90 days after discharge. Medicare and evidence-based criteria should be followed to determine whether the patient meets criteria for supplemental oxygen.

4 Don't perform chest computed tomography (CT angiography) to evaluate for possible pulmonary embolism in patients with a low clinical probability and negative results of a highly sensitive D-dimer assay.

Clinical practice guidelines for pulmonary embolism indicate that the cost and potential harms of CT angiography (including radiation exposure and the possibility of detecting and treating clinically insignificant pulmonary emboli with anticoagulation) outweigh the benefits for patients with a low pre-test probability of pulmonary embolism. In patients with a low clinical prediction score (e.g., Wells or Geneva score) followed by a negative D-dimer measured with a high sensitivity test (e.g., ELISA), pulmonary embolism is effectively excluded and no further imaging is indicated for pulmonary embolism evaluation.

5 Don't perform CT screening for lung cancer among patients at low risk for lung cancer.

Low dose chest CT screening for lung cancer has the potential to reduce lung cancer death in patients at high risk (i.e., individuals aged 55-74 with at least a 30-pack year history of tobacco use, who are either still smoking or quit within the past 15 years). However, CT screening for lung cancer also has the potential to cause a number of adverse effects (e.g., radiation exposure, high false positive rate, harms related to downstream evaluation of pulmonary nodules, overdiagnosis of indolent tumors). Thus, screening should be reserved for patients at high risk of lung cancer and should not be offered to individuals at low risk of lung cancer.

How This List Was Created

This document was prepared as a joint initiative of the American College of Chest Physicians and the American Thoracic Society. A taskforce with members from both societies was selected, including individuals from diverse backgrounds and clinical areas of expertise. Taskforce members initially proposed 30 items for consideration. The taskforce debated the impact of each based on five criteria (Evidence, Prevalence, Cost, Relevance, Innovation), and agreed to narrow the list to 10 items to explore in greater depth. Following an in-depth evidence review and consultation with external content experts for each item, the taskforce together reviewed and debated the compiled information for all 10 items. Subsequently, taskforce members independently scored each item on a scale of 1–5, rating each item on its overall impact as well as on each of the five criteria. The 5 items with the best mean overall scores were retained in the "penultimate" list. The taskforce then reviewed and edited the wording of items on the penultimate list, and submitted it to both societies' executive committees. The executive committees sought feedback from additional experts in the field, debated the items, and provided written comments to the taskforce. The taskforce deliberated and incorporated these suggestions where appropriate to create the final list, resolving any conflicts through discussion. Both Societies elected to endorse the final list.

Members of the Task Force were: Renda Soylemez Wiener, MD, MPH (Co-Chair), Scott D. Halpern, MD, PhD (Co-Chair), Daniel R. Ouellette, MD, FCCP (Co-Chair), Edward Diamond, MD, MBA, FCCP, Vincent S. Fan, MD, MPH, Janet R. Maurer, MD, FCCP, Richard A. Mularski, MD, MSHS, MCR, FCCP and Jay I. Peters, MD, FCCP.

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About the American College of Chest Physicians

The American College of Chest Physicians is the global leader in clinical chest medicine, representing more than 18,700 members who provide patient care in the areas of pulmonary, critical care and sleep medicine in the United States and more than 100 countries worldwide. From cutting-edge medical research in the journal CHEST; evidence-based guidelines in antithrombotic therapy, lung cancer and chronic cough; to innovative clinical education delivered through the CHEST annual meeting, simulation education program and Board Review courses, the ACCP strives to fulfill its mission – to promote the prevention, diagnosis and treatment of chest diseases through education, communication and research.

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

About The American Thoracic Society

The American Thoracic Society's mission is to improve health worldwide by advancing research, clinical care and public health in respiratory disease, critical illness and sleep disorders. Founded in 1905 to combat tuberculosis, the ATS is the world's oldest respiratory society. While the scope of the Society's activities have expanded greatly, its founding philosophy—that disease is vanquished faster when knowledge is shared—remains a touchstone for its programs and people, including 15,000 members.

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

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Five Things Physicians and Patients Should Question

1 Avoid computed tomography (CT) scans of the head in emergency department patients with minor head injury who are at low risk based on validated decision rules.

Minor head injury is a common reason for visiting an emergency department. The majority of minor head injuries do not lead to injuries such as skull fractures or bleeding in the brain that need to be diagnosed by a CT scan. As CT scans expose patients to ionizing radiation, increasing patients' lifetime risk of cancer, they should only be performed on patients at risk for significant injuries. Physicians can safely identify patients with minor head injury in whom it is safe to not perform an immediate head CT by performing a thorough history and physical examination following evidence-based guidelines. This approach has been proven safe and effective at reducing the use of CT scans in large clinical trials. In children, clinical observation in the emergency department is recommended for some patients with minor head injury prior to deciding whether to perform a CT scan.

2 Avoid placing indwelling urinary catheters in the emergency department for either urine output monitoring in stable patients who can void, or for patient or staff convenience.

Indwelling urinary catheters are placed in patients in the emergency department to assist when patients cannot urinate, to monitor urine output or for patient comfort. Catheter-associated urinary tract infection (CAUTI) is the most common hospital-acquired infection in the U.S., and can be prevented by reducing the use of indwelling urinary catheters. Emergency physicians and nurses should discuss the need for a urinary catheter with a patient and/or their caregivers, as sometimes such catheters can be avoided. Emergency physicians can reduce the use of indwelling urinary catheters by following the Centers for Disease Control and Prevention's evidence-based guidelines for the use of urinary catheters. Indications for a catheter may include: output monitoring for critically ill patients, relief of urinary obstruction, at the time of surgery and end-of-life care. When possible, alternatives to indwelling urinary catheters should be used.

3 Don't delay engaging available palliative and hospice care services in the emergency department for patients likely to benefit.

Palliative care is medical care that provides comfort and relief of symptoms for patients who have chronic and/or incurable diseases. Hospice care is palliative care for those patients in the final few months of life. Emergency physicians should engage patients who present to the emergency department with chronic or terminal illnesses, and their families, in conversations about palliative care and hospice services. Early referral from the emergency department to hospice and palliative care services can benefit select patients resulting in both improved quality and quantity of life.

4 Avoid antibiotics and wound cultures in emergency department patients with uncomplicated skin and soft tissue abscesses after successful incision and drainage and with adequate medical follow-up.

Skin and soft tissue infections are a frequent reason for visiting an emergency department. Some infections, called abscesses, become walled off and form pus under the skin. Opening and draining an abscess is the appropriate treatment; antibiotics offer no benefit. Even in abscesses caused by Methicillin-resistant *Staphylococcus aureus* (MRSA), appropriately selected antibiotics offer no benefit if the abscess has been adequately drained and the patient has a well-functioning immune system. Additionally, culture of the drainage is not needed as the result will not routinely change treatment.

5 Avoid instituting intravenous (IV) fluids before doing a trial of oral rehydration therapy in uncomplicated emergency department cases of mild to moderate dehydration in children.

Many children who come to the emergency department with dehydration require fluid replacement. To avoid the pain and potential complications of an IV catheter, it is preferable to give these fluids by mouth. Giving a medication for nausea may allow patients with nausea and vomiting to accept fluid replenishment orally. This strategy can eliminate the need for an IV. It is best to give these medications early during the ED visit, rather than later, in order to allow time for them to work optimally.

How This List Was Created

The American College of Emergency Physicians (ACEP) developed five *Choosing Wisely*® recommendations through a multi-step process that included input from ACEP members, an expert panel of emergency physicians and the ACEP Board of Directors. In 2012, ACEP appointed a task force to address cost effective emergency care. The Cost Effective Care Task Force conducted a survey that was open to all ACEP members asking for strategies to reduce cost and improve value in emergency medicine. The task force received over 200 individual suggestions, which were grouped into a set of strategies. A technical expert panel, including representatives from all aspects of emergency medicine practice, reviewed and prioritized the recommendations using a modified Delphi technique. The panel prioritized the strategies using multiple rounds of voting based on contribution to cost reduction, benefit to patients and actionability by emergency physicians. A literature review including data on cost was assembled for the highest-rated strategies. Strategies were further refined and a final list of strategies that received majority support of the panelists was created. Five of these were ultimately selected by the Board of Directors to be included in *Choosing Wisely*®.

ACEP's disclosure and conflict of interest policy can be found at www.acep.org.

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About the American College of Emergency Physicians

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Founded in 1968, the American College of Emergency Physicians (ACEP) has promoted the highest quality of emergency care and is the leading advocate for emergency physicians, their patients and the public. Headquartered in Dallas, Texas, ACEP has more than 32,000 members and 53 chapters representing each state, as well as Puerto Rico and the District of Columbia. A Government Services Chapter represents emergency physicians employed by military branches and other government agencies. Emergency physicians are recognized and valued for their commitment to high quality patient care, teaching, leadership, research and innovation. Emergency medicine is a valued and essential public service.

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The American College of Medical Toxicology and
The American Academy of Clinical Toxicology

Five Things Physicians and Patients Should Question

1 Don't use homeopathic medications, non-vitamin dietary supplements or herbal supplements as treatments for disease or preventive health measures.

Alternative therapies are often assumed safe and effective just because they are "natural." There is a lack of stringent quality control of the ingredients present in many herbal and dietary supplements. Reliable evidence that these products are effective is often lacking, but substantial evidence exists that they may produce harm. Indirect health risks also occur when these products delay or replace more effective forms of treatment or when they compromise the efficacy of conventional medicines.

2 Don't administer a chelating agent prior to testing urine for metals, a practice referred to as "provoked" urine testing.

Metals are ubiquitous in the environment and all individuals are exposed to and store some quantity of metals in the body. These do not necessarily result in illness. Scientific studies demonstrate that administration of a chelating agent leads to increased excretion of various metals into the urine, even in healthy individuals without metal-related disease. These "provoked" or "challenge" tests of urine are not reliable means to diagnose metal poisoning and have been associated with harm.

3 Don't order heavy metal screening tests to assess non-specific symptoms in the absence of excessive exposure to metals.

Individuals are constantly exposed to metals in the environment and often have detectable levels without being poisoned. Indiscriminant testing leads to needless concern when a test returns outside of a "normal" range. Diagnosis of any metal poisoning requires an appropriate exposure history and clinical findings consistent with poisoning by that metal. A patient should only undergo specific metal testing if there is concern for a specific poisoning based on history and physical examination findings.

4 Don't recommend chelation except for documented metal intoxication which has been diagnosed using validated tests in appropriate biological samples.

Chelation does not improve objective outcomes in autism, cardiovascular disease or neurodegenerative conditions like Alzheimer's disease. Edetate disodium is not FDA-approved for any condition. Even when used for appropriately diagnosed metal intoxication, chelating drugs may have significant side effects, including dehydration, hypocalcemia, kidney injury, liver enzyme elevations, hypotension, allergic reactions and essential mineral deficiencies. Inappropriate chelation, which may cost hundreds to thousands of dollars, risks these harms, as well as neurodevelopmental toxicity, teratogenicity and death.

5 Don't remove mercury-containing dental amalgams.

Mercury-containing dental amalgams release small amounts of mercury. Randomized clinical trials demonstrate that the mercury present in amalgams does not produce illness. Removal of such amalgams is unnecessary, expensive and subjects the individual to absorption of greater doses of mercury than if left in place.

How This List Was Created

The American College of Medical Toxicology's (ACMT's) Board of Directors established a *Choosing Wisely*® work group to develop a list of items for the *Choosing Wisely* campaign. Members of the work group were chosen to represent various practice settings within the field of medical toxicology, including ambulatory, acute and population-based practice. Work group members included the President of the College, the Chair of the Practice Committee, the Chair of the Positions and Guidelines committee and other academic leaders within the medical toxicology community. All work group members also represented the American Academy of Clinical Toxicology (AACT). The work group developed a preliminary list of items that was disseminated to all members of ACMT and AACT for review, commentary and potential additions. Additional feedback was solicited from leaders within the field of medical toxicology, including several past-presidents of ACMT and credible, leading subject matter experts in those areas identified. The work group reviewed all responses, and narrowed the list to the final five items based on a review of scientific evidence, relevance to the specialty and greatest opportunity to improve care, reduce cost, and reduce harm to patients. The final list was approved by the ACMT Board of Directors and the AACT Board of Trustees.

The ACMT and AACT disclosure and conflict of interest policies can be found at www.acmt.net and www.clintox.org respectively.

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About the ABIM Foundation

The mission of the ABIM Foundation is to advance medical professionalism to improve the health care system. We achieve this by collaborating with physicians and physician leaders, medical trainees, health care delivery systems, payers, policymakers, consumer organizations and patients to foster a shared understanding of professionalism and how they can adopt the tenets of professionalism in practice.

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

About the American College of Medical Toxicology and the American Academy of Clinical Toxicology

The American College of Medical Toxicology (ACMT) is an association of physicians with recognized expertise in the diagnosis, management and prevention of human poisoning and other adverse health effects due to medications, occupational and environmental toxins and biological agents. ACMT's mission is to advance quality care of poisoned patients and public health through physicians who specialize in consultative, emergency, environmental, forensic and occupational toxicology. ACMT values the importance of research and evidence based practice in combating human poisoning.

The American Academy of Clinical Toxicology (AACT) is a multidisciplinary organization uniting scientists and clinicians in the advancement of research, education, prevention and treatment of diseases caused by chemicals, drugs and toxins. AACT's mission is to promote the study of health effects of poisons, encourage the development of new therapies and treatment in clinical toxicology, and define the position of clinical toxicologists on toxicology-related issues.

For more information visit www.acmt.net and www.clintox.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 College of Occupational and Environmental Medicine

Five Things Physicians and Patients Should Question

1 Don't prescribe opioids for treatment of chronic or acute pain for workers who perform safety-sensitive jobs such as operating motor vehicles, forklifts, cranes or other heavy equipment.

The use of both strong and weak opioids has been consistently associated with increased risk of motor vehicle crashes as opioids produce sedation and hinder or impair higher cognitive function. Evidence suggests higher risk with acute opioid use, but risk remains elevated throughout treatment with any opioid and reverses on cessation. Workers who operate motor vehicles/heavy equipment should be precluded from performing these or other safety-sensitive job functions while under treatment with opioids.

2 Don't initially obtain X-rays for injured workers with acute non-specific low back pain.

X-ray is unnecessary for the initial routine management of low back pain unless red flags are present. Even when red flags are suspected, it should not be mandatory to order an X-ray in all cases. There is also no reason, either medically or legally, to obtain low back X-rays as a "baseline" for work-related injuries.

