



**STRONGERTOGETHER**

# **ASCP Effective Test Utilization**

10-Year Report



# FOREWORD

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In 1922, pathology as a medical specialty created its national organization, the American Society for Clinical Pathologists. Its objectives included promoting the practice of medicine through the application of clinical laboratory methods; stimulating original research; establishing uniform standards for laboratory tests; elevating the professional status of those practicing laboratory medicine; and encouraging collaboration with their colleagues in other branches of medicine. Now ASCP, the American Society for Clinical Pathology, celebrates 100 years providing excellence in education, certification, and advocacy on behalf of patients, pathologists, and laboratory professionals.

Central to ASCP's mission, therefore, is ensuring that laboratory services are appropriately used, reducing or eliminating overuse, underuse, and misuse of services. That's why ASCP continued its series of firsts by being among the initial specialty societies to join Choosing Wisely, the American Board of Internal Medicine's program to promote conversations between clinicians and patients by helping patients choose care that is:

1. supported by evidence
2. not duplicative of other tests or procedures already received
3. free from harm and
4. truly necessary

ASCP has been working with Choosing Wisely for a decade now and our members have been among the most active participants in the program. Led by ASCP's Effective Test Utilization Steering Committee, ASCP has developed 39 recommendations that focus on common challenges we see in laboratory practice:

- Tests with merit in some circumstances but are not appropriate in others
- Tests with little or no clinical utility
- Tests that have been generally replaced by better tests
- New and emerging diagnostics

We are pleased to provide our membership with this report highlighting the many successes of the Effective Test Utilization Steering Committee, our 800 advisors, and individuals and teams that have embraced Choosing Wisely and use recommendations to guide their practice. We truly hope that this report stimulates your interest to be part of this journey as we enter our second Choosing Wisely decade.

Personally I would like to extend my profound thanks to the Effective Test Utilization Steering Committee and ASCP staff who have provided incredible leadership over the last decade. Congratulations to ASCP on 100 years and to Choosing Wisely for being part of ASCP's amazing history for the last 10.



**Lee H. Hilborne, MD, MPH, FASCP, DLM(ASCP)<sup>CM</sup>**  
ASCP Effective Test Utilization Steering Committee Chair





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## **MISSION STATEMENT**

The mission of the ASCP Effective Test Utilization Steering Committee is to promote appropriate and necessary clinical laboratory testing by developing recommendations and tools for patients, providers and laboratory professionals that support optimal laboratory stewardship.

## Pathology and Laboratory Medicine Advancing Appropriate Utilization in the Medical Community

This 10-Year Report presents a detailed summary of the ASCP's Effective Test Utilization Steering Committee's (ETUSC) work to support the ASCP's Choosing Wisely Initiative and its impact over the past decade (2012-2022). To achieve its mission, the ETUSC works with individuals and groups from the field of pathology and laboratory medicine and the healthcare community at large; partner organizations; and industry.

Since ASCP joined the ABIMF's Choosing Wisely campaign in 2012, many of our members and non-members have been working to advance its ideals, which are intended to reduce test overuse and encourage clinicians and patients to question which tests are really necessary. As one of 80 medical societies in the Choosing Wisely campaign, ASCP is the only society representing pathology and laboratory medicine. Our goal is to identify the right test at the right time for the right cost to better serve our patients and improve the nation's healthcare system. In the past 10 years, ASCP has supported the Choosing Wisely campaign by advancing its major activities: creation of list of recommendations and the Choosing Wisely Champions.

Each year, ASCP compiles the most relevant testing questions and protocol improvements developed by the Choosing Wisely community to develop a reference guide of Choosing Wisely Recommendations. These recommendations help pathologists and laboratory professionals make decisions about appropriate testing and patient care. The ASCP list of recommendations are developed under the leadership of the ASCP Effective Test Utilization Steering Committee. This committee is chaired by an ASCP Past President and is comprised of subject matter and test utilization experts along with 737 advisory board members across the fields of pathology and laboratory medicine.

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. Implementation of these recommendations will

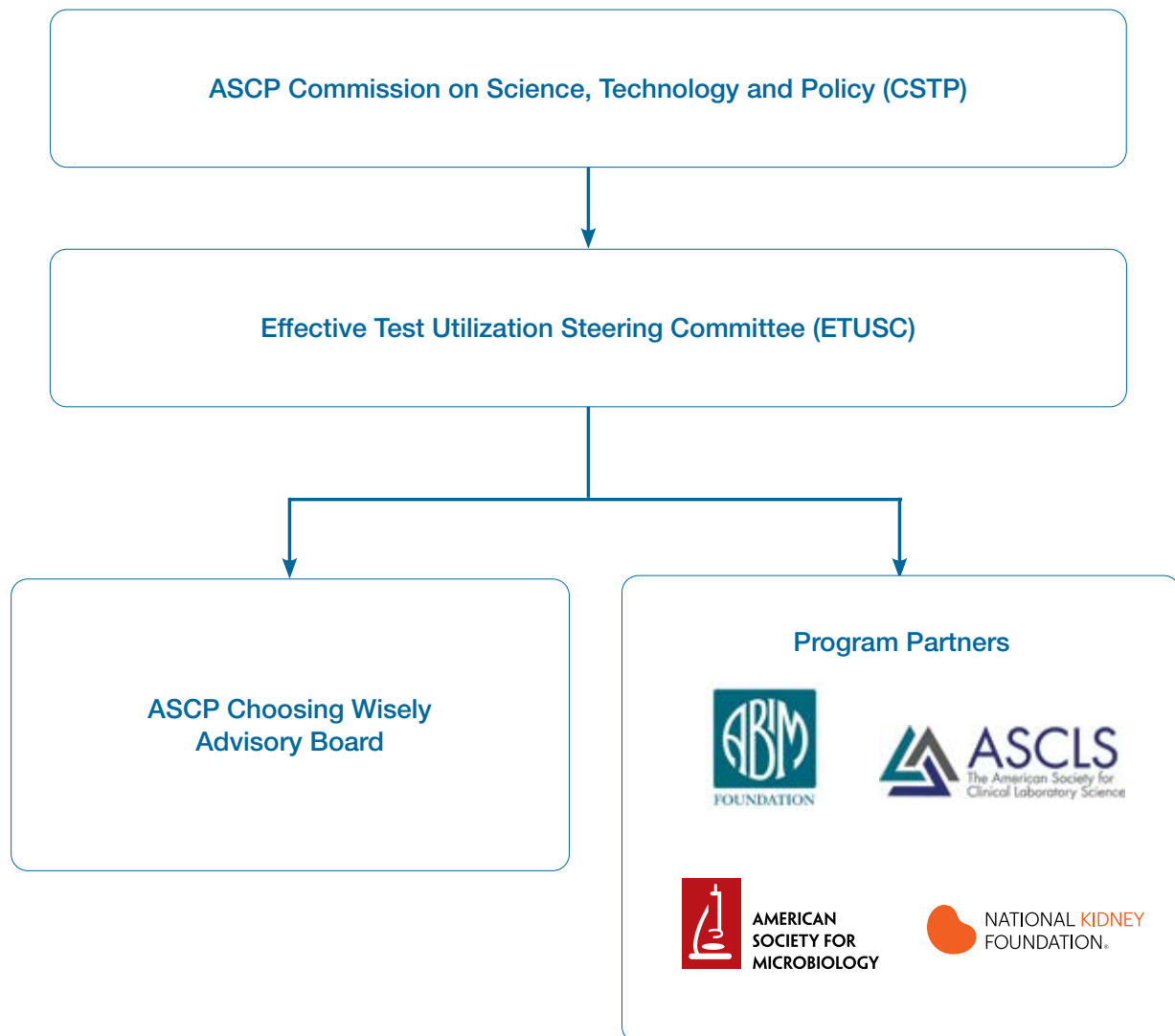
result in higher quality care, lower costs and a more effective use of our laboratory resources and personnel. The ASCP has since released **seven lists of recommendations** and **four special SARS-CoV-2 recommendations**, bringing the total to 39 recommendations. While the focus of our lists are on overused tests, the ASCP also provides guidance regarding test selection. The Choosing Wisely recommendations can form the basis of Laboratory Stewardship programs focused on evidence-based, effective test utilization strategies.

The Choosing Wisely Champions program, launched by the ABIM Foundation in 2016, was created to recognize clinicians who are leading efforts to reduce overuse and waste in medicine. Since participating in the program, the ASCP have chosen 35 Champions who have advanced appropriate test utilization in their health systems and demonstrated leadership of a local Choosing Wisely effort. "The Choosing Wisely Champions program seeks to recognize individual clinicians for their contributions to the campaign, inspire clinicians seeking to implement Choosing Wisely in their own practice, and demonstrate how clinicians are driving change in health care," said Lee H. Hilborne, MD, MPH, DLM(ASCP)<sup>CM</sup>, FASCP, Chair, ASCP Effective Test Utilization Steering Committee. "Clinicians can learn from one another by highlighting exemplars."

Lastly, the work of the ASCP Choosing Wisely team resulted in ASCP being the first society to promulgate 39 recommendations; collaborated with the National Kidney Foundation (NKF) to address Chronic Kidney Disease by promoting an updated "Kidney Profile" test with a Laboratory Engagement Plan since 2017; partnered with the American Society for Clinical Laboratory Science (ASCLS) and the American Society for Microbiology (ASM) Partnerships on Choosing Wisely; ASCP recommendations Vitamin-D testing and preoperative testing for low risk surgeries were cited by the ABIM Foundation as two of the Choosing Wisely recommendations that drove the largest decrease in unnecessary tests and procedures; and publication of the article, **Non-ASCP Choosing Wisely Recommendations Relevant to Pathology and Laboratory Medicine**.

