

Recommendations from the Society for Cardiovascular Angiography & Interventions, and Pediatric and Neuroscience Nurses Associations

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This is my 41st article on Choosing Wisely from the American Board of Internal Medicine (ABIM) Foundation. As noted in previous issues of *JLGH*, each specialty group is developing “Five or More Things That Physicians and Patients Should Question.”

All items are developed to encourage discussion between physicians and their patients about which tests and procedures are best in each case. Additional resources are available online at choosingwisely.org.

RECOMMENDATIONS FROM THE SOCIETY FOR CARDIOVASCULAR ANGIOGRAPHY & INTERVENTIONS

1. Routine stress testing after percutaneous coronary intervention (PCI) without specific clinical indications should be avoided. In patients who have undergone successful revascularization with PCI and are symptom free, routine screening by a stress test can lead to the performance of additional procedures with little clinical benefit. Testing therefore should be generally limited to patients with changes in clinical status (e.g., new symptoms or decreasing exercise tolerance).¹

2. Patients who are post-coronary artery bypass graft (CABG) and post-PCI who are asymptomatic, or who have normal or mildly abnormal stress tests and stable symptoms not limiting quality of life, should avoid coronary angiography. For most 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 improvements in quality of life. Angiography should therefore be limited to patients with changes in clinical status.

3. Patients with stable ischemic heart disease who are unwilling to undergo revascularization or are not candidates for revascularization based on comorbidities or individual preferences should avoid coronary angiography for risk assessment. Physicians should discuss the goal of angiography with patients before it is performed, including the possible role for revascularization with bypass surgery or coronary intervention. For patients unwilling or unable to undergo revascularization, the need for angiography is less compelling.

4. Asymptomatic patients with no evidence of ischemia or other abnormalities on adequate non-invasive testing should avoid coronary angiography. These patients are at very low risk for cardiac events, and coronary angiography is unlikely to add appreciable prognostic value.

5. Stable, asymptomatic patients with normal or only mildly abnormal adequate stress results should avoid PCI. 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 (fractional flow reserve ≤ 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.²

RECOMMENDATIONS FROM PEDIATRIC AND NEUROSCIENCE NURSES ASSOCIATIONS

The following offers “eight things nurses and patients should question.” The list compiles suggestions from the American Pediatric Surgical Nurses Association, the American Association of Neuroscience Nurses, and the Society of Pediatric Nurses.

1. A head CT to assess for shunt failure in children with hydrocephalus should not routinely be ordered. Because CT is the usual mode of imaging for children with hydrocephalus, these patients have a much higher cumulative radiation exposure than the average population. That increases their risk of cancer. Consider using head ultrasounds when there is an open fontanel or a rapid-sequence MRI scan to reduce the amount of ionizing radiation exposure to pediatric patients with a ventricular shunt. A rapid-sequence MRI is less expensive than a formal MRI and comparable in cost to a CT scan. Because the rapid-sequence MRI is quick, sedation is not needed, which further reduces costs and medical risks of sedation. A CT scan can be used for emergencies and if the child has implanted metal or a device that is not compatible with an MRI.

2. Neurologically healthy children who have a simple febrile seizure should not routinely be ordered an

EEG. Febrile seizures are the most commonly occurring seizures in the first 60 months of life. Attention should be directed at finding the cause of the fever and treating it. An EEG has not been shown to predict recurrence of febrile seizures or future epilepsy in patients with simple febrile seizures. An EEG can be ordered for children that present with afebrile seizures, complex febrile seizures, and in children with neurological insult.³

3. Diazepam should not be administered for muscle spasms following spine surgery in the elderly. Treatment of these spasms should include both pharmacologic and non-pharmacologic interventions. Diazepam can be problematic due to its long half-life and many active metabolites. Benzodiazepines have consistently been associated with falls in the aging population and should be avoided. Effective non-pharmacologic interventions for use include heat, cold, repositioning, and massage.

4. Lumbar puncture opening pressure should not be used as a reliable measure of intracranial pressure in children with severe chronic headache. Lumbar puncture pressure measurement can vary with patient position and level of the manometer, and anesthetic agents can also cause false readings. An intracranial monitor measures intracranial pressure over time as the patient goes about daily activities. Inaccurate readings can lead to unnecessary surgeries and medical treatments.