3 Don't order low back X-rays as part of a routine preplacement medical examination.

Preplacement medical examinations are conducted to determine an individual's ability to perform the job's essential functions. Routine low back X-rays are costly, result in unnecessary radiation exposure, do not address the worker's abilities and do not predict future injuries.

4 Don't routinely order X-ray for diagnosis of plantar fasciitis/heel pain in employees who stand or walk at work.

As the diagnosis of plantar fasciitis is in most cases evident from the worker's history and physical examination, X-ray is not recommended for routine evaluations for plantar fasciitis except in cases where a serious underlying medical condition is suspected, e.g., fracture, infection, etc.

5 Don't routinely order sleep studies (polysomnogram) to screen for/diagnose sleep disorders in workers suffering from chronic fatigue/insomnia.

Workers who suffer from fatigue, but do not have other sleep apnea symptoms (e.g., waking with a very sore or dry throat, loud snoring) or risk factors (obesity, neck diameter, fullness of soft tissues in the oropharynx, etc.), may not need a polysomnogram (sleep study). While a polysomnogram is an essential tool in diagnosing many sleep disorders, it is not usually necessary in assessing insomnia. If lack of sufficient sleep or the job schedule is affecting the patient's sleep patterns, then behavioral modification and attempts to modify the sleep schedule and improve sleep hygiene should be attempted first.

How This List Was Created

The American College of Occupational and Environmental Medicine (ACOEM) routinely develops evidence-based clinical practice guidelines to assist physicians in improving or restoring the health of those workers who incur occupationally related illnesses or injuries. ACOEM's Practice Guidelines, developed by expert panels, are the gold standard in effective treatment of occupational injuries and illnesses and are the only evidence-based guidelines that focus on returning employees to work within 90 days of an injury or illness. In addition, the College promotes the high-quality practice of occupational and environmental medicine (OEM) through the publication, via the scientific peer-reviewed Journal of Occupational and Environmental Medicine, of position statements and guidance documents relevant to the field. These documents are developed by ACOEM task forces made up of physician member volunteers and are approved by the Board of Directors. After input from ACOEM leaders and approval from the Board of Directors, five topics were selected from the Practice Guidelines and the ACOEM position paper on fatigue risk management in the workplace for this campaign. The position paper and the methodology for the development of the Practice Guidelines are available at www.acoem.org.

ACOEM's disclosure and conflict of interest policy can be found at www.acoem.org.

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About the American College of Occupational and Environmental Medicine

AMERICAN COLLEGE OF OCCUPATIONAL AND ENVIRONMENTAL MEDICINE

The American College of Occupational and Environmental Medicine (ACOEM), representing nearly 4,500 physicians who specialize in occupational and environmental medicine, is proud to support the *Choosing Wisely*® campaign. Founded in 1916, ACOEM is the nation's largest medical society dedicated to promoting the health of workers through preventive medicine, clinical care, disability management, research and education. ACOEM members are leaders in treating job-related diseases, recognizing and resolving workplace hazards, instituting rehabilitation methods and providing well-managed care. ACOEM sponsors the annual American Occupational Health Conference, the nation's largest conference of its kind, and periodically issues position papers and reports that set practice guidelines for a variety of workplace/environmental settings. ACOEM publishes the monthly *Journal of Occupational and Environmental Medicine* and sponsors the Corporate Health Achievement Award to recognize the finest health programs in North American companies. ACOEM has also established a Code of Ethical Conduct to guide occupational and environmental physicians. Through efforts such as our strategic partnership with the *Choosing Wisely*® campaign, ACOEM is pledged to advancing the principles of evidence-based care to deliver quality outcomes for patients.

For more information or questions, please visit www.acoem.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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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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About the ABIM Foundation

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About the American College of Obstetricians and Gynecologists

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.

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 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.

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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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Choosing Wisely®

An initiative of the ABIM Foundation

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

AMERICAN COLLEGE OF RHEUMATOLOGY
EDUCATION • TREATMENT • RESEARCH

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 ABIM Foundation

The mission of the ABIM Foundation is to advance medical professionalism to improve the health care system. We achieve this by collaborating with physicians and physician leaders, medical trainees, health care delivery systems, payers, policymakers, consumer organizations and patients to foster a shared understanding of professionalism and how they can adopt the tenets of professionalism in practice.

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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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To find a rheumatologist in your area, or to learn about the ACR, visit www.rheumatology.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 College of Rheumatology – **Pediatric Rheumatology**

American College of Rheumatology
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Five Things Physicians and Patients Should Question

1 Don't order autoantibody panels unless positive antinuclear antibodies (ANA) and evidence of rheumatic disease.

Up to 50% of children develop musculoskeletal pain. There is no evidence that autoantibody panel testing in the absence of history or physical exam evidence of a rheumatologic disease enhances the diagnosis of children with isolated musculoskeletal pain. Autoantibody panels are expensive; evidence has demonstrated cost reduction by limiting autoantibody panel testing. Thus, autoantibody panels should be ordered following confirmed ANA positivity or clinical suspicion that a rheumatologic disease is present in the child.

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 routinely perform surveillance joint radiographs to monitor juvenile idiopathic arthritis (JIA) disease activity.

There are no available data to suggest that routinely obtaining surveillance joint radiographs to monitor for the development or progression of erosive changes in children with juvenile idiopathic arthritis (JIA) improves outcomes. Radiation exposure and cost are potential risks. In the absence of data to support clear benefit, radiographs should be obtained by the pediatric rheumatologist only when history and physical exam raise clinical concern about joint damage or decline in function.

4 Don't perform methotrexate toxicity labs more often than every 12 weeks on stable doses.

Laboratory abnormalities in JIA patients taking methotrexate are usually mild and rarely prompt significant changes in management. Screening low-risk children every 1–2 months may lead to unnecessary interruptions in treatment. More frequent monitoring may be required in the first six months after methotrexate initiation or dose escalation and in patients with risk factors for toxicity including obesity, diabetes, renal disease, psoriasis, systemic JIA, Down syndrome and use of alcohol or other hepatotoxic or myelosuppressive medications.

5 Don't repeat a confirmed positive ANA in patients with established JIA or systemic lupus erythematosus (SLE).

ANA is important in the diagnosis of SLE and positivity guides more frequent slit lamp examination for detection of uveitis in children with JIA. Beyond this, there is no evidence that ANA is valuable in the ongoing management of SLE or JIA. It is recommended that following diagnosis of SLE or JIA, ANA should not be repeated unless a child with JIA has evolution of symptoms suggestive of an autoimmune connective tissue disease.

How This List Was Created

The American College of Rheumatology (ACR) used a multi-stage process combining consensus methodology and literature reviews to arrive at its Pediatric Rheumatology Top 5 list. Items were generated by a group of practicing pediatric rheumatologists using the Delphi method. Items with high content agreement and perceived prevalence advanced to a survey of ACR members who listed pediatric rheumatology as their specialty. Based on member input related to content agreement, impact and item ranking, candidate items advanced to literature review. The ACR Special Committee on Pediatric Rheumatology discussed the items in light of their relevance to rheumatology, level of evidence to support their inclusion in the final list and the member survey results, and drafted the final pediatric rheumatology Top 5 list. The list was reviewed and approved by the ACR Board of Directors.

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

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Five Things Physicians and Patients Should Question

1 Don't perform axillary lymph node dissection for clinical stages I and II breast cancer with clinically negative lymph nodes without attempting sentinel node biopsy.

Sentinel node biopsy is proven effective at staging the axilla for positive lymph nodes and is proven to have fewer short and long term side effects, and in particular is associated with a markedly lower risk of lymphedema (permanent arm swelling).

When the sentinel lymph node(s) are negative for cancer, no axillary dissection should be performed.

When one or two sentinel nodes are involved with cancer that is not extensive in the node, the patient received breast conserving surgery and is planning to receive whole breast radiation and stage appropriate systemic therapy, axillary node dissection should not be performed.

2 Avoid the routine use of "whole-body" diagnostic computed tomography (CT) scanning in patients with minor or single system trauma.

Aggressive use of "whole-body" CT scanning improves early diagnosis of injury and may even positively impact survival in polytrauma patients. However, the significance of radiation exposure as well as costs associated with these studies must be considered, especially in patients with low energy mechanisms of injury and absent physical examination findings consistent with major trauma.

3 Avoid colorectal cancer screening tests on asymptomatic patients with a life expectancy of less than 10 years and no family or personal history of colorectal neoplasia.

Screening for colorectal cancer has been shown to reduce the mortality associated with this common disease; colonoscopy provides the opportunity to detect and remove adenomatous polyps, the precursor lesion to many cancers, thereby reducing the incidence of the disease later in life.

However, screening and surveillance modalities are inappropriate when the risks exceed the benefit.

The risk of colonoscopy increases with increasing age and comorbidities.

The risk/benefit ratio of colorectal cancer screening or surveillance for any patient should be individualized based on the results of previous screening examinations, family history, predicted risk of the intervention, life expectancy and patient preference.

4 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 diseases in patients older than age 70 who have not had chest radiography within six months.

5 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 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 in experienced hands. Recognizing that expertise may vary, strategies including improving diagnostic expertise in community based ultrasound and the development of evidence-based clinical decision rules are realistic goals in improving diagnosis without the use of CT scan.

How This List Was Created

The American College of Surgeons (ACS) solicited recommendations for the ABIM Foundation's *Choosing Wisely*® campaign from the Commission on Cancer, Committee on Trauma and the Advisory Councils for Colon and Rectal Surgery, General Surgery and Pediatric Surgery. The committees were provided with a description of the campaign's initiative, a link to the *Choosing Wisely* website and published recommendations from organizations already participating in the campaign were referenced and reviewed during discussions. All of the recommendations collected from the ACS committees were reviewed, and five items were identified. The ACS' disclosure and conflict of interest policy can be found at www.facs.org.

Participating ACS Committees:

Advisory Council for Colon and Rectal Surgery
Chair: Thomas E. Read, MD, FACS, Burlington, MA

Advisory Council for General Surgery
Chair: E. Christopher Ellison, MD, FACS, Columbus, OH

Advisory Council for Pediatric Surgery
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Commission on Cancer
Chair: Daniel P. McKellar, MD, FACS, Greenville, OH

Committee on Trauma
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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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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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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.

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Five More Things Physicians and Patients Should Question

6 Don't prescribe cholinesterase inhibitors for dementia without periodic assessment for perceived cognitive benefits and adverse gastrointestinal effects.

In randomized controlled trials, some patients with mild-to-moderate and moderate-to-severe Alzheimer's disease (AD) achieve modest benefits in delaying cognitive and functional decline and decreasing neuropsychiatric symptoms. The impact of cholinesterase inhibitors on institutionalization, quality of life and caregiver burden are less well established. Clinicians, caregivers and patients should discuss cognitive, functional and behavioral goals of treatment prior to beginning a trial of cholinesterase inhibitors. Advance care planning, patient and caregiver education about dementia, diet and exercise and non-pharmacologic approaches to behavioral issues are integral to the care of patients with dementia, and should be included in the treatment plan in addition to any consideration of a trial of cholinesterase inhibitors. If goals of treatment are not attained after a reasonable trial (e.g., 12 weeks), then consider discontinuing the medication. Benefits beyond a year have not been investigated and the risks and benefits of long-term therapy have not been well-established.

7 Don't recommend screening for breast or colorectal cancer, nor prostate cancer (with the PSA test) without considering life expectancy and the risks of testing, overdiagnosis and overtreatment.

Cancer screening is associated with short-term risks, including complications from testing, overdiagnosis and treatment of tumors that would not have led to symptoms. For prostate cancer, 1,055 men would need to be screened and 37 would need to be treated to avoid one death in 11 years. For breast and colorectal cancer, 1,000 patients would need to be screened to prevent one death in 10 years. For patients with a life expectancy under 10 years, screening for these three cancers exposes them to immediate harms with little chance of benefit.

8 Avoid using prescription appetite stimulants or high-calorie supplements for treatment of anorexia or cachexia in older adults; instead, optimize social supports, provide feeding assistance and clarify patient goals and expectations.

Unintentional weight loss is a common problem for medically ill or frail elderly. Although high-calorie supplements increase weight in older people, there is no evidence that they affect other important clinical outcomes, such as quality of life, mood, functional status or survival. Use of megestrol acetate results in minimal improvements in appetite and weight gain, no improvement in quality of life or survival, and increased risk of thrombotic events, fluid retention and death. In patients who take megestrol acetate, one in 12 will have an increase in weight and one in 23 will die. The 2012 AGS Beers criteria lists megestrol acetate and cyproheptadine as medications to avoid in older adults. Systematic reviews of cannabinoids, dietary polyunsaturated fatty acids (DHA and EPA), thalidomide and anabolic steroids, have not identified adequate evidence for the efficacy and safety of these agents for weight gain. Mirtazapine is likely to cause weight gain or increased appetite when used to treat depression, but there is little evidence to support its use to promote appetite and weight gain in the absence of depression.

9 Don't prescribe a medication without conducting a drug regimen review.

Older patients disproportionately use more prescription and non-prescription drugs than other populations, increasing the risk for side effects and inappropriate prescribing. Polypharmacy may lead to diminished adherence, adverse drug reactions and increased risk of cognitive impairment, falls and functional decline. Medication review identifies high-risk medications, drug interactions and those continued beyond their indication. Additionally, medication review elucidates unnecessary medications and underuse of medications, and may reduce medication burden. Annual review of medications is an indicator for quality prescribing in vulnerable elderly.

10 Avoid physical restraints to manage behavioral symptoms of hospitalized older adults with delirium.

Persons with delirium may display behaviors that risk injury or interference with treatment. There is little evidence to support the effectiveness of physical restraints in these situations. Physical restraints can lead to serious injury or death and may worsen agitation and delirium. Effective alternatives include strategies to prevent and treat delirium, identification and management of conditions causing patient discomfort, environmental modifications to promote orientation and effective sleep-wake cycles, frequent family contact and supportive interaction with staff. Nursing educational initiatives and innovative models of practice have been shown to be effective in implementing a restraint-free approach to patients with delirium. This approach includes continuous observation; trying re-orientation once, and if not effective, not continuing; observing behavior to obtain clues about patients' needs; discontinuing and/or hiding unnecessary medical monitoring devices or IVs; and avoiding short-term memory questions to limit patient agitation. Pharmacological interventions are occasionally utilized after evaluation by a medical provider at the bedside, if a patient presents harm to him or herself or others. Physical restraints should only be used as a very last resort and should be discontinued at the earliest possible time.

How This List Was Created (1-5)

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.