## Organizational Chart

The ASCP Effective Test Utilization Steering Committee is a partner of the ABIMF's Choosing Wisely Campaign. Its members are experts in the field and consist of both pathologists and laboratory professionals. The work that they have done in the past 10 years, centers around the patient-centered approach and the current healthcare landscape demanding improved focus on test utilization.





## Effective Test Utilization Steering Committee Members



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# KEY EVENTS TIMELINE



Patient Champions  
Partnership

Choosing Wisely focuses mostly on overuse but ASCP believed underuse is equally important. We changed our name to the Effective Test Utilization Steering Committee to reflect priorities.

ASCP began participation in the ABIMF Choosing Wisely Champions Program

2012

2013

2014

2015

2016

2017

Joined ABIMF



1<sup>st</sup> list of  
recommendations  
published

Changed name from  
Subcommittee to  
Steering Committee



NKF Partnership



Partnerships with  
ASCLS and ASM

Formation of  
Effective Test  
Utilization  
Advisory Board

*Building Trust*  
Partnership

2018

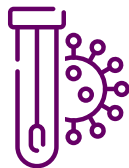
2019

2020

2021

2022

Choosing Wisely  
Non-ASCP  
Recommendations  
report publication



Developed  
four COVID-19  
recommendations

Engagement  
Survey  
launched

Supply  
Chain Issues  
editorial  
published



# PRIMARY ACTIVITIES



## ASCP Lists of Recommendations

Each year ASCP compiles the most relevant testing questions and protocol improvements developed by the Choosing Wisely community to develop a reference guide of Choosing Wisely Recommendations. These recommendations help pathologists and laboratory professionals make decisions about appropriate testing and patient care. We seek recommendations both from the ASCP Advisory Board and membership with increased engagement from the laboratory field annually.

ASCP released its first list of five recommendations at a national press event hosted by the ABIM Foundation and Consumer Reports in February 2013. ASCP has since released six additional lists (2015, 2016, 2017, 2018, 2019, 2020) and four special SARS-CoV-2 recommendations, bringing the total to 39 recommendations and becoming one of the first societies to promulgate this many recommendations.

**See the next 13 pages for the full 35 recommendations.**

[www.ascp.org/content/docs/default-source/get-involved-pdfs/istp\\_choosingwisely/ascp-35-things-list\\_2020\\_final.pdf](http://www.ascp.org/content/docs/default-source/get-involved-pdfs/istp_choosingwisely/ascp-35-things-list_2020_final.pdf)





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## Thirty 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.

6

### Don't order an erythrocyte sedimentation rate (ESR) to look for inflammation in patients with undiagnosed conditions. Order a C-reactive protein (CRP) to detect acute phase inflammation.

CRP is a more sensitive and specific reflection of the acute phase of inflammation than is the ESR. In the first 24 hours of a disease process, the CRP will be elevated, while the ESR may be normal. If the source of inflammation is removed, the CRP will return to normal within a day or so, while the ESR will remain elevated for several days until excess fibrinogen is removed from the serum.

These items are provided solely for informational purposes and are not intended 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 physician.

Released February 21, 2014 (1–5), February 3, 2015 (6–10), September 14, 2016 (11–15), September 19, 2017 (16–20), September 25, 2018 (21–25), September 4, 2019 (26–30) and September 1, 2020 (31–35)





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## Thirty Five Things Physicians and Patients Should Question

7

### Don't test vitamin K levels unless the patient has an abnormal international normalized ratio (INR) and does not respond to vitamin K therapy.

Measurements of the level of vitamin K in the blood are rarely used to determine if a deficiency exists. Vitamin K deficiency is very rare, but when it does occur, a prolonged prothrombin time (PT) and elevated INR will result. A diagnosis is typically made by observing the PT correction following administration of vitamin K, plus the presence of clinical risk factors for vitamin K deficiency.

8

### Don't prescribe testosterone therapy unless there is laboratory evidence of testosterone deficiency.

With the increased incidence of obesity and diabetes, there may be increasing numbers of older men with lower testosterone levels that do not fully meet diagnostic or symptomatic criteria for hypogonadism. Current clinical guidelines recommend making a diagnosis of androgen deficiency only in men with consistent symptoms and signs coupled with unequivocally low serum testosterone levels. Serum testosterone should only be ordered on patients exhibiting signs and symptoms of androgen deficiency.

9

### Don't test for myoglobin or CK-MB in the diagnosis of acute myocardial infarction (AMI). Instead, use troponin I or T.

Unlike CK-MB and myoglobin, the release of troponin I or T is specific to cardiac injury.

Troponin is released before CK-MB and appears in the blood as early as, if not earlier than, myoglobin after AMI. Approximately 30% of patients experiencing chest discomfort at rest with a normal CK-MB will be diagnosed with AMI when evaluated using troponins. Single-point troponin measurements equate to infarct size for the determination of the AMI severity. Accordingly, there is much support for relying solely on troponin and discontinuing the use of CK-MB and other markers.

10

### Don't order multiple tests in the initial evaluation of a patient with suspected non-neoplastic thyroid disease. Order thyroid-stimulating hormone (TSH), and if abnormal, follow up with additional evaluation or treatment depending on the findings.

The TSH test can detect subclinical thyroid disease in patients without symptoms of thyroid dysfunction. A TSH value within the reference interval excludes the majority of cases of primary overt thyroid disease. If the TSH is abnormal, confirm the diagnosis with free thyroxine (T4).

11

### Do not routinely perform sentinel lymph node biopsy or other diagnostic tests for the evaluation of early, thin melanoma because these tests do not improve survival.

Sentinel lymph node biopsy (SLNB) is a minimally invasive staging procedure developed to identify patients with subclinical nodal metastases at higher risk of occurrence, who could be candidates for complete lymph node dissection or adjuvant systemic therapy. The National Comprehensive Cancer Network (NCCN) Melanoma Panel does not recommend SLNB for patients with in situ melanoma (stage 0). In general, the panel does not recommend SLNB for Stage 1A or 1B lesions that are very thin (0.75mm or less). In the rare event that a conventional high-risk feature is present, the decision about SLNB should be left to the patient and the treating physician.

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## Thirty Five Things Physicians and Patients Should Question

12

### Do not routinely order expanded lipid panels (particle sizing, nuclear magnetic resonance) as screening tests for cardiovascular disease.

A standard lipid profile includes total cholesterol, low-density lipoprotein (LDL) cholesterol, high-density lipoprotein (HDL) cholesterol, and triglycerides. These lipids are carried within lipoprotein particles that are heterogeneous in size, density, charge, core lipid composition, specific apolipoproteins, and function. A variety of lipoprotein assays have been developed that subfractionate lipoprotein particles according to some of these properties such as size, density or charge. However, selection of these lipoprotein assays for improving assessment of risk of cardiovascular disease and guiding lipid-lowering therapies should be on an individualized basis for intermediate to high-risk patients only. They are not indicated for population based cardiovascular risk screening.

Research evaluating the frequency and correlates of repeat lipid testing in patients with CHD demonstrates that individuals with LDL-C levels of less than 100mg/dl had no additional benefit from the intensification of lipid-lowering therapies. Understanding the frequency and correlates of redundant lipid testing could identify areas for quality improvement initiatives aimed at improving the efficiency of cholesterol care in patients with coronary heart disease (CHD).

Millions of U.S. adults are at increased ASCVD risk—some because they have had an ASCVD event, others because of ASCVD risk factors. Adherence to healthy lifestyle behaviors, control of blood pressure and diabetes, and avoidance of smoking is recommended for all adults. Statin therapy should be used to reduce ASCVD risk in individuals likely to have a clear net benefit (those with clinical ASCVD) or in primary prevention for adults with LDL-C levels over 190 mg/dL, those aged 40 to 75 years with diabetes, and those with a 10-year ASCVD risk 7.5% without diabetes. A clinician–patient discussion that considers potential ASCVD risk reduction, adverse effects, and patient preferences is needed to decide whether to initiate statin therapy, especially in lower-risk primary prevention.

13

### Do not test for amylase in cases of suspected acute pancreatitis. Instead, test for lipase.

Amylase and lipase are digestive enzymes normally released from the acinar cells of the exocrine pancreas into the duodenum. Following injury to the pancreas, these enzymes are released into the circulation. While amylase is cleared in the urine, lipase is reabsorbed back into the circulation. In cases of acute pancreatitis, serum activity for both enzymes is greatly increased.

Serum lipase is now the preferred test due to its improved sensitivity, particularly in alcohol-induced pancreatitis. Its prolonged elevation creates a wider diagnostic window than amylase. In acute pancreatitis, amylase can rise rapidly within 3–6 hours of the onset of symptoms and may remain elevated for up to five days. Lipase, however, usually peaks at 24 hours with serum concentrations remaining elevated for 8–14 days. This means it is far more useful than amylase when the clinical presentation or testing has been delayed for more than 24 hours.

Current guidelines and recommendations indicate that lipase should be preferred over total and pancreatic amylase for the initial diagnosis of acute pancreatitis and that the assessment should not be repeated over time to monitor disease prognosis. Repeat testing should be considered only when the patient has signs and symptoms of persisting pancreatic or peripancreatic inflammation, blockage of the pancreatic duct or development of a pseudocyst. Testing both amylase and lipase is generally discouraged because it increases costs while only marginally improving diagnostic efficiency compared to either marker alone.