5. Stroke patients should not be ordered “formal” swallow evaluation unless they fail their initial swallow screen. Dysphasia occurs in 50% to 60% of acute stroke patients after a stroke. Swallow screening is critical in the rapid identification of risk of aspiration in patients presenting with acute stroke symptoms. The purpose of a swallowing screen is to identify those who do not need a formal evaluation and who can safely take food and medication by mouth. Note that the Toronto Bedside Swallowing Screening Test (TOR-BSST) has been validated for stroke patients and has shown high sensitivity and high negative predictive values for the early detection of dysphagia.⁴

6. Continuous cardiac-respiratory or pulse oximetry monitoring for children and adolescents admitted to the hospital should not be applied unless conditions warrant continuous monitoring based on objectively scored cardiovascular, respiratory, and behavioral parameters. When pulse oximetry and physiologic monitoring are used inappropriately, significant cost burdens can affect the entire health care system. Continuous bedside monitoring should not be used in place of hourly safety checks. Focused nursing assessments using a standardized early warning tool should be used to monitor changes in a pediatric patient’s status to identify de-

teriorations. High levels of false alarms can occur with continuous monitoring, causing alarm fatigue.

7. Routinely repeated labs of hemoglobin and hematocrit in hemodynamically normal pediatric patients should not routinely be done with isolated blunt solid organ injury. Clinical instability is defined by physiologic criteria such as age-specific tachycardia or hypotension, tachypnea, low urine output, altered mental status, or any significant clinical deterioration that warrants increased level of care and investigation.⁵

8. Hair at the surgical site including the hair on the patient’s head should not be removed, but if hair must be removed it should be clipped, not shaved. Removing hair at the surgical site has long been believed to be associated with an increased rate of surgical site infections because of razor-induced microtrauma. Post-operative wound infections increase the costs and length of hospital stay. Sometimes hair removal should be considered – for example, during emergent craniotomies or anytime a surgeon deems hair removal necessary for a surgical procedure. A razor should not be used, but hair should be removed by clipping or depilatory methods.⁶

CHOOSE WISELY WHEN IT COMES TO LOW-VALUE ADMINISTRATIVE PRACTICES

Since 2012, the Choosing Wisely campaign has helped clinicians and patients choose services that are high value and avoid those that may be unnecessary or harmful. The same principle should be extended to administrative practices, such as electronic health record documentation and risk-management requirements.

With the health care workforce increasingly stretched thin and stressed out, it is important to identify which administrative tasks are low value and could be changed or eliminated. This process involves three steps:

1. “Crowdsource” ideas for administrative reform by taking nominations from physicians and staff for tasks that are unnecessarily burdensome, don’t improve clinical quality, don’t address outcomes patients care about, or are duplicative or wasteful.
2. Determine which items can be changed or abandoned without violating external regulations (versus which would require regulatory reform), and take action to relieve burden.
3. Join other stakeholders to lobby payers or regulators to change burdensome mandates (e.g., accreditation, performance monitoring, insurance regulations).

By identifying low-value administrative tasks that are causing burnout, and then eliminating or changing them, organizations can save physicians and staff significant time and stress.⁷

Top Tips from Family Practice

NEW GUIDELINE ADDRESSES MANAGEMENT OF NONALCOHOLIC FATTY LIVER DISEASE

The American Association of Clinical Endocrinology last year published a new clinical practice guideline on the management of nonalcoholic fatty liver disease (NAFLD).⁸ The “biggest change” from the previous guidance, published five years ago, according to lead author Mary Rinella, MD, is “that we are explicitly recommending that people in high-risk categories get screened in primary care.” Highlights appear below; read the full guidelines online at doi.org/10.1016/j.eprac.2022.03.010.

The guidance continues to recommend against population-based screening for NAFLD. People at high risk for NAFLD, such as those with type 2 diabetes or medically complicated obesity, should be screened for advanced fibrosis. In addition, the guideline calls for a primary risk assessment with the index of liver fibrosis (FIB-4) to be performed every one to two years in patients with pre-diabetes, type 2 diabetes, two or more metabolic risk factors, or imaging evidence of hepatic steatosis. The FIB-4 score = age (years) x AST (U/L)/PLT (10⁹/L) x ALT ½ (U/L). This index classifies patients as being at low, intermediate, or high risk for liver fibrosis.

Patients with NAFLD who are overweight or obese should be prescribed a reduced calorie diet in a multidisciplinary setting because, according to the guideline, weight loss “improves hepatic steatosis, nonalcoholic steatohepatitis (NASH), and hepatic fibrosis in a dose-dependent manner.”

It is well known that alcohol consumption has a role in the progression of fatty liver disease. However, coffee – drinking at least three cups daily, either caffeinated or not – can also be associated with protection against advanced liver disease.

While noting the lack of approved medications for NAFLD, the guidance states that some drugs prescribed for comorbidities also benefit patients with NASH. These are glucagon-like peptide 1 agonist semaglutide (Ozempic), pioglitazone (Actos), and vitamin E supplementation in selected patients.

IMMUNIZATION UPDATE FROM THE ADVISORY COMMITTEE ON IMMUNIZATION PRACTICES⁹

The Advisory Committee on Immunization Practices (ACIP) of the Centers for Disease Control and Prevention (CDC) earlier this year updated its recommendations for immunizations in children, adolescents, and adults. Here’s what you need to know for your practice.