How This List Was Created (6-10)

The American Geriatrics Society (AGS) used the same work group from its first list to develop its second list. The group was chaired by the 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 a *Choosing Wisely®* list via an electronic survey. The workgroup then narrowed the list down and reviewed the evidence, seeking 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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About the ABIM Foundation

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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.

Choosing Wisely®

An initiative of the ABIM Foundation

American Headache Society

AMERICAN HEADACHE SOCIETY®

www.AmericanHeadacheSociety.org

Five Things Physicians and Patients Should Question

1

Don't perform neuroimaging studies in patients with stable headaches that meet criteria for migraine.

Numerous evidence-based guidelines agree that the risk of intracranial disease is not elevated in migraine. However, not all severe headaches are migraine. To avoid missing patients with more serious headaches, a migraine diagnosis should be made after a careful clinical history and an examination that documents the absence of any neurologic findings such as papilledema. Diagnostic criteria for migraine are contained in the International Classification of Headache Disorders.

2

Don't perform computed tomography (CT) imaging for headache when magnetic resonance imaging (MRI) is available, except in emergency settings.

When neuroimaging for headache is indicated, MRI is preferred over CT, except in emergency settings when hemorrhage, acute stroke or head trauma are suspected. MRI is more sensitive than CT for the detection of neoplasm, vascular disease, posterior fossa and cervicomedullary lesions and high and low intracranial pressure disorders. CT of the head is associated with substantial radiation exposure which may elevate the risk of later cancers, while there are no known biologic risks from MRI.

3

Don't recommend surgical deactivation of migraine trigger points outside of a clinical trial.

The value of this form of "migraine surgery" is still a research question. Observational studies and a small controlled trial suggest possible benefit. However, large multicenter, randomized controlled trials with long-term follow-up are needed to provide accurate estimates of the effectiveness and harms of surgery. Long-term side effects are unknown but potentially a concern.

4

Don't prescribe opioid or butalbital-containing medications as first-line treatment for recurrent headache disorders.

These medications impair alertness and may produce dependence or addiction syndromes, an undesirable risk for the young, otherwise healthy people most likely to have recurrent headaches. They increase the risk that episodic headache disorders such as migraine will become chronic, and may produce heightened sensitivity to pain. Use may be appropriate when other treatments fail or are contraindicated. Such patients should be monitored for the development of chronic headache.

5

Don't recommend prolonged or frequent use of over-the-counter (OTC) pain medications for headache.

OTC medications are appropriate treatment for occasional headaches if they work reliably without intolerable side effects. Frequent use (especially of caffeine-containing medications) can lead to an increase in headaches, known as medication overuse headache (MOH). To avoid this, OTC medication should be limited to no more than two days per week. In addition to MOH, prolonged overuse of acetaminophen can cause liver damage, while overuse of nonsteroidal anti-inflammatory drugs can lead to gastrointestinal bleeding.

How This List Was Created

The American Headache Society (AHS) Board of Directors approved the creation of a task force to lead work on the *Choosing Wisely*® campaign. The task force consisted of: Elizabeth Loder, MD, MPH, (AHS President), Stephen Silberstein, MD, (Chair of the AHS Guidelines and Position Paper Committee), Randolph Evans, MD, Benjamin Frishberg, MD, Scott Litin, MD, Donald Dworek, MD, Josif Stakic, MD, and Jessica Ailani, MD.

The list was developed in consultation with AHS members, who received an electronic survey informing them of the project and asking them to recommend items to be considered for the list. The task force reviewed a list of 11 candidate topics that had been developed from the over 100 suggestions received from AHS members.

The task force met twice by conference call to review the suggestions and choose items for further development, and then communicated electronically during the development and approval process. Final items were selected based on commonly encountered situations in headache medicine associated with poor patient outcomes, low-value care or misuse or overuse of resources. The five recommendations were then approved by the AHS Executive Committee and Board of Directors.

The AHS disclosure and conflict of interest policy can be found at: www.americanheadachesociety.org/professional_resources/disclosure_policy.

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About the American Headache Society

The American Headache Society (AHS) is the professional organization for headache medicine physicians and other health care providers who are committed to improving the lives of people with headache and face pain. Migraine alone is the seventh highest specific cause of disability globally and the leading cause worldwide of neurological disability, according to the World Health Organization 2010 Burden of Disease Study. The AHS provides a forum for the exchange of ideas and information about causes and treatments of headache and related painful disorders. It also provides education and training to physicians, health professionals and the public about headache and encourages scientific research worldwide about the causes and treatment of headache and related problems.

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AMDA – Dedicated to Long Term Care Medicine™

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Dedicated To Long Term Care Medicine

Five Things Physicians and Patients Should Question

1 Don't insert percutaneous feeding tubes in individuals with advanced dementia. Instead, offer oral assisted feedings.

Strong evidence exists that artificial nutrition does not prolong life or improve quality of life in patients with advanced dementia. Substantial functional decline and recurrent or progressive medical illnesses may indicate that a patient who is not eating is unlikely to obtain any significant or long-term benefit from artificial nutrition. Feeding tubes are often placed after hospitalization, frequently with concerns for aspirations, and for those who are not eating. Contrary to what many people think, tube feeding does not ensure the patient's comfort or reduce suffering; it may cause fluid overload, diarrhea, abdominal pain, local complications, less human interaction and may increase the risk of aspiration. Assistance with oral feeding is an evidence-based approach to provide nutrition for patients with advanced dementia and feeding problems.

2 Don't use sliding scale insulin (SSI) for long-term diabetes management for individuals residing in the nursing home.

SSI is a reactive way of treating hyperglycemia after it has occurred rather than preventing it. Good evidence exists that SSI is neither effective in meeting the body's insulin needs nor is it efficient in the long-term care (LTC) setting. Use of SSI leads to greater patient discomfort and increased nursing time because patients' blood glucose levels are usually monitored more frequently than may be necessary and more insulin injections may be given. With SSI regimens, patients may be at risk from prolonged periods of hyperglycemia. In addition, the risk of hypoglycemia is a significant concern because insulin may be administered without regard to meal intake. Basal insulin, or basal plus rapid-acting insulin with one or more meals (often called basal/bolus insulin therapy) most closely mimics normal physiologic insulin production and controls blood glucose more effectively.

3 Don't obtain a urine culture unless there are clear signs and symptoms that localize to the urinary tract.

Chronic asymptomatic bacteriuria is frequent in the LTC setting, with prevalence as high as 50%. A positive urine culture in the absence of localized urinary tract infection (UTI) symptoms (i.e., dysuria, frequency, urgency) is of limited value in identifying whether a patient's symptoms are caused by a UTI. Colonization (a positive bacterial culture without signs or symptoms of a localized UTI) is a common problem in LTC facilities that contributes to the over-use of antibiotic therapy in this setting, leading to an increased risk of diarrhea, resistant organisms and infection due to Clostridium difficile. An additional concern is that the finding of asymptomatic bacteriuria may lead to an erroneous assumption that a UTI is the cause of an acute change of status, hence failing to detect or delaying the more timely detection of the patient's more serious underlying problem. A patient with advanced dementia may be unable to report urinary symptoms. In this situation, it is reasonable to obtain a urine culture if there are signs of systemic infection such as fever (increase in temperature of equal to or greater than 2°F [1.1°C] from baseline) leukocytosis, or a left shift or chills in the absence of additional symptoms (e.g., new cough) to suggest an alternative source of infection.

4

Don’t prescribe antipsychotic medications for behavioral and psychological symptoms of dementia (BPSD) in individuals with dementia without an assessment for an underlying cause of the behavior.

Careful differentiation of cause of the symptoms (physical or neurological versus psychiatric, psychological) may help better define appropriate treatment options. The therapeutic goal of the use of antipsychotic medications is to treat patients who present an imminent threat of harm to self or others, or are in extreme distress – not to treat nonspecific agitation or other forms of lesser distress. Treatment of BPSD in association with the likelihood of imminent harm to self or others includes assessing for and identifying and treating underlying causes (including pain; constipation; and environmental factors such as noise, being too cold or warm, etc.), ensuring safety, reducing distress and supporting the patient’s functioning. If treatment of other potential causes of the BPSD is unsuccessful, antipsychotic medications can be considered, taking into account their significant risks compared to potential benefits. When an antipsychotic is used for BPSD, it is advisable to obtain informed consent.

5

Don’t routinely prescribe lipid-lowering medications in individuals with a limited life expectancy.

There is no evidence that hypercholesterolemia, or low HDL-C, is an important risk factor for all-cause mortality, coronary heart disease mortality, hospitalization for myocardial infarction or unstable angina in persons older than 70 years. In fact, studies show that elderly patients with the lowest cholesterol have the highest mortality after adjusting other risk factors. In addition, a less favorable risk-benefit ratio may be seen for patients older than 85, where benefits may be more diminished and risks from statin drugs more increased (cognitive impairment, falls, neuropathy and muscle damage).

How This List Was Created

AMDA – Dedicated to Long Term Medicine convened a work group made up of members from the Clinical Practice Committee (CPC). Members of the CPC include board certified geriatricians, certified medical directors, multi-facility medical directors, attending practitioners, physicians practicing in both office-based and nursing facility practice, physicians in rural, suburban and academic settings, those with university appointments, and more. It was important to AMDA that the workgroup chosen represent the core base of the AMDA membership. Ideas for the "five things" were solicited from the workgroup. Suggested elements were considered for appropriateness, relevance to the core of the specialty 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. A literature search was conducted to provide supporting evidence or refute the activities. The list was modified and a second round of selection of the refined list was sent to the workgroup for paring down to the final "top five" list. Finally, the work group chose its top five recommendations before submitting a final draft to the AMDA Executive Committee, which were then approved. AMDA's disclosure and conflict of interest policy can be found at www.amda.com.

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AMDA – Dedicated to Long Term Care Medicine is the only professional association representing medical directors, attending physicians and others practicing in the long term care continuum. AMDA is dedicated to excellence in patient care and provides education, advocacy, information and professional development to promote the delivery of quality long term care medicine. AMDA strives to provide cutting edge education, information and tools on clinical, management and technology topics that are specific to the evolving long term care setting. AMDA offers opportunities to learn about best practices and activities that can maximize the quality of care and quality of life for patients.

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American Medical Society for Sports Medicine

American Medical Society for Sports Medicine

Leading Sports Medicine into the Future

Five Things Physicians and Patients Should Question

1 Avoid ordering a brain CT or brain MRI to evaluate an acute concussion unless there are progressive neurological symptoms, focal neurological findings on exam or there is concern for a skull fracture.

Concussion is a clinical diagnosis. Concussion is not associated with clinically relevant abnormalities on standard neuroimaging with CT or MRI. These studies should be ordered if more severe brain injury is suspected. CT is best utilized for skull fracture and intracranial bleeding, whereas MRI may be ordered for prolonged symptoms, worsening symptoms or other suspected structural pathology.

2 Avoid ordering an abdominal ultrasound examination routinely in athletes with infectious mononucleosis.

Splenic enlargement is common in patients with infectious mononucleosis. The spleen is at increased risk for splenic rupture in the first 3–4 weeks of infection. This has led many clinicians to utilize ultrasound to determine if splenic enlargement is present. However, because individual splenic diameters vary greatly, comparing splenic size to population norms is not a valid method to assess splenic enlargement.

3 Don't prescribe oral contraceptive pills as initial treatment for patients with amenorrhea or menstrual dysfunction due to the female athlete triad (defined as low energy availability with or without disordered eating, menstrual dysfunction and low bone mineral density).

The cause of female athlete triad is an imbalance between energy intake and energy expenditure that leads to menstrual dysfunction (abnormal or loss of periods) and low bone mineral density. Historically, some physicians have used oral contraceptive pills (OCPs) to regulate the menstrual cycle in this disorder. However, the underlying cause for the menstrual dysfunction is energy imbalance. Treatment includes increasing caloric intake and/or decreasing energy expenditure (exercise) to restore normal menses, which can take up to 12 months or longer. Additionally, OCPs do not increase bone density in females affected by the triad. By restoring menses, OCPs can mask energy imbalance and delay appropriate treatment. We recommend a multi-disciplinary approach to treatment that includes a physician, dietitian, mental health professional (when appropriate) and support from coaches, family members and friends.

4 Avoid ordering a knee MRI for a patient with anterior knee pain without mechanical symptoms or effusion unless the patient has not improved following completion of an appropriate functional rehabilitation program.

The most common cause of anterior knee pain is patellofemoral pain syndrome. Magnetic resonance imaging (MRI) is rarely helpful in managing this syndrome. Treatment should focus on a guided exercise program to correct lumbopelvic and lower limb strength and flexibility imbalances. If pain persists, if there is recurrent swelling or if mechanical symptoms such as locking and painful clicking are present, and radiographs are non-diagnostic, an MRI may be useful.

5 Avoid recommending knee arthroscopy as initial management for patients with degenerative meniscal tears and no mechanical symptoms.

Degenerative meniscal tears may respond to non-operative treatments such as exercise to improve muscle strength, endurance and flexibility. Other treatment options include mild analgesics, anti-inflammatory medication, activity modification or corticosteroid injection. If mechanical symptoms such as locking, painful clicking or recurrent swelling are present, or if pain relief is not obtained after a trial of non-operative treatment, arthroscopy may be warranted. If significant osteoarthritis is also present, other surgical options should be considered.

How This List Was Created

The American Medical Society for Sports Medicine (AMSSM) has identified this list of clinical recommendations for the *Choosing Wisely*® campaign. The goal was to identify common topics in the practice of sports medicine that, supported by a review of the literature, would lead to significant health benefits and a reduction of common procedures that can be unnecessary or cause harm. For each item, evidence was reviewed from peer-reviewed literature and several sports medicine consensus statements. The list was initially generated and drafted by AMSSM's Quality Measures Subcommittee. It was then edited and approved by AMSSM's Practice and Policy Committee and the Board of Directors.

The American Medical Society for Sports Medicine's disclosure and conflict of interest policy can be found at www.amssm.org.

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About the ABIM Foundation

The mission of the ABIM Foundation is to advance medical professionalism to improve the health care system. We achieve this by collaborating with physicians and physician leaders, medical trainees, health care delivery systems, payers, policymakers, consumer organizations and patients to foster a shared understanding of professionalism and how they can adopt the tenets of professionalism in practice.