14

### Do not request serology for *H. pylori*. Use the stool antigen or breath tests instead.

Serologic evaluation of patients to determine the presence/absence of *Helicobacter pylori* (*H. pylori*) infection is no longer considered clinically useful. Alternative noninvasive testing methods (e.g., the urea breath test and stool antigen test) exist for detecting the presence of the bacteria and have demonstrated higher clinical utility, sensitivity, and specificity. Additionally, both the American College of Gastroenterology and the American Gastroenterology Association recommend either the breath or stool antigen tests as the preferred testing modalities for active *H. pylori* infection. Finally, several laboratories have dropped the serological test from their menus, and many insurance providers are no longer reimbursing patients for serologic testing.

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## Thirty Five Things Physicians and Patients Should Question

15

### **Do not perform fluorescence in situ hybridization (FISH) for myelodysplastic syndrome (MDS)-related abnormalities on bone marrow samples obtained for cytopenias when an adequate conventional karyotype is obtained.**

The presence of certain clonal abnormalities in the bone marrow or blood of patients with cytopenia(s) establishes or strongly supports the diagnosis of MDS, in some cases even in the absence of diagnostic morphologic findings. MDS FISH panels typically employ probes for four or more genetic loci, making this an expensive test. Multiple studies have demonstrated the added value of MDS FISH on bone marrow is extremely low when a satisfactory karyotype is obtained (20 interpretable metaphases). MDS FISH can be performed post hoc in the event of an unsatisfactory karyotype.

16

### **Do not order a frozen section on a pathology specimen if the result will not affect immediate (i.e., intraoperative or perioperative) patient management.**

Although the result of an intraoperative frozen section evaluation is often helpful to determine the treatment path of a patient during a surgical procedure, the frozen section analysis may be limited in regards to sampling and technical issues that can hinder interpretation and/or compromise the integrity of the specimen for the final diagnosis. If there is no therapeutic decision to be made for the patient on the day of the surgical procedure based on the results of the frozen section, it is preferable to submit the specimen for routine (or rush, if necessary) histologic processing and permanent section evaluation.

17

### **Do not repeat hemoglobin electrophoresis (or equivalent) in patients who have a prior result and who do not require therapeutic intervention or monitoring of hemoglobin variant levels.**

Pre-conception and antenatal hemoglobin electrophoresis screening is recommended, especially in high prevalence areas for sickle cell disease or thalassemia, and has become routine practice in order to detect abnormalities of hemoglobins S, C, D-Punjab, E, O-Arab, Lepore, beta-thalassemia trait, delta/beta thalassemia trait, alpha thalassemia trait (2 chain deletion), and hereditary persistence of fetal hemoglobin (HPFH). Partner testing should be offered when there is a risk of a significant hemoglobinopathy in the infant. Repeat hemoglobin electrophoresis testing is required only to make a more specific diagnosis or monitor the results of interventional therapies in patients with known hemoglobinopathies. Providers should investigate prior results before requesting a repeat hemoglobin electrophoresis.

18

### **Do not test for Protein C, Protein S, or Antithrombin (ATIII) levels during an active clotting event to diagnose a hereditary deficiency because these tests are not analytically accurate during an active clotting event.**

These assays may be useful to test for an acquired deficiency (i.e., disseminated intravascular coagulation) in consumptive coagulopathies. These tests are not analytically accurate during an active clotting event. Moreover they are not clinically actionable at the time of an acute clot, because the same therapeutic intervention (anticoagulation) is performed regardless of the results. Deferral to the outpatient/non-acute setting allows for the testing to be done at a time when the results would change patient management, i.e., ceasing or continuing anticoagulation. Because anticoagulation may also impact the determination of results (e.g., Protein C and Protein S decrease on warfarin, while ATIII is actually elevated), testing while on anticoagulants may also yield misleading results and should be avoided.

19

### **Do not order red blood cell folate levels at all. In adults, consider folate supplementation instead of serum folate testing in patients with macrocytic anemia.**

Since 1998, when the U.S. and Canada mandated that foods with processed grains be fortified with folic acid, there has been a significant decline in the incidence of folate deficiency. For the rare patient suspected of having a folate deficiency, simply treating with folic acid is a more cost-effective approach than blood testing. While red blood cell folate levels have been used in the past as a surrogate for tissue folate levels or a marker for folate status over the lifetime of red blood cells, the result of this testing does not, in general, add to the clinical diagnosis or therapeutic plan.

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## Thirty Five Things Physicians and Patients Should Question

20

### Do not use sputum cytology to evaluate patients with peripheral lung lesions.

Sputum cytology is not effective for evaluating peripheral lesions. For peripheral lesion evaluation, consider alternative diagnostic approaches (e.g., image guided needle aspiration).

21

### Don't request just a serum creatinine to test adult patients with diabetes and/or hypertension for CKD; use the Kidney Profile (serum Creatinine with eGFR and urinary albumin-creatinine ratio.)

Use the National Kidney Foundation (NKF) updated evidence-based Kidney Profile test to evaluate patients for CKD with the following common tests to more effectively assess kidney function.

- "Spot" urine for albumin-creatinine ratio (ACR) to detect albuminuria
- Serum creatinine to estimate glomerular filtration rate (GFR) using the CKD EPI equation

22

### Don't transfuse plasma to correct a laboratory value; treat the clinical status of the patient.

Plasma transfusion to a patient with an INR of  $<1.6$  has minimal effect, and transfusion for INR values between 1.6 and 2 should be carefully considered. Since a mildly elevated INR is usually not associated with spontaneous hemorrhage and doesn't increase the risk of bleeding during routine invasive procedures, excessive transfusion of plasma is unnecessary and increases the risk of transfusion-associated circulatory overload (TACO), which is a leading cause of transfusion associated morbidity and mortality. Judicious use of vitamin K and/or prothrombin complex concentrate following evidence-based clinical practice guidelines should also be considered to avoid unnecessary transfusion.

23

### Don't order IgM antibody serologic studies to assess for acute infection with infectious agents no longer endemic in the US, and in general avoid using IgM antibody serologies to test for acute infection in the absence of sufficient pre-test probability.

As the prevalence of a disease decreases, so does the positive predictive value for testing for acute infection with that disease. Although documentation of IgG antibodies to rare infectious agents is useful (for documentation of effective vaccination, for example), assessing acute infection by evaluation of IgM antibody status to these agents is fraught with false positives and low predictive value. For example, according to CDC, rubella is no longer endemic in the US. As such, nearly all positive rubella IgM antibody tests are false positives, resulting in unnecessary follow-up testing and unnecessary anxiety.

Even for diseases not yet eradicated and for which low level outbreaks still occur (such as measles), if overall prevalence remains low, then the predictive value of positive IgM serology will still be low. False positive measles IgM serology, for example, has been documented due to cross-reactivity to parvovirus and human herpes virus 6, among others.

If clinical evaluation yields legitimate pre-test suspicion for a rare infectious disease, then practitioners should report to and engage the help of their state public health department and/or the CDC in further evaluating for potential acute infection.

In common viral infections it is also most effective to limit IgM serology to those cases in which clinical assessment yields relatively high suspicion for acute infection, since there are well known causes for potential IgM antibody cross-reactivity (rheumatoid factor, cross reactivity with other viral antigens). The potential for false positive results will decrease (and positive predictive value will increase) with increasing pre-test probability for true acute infection.

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## Thirty Five Things Physicians and Patients Should Question

24

### Do not perform peripheral blood flow cytometry to screen for hematological malignancy in the settings of mature neutrophilia, basophilia, erythrocytosis, thrombocytosis, isolated anemia, or isolated thrombocytopenia.

The role of peripheral blood flow cytometry for hematologic neoplasia is limited to settings in which either there are morphologically abnormal cells identified on a peripheral blood smear review (blasts, lymphoma cells) or there are clinical and/or laboratory findings that suggest a high pre-test probability for the presence of a disorder amenable to the immunophenotypic detection of neoplastic cells in the blood. The latter includes patients with neutropenia, absolute lymphocytosis, lymphadenopathy, or splenomegaly. The likelihood of flow cytometry of blood producing diagnostic results in the settings enumerated in the recommendation above is extremely low; bone marrow sampling with morphologic analysis (and appropriate ancillary diagnostic testing) may be indicated in those scenarios.

25

### Don't perform Procalcitonin testing without an established, evidence-based protocol.

Procalcitonin is a biomarker that has been used successfully to identify patients with certain bacterial infections (e.g., sepsis). The appropriate use includes serial (usually daily) measurements of procalcitonin in select patient populations (e.g. patients with fever and presumed serious infection for which antibiotics were initiated).(1) Such uses may help to identify low-risk patients with respiratory infections who would not benefit from antibiotic therapy, and to differentiate blood culture contaminants (e.g., coagulase-negative staphylococci) from true infections.(2,3) When used appropriately there are significant opportunities to decrease unnecessary antimicrobial use. The overuse of antimicrobial agents is directly related to the increasing antimicrobial resistance, so judicious use of these agents is warranted.

Unfortunately, procalcitonin is often either misused (i.e. not used in the appropriate setting) or established algorithms are not followed. When the latter occurs, the procalcitonin result becomes simply another piece of laboratory data that adds costs, but does not benefit the patient. These scenarios often occur because there is not an evidence-based utilization plan established at an institution. Laboratory and intensive care unit leadership are encouraged to identify the major users of procalcitonin, to establish guidelines that are most appropriate for the local setting and to monitor use.