Children and Adolescents

- For influenza vaccination, new guidance recommends vaccinating individuals who are close contacts of severely immunocompromised patients who require a protected environment.
- For measles, mumps, and rubella vaccination, a newly licensed vaccine with the trade name Priorix has been added to the table of vaccine abbreviations and trade names. Routine MMR vaccination consists of a two-dose series, with the first dose administered at age 12-15 months and the second dose at age 4-6 years.
- For pneumococcal vaccination, a new 15-valent pneumococcal conjugate vaccine with the trade name Vaxneuvance has been added to existing available vaccines. All children should receive four doses of pneumococcal conjugate vaccine (either PCV13 or PCV15) at 2, 4, 6, and 12-15 months.
- For both routine and catch-up vaccinations, note that PCV15 can be used interchangeably with 13-valent pneumococcal conjugate vaccine in children who are healthy or have underlying conditions. No additional PCV15 vaccine is indicated for children who have already completed their age-appropriate PCV13 series.
- Clinicians should also be aware that the appendix contains several clarifying edits, with changes regarding dengue vaccine, egg-based influenza vaccines, hepatitis B vaccines, human papillomavirus vaccine, MMR vaccines, and varicella vaccine.

Adults

- For hepatitis B vaccination, a three-dose vaccine with the trade name PreHevbrio is now available. PreHevbrio is not recommended during pregnancy due to a lack of safety data. In addition, clarifying language states that people 60 years or older *with* known risk factors for hepatitis B infection *should* complete a hepatitis B vaccine series, while those 60 years and older *without* known risk factors *may* complete a vaccine series.
- For influenza vaccination, new language supports that for people 65 years and older who are undergoing routine vaccination, any one of the following is preferred:
 - > High-dose inactivated influenza vaccine.
 - > Quadrivalent recombinant influenza vaccine.
 - > Quadrivalent adjuvanted inactivated influenza vaccine.

If none of these vaccines is available, then any other age-appropriate influenza vaccine should be used.

- For pneumococcal vaccination, there are substantial changes regarding the use of PCV15 and PCV20 vaccines in people who previously received other pneumococcal vaccines (discussed in the Summer 2022 issue of this journal). It is suggested that practitioners utilize the agency's PneumoRecs Vax-Advisor Mobile App for help in determining which pneumococcal vaccines a person needs and when.
- Regarding polio vaccination, there are new recommendations for adults at increased risk of exposure to poliovirus:
 - > For those with no evidence of a complete polio vaccination series (i.e., at least three doses), practitioners should administer remaining doses (one, two, or three doses) to complete a three-dose series.
 - > For those with evidence of a complete polio vaccination series (i.e., at least three doses), practitioners may administer one lifetime IPV booster.

VEXAS SYNDROME

A recently discovered inflammatory disease known as VEXAS syndrome is more common, variable, and dangerous than previously understood, according to results from a retrospective observational study of a large health care system database. The findings, published in *JAMA*, found that it struck one in 4,269 men over the age of 50 in a largely white population and caused a wide variety of symptoms.¹⁰

Physicians first described VEXAS (vacuoles, E1-ubiquitin-activating enzyme, X-linked, autoinflammatory, somatic) syndrome in 2020. They linked it to mutations in the UBA1 (ubiquitin-like modifier activating enzyme 1) gene. The enzyme initiates a process that identifies misfolded proteins as targets for degradation.

VEXAS syndrome is characterized by anemia and inflammation in the skin, lungs, cartilage, and joints. These symptoms are frequently mistaken for other rheumatic or hematologic diseases. However, this syndrome has a different cause, is treated differently, requires additional monitoring, and can be far more severe.

A previous report found that the median survival was nine years among patients with a certain variant; that was significantly less than patients with two other variants. The 1996-2022 data comes from patients at 10 Pennsylvania hospitals. Other common findings included macrocytosis (91%), skin problems (73%), and pulmonary disease (91%). Ten patients (91%) required transfusions. VEXAS syndrome represents an example of a multisystem disease where patients and their symptoms get lost in the shuffle.

In the future, physicians should look out for patients with unexplained inflammation and some combination of hematologic, rheumatologic, pulmonary, and dermatologic clinical manifestations that either don't carry a clinical diagnosis or don't respond to first-line therapies. These patients will also frequently be anemic, have low platelet counts and elevated markers of inflammation in the blood, and be dependent on corticosteroids.

The disease can be partially controlled by multiple different anticytokine therapies or biologics. However, in most cases, patients still need additional steroids and/or disease-modifying antirheumatic agents. In addition, bone marrow transplantation has shown signs of being a highly effective therapy.

The prevalence is high enough that clinicians should consider that some of the patients with diseases that are not responding to treatment may in fact have VEXAS rather than "refractory" relapsing polychondritis or "recalcitrant" rheumatoid arthritis.

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