ABIM FOUNDATION®

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

About the American Medical Society for Sports Medicine

The American Medical Society for Sports Medicine (AMSSM) is proud to be a partner in the *Choosing Wisely*® campaign. Founded in 1991, AMSSM is a multi-disciplinary organization of 2,500 sports medicine physicians dedicated to education, research, advocacy and the care of athletes of all ages. The majority of AMSSM members are primary care physicians with fellowship training and added qualification in sports medicine who then combine their practice of sports medicine with their primary specialty. AMSSM includes members who specialize solely in non-surgical sports medicine and serve as team physicians at the youth level, NCAA, NFL, MLB, NBA, WNBA, MLS and NHL, as well as with the U.S. Olympic team. By nature of their training and experience, sports medicine physicians are ideally suited to provide comprehensive medical care for athletes, sports teams or active individuals who are simply looking to maintain a healthy lifestyle. This partnership with the *Choosing Wisely*® campaign aligns with AMSSM's dedication to providing the highest standard of comprehensive care of the athlete, while reducing unnecessary health care costs.

AMERICAN MEDICAL SOCIETY FOR SPORTS MEDICINE
Leading Sports Medicine into the Future

For more information or questions, please visit www.amssm.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 Psychiatric Association

Five Things Physicians and Patients Should Question

1 Don't prescribe antipsychotic medications to patients for any indication without appropriate initial evaluation and appropriate ongoing monitoring.

Metabolic, neuromuscular and cardiovascular side effects are common in patients receiving antipsychotic medications for any indication, so thorough initial evaluation to ensure that their use is clinically warranted, and ongoing monitoring to ensure that side effects are identified, are essential. "Appropriate initial evaluation" includes the following: (a) thorough assessment of possible underlying causes of target symptoms including general medical, psychiatric, environmental or psychosocial problems; (b) consideration of general medical conditions; and (c) assessment of family history of general medical conditions, especially of metabolic and cardiovascular disorders. "Appropriate ongoing monitoring" includes re-evaluation and documentation of dose, efficacy and adverse effects; and targeted assessment, including assessment of movement disorder or neurological symptoms; weight, waist circumference and/or BMI; blood pressure; heart rate; blood glucose level; and lipid profile at periodic intervals.

2 Don't routinely prescribe two or more antipsychotic medications concurrently.

Research shows that use of two or more antipsychotic medications occurs in 4 to 35% of outpatients and 30 to 50% of inpatients. However, evidence for the efficacy and safety of using multiple antipsychotic medications is limited, and risk for drug interactions, noncompliance and medication errors is increased. Generally, the use of two or more antipsychotic medications concurrently should be avoided except in cases of three failed trials of monotherapy, which included one failed trial of Clozapine where possible, or where a second antipsychotic medication is added with a plan to cross-taper to monotherapy.

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

Behavioral and psychological symptoms of dementia are defined as the non-cognitive symptoms and behaviors, including agitation or aggression, anxiety, irritability, depression, apathy and psychosis. Evidence shows that risks (e.g., cerebrovascular effects, mortality, parkinsonism or extrapyramidal signs, sedation, confusion and other cognitive disturbances, and increased body weight) tend to outweigh the potential benefits of antipsychotic medications in this population. Clinicians should limit the use of antipsychotic medications to cases where non-pharmacologic measures have failed and the patients' symptoms may create a threat to themselves or others. This item is also included in the American Geriatric Society's list of recommendations for "*Choosing Wisely*."

4 Don't routinely prescribe antipsychotic medications as a first-line intervention for insomnia in adults.

There is inadequate evidence for the efficacy of antipsychotic medications to treat insomnia (primary or due to another psychiatric or medical condition), with the few studies that do exist showing mixed results.

5 Don't routinely prescribe antipsychotic medications as a first-line intervention for children and adolescents for any diagnosis other than psychotic disorders.

Recent research indicates that use of antipsychotic medication in children has nearly tripled in the past 10 to 15 years, and this increase appears to be disproportionate among children with low family income, minority children and children with externalizing behavior disorders (i.e., rather than schizophrenia, other psychotic disorders and severe tic disorders). Evidence for the efficacy and tolerability of antipsychotic medications in children and adolescents is inadequate and there are notable concerns about weight gain, metabolic side effects and a potentially greater tendency for cardiovascular changes in children than in adults.

How This List Was Created

The American Psychiatric Association (APA) created a work group of members from the Council on Research and Quality Care (CRQC) to identify, refine and ascertain the degree of consensus for five proposed items. Two rounds of surveys were used to arrive at the final list: the first round narrowed the list from more than 20 potential items by inquiring about the extent of overuse, the impact on patients' health, the associated costs of care and the level of evidence for each treatment or procedure; and the second gauged membership support for the top five and asked for suggested revisions and comments. The surveys targeted the CRQC; the Council on Geriatric Psychiatry; the Council on Children, Adolescents, and Their Families; and the Assembly, which is the APA's governing body consisting of representative psychiatrists from around the country. After the work group incorporated feedback from the two large surveys, the APA's Board of Trustees Executive Committee reviewed and unanimously approved the final list.

For APA disclosure and conflict of interest policy please visit www.psychiatry.org.

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About the American Psychiatric Association

The American Psychiatric Association (APA), founded in 1844, is the world's largest psychiatric organization. It is a medical specialty society representing more than 33,000 psychiatric physicians from the United States and around the world. Its member physicians work together to ensure humane care and effective treatment for all persons with mental disorders, including intellectual disabilities and substance use disorders. APA is the voice and conscience of modern psychiatry. Participating in the *Choosing Wisely*® campaign furthers APA's mission to promote the highest quality care for individuals with mental disorders (including intellectual disabilities and substance use disorders) and their families.

For more information, visit www.psychiatry.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 Anesthesiologists

American Society of Anesthesiologists®

Five Things Physicians and Patients Should Question

1 Don't obtain baseline laboratory studies in patients without significant systemic disease (ASA I or II) undergoing low-risk surgery – specifically complete blood count, basic or comprehensive metabolic panel, coagulation studies when blood loss (or fluid shifts) is/are expected to be minimal.

Performing routine laboratory tests in patients who are otherwise healthy is of little value in detecting disease. Evidence suggests that a targeted history and physical exam should determine whether pre-procedure laboratory studies should be obtained. The current recommendation from the 2003 ASA amendment that all female patients of childbearing age be offered pregnancy testing rather than required to undergo testing has provided individual physicians and hospitals the opportunity to set their own practices and policies relating to preoperative pregnancy testing. Some institutions respect the right of a patient to refuse testing after a thorough explanation of the anesthetic risks during pregnancy and the required signing of a waiver. The avoidance of the routine administration of the pregnancy test was therefore excluded from our Top 5 preoperative recommendations.

The risk specifically related to the surgical procedure could however modify the above preoperative recommendation to obtain laboratory studies and when the need arises; the decision to implement should include a joint decision between the anesthesiologists and surgeons. This should be applicable to all outpatient surgery.

2 Don't obtain baseline diagnostic cardiac testing (trans-thoracic/esophageal echocardiography – TTE/TEE) or cardiac stress testing in asymptomatic stable patients with known cardiac disease (e.g., CAD, valvular disease) undergoing low or moderate risk non-cardiac surgery.

Advances in cardiovascular medical management, particularly the introduction of perioperative beta-blockade and improvements in surgical and anesthetic techniques, have significantly decreased operative morbidity and mortality rates in noncardiac surgery. Surgical outcomes continue to improve causing the mortality rate of major surgeries to be low and the need for revascularization minimal. Consequently, the role of preoperative cardiac stress testing has been reduced to the identification of extremely high-risk patients, for instance, those with significant left main disease for which preoperative revascularization would be beneficial regardless of the impending procedure. In other words, testing may be appropriate if the results would change management prior to surgery, could change the decision of the patient to undergo surgery, or change the type of procedure that the surgeon will perform.

3 Don't use pulmonary artery catheters (PACs) routinely for cardiac surgery in patients with a low risk of hemodynamic complications (especially with the concomitant use of alternative diagnostic tools (e.g., TEE).

The increased risk of hemodynamic complications as indicated above is defined as a patient with clinical evidence of significant cardiovascular disease; pulmonary dysfunction, hypoxia, renal insufficiency or other conditions associated with hemodynamic instability (e.g., advanced age, endocrine disorders, sepsis, trauma, burns).

The use of a PAC during cardiac surgery has been associated with increased mortality and a higher risk of severe end-organ complications. There is clear consensus in the literature that the use of a PAC cannot be recommended as a matter of routine, but for a definite role in a very select group of patients undergoing cardiac surgery. According to a survey by practicing anesthesiologists, the use of PAC could be recommended for specific indications in cardiac surgery including coronary artery bypass grafting (CABG) with poor left ventricular (LV) function, LV aneurysmectomy, recent myocardial infarction, pulmonary hypertension, diastolic dysfunction, acute ventricular septal rupture and insertion of left ventricular assist device. The appropriate indications remain debatable. However, although the PAC has no role in routine perioperative care, the existence of a specific subpopulation for which the use of this device may be beneficial cannot be excluded.

4

Don’t administer packed red blood cells (PRBCs) in a young healthy patient without ongoing blood loss and hemoglobin of ≥ 6 g/dL unless symptomatic or hemodynamically unstable.

The hemoglobin transfusion threshold used in multiple studies has varied from 6.0 to 10.0 g/dL. The optimal hemoglobin/hematocrit criterion for transfusion remains controversial in several clinical settings. Nevertheless, compared with higher hemoglobin thresholds, a lower hemoglobin threshold is associated with fewer red blood cell units transfused without adverse associations with mortality, cardiac morbidity, functional recovery or length of hospital stay. Hospital mortality remains lower in patients randomized to a lower hemoglobin threshold for transfusion versus those randomized to a higher hemoglobin threshold.

The decision to transfuse should be based on a combination of both clinical and hemodynamic parameters.

5

Don’t routinely administer colloid (dextrans, hydroxylethyl starches, albumin) for volume resuscitation without appropriate indications.

There is no evidence from multiple randomized controlled trials and recent reviews/meta-analyses that resuscitation with colloids reduces the risk of death compared to crystalloids. Colloids offer no survival benefit and are considerably more expensive than crystalloids; their continued routine use in clinical practice should therefore be questioned. Recent perioperative data on the use of colloids in certain populations remain controversial; nevertheless, there is consensus on the avoidance of the routine use of colloids for volume resuscitation in the general surgical population given the overwhelming amount of evidence in the literature of possible harm when used in un-indicated patients. Health care providers should refer to the current evolving literature when faced with specific conditions like sepsis, traumatic brain injury, acute renal injury and burns thereby creating a forum for discussion among the care providers of the efficacy of such a treatment in that individual patient.

Nevertheless, it is important to note that the endpoint in most studies is mortality and morbidity. There is insufficient data to adequately address the need of colloids over crystalloids for other endpoints of interest like hypotension, need for blood transfusion, length of hospital stay, etc. Further research may be required to delineate the existence of any particular benefits of colloids over crystalloids.

How This List Was Created

The list started as an academic project of Onyi C. Onuoha, M.D., M.P.H. A review of the literature and practice guidelines as approved by the American Society of Anesthesiologists (ASA) was performed to identify an evidence-based list of activities to question within the field of anesthesiology. A multi-step survey of anesthesiologists in both the academic and private sector and ASA Committees of Jurisdiction was performed to generate a "Top 5 List" list of preoperative and intraoperative activities. The final list was endorsed by the ASA and accepted for the *Choosing Wisely*® campaign. We believe that developing strategies whereby all stakeholders in the perioperative team are involved in the implementation is a means in which anesthesiologists could be engaged in the efforts to reduce over-utilization of low value, non-indicated medical services evident in the U.S. health system today.

ASA's disclosure and conflict of interest policy can be found at www.asahq.org.

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For more information about ASA, visit www.asahq.org.

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American Society of Anesthesiologists - Pain Medicine

American Society of Anesthesiologists®

Five Things Physicians and Patients Should Question

1 Don't prescribe opioid analgesics as first-line therapy to treat chronic non-cancer pain.

Physicians should consider multimodal therapy, including non-drug treatments such as behavioral and physical therapies prior to pharmacological intervention. If drug therapy appears indicated, non-opioid medication (e.g., NSAIDs, anticonvulsants, etc.) should be trialed prior to commencing opioids.

2 Don't prescribe opioid analgesics as long-term therapy to treat chronic non-cancer pain until the risks are considered and discussed with the patient.

Patients should be informed of the risks of such treatment, including the potential for addiction. Physicians and patients should review and sign a written agreement that identifies the responsibilities of each party (e.g., urine drug testing) and the consequences of non-compliance with the agreement. Physicians should be cautious in co-prescribing opioids and benzodiazepines. Physicians should proactively evaluate and treat, if indicated, the nearly universal side effects of constipation and low testosterone or estrogen.

3 Avoid imaging studies (MRI, CT or X-rays) for acute low back pain without specific indications.

Imaging for low back pain in the first six weeks after pain begins should be avoided in the absence of specific clinical indications (e.g., history of cancer with potential metastases, known aortic aneurysm, progressive neurologic deficit, etc.). Most low back pain does not need imaging and doing so may reveal incidental findings that divert attention and increase the risk of having unhelpful surgery.

4 Don't use intravenous sedation for diagnostic and therapeutic nerve blocks, or joint injections as a default practice.*

Intravenous sedation, such as with propofol, midazolam or ultrashort-acting opioid infusions for diagnostic and therapeutic nerve blocks, or joint injections, should not be used as the default practice. Ideally, diagnostic procedures should be performed with local anesthetic alone. Intravenous sedation can be used after evaluation and discussion of risks, including interference with assessing the acute pain relieving effects of the procedure and the potential for false positive responses. American Society of Anesthesiologists Standards for Basic Anesthetic Monitoring should be followed in cases where moderate or deep sedation is provided or anticipated.

5 Avoid irreversible interventions for non-cancer pain that carry significant costs and/or risks.

Irreversible interventions for non-cancer pain, such as peripheral chemical neurolytic blocks or peripheral radiofrequency ablation, should be avoided because they may carry significant long-term risks of weakness, numbness or increased pain.

*This recommendation does not apply to pediatric patients.

How This List Was Created

The American Society of Anesthesiologists (ASA) Committee on Pain Medicine was charged with developing the "Top 5 List" on pain medicine for the *Choosing Wisely*® campaign. Committee members submitted potential recommendations for the campaign, and from this list voted on which recommendations should be included in the final "Top 5 List." The literature was then searched to provide supporting evidence. The Committee communicated electronically and met in person during the development and approval process. Once approved by the Committee, the "Top 5 List" was reviewed by ASA's Chair of the Section on Subspecialties, Vice President for Scientific Affairs, Executive Committee and Administrative Council. ASA's "Top 5 List" for pain medicine has been endorsed by the American Pain Society.

ASA's disclosure and conflict of interest policy can be found at www.asahq.org.

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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 ten 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.