26

### Do not routinely test for community gastrointestinal stool pathogens in hospitalized patients who develop diarrhea after day 3 of hospitalization.

A number of studies have indicated that stool culture and parasitological examination is usually not indicated when diarrhea develops more than 3 days after admission to the hospital, because these tests are designed to detect agents of community-acquired gastrointestinal infection (1-3). In contrast, testing for *C. difficile* should be considered in such patients. In contrast, testing for *C. difficile* should be considered in such patients, if they are over 2 years in age; patients <2 years in age commonly have asymptomatic *C. difficile* colonization.

NOTE: There are select patient populations, such as older adults and immunocompromised patients, in whom community-type pathogens may be detected after three days of hospitalization. Therefore, clinicians should be able to obtain stool cultures and/or stool parasitological examinations in these select populations after three days of hospitalization.

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## Thirty Five Things Physicians and Patients Should Question

27

### Do not repeat Hepatitis C virus antibody testing in patients with a previous positive Hepatitis C virus (HCV) test. Instead, order Hepatitis C viral load testing for assessment of active versus resolved infection.

There are joint guidelines from the Infectious Diseases Society of America and the American Association for the Study of Liver Diseases, which are consistent with guidance from the Centers for Disease Control and Prevention regarding the testing, management and treatment of patients with HCV infection (1, 2). A positive HCV antibody test remains positive for life (3). Repeat HCV antibody testing, adds cost but no clinical benefit, so it should not be performed. A common reason for unnecessary repeat testing is the inclusion of this test in order sets (eg, hepatitis and/or opioid screening order sets), or a result of problematic follow-up of HCV positive patients in an outpatient setting.

A positive HCV serologic test (or a proven history of positive results) should be followed by an HCV viral load test, which distinguishes an active from resolved infection. The result of the HCV viral load establishes a baseline in patients with active disease by which the efficacy of therapy can be monitored. Patients with active infection (i.e. positive serology and HCV viral load) may often need an HCV genotyping assay to guide therapy.

Patients who have had a remote and resolved HCV infection who are suspected to have been reinfected, should be tested using the HCV viral load test, rather than the HCV antibody test, since this latter test remains positive for life. Viral load reflects the degree and severity of active infection and also acts as a useful component in monitoring antiviral therapy in medication-managed patients.

28

### Do not perform a hypercoagulable workup in patients taking direct factor Xa or direct thrombin inhibitors.

Direct oral anticoagulants (DOACs) such as dabigatran etexilate, rivaroxaban, apixaban, edoxaban, and betrixaban often interfere with clot-based or chromogenic coagulation assays and may lead to inaccurate results or render the test uninterpretable. Affected tests include many commonly ordered tests on hypercoagulable workup panels: Lupus anticoagulant (LA) panels, activated protein C resistance, protein C and protein S activity, antithrombin activity, and specific factor activity levels. These tests should not be done in patients taking DOACs. If there is a compelling reason to perform these tests, great caution must be taken to avoid acting on a false result. For instance, specimens should be collected at the medication trough, and potential test interference should be considered prior to ordering. The potential for interference is dependent on test methodology, drug mechanism of action, and drug concentration. For patients suspected clinically to have antiphospholipid antibody syndrome, the lupus anticoagulant panel may be uninterpretable, but ELISA-based anticardiolipin and anti-beta2 GP1 antibody testing is unaffected. Genetic testing, such as PCR for factor V Leiden, is also unaffected.

29

### Don't use plasma catecholamines to evaluate a patient for pheochromocytoma or paraganglioma; instead use plasma free metanephrines or urinary fractionated metanephrines.

Recommended first-line testing is either plasma free metanephrines or urinary fractionated metanephrines. If measuring plasma metanephrines, patients should have their blood drawn while in a supine position, and the values should be compared to reference intervals determined from the same collection position.

30

### Do not routinely order broad respiratory pathogen panels unless the result will affect patient management.

In place of broad respiratory pathogen panels, use tests that provide immediate diagnosis and potentially expedite management decisions. Consider first using tests of commonly suspected pathogens, which may change according to the location/season. Examples include rapid molecular or point of care tests for RSV, Influenza A/B, or Group A pharyngitis. Rapid tests may be laboratory based or point of care, depending on operational needs. Broader testing for other respiratory pathogens may be done when the result will affect patient management; such as altering/discontinuing empiric antimicrobial therapy or changing infection control measures

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## Thirty Five Things Physicians and Patients Should Question

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**Do not generally use swabs to collect specimens for microbiology cultures on specimens from the operating room. For optimal recovery of microbes, tissue or fluid samples obtained in the operating room should be submitted, when available and adequate.**

Microbiology laboratories recommend that operating room surgeons and staff collect tissue or fluid when submitting specimens, but many laboratories continue to receive swabs instead, even when tissue or fluid samples are available. In some cases, both (tissue and swabs) are submitted with requests to fully evaluate both. Swab specimens are not optimal for microbiology testing because in this setting alternative specimen types have greater specificity and are more likely to reflect the pathologic process being investigated: there is evidence that, in these settings, swabs do not offer benefit, testing increases costs and does not provide higher quality care. Eliminating swabs when possible and only submitting tissue or fluid addresses these issues and results in a more effective use of laboratory resources and personnel.

32

**Avoid Thyroid Stimulating Hormone (TSH) screening in annual well-visits for asymptomatic adults, regardless of age.**

TSH screening is a common ambulatory practice; however, no evidence finds routine screening improves patient care. Testing is appropriate when patients are considered at-risk or demonstrate subtle or direct signs of thyroid dysfunction upon physical evaluation.

33

**Don't perform urine cytology for routine hematuria investigation.**

Urine cytology has little value in the diagnosis of common causes of hematuria. Routine urine cytology is costly and of limited clinical value as a first line investigation for all patients with hematuria. Because this test has low sensitivity for diagnosing low-grade superficial urothelial malignancy, a negative test does not rule out malignancy. Although urine cytology has reasonable specificity when positive, it is impossible to localize a tumor based on urine cytology alone. A positive test would require further invasive investigation including upper urinary tract imaging and flexible cystoscopy.

34

**Do not order a Type & Crossmatch for patients undergoing procedures that have minimal anticipated blood loss, historically low fraction of transfusion use, and a low transfusion index (ratio of transfused units to patients).**

Appropriate use of blood component resources is critical to maintain adequate supply. For specific elective surgeries, the need for red blood cell transfusion may be anticipated, however, there is often over-ordering of RBCs and a lack of valid need. The Type & Crossmatch is labor and reagent intensive, resulting in increased workload costs and increased inventory wastage. Optimizing appropriate orders for a Type & Crossmatch can prevent these downstream detriments to effective, efficient care and stewardship of our blood supply. Development and implementation of an institutional-specific maximal surgical blood ordering schedule (MSBOS) can aid in this endeavor, along with over-arching education regarding transfusion best practices. Each hospital medical staff should have a MSBOS and it should be available to all members of the medical and hospital staff, on request.

35

**Do not monitor anti-platelet agent inhibition of platelet activity using platelet function or genetic testing.**

Available evidence does not support the use of these laboratory tests to guide the dose of aspirin or clopidogrel in patients with so-called aspirin or clopidogrel "resistance." Study results do not provide support for the concept of changing antiplatelet therapy based on the results of platelet function monitoring tests. Thus, high on-treatment platelet reactivity (higher than expected platelet reactivity seen in patients receiving antiplatelet therapy) may be a non-modifiable clinical risk factor in patients treated with anti-platelet agents. The American Heart Association has not recommended either platelet function testing or genetic testing at the present time.

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## How This List Was Created (1–5)

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.

## How This List Was Created (6–15)

The American Society for Clinical Pathology (ASCP) list of recommendations was developed under the leadership of the ASCP Choosing Wisely Ad Hoc Committee. This committee is chaired by an ASCP Past President and comprises subject matter and test utilization experts across the fields of pathology and laboratory medicine. The committee considered an initial list of possible recommendations compiled as the result of a survey administered to Society members serving on ASCP's many commissions, committees, and councils. 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. Implementation of these recommendations will result in higher quality care, lower costs, and a more effective use of our laboratory resources and personnel.

## How This List Was Created (16–35)

The American Society for Clinical Pathology (ASCP) list of recommendations was developed under the leadership of the ASCP Effective Test Utilization Steering Committee. This committee is chaired by an ASCP Past President and is comprised of subject matter and test utilization experts across the fields of pathology and laboratory medicine. The committee considered a list of possible recommendations compiled as the result of a survey administered to Society members serving on ASCP's many commissions, committees and councils. In addition, an announcement was made to ASCP's newly formed Advisory Board seeking suggestions for possible recommendations to promote member involvement. 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. Implementation of these recommendations will result in higher quality care, lower costs and a more effective use of our laboratory resources and personnel.

ASCP's disclosure and conflict of interest policy can be found at [www.ascp.org](http://www.ascp.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](http://www.abimfoundation.org).

## About the American Society for Clinical Pathology

Founded in 1922 in Chicago, ASCP is the world's largest professional membership organization for pathologists and laboratory professionals. ASCP provides excellence in education, certification, and advocacy on behalf of patients, anatomic and clinical pathologists, and medical laboratory professionals.