These items are provided solely for informational purposes and are not intended to replace a medical professional's independent judgment or as a substitute for consultation with a medical professional. Patients with any specific questions about the items on this list or their individual situation should consult their health care provider. New evidence may emerge following the development of these items. ASCO is not responsible for any injury or damage arising out of or related to any use of these items or to any errors or omissions.

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).

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Five More Things Physicians and Patients Should Question

6

Don't give patients starting on a chemotherapy regimen that has a low or moderate risk of causing nausea and vomiting antiemetic drugs intended for use with a regimen that has a high risk of causing nausea and vomiting.

- Over the past several years, a large number of effective drugs with fewer side effects have been developed to prevent nausea and vomiting from chemotherapy. When successful, these medications can help patients avoid spending time in the hospital, improve their quality of life and lead to fewer changes in the chemotherapy regimen.
- Oncologists customarily use different antiemetic drugs depending on the likelihood (low, moderate or high) for a particular chemotherapy program to cause nausea and vomiting. For chemotherapy programs that are likely to produce severe and persistent nausea and vomiting, there are new agents that can prevent this side effect. However, these drugs are very expensive and not devoid of side effects. For this reason, these drugs should be used only when the chemotherapy drugs that have a high likelihood of causing severe or persistent nausea and vomiting.
- When using chemotherapy that is less likely to cause nausea and vomiting, there are other effective drugs available at a lower cost.

7

Don't use combination chemotherapy (multiple drugs) instead of chemotherapy with one drug when treating an individual for metastatic breast cancer unless the patient needs a rapid response to relieve tumor-related symptoms.

- Although chemotherapy with multiple drugs, or combination chemotherapy, for metastatic breast cancer may slow tumor growth for a somewhat longer time than occurs when treating with a single agent, use of combination chemotherapy has not been shown to increase overall survival. In fact, the trade-offs of more frequent and severe side effects may have a net effect of worsening a patient's quality of life, necessitating a reduction in the dose of chemotherapy.
- Combination chemotherapy may be useful and worth the risk of more side effects in situations in which the cancer burden must be reduced quickly because it is causing significant symptoms or is life threatening. As a general rule, however, giving effective drugs one at a time lowers the risk of side effects, may improve a patient's quality of life, and does not typically compromise overall survival.

8

Avoid using PET or PET-CT scanning as part of routine follow-up care to monitor for a cancer recurrence in asymptomatic patients who have finished initial treatment to eliminate the cancer unless there is high-level evidence that such imaging will change the outcome.

- PET and PET-CT are used to diagnose, stage and monitor how well treatment is working. Available evidence from clinical studies suggests that using these tests to monitor for recurrence does not improve outcomes and therefore generally is not recommended for this purpose.
- False positive tests can lead to unnecessary and invasive procedures, overtreatment, unnecessary radiation exposure and incorrect diagnoses.
- Until high level evidence demonstrates that routine surveillance with PET or PET-CT scans helps prolong life or promote well-being after treatment for a specific type of cancer, this practice should not be done.

9

Don't perform PSA testing for prostate cancer screening in men with no symptoms of the disease when they are expected to live less than 10 years.

- Since PSA levels in the blood have been linked with prostate cancer, many doctors have used repeated PSA tests in the hope of finding "early" prostate cancer in men with no symptoms of the disease. Unfortunately, PSA is not as useful for screening as many have hoped because many men with prostate cancer do not have high PSA levels, and other conditions that are not cancer (such as benign prostate hyperplasia) can also increase PSA levels.
- Research has shown that men who receive PSA testing are less likely to die specifically from prostate cancer. However when accounting for deaths from all causes, no lives are saved, meaning that men who receive PSA screening have not been shown to live longer than men who do not have PSA screening. Men with medical conditions that limit their life expectancy to less than 10 years are unlikely to benefit from PSA screening as their probability of dying from the underlying medical problem is greater than the chance of dying from asymptomatic prostate cancer.

10

Don't use a targeted therapy intended for use against a specific genetic aberration unless a patient's tumor cells have a specific biomarker that predicts an effective response to the targeted therapy.

- Unlike chemotherapy, targeted therapy can significantly benefit people with cancer because it can target specific gene products, i.e., proteins that cancer cells use to grow and spread, while causing little or no harm to healthy cells. Patients who are most likely to benefit from targeted therapy are those who have a specific biomarker in their tumor cells that indicates the presence or absence of a specific gene alteration that makes the tumor cells susceptible to the targeted agent.
- Compared to chemotherapy, the cost of targeted therapy is generally higher, as these treatments are newer, more expensive to produce and under patent protection. In addition, like all anti-cancer therapies, there are risks to using targeted agents when there is no evidence to support their use because of the potential for serious side effects or reduced efficacy compared with other treatment options.

Abbreviations

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

How This List Was Created (1–5)

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.

How This List Was Created (6–10)

To guide ASCO in developing this list, suggestions were elicited from current ASCO committee members (approximately 700 individuals); 115 suggestions were received. After removing duplicates, researching the literature and discussing practice patterns, the Value in Cancer Care Task Force culled the list to 11 items, which comprised an ASCO Top Five voting slate that was sent back to the membership of all standing committees. Approximately 140 oncologists from its leadership cadre voted, providing ASCO with an adequate sample size and perspective on what oncologists find to be of little value. The list was reviewed and finalized by the Value in Cancer Care Task Force and ultimately reviewed and approved by 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 ABIM Foundation

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

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®

An initiative of the ABIM Foundation

American Society for Clinical Pathology

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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About the American Society for Clinical Pathology

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.

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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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About the American Society of Echocardiography

ASE 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.

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American Society of Hematology

Five Things Physicians and Patients Should Question

1 Don't transfuse more than the minimum number of red blood cell (RBC) units necessary to relieve symptoms of anemia or to return a patient to a safe hemoglobin range (7 to 8 g/dL in stable, non-cardiac in-patients).

Transfusion of the smallest effective dose of RBCs is recommended because liberal transfusion strategies do not improve outcomes when compared to restrictive strategies. Unnecessary transfusion generates costs and exposes patients to potential adverse effects without any likelihood of benefit. Clinicians are urged to avoid the routine administration of 2 units of RBCs if 1 unit is sufficient and to use appropriate weight-based dosing of RBCs in children.

2 Don't test for thrombophilia in adult patients with venous thromboembolism (VTE) occurring in the setting of major transient risk factors (surgery, trauma or prolonged immobility).

Thrombophilia testing is costly and can result in harm to patients if the duration of anticoagulation is inappropriately prolonged or if patients are incorrectly labeled as thrombophilic. Thrombophilia testing does not change the management of VTEs occurring in the setting of major transient VTE risk factors. When VTE occurs in the setting of pregnancy or hormonal therapy, or when there is a strong family history plus a major transient risk factor, the role of thrombophilia testing is complex and patients and clinicians are advised to seek guidance from an expert in VTE.

3 Don't use inferior vena cava (IVC) filters routinely in patients with acute VTE.

IVC filters are costly, can cause harm and do not have a strong evidentiary basis. The main indication for IVC filters is patients with acute VTE and a contraindication to anticoagulation such as active bleeding or a high risk of anticoagulant-associated bleeding. Lesser indications that may be reasonable in some cases include patients experiencing pulmonary embolism (PE) despite appropriate, therapeutic anticoagulation, or patients with massive PE and poor cardiopulmonary reserve. Retrievable filters are recommended over permanent filters with removal of the filter when the risk for PE has resolved and/or when anticoagulation can be safely resumed.

4 Don't administer plasma or prothrombin complex concentrates for non-emergent reversal of vitamin K antagonists (i.e. outside of the setting of major bleeding, intracranial hemorrhage or anticipated emergent surgery).

Blood products can cause serious harm to patients, are costly and are rarely indicated in the reversal of vitamin K antagonists. In non-emergent situations, elevations in the international normalized ratio are best addressed by holding the vitamin K antagonist and/or by administering vitamin K.

5 Limit surveillance computed tomography (CT) scans in asymptomatic patients following curative-intent treatment for aggressive lymphoma.

CT surveillance in asymptomatic patients in remission from aggressive non-Hodgkin lymphoma may be harmful through a small but cumulative risk of radiation-induced malignancy. It is also costly and has not been demonstrated to improve survival. Physicians are encouraged to carefully weigh the anticipated benefits of post-treatment CT scans against the potential harm of radiation exposure. Due to a decreasing probability of relapse with the passage of time and a lack of proven benefit, CT scans in asymptomatic patients more than 2 years beyond the completion of treatment are rarely advisable.

How This List Was Created

The American Society of Hematology (ASH) *Choosing Wisely*® Task Force utilized a modified Delphi technique to collect suggestions from committee members and recipients of its clinically focused newsletter, the *ASH Practice Update*. Respondents were asked to consider the core values of harm, cost, strength of evidence, frequency and control. Fifty-nine of 167 ASH committee members (35%) and 2 recipients of the *ASH Practice Update* submitted 81 unique suggestions. The Task Force used a nominal group technique (NGT) to identify the top 20 items, which were scored by ASH committee and practice community members, with a 46 percent participation rate. ASH's Task Force reviewed all scores to develop a 10-item list. A professional methodologist conducted a systematic literature review on each of the 10 items; the Task Force chair served as the second reviewer. Evidence reviews and source material for the 10 items were shared with ASH's Task Force, which ranked the items according to the core values. The Task Force then identified the top 5 items plus 1 alternate. ASH member content experts provided external validation for the veracity and clarity of the items.

ASH's disclosure and conflict of interest policy can be found at www.hematology.org.

Sources

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

About the American Society of Hematology

The American Society of Hematology (ASH) is the world's largest professional society of hematologists, serving more than 14,000 clinicians and scientists from around the world who are dedicated to furthering the understanding, diagnosis, treatment and prevention of disorders affecting the blood.

For more than 50 years, the Society has led the development of hematology as a discipline by promoting research, patient care, education, training and advocacy in hematology. By providing a forum for clinicians and scientists to share the latest discoveries in the field, ASH is helping to improve care and possibly lead to cures for diseases that affect millions of people, including leukemia, lymphoma, myeloma, anemias and various bleeding and clotting disorders.

For more information, visit www.hematology.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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5 Renal Physicians' Association End-of-Life Care Guidelines, *Pediatric Nephrology, Clinical Journal of the American Society of Nephrology, Journal of Pediatrics, Nephrology Dialysis Transplantation, Archives of Internal Medicine, Nephrology Dialysis and Transplant, New England Journal of Medicine, Palliative Medicine*.

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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.

ASN LEADING THE FIGHT AGAINST KIDNEY DISEASE

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

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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.

AMERICAN SOCIETY OF NUCLEAR CARDIOLOGY

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Choosing Wisely®

An initiative of the ABIM Foundation

American Society for Reproductive Medicine

Five Things Physicians and Patients Should Question

1 Don't perform routine diagnostic laparoscopy for the evaluation of unexplained infertility.

In patients undergoing evaluation for infertility, routine diagnostic laparoscopy should not be performed unless there is a suspicion of pelvic pathology based on clinical history, an abnormal pelvic exam or abnormalities identified with less invasive testing. In patients with a normal hysterosalpingogram or the presence of a unilaterally patent tube, diagnostic laparoscopy typically will not change the initial recommendation for treatment.

2 Don't perform advanced sperm function testing, such as sperm penetration or hemizona assays, in the initial evaluation of the infertile couple.

Studies document that extreme variability exists among these tests, with very little correlation between results and outcomes. They have also been shown not to be cost-effective and often lead to more expensive treatments.

3 Don't perform a postcoital test (PCT) for the evaluation of infertility.

The PCT suffers from poor reproducibility and its predictive value for pregnancy is no better than chance. Utilizing the PCT leads to more tests and treatments but yields no improvement in cumulative pregnancy rates.

4 Don't routinely order thrombophilia testing on patients undergoing a routine infertility evaluation.

There is no indication to order these tests, and there is no benefit to be derived in obtaining them in someone that does not have any history of bleeding or abnormal clotting and in the absence of any family history. This testing is not a part of the infertility workup. Furthermore, the testing is costly, and there are risks associated with the proposed treatments, which would also not be indicated in this routine population.

5 Don't perform immunological testing as part of the routine infertility evaluation.

Diagnostic testing of infertility requires evaluation of factors involving ovulation, fallopian tube patency and spermatogenesis based upon clinical history. Although immunological factors may influence early embryo implantation, routine immunological testing of couples with infertility is expensive and does not predict pregnancy outcome.

How This List Was Created

The Practice Committee of the American Society for Reproductive Medicine (ASRM) reviewed evidence from ASRM's practice documents to identify possible topics along with suggestions for possible topics from the ASRM Board of Directors. By consensus, the Practice Committee narrowed the list to the top five most overused tests within specified parameters. Additional input was sought from the ASRM Board of Directors and incorporated. The final list was reviewed and approved by the ASRM Board of Directors. The ASRM Board of Directors and Practice Committee are comprised of representatives from every aspect of reproductive medicine through our five affiliated societies including the Society for Assisted Reproductive Technology, the Society of Reproductive Surgeons, the Society for Reproductive Endocrinology and Infertility, the Society for Male Reproduction and Urology and the Society of Reproductive Biologists and Technologists.

ASRM's disclosure and conflict of interest policy can be found at www.asrm.org.

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About the American Society for Reproductive Medicine

The American Society for Reproductive Medicine (ASRM) is a multidisciplinary organization dedicated to the advancement of the art, science and practice of reproductive medicine. The Society accomplishes its mission through the pursuit of excellence in education and research and through advocacy on behalf of patients, physicians and affiliated health care providers. The Society is committed to facilitating and sponsoring educational activities for the lay public and continuing medical education activities for professionals who are engaged in the practice of and research in reproductive medicine.

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American Society for Radiation Oncology

ASTRO

TARGETING CANCER CARE

Five Things Physicians and Patients Should Question

1 Don't initiate whole breast radiotherapy as a part of breast conservation therapy in women age ≥50 with early stage invasive breast cancer without considering shorter treatment schedules.

- Whole breast radiotherapy decreases local recurrence and improves survival of women with invasive breast cancer treated with breast conservation therapy. Most studies have utilized "conventionally fractionated" schedules that deliver therapy over 5–6 weeks, often followed by 1–2 weeks of boost therapy.
- Recent studies, however, have demonstrated equivalent tumor control and cosmetic outcome in specific patient populations with shorter courses of therapy (approximately 4 weeks). Patients and their physicians should review these options to determine the most appropriate course of therapy.