**STRONGER**TOGETHER

To learn more about ASCP, visit [www.ascp.org](http://www.ascp.org).

For more information or to see other lists of Five Things Physicians and Patients Should Question, visit [www.choosingwisely.org](http://www.choosingwisely.org).



## ASCP's COVID-19 Recommendations

During the course of the COVID-19 pandemic, the American Society for Clinical Pathology (ASCP), an active member in the Choosing Wisely initiative, has been working aggressively to provide up-to-date resources for pathologists, laboratory professionals and the general public, including the development of a curated **Coronavirus Disease (COVID-19) resource page**. Early on, ASCP helped initiate discussions on the need for a **National COVID-19 Testing Strategy** as well as the establishment of a **COVID-19 Testing Task Force**.

ASCP has been working with the Biden-Harris Administration, Congress, the states, and cities to address testing supply and personnel shortages, which are constraining test capacity at a time when the nation desperately needs more tests. And ASCP has been promoting patient-centric strategies in its regular contact with the federal agencies and with its membership to provide crucial scientific input on issues the **optimal use of certain laboratory tests** and **test accuracy**.

While many Choosing Wisely and related programs were initiated to curb overuse and reduce waste, the COVID-19 pandemic highlighted stewardship opportunities to address underuse (most prevalent, particularly tests to manage chronic disease for traditionally underserved communities and people of color)

- Laboratory professionals have access to data that can identify and help close pandemic-related care gaps
- Choosing Wisely data and resultant programs empower healthcare leaders, especially laboratorians, by supporting their commitments toward appropriate, equitable, and efficient care

The ASCP Effective Test Utilization Steering Committee developed four SARS-CoV-2 recommendations as a response to the pandemic and its effects in the lab.

### Serology

- Do not use serology to evaluate patients with acute COVID-19 upper or lower respiratory tract symptoms, use nucleic acid amplification or antigen testing.

### Antigen testing

- For symptomatic patients with a negative antigen test, confirm with a more sensitive test (ie, PCR), if clinically indicated.
- When antigen tests are used to evaluate an asymptomatic population, positive results should be confirmed using PCR.

### Respiratory pathogen panels

- Do not order a respiratory viral panel for COVID-19 screening (asymptomatic patients) following possible exposure or for return to work/school. Order just the SARS-CoV-2 PCR or antigen test.

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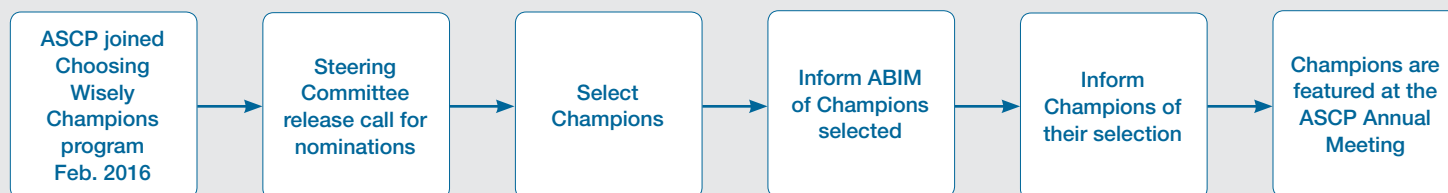
## ASCP Choosing Wisely Champions

In 2016, the ABIM launched the “Choosing Wisely Champions” program to seek and highlight individual clinicians that make significant contributions toward advancing the ideals of Choosing Wisely. The goals of this program are:

- To help expand the Choosing Wisely campaign through dissemination of positive stories of individual clinicians, or teams of clinicians.
- To serve as an inspiration to others within their specialty so that they may apply learnings in their own practice.
- Reaffirm society partner commitments to the campaign and demonstrate tangible action toward advancing the goals of Choosing Wisely.

ASCP’s Choosing Wisely Champions program seeks to recognize successful laboratory related initiatives by pathologists, laboratory professionals, individual clinicians, and clinical teams for their commitment to the ABIM Foundation’s Choosing Wisely Campaign. ASCP has been honoring Champions since the program started. To date, we have awarded 35 Champions from various institutions across the US.

### ASCP Choosing Wisely Champions Nominations & Selection Process



The Choosing Wisely Champions program:

- Recognizes individual clinicians for their contributions to the campaign;
- Inspires other clinicians seeking to implement Choosing Wisely in their own practice;
- Provides society partners an opportunity to celebrate members’ contributions to the campaign;
- Demonstrates how the campaign is driving change in healthcare; and
- Helps clinicians learn from one another by highlighting exemplars.

**See the next page for the ASCP Choosing Wisely Champions.**

**Andrew Fletcher, MD, MBA, CPE, CHCQM, FASCP\****ARUP Laboratories*

Dr. Andrew Fletcher, ARUP medical director of Consultative Services, promotes Choosing Wisely guidelines through his considerable contributions to continuing education and his collaborative initiatives with hospital systems throughout the country to drive quality healthcare improvement.

Along with the ARUP Consultative Services team, Dr. Fletcher has developed real-time analytics tools to identify commonly misused tests and has led laboratory stewardship analyses of reference and in-house testing. Nearly 1,600 users in hospitals and labs across the United States utilize 645 of these dashboards to reduce inappropriate testing, thereby reducing costs and improving patient safety by decreasing daily recurring lab tests, tests reported post discharge, inappropriate test intervals, and iatrogenic anemia. Additionally, his efforts to implement Choosing Wisely recommendations in over 475 reference test ordering pattern reports for U.S. hospitals have resulted in the elimination or reduction of obsolete tests. Dr. Fletcher's laboratory stewardship webinars at the ARUP Institute for Learning focus on principles of Choosing Wisely and have drawn 9,483 viewers and resulted in 5,648 awarded CME/P.A.C.E. credits. He also studies the downstream impact of laboratory testing on aspects of care such as length of stay, readmissions, hospital-acquired infections, and other CMS metrics. His recent publication highlights troponin testing intervals in the U.S. in an effort to reduce lengths of stay and improve diagnostic turnaround times in patients suspected of having myocardial infarction. As a diplomate of the American Board of Utilization Review Physicians, Dr. Fletcher applies laboratory stewardship principles in areas such as accountable care organization operations and revenue cycle management.

**ARUP Consultative Services****Representative: Sandy Richman, MBA, C(ASCP)\****ARUP Laboratories*

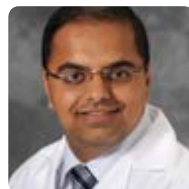
ARUP's Consultative Services team collaborates with health systems throughout the United States to better implement Choosing Wisely guidelines that optimize both reference and in-house laboratory test utilization. By developing and deploying its AnalyticsDx dashboards, the team has

helped clients identify key opportunities to eliminate gaps in their test use that do not adhere to Choosing Wisely guidelines, as well as opportunities to reduce inappropriate tests, thereby reducing costs and improving patient safety. Currently, 645 of these dashboards are utilized in health systems across the U.S. Further, the team has completed over a dozen consulting projects in the last three years aimed at improving test utilization and has identified opportunities to save individual hospitals and health systems over \$700,000 annually. The team dedicates its time and effort to offer continuing education on how to best use Choosing Wisely guidelines. For example, Consultative Services cohosted the PLUGS Mid- west Regional Summit 2019 and conducts lab stewardship workshops at the annual PLUGS Summit in Seattle.

**Mather Hospital Northwell Health's  
Choosing Wisely Committee****Representative: Denise Uettwiller-Geiger, PhD, DLM(ASCP)***Mather Hospital*

In January 2016, colleagues from all disciplines within the hospital were invited by the Medical Board to join the Choosing Wisely committee. The high-level goals for this committee include review of evidence-based guidelines to stimulate discussion about frequently ordered test(s) and/or treatments, as well as to develop tools to ensure clinicians make more effective care choices for improving quality and patient outcomes. The committee performs data analysis, prepares slide presentations, provides evidence-based practice guidelines, and at the monthly meeting presents the information to facilitate the discussion, recommendations and action items.

Specific Laboratory driven initiatives include leveraging a pre-test probability, Wells Score, with a rapid D-dimer assay to support an exclusion strategy for patients presenting to the Emergency Department (ED) with possible symptoms of pulmonary embolism (PE) or deep venous thrombosis (DVT); accelerated ED Chest pain protocol with HEART Score using a hs-troponin; use of an algorithm for difficult testing and screening and identification of anemia in heart failure (HF) patients using Reticulocyte Hemoglobin (RET-He). Other initiatives have included syncope, procainonin, antibiotic stewardship, echocardiogram, and use of the Canadian Head Score for head injury.

**Gaurav Sharma, MD, FASCP***Henry Ford Health System*

Dr. Sharma serves Henry Ford Health System as the Division Head of Regional Laboratories of the Henry Ford Medical Group, Associate Medical Director of Clinical Pathology Core Laboratory at Henry Ford Hospital, and Co-Chair of Henry Ford Health System Laboratory Utilization

Taskforce. Since 2013, Dr. Sharma has been a champion at Henry Ford of the system-wide achievements of numerous Choosing Wisely goals since this initiative was initially fostered by ASCP. Dr. Sharma has demonstrated exceptional and effective leadership in establishing the health system's Choosing Wisely and other laboratory utilization activities across its hospitals and medical centers. Dr. Sharma has partnered with departmental and health system leaders to formalize and establish a health system-wide Multidisciplinary Laboratory Formulary Committee (MLFC) and its subcommittees. As co-chair of Laboratory Utilization Taskforce (LUTF), a multidisciplinary group that oversaw utilization efforts, he interfaced with pathologists, laboratorians, clinicians, clinical leaders, finance experts, and information technology experts to solve issues related to the appropriate use of laboratory testing, including the implementation of Choosing Wisely recommendations. Over five years, the work of MLFC and its subcommittees has translated into a cost saving of over \$5 million. During his tenure, the LUTF created a unique 5-step process for utilization project management and initiated 26 projects, of which 22 were

completed (85% completion rate) on time and within scope. He has also spoken nationally and internationally on this topic at various conference. The team at Henry Ford Health System uses a data-driven approach to identify opportunities and appropriate aligned Choosing Wisely recommendations, lobbies with clinicians, and effectively secures their participation. Through his leadership and work in MLFC and LUTF, Dr. Sharma has helped their clinicians use medical laboratory testing services in a manner that is medically efficacious, fiscally responsible, and most importantly collaborative.

## University of California at San Diego and the Veterans' Affairs VISN22 Area Team

Representative: Nicholas Bevins, MD, PhD\*

Team Members: (Clockwise from top left:) Robin Nuspl, MT(ASCP); Daniel R. Luevano, MS; Nicholas J. Bevins, MD, PhD; Jessica Wang-Rodriguez, MD

*University of California at San Diego*



Jessica Wang-Rodriguez, Danny Luevano, Robin Nuspl, and Nick Bevins developed an innovative and data-driven approach to identifying low-value laboratory utilization based on the Choosing Wisely recommendations. Their methods enabled interrogation of a large array of tests utilizing performance benchmarks derived from national level data

including all Veterans Affairs medical centers. The team was able to intervene at sites within the VISN22 administrative with a combination of provider education, electronic health record ordering adjustments, and other interventions to successfully decrease low-value utilization after identification. These efforts led to nearly \$200,000 of direct savings in testing costs. Their benchmarking methods have enabled ongoing benchmarking reports to identify additional opportunities to implement Choosing Wisely recommendations. Their methods and results are in press at the American Journal of Clinical Pathology, Bevins et al, "Test Volume Ratio Benchmarking to Identify and Reduce Low-Value Laboratory Utilization."

## PeaceHealth

Representative: Mohiedean Ghofrani, MD, MBA, FASCP

*PeaceHealth Southwest Medical Center*



Since 2017, PeaceHealth—a regional healthcare system with 10 hospital laboratories in the Pacific Northwest—has partnered with Quest Diagnostics for clinical laboratory testing, and Quest has shared its expertise to support laboratory stewardship at PeaceHealth. Laboratory leadership convened in-house experts to form a Laboratory Stewardship Committee (LSC) including executives,

clinicians, laboratorians, clinical informaticists, IT specialists, and financial experts. After analysts reviewed laboratory data shared by PeaceHealth, the first LSC meeting was held in November 2019. Monthly meetings have continued on a regular basis. During this short period, the LSC has successfully ratified a charter, solicited dozens of projects, analyzed test utilization data, recommended interventions, and measured and reported effectiveness of implemented interventions.

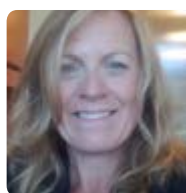
The Choosing Wisely recommendations have been a valuable guide for projects. In line with recommendation #25, after system-wide education and with clinical leadership support, the LSC discontinued procalcitonin testing throughout PeaceHealth, leading to over \$2.25 million of savings to patients each year. Inspired by Choosing Wisely recommendation #9, the LSC removed CK-MB from PeaceHealth's in-house test menu to guide providers toward ordering troponin I (and later, high sensitivity troponin) for the diagnosis of acute myocardial infarction. This change led to near elimination of CK-MB testing, more efficient management of patients presenting with chest pain, and gross annual patient savings of over \$1.16 million. Based on recommendation #6, a clinical champion educated PeaceHealth providers to utilize C-reactive protein instead of erythrocyte sedimentation rate (ESR) when possible, and changes were made to the electronic health record system to remove ESR from several ordersets and to add ask-at-order-entry questions to help ensure ESR is only ordered for certain defined indications.

With these and many other early successes, the LSC hopes to continue promoting more rational stewardship of laboratory resources through initiatives such as utilizing electronic clinical decision support to reduce unnecessary duplicative testing, reducing use of outdated tests, and adopting evidence-based testing algorithms.

## Quest Diagnostics Lab Stewardship Reference Program

Representative: Erin P. Monteverdi

*Quest Diagnostics*



The Quest Lab Stewardship Reference Program supports the implementation of Choosing Wisely guidelines in clinical practice settings across the country. Quest Diagnostics serves more than half of all prescribing physicians and hospitals, which enables Quest Lab Stewardship to have considerable national reach. Quest Diagnostics has provided customers with a complimentary view into their send-out testing laboratory ordering practices with Quest Lab Stewardship Reference. Insight from Quest Lab Stewardship Reference supports health systems and hospitals with managing and monitoring any interventions associated with guideline education needs and helps them focus on targeted areas where adherence gaps are identified. Quest Lab Stewardship has executed five codable rules across 397 healthcare organizations and includes more than 23.5 million laboratory orders. Quest Diagnostics has provided access to the Choosing Wisely recommendations through links and citations in the complimentary products they offer, as well as referencing these rules as part of a utilization review of ordering practices. The Quest Lab Stewardship platform



provides health systems a concrete, near-time measurable view into their adherence to codable guidelines. Orders are directly measured against adherence. Lastly, Quest Diagnostics has served as an ambassador for the Choosing Wisely campaign through discussion and participation in best practice groups.

**Sachin Gupta, PhD, MBA, MT(ASCPi)MB, Lean SSBB**

*Laboratory Quality and Informatics Lead,  
BayCare Health System, Clearwater, FL*



In his role as Laboratory Quality and Informatics Lead at BayCare Health System in Clearwater, Florida, Sachin Gupta, PhD, MBA, MT(ASCPi)MB, Lean SSBB, manages and makes improvements in laboratory processes. For the past five years, Dr. Gupta—who has a PhD in molecular pathology and is certified as a Lean Six Sigma Black Belt—has been involved in more than 20 quality improvement initiatives at BayCare Health System. Some of these initiatives include reducing over-utilization of CT chest angiography using a pre-test probability clinical decision tool and D-Dimer for the diagnosis of pulmonary embolism and appropriate use of C. Diff PCR and MRSA PCR tests using evidence-based guidelines and clinical decision support tools to guide treatment. Dr. Gupta takes a broad view of laboratory data, identifies significant trends and studies health information to effectively improve patient safety and clinical outcomes. His work improves overall patient care and helps in reducing the cost of health care. Dr. Gupta and the quality improvement team at BayCare Health System often utilize Choosing Wisely recommendations as part of evidence-based, best practice guidelines.

**Eric A. Gehrie, MD**

*Medical Director of Blood Bank,  
Johns Hopkins Hospital, Baltimore, MD*



Eric A. Gehrie, MD, FASCP, is an assistant professor of pathology at Johns Hopkins University School of Medicine, in Baltimore, Maryland, where he is also the medical director of the Blood Bank, associate director of the Pathology Residency Program and associate director of the Patient Blood Management Program at Johns Hopkins Hospital. Dr. Gehrie's work with platelet transfusion demonstrates appropriate use of blood products is essential for maintaining a safe and evidence-based clinical environment. Despite multitudes of studies comparing liberal versus restrictive red blood cell transfusion strategies, there remains a paucity of data for platelet transfusion requirements, especially in high-use patient populations like oncology. To examine the daily use and necessity of platelet transfusions in the adult oncology group, Dr. Gehrie has studied the clinical difference and impact between 1-unit platelet transfusions and 2-unit platelet transfusions. His two-year retrospective review demonstrates that the routine use of 2-platelet transfusions per patient provided no benefit over a single platelet transfusion. His study stands as a singular example of judicious use of a limited biologic product—platelets. His research recognizes the importance of reducing

unnecessary platelet transfusions; patients are exposed to fewer donors, hospital platelet inventories remain intact for critical patients, and the financial budget for the blood bank remains fiscally solvent.

**Gary W. Procop, MD, MS, MASCP**

*Cleveland Clinic*



A practicing pathologist, Dr. Procop is nationally recognized in the area of test utilization and was one of the initiators of the Choosing Wisely campaign. He is the founder and current co-chair of the Laboratory Stewardship Committee of the Cleveland Clinic healthcare system and pioneered test utilization analysis by introducing effective methods to control unnecessary testing. The electronic measures to apply algorithms which he and his team developed are widely used in Cleveland Clinic hospital system. The importance of these changes is illustrated by the implementation of a system to continuously analyze the ordering of tests and their effectiveness. In collaboration with other pathologists and specialists in internal medicine, Dr. Procop initiated evidence-based analysis of utilization patterns and contributed to the identification of circumstances in which tests are ordered in an inappropriate manner.