2 Don't initiate management of low-risk prostate cancer without discussing active surveillance.

- Patients with prostate cancer have a number of reasonable management options. These include surgery and radiation, as well as conservative monitoring without therapy in appropriate patients.
- Shared decision-making between the patient and the physician can lead to better alignment of patient goals with treatment and more efficient care delivery.
- ASTRO has published patient-directed written decision aids concerning prostate cancer and numerous other types of cancer. These types of instruments can give patients confidence about their choices, improving compliance with therapy.

3 Don't routinely use extended fractionation schemes (>10 fractions) for palliation of bone metastases.

- Studies suggest equivalent pain relief following 30 Gy in 10 fractions, 20 Gy in 5 fractions, or a single 8 Gy fraction.
- A single treatment is more convenient but may be associated with a slightly higher rate of retreatment to the same site.
- Strong consideration should be given to a single 8 Gy fraction for patients with a limited prognosis or with transportation difficulties.

4 Don't routinely recommend proton beam therapy for prostate cancer outside of a prospective clinical trial or registry.

- There is no clear evidence that proton beam therapy for prostate cancer offers any clinical advantage over other forms of definitive radiation therapy. Clinical trials are necessary to establish a possible advantage of this expensive therapy.

5 Don't routinely use intensity modulated radiotherapy (IMRT) to deliver whole breast radiotherapy as part of breast conservation therapy.

- Clinical trials have suggested lower rates of skin toxicity after using modern 3-D conformal techniques relative to older methods of 2-D planning.
- In these trials, the term "IMRT" has generally been applied to describe methods that are more accurately defined as field-in-field 3-D conformal radiotherapy.
- While IMRT may be of benefit in select cases where the anatomy is unusual, its routine use has not been demonstrated to provide significant clinical advantage.

How This List Was Created

Following approval of the participation of the American Society for Radiation Oncology (ASTRO) in the *Choosing Wisely* campaign, a survey was sent to ASTRO committees and panels related to health policy, government relations, and clinical affairs and quality in order to identify potential items for inclusion in the list. A work group, comprised of seven physicians drawn from these three areas, was also selected and convened. The work group members were asked to pick their top eight items from the total of 34 topics that had been suggested in the initial survey. The results were tabulated and a list of the highest scoring items generated, creating a short list of 13 draft items.

Three conference calls were subsequently held to further refine the list and finalize the wording of the items based on input from ASTRO's Board of Directors. A literature review was conducted for each topic by ASTRO staff and each work group member took the lead on writing text and selecting references for one or more draft items. The final items for submission were selected by ASTRO's Board of Directors. ASTRO's disclosure and conflict of interest policy can be found at: www.astro.org.

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About the ABIM Foundation

The mission of the ABIM Foundation is to advance medical professionalism to improve the health care system. We achieve this by collaborating with physicians and physician leaders, medical trainees, health care delivery systems, payers, policymakers, consumer organizations and patients to foster a shared understanding of professionalism and how they can adopt the tenets of professionalism in practice.

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

About the American Society for Radiation Oncology

ASTRO is the premier radiation oncology society in the world, with more than 10,000 members who are physicians, nurses, biologists, physicists, radiation therapists, dosimetrists and other health care professionals that specialize in treating patients with radiation therapies. As the leading organization in radiation oncology, the Society is dedicated to improving patient care through professional education and training, support for clinical practice and health policy standards, advancement of science and research, and advocacy. To learn more about ASTRO, visit www.astro.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

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

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.

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

Commission on Cancer

Commission on Cancer®

Five Things Physicians and Patients Should Question

1 Don't perform surgery to remove a breast lump for suspicious findings unless needle biopsy cannot be done.

- Needle biopsy is large bore core biopsy or vacuum-assisted large bore needle for histology or fine needle aspiration for cytology.
- Needle biopsy may be directed by breast imaging (ultrasound, mammographic, magnetic resonance imaging) or by direct palpation.
- Studies show that confirmation of breast cancer diagnosis prior to any surgery allows for complete multidisciplinary treatment counseling, reduces the overall number of surgical procedures needed for treatment, improves the cosmetic results of surgery and avoids mastectomy resulting from multiple surgical procedures.
- Use of needle biopsy also makes surgery altogether unnecessary for the majority of image-detected breast lesions that require biopsy but prove to be benign.
- Needle biopsy is generally less costly than open surgical biopsy.
- Some breast lesions require surgical biopsy because of a location in the breast that precludes image localization. This may apply to 10–15% of breast lesions. Surgeons performing surgical breast biopsy without preceding needle biopsy should document the reason for no needle biopsy.

2 Don't initiate surveillance testing after cancer treatment without providing the patient a survivorship care plan.

- Inappropriate or overused testing after cancer treatment is common, but provides no value in surveillance for recurrence and often leads to other unnecessary tests, potential morbidity, anxiety, uncertainty and higher cost.
- A survivorship care plan provides the patient and their primary providers an evidence-based road map for surveillance testing and supportive care.
- The Institute of Medicine identified the need for a survivorship care plan as a key factor to help cancer patients transition to long-term surveillance care, avoid unnecessary services and seek appropriate rehabilitative care and emotional support.
- A survivorship care plan includes a summary of the type and stage of the cancer, treatment received, the plan for type and frequency of surveillance testing and information on resources for rehabilitative and supportive care.
- Templates for survivorship care plans are available from organizations including the Livestrong Foundation, the National Coalition for Cancer Survivorship and the American Society of Clinical Oncology.
  - LiveStrong Care Plan: www.livestrongcareplan.org
  - JourneyForward: www.journeyforward.org
  - American Society of Clinical Oncology: www.cancer.net/survivorship/asco-cancer-treatment-summaries

3

Don’t use surgery as the initial treatment without considering presurgical (neoadjuvant) systemic and/or radiation for cancer types and stage where it is effective at improving local cancer control, quality of life or survival.

- In many cancer types, presurgical chemotherapy, hormone/endocrine therapy and/or radiation therapy followed by surgery is better than surgery as the first treatment. This often shrinks the cancer, allowing more limited surgery that maintains organ function, reduces the chances of cancer recurrence and spread and improves the quality of life.
- For example, presurgical therapy may make mastectomy unnecessary with breast cancer, a colostomy unnecessary with rectal cancer, voice-sparing surgery possible with laryngeal cancer and amputation unnecessary with extremity soft tissue sarcoma.
- When used appropriately, there is no evidence that the cancer spreads during presurgical therapy and that cancer survival is the same or better as with initial surgery.
- Despite its known advantages, many people are not provided the advantages of presurgical therapy.
- Disease sites where this should be considered include:
  - Clinical Stage IIB and IIIA Non Small Cell Lung Cancer
  - Clinical T2-4a; Any N positive esophageal cancer
  - Clinical T3 and T4 rectal cancer
  - Clinical T2, T3 or Stage III breast cancer
  - Head and Neck cancer
  - Resectable pancreas cancer
  - Extremity soft tissue sarcomas where resection may affect functional outcomes

4

Don’t perform major abdominal surgery or thoracic surgery without a pathway or standard protocol for postoperative pain control and pneumonia prevention.

- Uncontrolled pain and pneumonia after major abdominal and thoracic surgery are factors that lead to other serious complications and prolonged hospitalization.
- Coordinated care efforts and established care pathways to control pain and prevent pneumonia reduce the frequency of complications and reduce length of hospital stay and should be in place.
- Fewer pulmonary complications occur when adequate analgesia is provided making postoperative pain protocol and pulmonary plan as essential elements of care.
  - Facilities that conduct flow analyses in patients with lung cancer have improved quality care.
- Institutions or hospitals in collaboration with the surgeons and other medical staff should develop these pathways, standard protocol or procedures and assure their implementation.
  - Improvement efforts need to address documentation and standardization of process of care.

5

Don’t initiate cancer treatment without defining the extent of the cancer (through clinical staging) and discussing with the patient the intent of treatment.

- Treatment intent may be diagnostic, curative, maintenance or palliative.
- Many patients, especially those with advanced or metastatic cancer, do not have a full understanding of the intent of cancer treatment – they identify that treatment may be curative when in fact it is given only with palliative intent. They often do not understand the costs, risks and potential side effects of the treatment.
- Palliative therapy may provide relief of symptoms or short-term prolongation of survival, but often can cause substantial toxic effects and can interfere with the patient’s quality of life.
- This directive should be applied to all phases of cancer treatment from initial therapy to treatment for recurrent and metastatic cancer.
- Clinical staging should be performed and documented using information from history and physical examination, relevant biopsy and appropriate imaging based on the type and stage (extent) of the cancer.

How This List Was Created

The American College of Surgeons concluded in its review of this opportunity that it was optimal to submit a separate list of interventions related to cancer from the American College of Surgeons Commission on Cancer. The Commission on Cancer appointed a multidisciplinary task force that met in person in September 2012 and subsequently by conference call and electronic communications.

Recommendations for candidate interventions were solicited from panel members and other leaders from the Commission on Cancer. These panel members were provided a written charge to identify measures that would support the Commission's standards for accreditation in use in more than 1,500 cancer programs across the U.S. In addition, panel members were provided with a full description of the *Choosing Wisely*® campaign and the interventions previously recommended by other organizations both for cancer and all other disorders.

Following initial submission of the candidate interventions, the panel discussed each intervention specifically evaluating the significance of the intervention, the potential scope of variation in care affected by the intervention, and the potential numbers of persons affected by this. The group also discussed the impact on short-term and long-term cost to be gained by implementation of each intervention. The panel voted on each intervention to select the final list of recommended interventions. The panel members then reviewed and refined the wording of each intervention and completed the bulleted supporting documentation and literature citations. The final list of interventions was then approved by the panel and submitted to the leadership of the American College of Surgeons for final approval. The Commission on Cancer's disclosure and conflict of interest policy can be found at www.facs.org.

Commission on Cancer Panel Members

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

About the Commission on Cancer

The Commission on Cancer (CoC) is a consortium of 50 professional organizations dedicated to improving survival and quality of life for cancer patients through standard-setting, prevention, research, education and the monitoring of comprehensive quality care.

Established by the American College of Surgeons in 1922, the multidisciplinary CoC establishes standards to ensure quality, multidisciplinary and comprehensive cancer care delivery in health care settings; conducts surveys in health care settings to assess compliance with those standards; collects standardized data from CoC-accredited health care settings to measure cancer care quality; uses data to monitor treatment patterns and outcomes and enhance cancer control and clinical surveillance activities, and develops effective educational interventions to improve cancer prevention, early detection, cancer care delivery and outcomes in health care settings. For more information, visit www.facs.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

Heart Rhythm Society

Heart Rhythm Society℠

Five Things Physicians and Patients Should Question

1 Don't implant pacemakers for asymptomatic sinus bradycardia in the absence of other indications for pacing.

While pacemaker implantation is clearly indicated in patients with symptomatic sinus node dysfunction, there is no clear evidence that pacemaker implantation benefits asymptomatic patients with sinus bradycardia who have no other reasons for pacing nor need for cardiac resynchronization. Although pacemaker implantation is a relatively low-risk surgical procedure, like any operation, there is both risk and cost. Furthermore, persistent inappropriate right ventricular pacing may have harmful effects on heart function. Current professional society clinical guidelines recommend against (Class III, contraindicated) pacemaker implantation in these patients where the risks outweigh the benefits.

2 Don't implant an implantable cardioverter-defibrillator (ICD) for the primary prevention of sudden cardiac death in patients with New York Heart Association (NYHA) Functional Class IV who are not candidates for either cardiac transplantation, a left ventricular assist device as destination therapy or cardiac resynchronization therapy (CRT).

Because patients with severe (New York Heart Association functional class IV) congestive heart failure who are not eligible for advanced therapies such as ventricular assist devices, cardiac resynchronization or cardiac transplantation have extremely high mortality, they were not included in the primary prevention trials of ICD therapy. As such, current clinical professional society guidelines recommend against (Class III, contraindicated) implantation of an ICD in such patients.

3 Don't implant an ICD for the primary prevention of sudden cardiac death in patients unlikely to survive at least one year due to non-cardiac comorbidity.

Because the explicit goal of primary prevention of sudden death with an ICD is the prevention of death due to life-threatening ventricular arrhythmias in patients with an otherwise reasonable expectation of survival, current clinical professional society guidelines recommend against (Class III, contraindicated) implantation of an ICD when there is no reasonable expectation of survival from a non-cardiac illness for at least one year.

4 Don't ablate the atrioventricular node in patients with atrial fibrillation when both symptoms and heart rate are acceptably controlled by well-tolerated medical therapy.

Atrioventricular node ablation and pacemaker implantation may provide benefit in some patients when rate and related symptoms cannot be controlled by medication therapy,(Class IIa, indicated) or when there is concern for possible tachycardia-induced cardiomyopathy (Class IIb, may be considered). However, according to current professional society clinical guidelines, the risks of AV node ablation outweigh the benefits among patients with no symptoms and who have appropriate rate control with well-tolerated medical therapy.

5 Don't use Vaughan-Williams Class Ic antiarrhythmic drugs as a first-line agent for the maintenance of sinus rhythm in patients with ischemic heart disease who have experienced prior myocardial infarction.

Class Ic antiarrhythmic agents (i.e., flecainide and encainide,) have been demonstrated to increase mortality in patients treated with these agents after myocardial infarction, and as a result, current clinical professional society guidelines recommend against (Class III, contraindicated) the use of these agents (and propafenone, because it is also a Class Ic agent) in patients with known coronary artery disease with left ventricular dysfunction or concern for possible ischemic myocardium at risk.

How This List Was Created

The Heart Rhythm Society (HRS) asked its standing Quality Improvement Subcommittee, comprised of twelve experienced physicians and allied professionals, to recommend five procedures that should not be performed or should be performed more rarely and only in specific circumstances. The recommendations were identified based on existing appropriate use criteria and guidelines. The HRS Health Policy Committee then reviewed the five recommendations before sending the list to the HRS Board of Trustees for final review and approval.

HRS's disclosure and conflict of interest policy can be found at http://www.hrsonline.org/About-HRS/Heart-Rhythm-Society-Governance/Disclosure-Policy#axzz2ILTZwIkZ.

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About the Heart Rhythm Society

The Heart Rhythm Society is the international leader in science, education and advocacy for cardiac arrhythmia professionals and patients, and the primary information resource on heart rhythm disorders. Its mission is to improve the care of patients by promoting research, education and optimal health care policies and standards. Representing more than 5,800 heart rhythm professionals in more than 70 countries around the world, HRS is pleased to partner in the *Choosing Wisely*® campaign to help ensure that people living with heart rhythm disorders receive optimal care and improved quality of life. The Society also is a leader of the "Apples and Oranges" Sudden Cardiac Arrest Awareness Campaign aimed at sharing the differences between SCA and heart attack and the "AFib Feels Like" Awareness Campaign aimed at helping people understand the symptoms, risks and treatment options for Atrial Fibrillation, the most common heart rhythm disorder. For more information, follow HRS on Twitter, Facebook or LinkedIn.

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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North American Spine Society

NASS NORTH AMERICAN SPINE SOCIETY

Five Things Physicians and Patients Should Question

1 Don't recommend advanced imaging (e.g., MRI) of the spine within the first six weeks in patients with non-specific acute low back pain in the absence of red flags.

In the absence of red flags, advanced imaging within the first six weeks has not been found to improve outcomes, but does increase costs. Red flags include, but are not limited to: trauma history, unintentional weight loss, immunosuppression, history of cancer, intravenous drug use, steroid use, osteoporosis, age > 50, focal neurologic deficit and progression of symptoms.

2 Don't perform elective spinal injections without imaging guidance, unless contraindicated.

Elective spinal injections, such as epidural steroid injections, should be performed under imaging guidance using fluoroscopy or CT with contrast enhancement (unless contraindicated) to ensure correct placement of the needle and to maximize diagnostic accuracy and therapeutic efficacy. Failure to use appropriate imaging may result in inappropriate placement of the medication, thereby decreasing the efficacy of the procedure and increasing the need for additional care.

3 Don't use Bone Morphogenetic Protein (rhBMP) for routine anterior cervical spine fusion surgery.

Bone Morphogenic Protein is a compound which stimulates bone formation and healing. Life-threatening complications have been reported in the routine use of recombinant human rhBMP in anterior cervical spine fusion surgery, due to swelling of the soft tissues. This may lead to difficulty swallowing or pressure on the airway.

4 Don't use electromyography (EMG) and nerve conduction studies (NCS) to determine the cause of axial lumbar, thoracic or cervical spine pain.

Electromyography and nerve conduction studies are measures of nerve and muscle function. They may be indicated when there is concern for a neurologic injury or disorder, such as the presence of leg or arm pain, numbness or weakness associated with compression of a spinal nerve. As spinal nerve injury is not a cause of neck, mid back or low back pain, EMG/NCS have not been found to be helpful in diagnosing the underlying causes of axial lumbar, thoracic and cervical spine pain.

5 Don't recommend bed rest for more than 48 hours when treating low back pain.

In patients with low back pain, bed rest exceeding 48 hours in duration has not been shown to be of benefit.

How This List Was Created

The North American Spine Society (NASS) appointed a multidisciplinary task force to identify five areas in which to make recommendations. Based on the scientific evidence, existing clinical practice recommendations and expert opinion, the task force collaboratively identified a draft list of nine recommendations that was subsequently submitted to the NASS Board of Directors for review and ranking. After further refinement, the final list was reviewed and approved by the NASS Board of Directors.

NASS' disclosure and conflict of interest policy can be found at: www.spine.org/Pages/PracticePolicy/EthicsProfConduct/NASSDisclosurePolicy.aspx.

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THIS CHOOSING WISELY DOCUMENT DOES NOT REPRESENT A "STANDARD OF CARE," *nor is it intended as a fixed treatment protocol. It is anticipated that there will be patients who will require less or more treatment than the average. It is also acknowledged that in atypical cases, treatment falling outside this recommendation list will sometimes be necessary. This document should not be seen as prescribing the type, frequency or duration of intervention. Treatment should be based on the individual patient's need and physician's professional judgment. This document is designed to function as a guide and should not be used as the sole reason for denial of treatment and services. This document is not intended to expand or restrict a health care provider's scope of practice or to supersede applicable ethical standards or provisions of law, but to encourage discussion of these issues between physician and patient, encourage active patient participation in health care decision-making, and foster greater mutual understanding.*

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About the North American Spine Society

NASS is a multidisciplinary medical organization dedicated to fostering the highest quality, evidence-based and ethical spine care by promoting education, research and advocacy. NASS is comprised of more than 7,500 members from several disciplines including orthopedic surgery, neurosurgery, physiatry, neurology, radiology, anesthesiology, research, physical therapy and other spine care professionals.

For more information, visit www.spine.org and find NASS on: Facebook www.facebook.com/NASS.Spine and Twitter www.twitter.com/NASSspine.

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

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Society for Cardiovascular Angiography and Interventions

SCAI

Five Things Physicians and Patients Should Question

1 Avoid performing routine stress testing after percutaneous coronary intervention (PCI) without specific clinical indications.

In patients who have undergone successful revascularization with PCI and are now symptom free, routine screening via stress testing can lead to the performance of additional procedures with little clinical benefit. Therefore, testing should generally be limited to patients with changes in clinical status (for example: new symptoms or decreasing exercise tolerance).

2 Avoid coronary angiography in post-coronary artery bypass graft (CABG) and post-PCI patients who are asymptomatic, or who have normal or mildly abnormal stress tests and stable symptoms not limiting quality of life.

In the majority of patients who have been completely revascularized with PCI or CABG and are now symptom free, routine coronary angiography is unlikely to identify additional blockages that, if treated, will lead to treatments that will improve quality of life. Therefore, angiography should be limited to patients with changes in clinical status (for example: new symptoms or decreasing exercise tolerance, or significant abnormalities on clinically indicated stress testing).

3 Avoid coronary angiography for risk assessment in patients with stable ischemic heart disease (SIHD) who are unwilling to undergo revascularization or who are not candidates for revascularization based on comorbidities or individual preferences.

Physicians should discuss the goal of angiography with patients before it is performed, including the possible role of revascularization with bypass surgery or coronary intervention. For patients unwilling or unable to undergo revascularization, the need for angiography is less compelling.

4 Avoid coronary angiography to assess risk in asymptomatic patients with no evidence of ischemia or other abnormalities on adequate non-invasive testing.

Asymptomatic patients who have no evidence of ischemia or other abnormalities (for example: arrhythmias) on adequate non-invasive testing are at very low risk for cardiac events. In these patients, coronary angiography is unlikely to add appreciable prognostic value.

5 Avoid PCI in asymptomatic patients with stable SIHD without the demonstration of ischemia on adequate stress testing or with normal fractional flow reserve (FFR) testing.

For patients with stable ischemic heart disease, in the absence of symptoms, there is limited clinical benefit to PCI unless performed on a lesion with demonstrable hemodynamic significance (FFR <0.8) or causing a significant amount of ischemia as assessed by non-invasive stress testing. Rare exceptions would be a significant left main coronary artery lesion or a >90% proximal lesion in a major coronary artery.

How This List Was Created

Members of the SCAI Quality Improvement Committee reviewed the appropriate use criteria for catheterization and percutaneous coronary revascularization and the guidelines for stable ischemic heart disease and percutaneous coronary revascularization. The Committee extracted this list from these documents, which have been developed by the Society for Cardiovascular Angiography and Interventions, American College of Cardiology Foundation, American Heart Association and other professional societies over the past four years.

Appropriate use criteria grade clinical scenarios as appropriate, uncertain (or sometimes appropriate), or inappropriate (or rarely appropriate) for catheterization or coronary intervention. Guidelines describe circumstances when catheterization or coronary interventions are recommended (Class I), are probably recommended (Class IIa), may be reasonable (Class IIb), or are not recommended (Class III). The items in this *Choosing Wisely*® list were selected from among the scenarios rated as inappropriate (or rarely appropriate) by the appropriate use criteria or as Class III (not recommended) by the guidelines. These items were selected (rather than making new items for *Choosing Wisely*®) because these appropriate use criteria and guidelines have been carefully vetted, adjudicated and agreed upon by myriad experts from many societies.

The proposed *Choosing Wisely*® items were critiqued by the SCAI Quality Improvement Committee and several authors of documents cited in this list. They were approved by the SCAI Executive Committee. The Committees would like to emphasize that the science of guidelines and appropriate use criteria should be complementary to the art of clinical judgment for best care of the individual patient.

SCAI's disclosure and conflict of interest policy can be found at www.scai.org.

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About the Society for Cardiovascular Angiography and Interventions

The Society for Cardiovascular Angiography and Interventions (SCAI) is the only U.S.-based professional medical society focused exclusively on adult and pediatric invasive/interventional cardiovascular care. For more than 35 years, SCAI has supported optimal patient care through education, advocacy and the advancement of quality standards. SCAI is a recognized leader in quality improvement and a proponent of efforts that help patients and their families make informed decisions about prevention, symptom recognition, testing and treatment. This is the primary goal of www.SecondsCount.org, SCAI's comprehensive website that encourages collaborative decision-making between patients and their healthcare providers. SCAI is pleased to join the *Choosing Wisely*® campaign and looks forward to furthering its goal of promoting conversations among patients and physicians.

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Critical Care Societies Collaborative - **Critical Care**

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Society of Critical Care Medicine The Intensive Care Professionals

Five Things Physicians and Patients Should Question

1

Don't order diagnostic tests at regular intervals (such as every day), but rather in response to specific clinical questions.

Many diagnostic studies (including chest radiographs, arterial blood gases, blood chemistries and counts and electrocardiograms) are ordered at regular intervals (e.g., daily). Compared with a practice of ordering tests only to help answer clinical questions, or when doing so will affect management, the routine ordering of tests increases health care costs, does not benefit patients and may in fact harm them. Potential harms include anemia due to unnecessary phlebotomy, which may necessitate risky and costly transfusion, and the aggressive work-up of incidental and non-pathological results found on routine studies.

2

Don't transfuse red blood cells in hemodynamically stable, non-bleeding ICU patients with a hemoglobin concentration greater than 7 g/dL.

Most red blood cell transfusions in the ICU are for benign anemia rather than acute bleeding that causes hemodynamic compromise. For all patient populations in which it has been studied, transfusing red blood cells at a threshold of 7 g/dL is associated with similar or improved survival, fewer complications and reduced costs compared to higher transfusion triggers. More aggressive transfusion may also limit the availability of a scarce resource. It is possible that different thresholds may be appropriate in patients with acute coronary syndromes, although most observational studies suggest harms of aggressive transfusion even among such patients.

3

Don't use parenteral nutrition in adequately nourished critically ill patients within the first seven days of an ICU stay.

For patients who are adequately nourished prior to ICU admission, parenteral nutrition initiated within the first seven days of an ICU stay has been associated with harm, or at best no benefit, in terms of survival and length of stay in the ICU. Early parenteral nutrition is also associated with unnecessary costs. These findings are true even among patients who cannot tolerate enteral nutrition. Evidence is mixed regarding the effects of early parenteral nutrition on nosocomial infections. For patients who are severely malnourished directly prior to their ICU admission, there may be benefits to earlier parenteral nutrition.

4

Don't deeply sedate mechanically ventilated patients without a specific indication and without daily attempts to lighten sedation.

Many mechanically ventilated ICU patients are deeply sedated as a routine practice despite evidence that using less sedation reduces the duration of mechanical ventilation and ICU and hospital length of stay. Several protocol-based approaches can safely limit deep sedation, including the explicit titration of sedation to the lightest effective level, the preferential administration of analgesic medications prior to initiating anxiolytics and the performance of daily interruptions of sedation in appropriately selected patients receiving continuous sedative infusions. Although combining these approaches may not improve outcomes compared to one approach alone, each has been shown to improve patient outcomes compared with approaches that provide deeper sedation for ventilated patients.

5

Don't continue life support for patients at high risk for death or severely impaired functional recovery without offering patients and their families the alternative of care focused entirely on comfort.

Patients and their families often value the avoidance of prolonged dependence on life support. However, many of these patients receive aggressive life-sustaining therapies, in part due to clinicians' failures to elicit patients' values and goals, and to provide patient-centered recommendations. Routinely engaging high-risk patients and their surrogate decision makers in discussions about the option of foregoing life-sustaining therapies may promote patients' and families' values, improve the quality of dying and reduce family distress and bereavement. Even among patients pursuing life-sustaining therapy, initiating palliative care simultaneously with ongoing disease-focused therapy may be beneficial.

How This List Was Created

This document was prepared as an initiative of the Critical Care Societies Collaborative, which includes the American Association of Critical-Care Nurses, the American College of Chest Physicians, the American Thoracic Society and the Society of Critical Care Medicine. Each of these four societies was invited to nominate up to three members to join the taskforce. The final taskforce included 10 members representing all four societies and the disciplines of internal medicine, surgery, anesthesiology, emergency medicine and critical care nursing. Taskforce members initially proposed 58 items for consideration. The taskforce evaluated each item on five criteria (evidence, prevalence, cost, relevance, innovation), and agreed to narrow the list to 16 items. The taskforce debated the conceptual merits of these 16, and selected nine in which to pursue in-depth evidence reviews and consultations with external content experts. Taskforce members then independently scored each item on a scale from 1-9, rating each item on its overall impact as well as on each of the five criteria. The five items with the best mean overall scores were retained in the "penultimate" list. The taskforce then reviewed and edited the wording of items on the penultimate list, and submitted it to the four societies' executive committees. The executive committees sought feedback from additional experts in the field, debated the items and provided written comments to the taskforce. The taskforce deliberated and incorporated these suggestions where appropriate to create the final list, resolving any conflicts through discussion. All four societies endorsed the final list.

Members of the taskforce were: Scott D. Halpern, MD, PhD (Chair), Deborah Becker, PhD, RN, J. Randall Curtis, MD, MPH, Robert Fowler, MD, Robert Hyzy, MD, Jeremy M. Kahn, MD, MSc, Lewis Kaplan, MD, Nishi Rawat, MD, Curtis Sessler, MD and Hannah Wunsch, MD, MSc.

The disclosure and conflict of interest policies for the American Association of Critical Care Nurses, the American College of Chest Physicians, the American Thoracic Society and the Society of Critical Care Medicine can be found at www.accn.org, www.chestnet.org, www.thoracic.org and www.sccm.org respectively.

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About the Collaborative Societies

The Critical Care Societies Collaborative (CCSC) was established in 2000 as a partnership among the four major professional and scientific societies whose members care for America's critically ill and injured. These societies are: the American Association of Critical-Care Nurses (AACN), the American College of Chest Physicians (ACCP), the American Thoracic Society (ATS) and the Society of Critical Care Medicine (SCCM). The CCSC leverages its collective and multi-professional expertise through communication, education, research and advocacy efforts. The CCSC speaks with a unified voice representing more than 150,000 critical care professionals to bring important issues to the forefront in public policy and in the health care arena.

To learn more about the American Association of Critical-Care Nurses, the American College of Chest Physicians, the American Thoracic Society and the Society of Critical Care Medicine, please visit www.accn.org, www.chestnet.org, www.thoracic.org and www.sccm.org respectively.