**Inova Laboratory Test Utilization Best Practice Team**

**Team Leader: Myong Ho (Lucy) Nam, MD, FASCP\***

**Team Members: Anh Dang, Marina Douglas, Sonali Pakala, Bala Subramanian, Hassan Nayer, Arlane Nelson, Karen McHale, Valley Health, Michelle Mason, Maiordys Moreira, Lorraine Stoudt, Susan Alfaro, Ann McClellan, Becky Shade, Martha Andrews**

*Inova Health System*

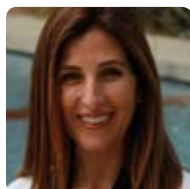


Inova Health System Laboratories has successfully implemented several single test utilization control measures. Its staff worked with their IT department to create simple, rule-based order options during the past five years. They achieved this through changes that include changing the CBC automated differential (CBC A Diff) to CBC Diff to place CBCDiff in front of CBCMDiff to reduce manual differential testing, changing the default screen for QAM lab (x3) to QAM lab (x1), changing the BNP order guideline to a one time on admission and optional one time discharge order, and removing the CK-MB reflex order. With these simple changes, many unnecessary tests were reduced. From there, Inova Health System Laboratories and their IT staff took on an ambitious project to create "Interval Test Allowance Rules" with the help of the System Quality Department and several physicians. The purpose was to control duplicate testing and unnecessary repeat testing based on clinically accepted Interval Rules created by the Laboratory Test Utilization Best Practice Team.

**Red Blood Cell Utilization Project Team, UCLA Health**  
Team Leader: Alyssa Ziman, MD\*

Team Members: Kevin Baldwin, Ashley Busuttil, Robin Clarke, Meg Furukawa, Andrew Hackbarth, Jeffrey Mayne, Dawn Ward

*UCLA Health*



UCLA Health improved red blood cell utilization, following the Choosing Wisely recommendation of the AABB aimed at not transfusing “more units of blood than absolutely necessary.” Through a multidisciplinary effort with hospitalists, transfusion medicine, nursing and IT, UCLA Health utilized IT-enabled strategies to increase the number of guideline-indicated red blood cell transfusions and decrease the number of routine two-unit transfusions. A dynamic order set with embedded real-time clinical decision support, based on the patient’s most recent hemoglobin concentration, was created to guide providers to order appropriately. It increased guideline-indicated red blood cell transfusions from 27 percent to nearly 68 percent (average of 55 percent over the past year) and decreased the number of routine two-unit transfusions without intervening hemoglobin assessment from 43 percent to approximately 27 percent (average of 23 percent over the past year).

Throughout this project, pathologists and hospitalists have been educating attending physicians, house staff, and nurses about the Choosing Wisely campaign as it relates to blood transfusion. These educational efforts not only increased awareness of the importance of transfusing wisely but also increased the appropriateness of transfusions prior to IT intervention. The efforts have resulted in a sustained and continued improvement in overall red blood cell ordering practices since implementation.

**Charlene Bierl, MD, PhD, FASCP**

*Children’s Hospital of Philadelphia*



Dr. Bierl is the Medical Director of Central Laboratory and Phlebotomy Services at the Children’s Hospital of Philadelphia. She previously served as the Director of the Clinical Laboratories at Cooper University Hospital, where she was a leader of multidisciplinary efforts reflective of the Choosing Wisely mission. Over the last nine years, her team made significant efforts to optimize utilization, following many of the Choosing Wisely recommendations. The team developed high level metrics to monitor the financial impact of utilization efforts, as well as feedback reports for ordering clinicians.

Dr. Bierl engaged physician and non-physician partners throughout the health system, leading to successful implementation efforts that resulted in ordering patterns more reflective of Choosing Wisely. Two of her published studies on effective test utilization examine the impact of weekly feedback on test ordering patterns and cost per case mix index-adjusted hospital day as a measure of effective laboratory utilization efforts in a growing academic medical center. She has recently moved to the

Children’s Hospital of Philadelphia, where she plans to continue her efforts on this important initiative. She is also serving as the Associate Professor of Pathology and Laboratory Medicine at the Perelman School of Medicine, University of Pennsylvania.

**Stephen Sibbitt, MD, MBA, FACP**

*BSW Memorial Hospital, Temple Region Baylor Scott & White Health*



Dr. Sibbitt has more than 20 years of experience in healthcare, holding administrative responsibilities in an academic health system with concurrent roles at affiliate hospitals, including a large Top 100 hospital and Level I Trauma center. He has served in significant leadership roles for numerous professional organizations and the Texas A&M Health Science Center, College of Medicine. In partnership with the Regional President, Dr. Sibbitt is leading the initiative to achieve “Medicare Break Even” within the flagship hospital (Baylor Scott & White Medical Center - Temple). He is guiding his multidisciplinary team to reduce unnecessary expenses related to reduction in length of hospital stay, unnecessary lab and radiology utilization, inappropriate utilization of high-cost medications, and cost-inefficient variation in provider practice. He has steadfastly supported the laboratory’s use of the guidelines, educated his peers, and led monthly monitoring and communications of data and results.

**Rana Nabulsi, PhD, FACHE, MSc, CPHQ, SSGB**

*Dubai Health Authority*



Dr. Nabulsi serves as a consultant in the Head of Quality Assurance Unit in the Pathology and Genetics Department at Dubai Health Authority. She is a Fellow at the American College of Healthcare Executives and the Chair of the ASCP Board of Certification United Arab Emirates Advisory Board. Dr. Nabulsi completed her PhD in quality management and obtained her Master’s degree in molecular genetics from the Faculty of Medicine at Jordan University. She is a Certified Professional in Healthcare Quality and is certified as a Six Sigma Green Belt by the American Society of Quality.

Dr. Nabulsi has promoted the Choosing Wisely guidelines in her training, meetings, and utilization committee, and has done speaker sessions for the same. She has implemented Choosing Wisely guidelines in her organization and conducted operational activities such as moving from ESR to CRP and limiting Vitamin D testing to only high-risk categories.



**Ila Singh, MD, PhD***Baylor College of Medicine & Texas Children's Hospital*

Dr. Singh serves as the Chief of Laboratory Medicine in the Department of Pathology at Texas Children's Hospital and as tenured Professor of Pathology & Immunology at Baylor College of Medicine. She completed her MD at the University of Bombay, and her PhD at Yale University. She also served as

the Jane Coffin Childs Fellow at Stanford University and completed her Clinical Pathology residency training at Columbia University Medical Center. Dr. Singh is board-certified in Clinical Pathology and in Clinical Informatics. She has special expertise in Laboratory Test Utilization management, as evidenced by her involvement in creating the Clinical and Laboratory Standards Institute (CLSI) document on Test Utilization, and her membership on the national committee on Lab Test Utilization and Stewardship that co-authored the consensus document on the subject. Her research is focused on using Artificial Intelligence/Deep Learning approaches to determine risk stratification, prescriptive analytics, better utilization of healthcare resources, personalized therapeutics and optimization of treatment protocols.

**Curtis A. Hanson, MD***Mayo Clinic*

Dr. Hanson currently serves as the Professor of Laboratory Medicine and Pathology at Mayo Clinic and as the Chief Medical Officer for Mayo Medical Laboratories. He has been a proponent of optimal test utilization throughout his 31-year career as a pathologist and has led Mayo Clinic efforts in appropriate laboratory utilization for the past two decades. Most recently, he has served in the role of being the physician leader for value based testing for Mayo Medical Laboratory clients and has worked tirelessly to incorporate the tenets of Choosing Wisely into the clinical practice at Mayo Clinic. In addition to extensive educational efforts and creation of testing algorithms for optimizing test utilization and interpretation in the fields of hematology and hematopathology early in his career, Dr. Hanson led the effort to expand this beyond his specialty area and helped lead the incorporation of laboratory utilization rules into the inpatient hospital practice at Mayo. He led the development of the laboratory utilization rules that are used within the clinical decision support tool used at Mayo Clinic (CareSelect). Dr. Hanson is the creator/co-creator of 25 clinician/pathologist-driven testing algorithms in hematopathology. Implementation of these algorithms has led to a reduction of unnecessary tests that has reduced laboratory costs by approximately \$1 million annually over the last eight years. Dr. Hanson has co-authored numerous peer-reviewed publications on test utilization and has also delivered lectures on this topic to medical students, pathology residents, medical laboratory scientists, pathologists, and other clinicians as well as to numerous medical societies.

**Diane George, DO***Henry Ford Medical Group*

As the Chief Medical Officer for Primary Care- Henry Ford Medical Group, Dr. George has demonstrated extraordinary physician leadership in ensuring appropriate utilization of Vitamin D testing across the Henry Ford health system. Her group established a baseline of ordering volume and

developed analytics tool to monitor total volume as well as high-light low and high utilizers. Dr. George spoke with leaders and providers at all levels and was a public and visible champion for Choosing Wisely. Due to these efforts, the number of Vitamin D orders (from ambulatory providers distributed over 20+ sites) reduced from 685/month to 150/month within the first year of implementation, and continues to decrease at an annual rate of 23 percent. Dr. George's leadership and guidance towards appropriate Vitamin D utilization has made a significant impact in implementing ASCP's Choosing Wisely guidelines in Southeastern Michigan.

**Heather Signorelli***HCA-HealthOne*

Dr. Signorelli is board certified in Anatomic Pathology, Clinical Pathology and Chemical Pathology and currently serves as the Chief Laboratory Officer for HCA-HealthOne overseeing nine hospital laboratory operations. This has included building laboratory stewardship programs for two hospital markets

with an annual savings of over \$2 million and leading consolidation and standardization efforts. As of June 2018, 14 other divisions within the HCA system have built and started laboratory stewardship programs under Dr. Heather Signorelli's leadership. The committees will initially focus on the Choosing Wisely list of obsolete tests and continue to build the program from there. The focus is on developing an infrastructure to provide a laboratory stewardship template for other divisions, gathering data and planning for resources needed to implement. Prior to her current role, Dr. Signorelli was a Clinical Pathologist with Unipath working to build laboratory stewardship programs in three Colorado healthcare systems. In addition, she has served as laboratory medical director and system medical director for Centura Laboratory Systems. She has also worked with the American Society for Clinical Pathology (ASCP) for the Laboratory Management University developing instructional webinars for students enrolled in the laboratory management certificate program.