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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 for Cardiovascular Magnetic Resonance

SCMR

Five Things Physicians and Patients Should Question

1 Don't perform stress cardiovascular magnetic resonance (CMR) in the initial evaluation of chest pain patients with low pretest probability of coronary artery disease.

There are lower cost stress tests available for the initial evaluation of low-risk chest pain patients, particularly when they have a normal electrocardiogram and can exercise. Stress CMR can be valuable in evaluating intermediate-risk patients with abnormal electrocardiograms or who cannot exercise, or when initial test results are equivocal.

2 Don't perform stress CMR as a pre-operative assessment in patients scheduled to undergo low-risk, non-cardiac surgery.

Stress testing has not been shown to be useful in patients undergoing low-risk surgery. Therefore, stress CMR in these patients will not improve outcomes and will increase cost.

3 Don't perform stress CMR in patients with acute chest pain and high probability of coronary artery disease.

Stress testing can increase risk and delay therapy in patients with acute chest pain and markers of high risk, such as ST segment elevation and/or positive cardiac enzymes. After initial evaluation and therapy, non-stress CMR may aid in diagnosing ischemic or non-ischemic myocardial injury.

4 Don't perform coronary CMR in symptomatic patients with a history of coronary stents.

Coronary stents cause artifacts on CMR that preclude accurate evaluation. Therefore, coronary CMR in these patients will not be diagnostic.

5 Don't perform coronary CMR in the initial evaluation of asymptomatic patients.

Coronary CMR has not been well established for the evaluation of coronary atherosclerosis. Coronary CMR is primarily indicated for detecting and characterizing anomalous coronary arteries.

How This List Was Created

The Society for Cardiovascular Magnetic Resonance (SCMR) has developed the following list of tests involving cardiovascular magnetic resonance imaging (CMR) thought to be overused or misused. This list was developed by a subcommittee of the SCMR and reviewed and approved by the SCMR Board of Trustees. The list was based primarily on appropriateness guidelines for CMR, published by both the American College of Cardiology and the American College of Radiology, with the goal of limiting the inappropriate use of expensive imaging testing in low-risk patients or where it is unlikely to add to clinical management.

SCMR's disclosure and conflict of interest policy can be found at www.scmr.org.

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About the Society for Cardiovascular Magnetic Resonance

Founded in 1994, the Society for Cardiovascular Magnetic Resonance (SCMR) is a professional association whose vision is to be the leading international representative and advocate for all physicians, scientists and technologists working in cardiovascular magnetic resonance imaging (CMR) to improve patient outcomes through excellence in education, training, standards, research and development. SCMR's membership includes professionals from around the globe. Among the primary activities of SCMR are its annual scientific sessions and other courses, the open access online *Journal of Cardiovascular Magnetic Resonance* (www.jcmr-online.com) and the Society website (www.scmr.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 General Internal Medicine

SGIM Society of General Internal Medicine

Five Things Physicians and Patients Should Question

1 Don't recommend daily home finger glucose testing in patients with Type 2 diabetes mellitus not using insulin.

Self-monitoring of blood glucose (SMBG) is an integral part of patient self-management in maintaining safe and target-driven glucose control in type 1 diabetes. However, there is no benefit to daily finger glucose testing in patients with type 2 diabetes mellitus who are not on insulin or medications associated with hypoglycemia, and there is negative economic impact and potential negative clinical impact of daily glucose testing. SMBG should be reserved for patients during the titration of their medication doses or during periods of changes in patients' diet and exercise routines.

2 Don't perform routine general health checks for asymptomatic adults.

Routine general health checks are office visits between a health professional and a patient exclusively for preventive counseling and screening tests. In contrast to office visits for acute illness, specific evidence-based preventive strategies, or chronic care management such as treatment of high blood pressure, regularly scheduled general health checks without a specific cause including the "health maintenance" annual visit, have not shown to be effective in reducing morbidity, mortality or hospitalization, while creating a potential for harm from unnecessary testing.

3 Don't perform routine pre-operative testing before low-risk surgical procedures.

Pre-operative assessment is expected before all surgical procedures. This assessment includes an appropriately directed and sufficiently comprehensive history and physical examination, and, in some cases, properly includes laboratory and other testing to help direct management and assess surgical risk. However, pre-operative testing for low-risk surgical procedures (such as cataract extraction) results in unnecessary delays and adds to significant avoidable costs and should be eliminated.

4 Don't recommend cancer screening in adults with life expectancy of less than 10 years.

Screening for cancer can be lifesaving in otherwise healthy at-risk patients. While screening tests lead to a mortality benefit, which emerges years after the test is performed, they expose patients to immediate potential harms. Patients with life expectancies of less than 10 years are unlikely to live long enough to derive the distant benefit from screening. However, these patients are in fact more likely to experience the harms since patients with limited life expectancy are more likely to be frail and more susceptible to complications of testing and treatments. Therefore the balance of potential benefits and harms does not favor recommending cancer screening in patients with life expectancies of less than 10 years.

5 Don't place, or leave in place, peripherally inserted central catheters for patient or provider convenience.

Peripherally inserted central catheters (or "PICCs") are commonly used devices in contemporary medical practice that are associated with two costly and potentially lethal health care-acquired complications: central-line associated bloodstream infection (CLABSI) and venous thromboembolism (VTE). Given the clinical and economic consequences of these complications, placement of PICCs should be limited to acceptable indications (long-term intravenous antibiotics, total parenteral nutrition, chemotherapy and frequent blood draws). PICCs should be promptly removed when acceptable indications for their use ends.

How This List Was Created

An ad hoc committee of the Society of General Internal Medicine (SGIM) was impaneled, taking advantage of the clinical expertise of members from the existing Clinical Practice and the Evidence-Based Medicine Committees within the Society. Members of the ad hoc committee were then solicited to determine possible topics for consideration. The topics chosen were selected to meet the goals of the *Choosing Wisely*® campaign, utilizing the unique clinical perspective of members of the Society in ambulatory General Medicine as well as hospital-based practice. The final topics were selected by a vote of committee members based on the strength of the existing evidence, the unique standing members of the Society have in addressing the clinical topics selected, as well as contributions the recommendations would make in terms of patient safety, quality and economic impact. The final recommendations were approved by the governing Council of SGIM.

For SGIM's disclosure and conflict of interest policy, please visit www.sgim.org.

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ABIM FOUNDATION®

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About the Society of General Internal Medicine

The membership of the Society of General Internal Medicine (SGIM) consists of academic general internal medicine faculty practicing, teaching and conducting research in outpatient settings as well as in our nation's teaching hospitals. As leading teachers of the next generation of physicians, we are committed to moving the practice of medicine to a more evidence-based approach. We are deeply committed to using science to improve our knowledge-base so that our patients can receive the best treatments, the optimal prevention care and the highest quality of life. We believe that the *Choosing Wisely* campaign mirrors these same commitments to the evidence-based practice of medicine for the benefit of our patients.

SGIM Society of General Internal Medicine

To learn more about the SGIM, visit www.sgim.org.

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Choosing Wisely®

An initiative of the ABIM Foundation

Society of Gynecologic Oncology

Society of Gynecologic Oncology

Five Things Physicians and Patients Should Question

1 Don't screen low risk women with CA-125 or ultrasound for ovarian cancer.

CA-125 and ultrasound in low risk, asymptomatic women have not led to diagnosis of ovarian cancer in earlier stages of disease or reduced ovarian cancer mortality. False positive results of either test can lead to unnecessary procedures, which have risks of complication.

2 Don't perform Pap tests for surveillance of women with a history of endometrial cancer.

Pap testing of the top of the vagina in women treated for endometrial cancer does not improve detection of local recurrence. False positive Pap smears in this group can lead to unnecessary procedures such as colposcopy and biopsy.

3 Don't perform colposcopy in patients treated for cervical cancer with Pap tests of low-grade squamous intraepithelial lesion (LGSIL) or less.

Colposcopy for low-grade abnormalities in this group does not detect recurrence unless there is a visible lesion and is not cost effective.

4 Avoid routine imaging for cancer surveillance in women with gynecologic cancer, specifically ovarian, endometrial, cervical, vulvar and vaginal cancer.

Imaging in the absence of symptoms or rising tumor markers has shown low yield in detecting recurrence or impacting overall survival.

5 Don't delay basic level palliative care for women with advanced or relapsed gynecologic cancer, and when appropriate, refer to specialty level palliative medicine.

There is now an evidence-based consensus among physicians who care for cancer patients that palliative care improves symptom burden and quality of life. Palliative care empowers patients and physicians to work together to set appropriate goals for care and outcomes. Palliative care can and should be delivered in parallel with cancer directed therapies in appropriate patients.

How This List Was Created

The Society of Gynecologic Oncology (SGO) created a "Cost of Care" workgroup in response to the ABIM Foundation's *Choosing Wisely*® campaign. Workgroup members are comprised of the Society's clinical practice committee that is made up of gynecologic oncologists, medical oncologists, nurse practitioners, pharmacists and other allied health providers. A literature review was conducted to identify areas of overutilization or unproven clinical benefit and areas of underutilization in the presence of evidence-based guidelines. The workgroup then evaluated these data and presented a list of five topics to the membership of the clinical practice committee and then to the SGO Board of Directors for approval. The five selected interventions were agreed upon as the most important components for women with gynecologic malignancies and their providers to consider.

SGO's disclosure and conflict of interest policy can be found at www.sgo.org.

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About the Society of Gynecologic Oncology

The Society of Gynecologic Oncology (SGO) is a 501(c) 6 national medical specialty organization of physicians and allied health care professionals who are trained in the comprehensive management of women with malignancies of the reproductive tract. The Society's membership, totaling more than 1,600, is primarily comprised of gynecologic oncologists, as well as other related medical specialists including medical oncologists, radiation oncologists, nurses, social workers and pathologists. SGO members provide multidisciplinary cancer treatment including chemotherapy, radiation therapy, surgery and supportive care.

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

About the Foundation for Gynecologic Oncology

The Foundation for Gynecologic Oncology is a 501(c) 3 organization that ensures that SGO meets the needs and provides the resources for members and the women's cancer care community.

For more information, please visit www.sgo.org/foundation.

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Choosing Wisely®

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

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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About the Society of Hospital Medicine

Representing the fastest growing specialty in modern healthcare, the Society of Hospital Medicine (SHM) is the leading medical society for more than 34,000 hospitalists and their patients. SHM is dedicated to promoting the highest quality care for all hospitalized patients and overall excellence in the practice of hospital medicine through quality improvement, education, advocacy and research. Over the past decade, studies have shown that hospitalists can contribute to decreased patient lengths of stay, reductions in hospital costs and readmission rates, and increased patient satisfaction.

For more information about SHM and hospital medicine, visit www.hospitalmedicine.org.

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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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Society for Maternal-Fetal Medicine

Five Things Physicians and Patients Should Question

1 Don't do an inherited thrombophilia evaluation for women with histories of pregnancy loss, intrauterine growth restriction (IUGR), preeclampsia and abruption.

Scientific data supporting a causal association between either methylenetetrahydrofolate reductase (MTHFR) polymorphisms or other common inherited thrombophilias and adverse pregnancy outcomes, such as recurrent pregnancy loss, severe preeclampsia and IUGR, are lacking. Specific testing for antiphospholipid antibodies, when clinically indicated, should be limited to lupus anticoagulant, anticardiolipin antibodies and beta 2 glycoprotein antibodies.

2 Don't place a cerclage in women with short cervix who are pregnant with twins.

Women with a short cervical length who are pregnant with twins are at very high risk for delivering preterm, but the scientific data, including a meta-analysis of data published on this issue, shows that cerclage in this clinical situation not only is not beneficial, but may in fact be harmful, i.e., associated with an increase in preterm births.

3 Don't offer noninvasive prenatal testing (NIPT) to low-risk patients or make irreversible decisions based on the results of this screening test.

NIPT has only been adequately evaluated in singleton pregnancies at high risk for chromosomal abnormalities (maternal age >35, positive screening, sonographic findings suggestive of aneuploidy, translocation carrier at increased risk for trisomy 13, 18 or 21, or prior pregnancy with a trisomy 13, 18 or 21). Its utility in low-risk pregnancies remains unclear. False positive and false negative results occur with NIPT, particularly for trisomy 13 and 18. Any positive NIPT result should be confirmed with invasive diagnostic testing prior to a termination of pregnancy. If NIPT is performed, adequate pretest counseling must be provided to explain the benefits and limitations.

4 Don't screen for intrauterine growth restriction (IUGR) with Doppler blood flow studies.

Studies that have attempted to screen pregnancies for the subsequent occurrence of IUGR have produced inconsistent results. Furthermore, no standards have been established for the optimal definition of an abnormal test, best gestational age for the performance of the test or the technique for its performance. However, once the diagnosis of IUGR is suspected, the use of antenatal fetal surveillance, including umbilical artery Doppler flow studies, is beneficial.

5 Don't use progestogens for preterm birth prevention in uncomplicated multifetal gestations.

The use of progestogens has not been shown to reduce the incidence of preterm birth in women with uncomplicated multifetal gestations.

How This List Was Created

As a national medical specialty society, the Society for Maternal-Fetal Medicine relies on the input of any number of its committees in the development of various documents. In the case of the items included in this list, the Publications Committee reviewed the literature and evidence from SMFM's published documents for possible topics. A sub-group of the Committee initially developed a list of 10 items that the Committee then ranked for the top five with input and suggestions by the Society's Executive Committee. The final list has been reviewed and approved by the Society's Risk Management Committee and Executive Committee.

SMFM's disclosure and conflict of interest policy can be found at www.smfm.org.

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About the Society for Maternal-Fetal Medicine

The Society for Maternal-Fetal Medicine (SMFM) is a society of physicians and scientists who are dedicated to the optimization of pregnancy and perinatal outcomes. SMFM was established in 1977 and is the membership organization for obstetricians/gynecologists who have additional formal education and training in maternal-fetal medicine. There are currently about 2,000 active members of SMFM. The Society hosts an annual scientific meeting in which new ideas and research in the area of maternal-fetal medicine are presented. The Society is also an advocate for improving public policy and expanding research funding and opportunities in the area of maternal-fetal medicine.

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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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The Society of Thoracic Surgeons

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 ABIM Foundation

The mission of the ABIM Foundation is to advance medical professionalism to improve the health care system. We achieve this by collaborating with physicians and physician leaders, medical trainees, health care delivery systems, payers, policymakers, consumer organizations and patients to foster a shared understanding of professionalism and how they can adopt the tenets of professionalism in practice.

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

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

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.

For more information, visit www.vascularmed.org.

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