## James Littlejohn, MD, PhD

Weill Cornell Medical Center



Dr. Littlejohn currently serves as an Assistant Professor of Clinical Anesthesiology and Critical Care Medicine at Weill Cornell Medical Center. He has worked with the Quality and Safety department's blood utilization group, the Transfusing Wisely committee, at UC Davis Medical Center, for approximately nine months to evaluate data pulled from their operating room's electronic medical record into their transfusion registry. Dr. Littlejohn worked with the team to produce an intuitive user interface for the first version of the perioperative transfusion dashboard, strategize the best approach to begin a perioperative blood management campaign at our institution, and produce and administer a survey on perioperative red blood cell transfusions to his department. The survey data produced by Dr. Littlejohn showed that majority of anesthesiology providers consider hemoglobin  $\leq 7$  g/dL as an appropriate prophylactic red blood cell transfusion trigger in asymptomatic, otherwise healthy patients and support providing one red blood cell unit at a time for transfusion support. His presentation on the project in an interdisciplinary grand rounds between the departments of anesthesiology and surgery was well received and would be a spring-board for policy review/revision and education moving forward.

## Jennifer Stumph, MD

Michigan Pathology Specialists



Dr. Stumph has been an influential person in her role as a Pathologist at Michigan Pathology Specialists, P.C., Spectrum Health Hospitals in Grand Rapids, Michigan. She has worked with a group of interdisciplinary specialist standardizing breast cancer treatment protocols to provide evidence based medicine in an efficient manner. Her study, "Sentinel Lymph Node Biopsy for Patients with DCIS: Just In Case vs. Choosing Wisely," focuses on the added cost without added clinical value to performing sentinel lymph node biopsy on patients with DCIS. Her research is a testimony to her dedication to implementing change in a healthcare system with room for improvement. To her students, she has been an incredible role model, demonstrating strong interpersonal skills and with a passion for driving change in the healthcare field today.

## Pallavi Patil, MBBS, MD

Brown University and Lifespan Academic Medical Center



Dr. Patil is currently a fourth year pathology resident at Brown University. During her second year in residency, she started working with principal investigator Dr. Chapin (Director of Microbiology) to look into the PCR send out testing for blood parasites Babesia (Bb), Plasmodium (Pm), Ehrlichia (Er), and Anaplasma (Ap) through the laboratory that entails a large non-reimbursed expenditure for the hospital lab. After

looking at the results from send out PCR tests and peripheral blood smear for parasites and serology, her team liaised with hematopathology Director Dr. Treaba to validate the suggested flow chart on workup for blood parasite testing. According to her study, PCR testing does not add value and should not be ordered for determination of blood parasites without initial peripheral blood smear evaluation, or consultation with pathologist. Dr. Patil is also an honoree of ASCP's 40 Under forty program for 2018.

## Mayukh Sarkar, PhD, MLS(ASCP)<sup>CM</sup>

University of Texas Medical Branch; Hematology Department



Dr. Sarkar is a Medical Lab scientist working in special coagulation. He recently published a study in the journal Diagnosis on Laboratory test utilization - how errors are made by underutilization or overutilization of laboratory tests specific to coagulation test orders. He presented his research at the Diagnostic Management Team Conference held in February 2017 in Galveston, TX and was invited by Seattle Children's Hospital to present at their Annual PLUGS Summit in June 2017.

## Silvia Bunting, MD

Children's Hospital of Atlanta



Dr. Bunting is a hematopathologist. During her practice, she has seen many unnecessary tests being ordered in her specialty. In 2013, she proposed to her chief that they needed a test utilization committee to decrease the inefficiency of the testing. She was tasked to start the committee thus becoming the co-chair. In the past few years, the committee has made a lot of progress in terms of having physician involvement and implementing practice changes to improve test utilization. One of the changes which will result in a publication is that to decrease the use of FISH MDS for working up a cytopenia patient at her hospital.

## Lana Jackson, MD

University of Mississippi Medical Center



Dr. Jackson is an Associate Professor of Otolaryngology at the University of Mississippi Medical Center. She is a fellowship trained head and neck surgeon who specializes in surgical treatment of head and neck cancer and disorders of the thyroid and parathyroid glands. She is also the Otolaryngology Residency Program Director. Dr. Jackson and her colleagues perform the majority of the thyroidectomies at our institution. Prior to the initiation of our utilization project, there was no standardized protocol for the monitoring of serum calcium after thyroidectomy. The rationale for testing is that parathyroid dysfunction after thyroidectomy can cause hypocalcemia in up to 50% of patients. Variation in practice and overutilization of labs can lead to increased cost due to the cost of labs, increased time in the OR and increased length

of stay (LOS). Without a front-line clinician championing our utilization efforts, the implementation of projects involving testing utilization can be very challenging. It is through partnership and collaboration with physicians like Dr. Jackson that meaningful changes can occur.

### Jack Jordan, MA

*Henry Ford Health System*

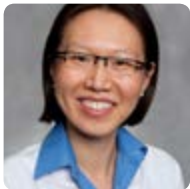


Mr. Jordan is Director of Performance Excellence and Quality at Henry Ford Health System, Detroit. He has consistently gone above and beyond in making the utilization of laboratory services evidence-based, safer and compliant with Choosing Wisely Recommendations. Jack, in his capacity as

the past head of Inpatient Analytics and now the director of Quality at Henry Ford Hospital, has been an invaluable information partner. He has constantly guided the laboratory utilization task force (LUTF) towards actionable information derived and collated from multiple data sources. His work and his leadership has enabled us to gain invaluable insight into our laboratory and clinical data.

### Yaolin Zhou, M.D.

*University of Oklahoma Health Sciences Center*



After leaving UAB to become a fellow in molecular genetic pathology at the Cleveland Clinic, she joined their Test Utilization Committee, and actively evaluated genetic test orders and developed algorithms based on best practice guidelines. Since joining the faculty at the University of Oklahoma

Health Sciences Center (OUHSC), her ability to advance dissemination of the Choosing Wisely recommendations that relate to the laboratory among her clinical colleagues has exploded! Dr. Zhou estimates that she has presented to about 630 folks in Oklahoma since July and hopes that she has had a slight impact on the “choosing wisely” culture. Yaolin always wanted to “change the world” and “make the world a better place,” but since that is really ambitious, she decided to start smaller by promoting a culture of collaboration and patient-centeredness. As a pathologist, she decided to reach her goals by teaching healthcare value, diagnostic decision-making, and an evidence-based approach to utilization management.

### Meghan Kapp, M.D.

*Vanderbilt University Medical Center*



Meghan Kapp is presently a clinical fellow in Renal Pathology. As a pathology resident and subsequently Chief Resident, she has served as a founding member and co-chair of VUMC's Choosing Wisely (CW) steering committee. This committee brings together

house-staff from all specialties for the common goal of providing high-value care to patients across our institution. By educating house-staff and faculty regarding the issue and potential harm of daily labs encouraging specific

discussion of lab results and the need for future labs during rounds, and providing data feedback with peer comparisons, VUMC achieved its goal of <60% of inpatients receiving daily labs. For her work with Choosing Wisely initiatives, she was invited along with Drs. Donald Brady and Wade Iams to present their efforts to the Connecticut Hospital Association and at Grand Rounds for Middlesex Hospital in Middletown, CT. Additionally she was invited to present this work at Grand Rounds for University of Tennessee Medical Center, Knoxville.

### Geoffrey Baird, MD, PhD, FASCP

*University of Washington & Harborview Medical Center*



Dr. Baird is the residency program director as well as the new Interim Chair of our Department of Laboratory Medicine at the University of Washington in Seattle, WA and the Director of Clinical Chemistry at Harborview Medical Center. He has submitted many of the recent recommenda-

tions that were chosen for Laboratory Medicine. He continually works to advance Choosing Wisely in our practice of Laboratory Medicine. He has also built into his institution's curriculum an Informatics project where they each research the usage/utility of a test and most residents present it at a national meeting and/or publish their data. Most of the projects that directly relate to Choosing Wisely campaigns have been submitted/accepted/presented as abstracts.

### Christopher Polage, MD

*University of California, Davis*



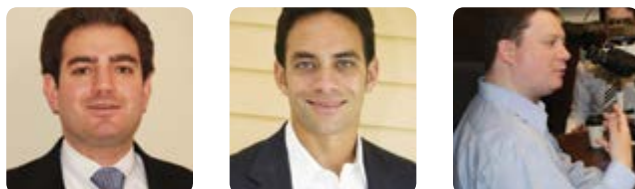
*Clostridium difficile* is one of the most common causes of healthcare-associated infection in United States hospitals and globally. However, indiscriminate testing of minimally symptomatic patients and overly sensitive genomic tests have resulted in massive over diagnosis and overtreatment affecting tens

of thousands of patients each year. Dr. Polage's research and publication in JAMA have brought national attention to this issue and contributed to the March 2015 Choosing Wisely recommendation from the Infectious Diseases Society of America (IDSA) for physicians to 'Avoid testing for a *Clostridium difficile* infection in the absence of diarrhea.' In addition, Dr. Polage is working to develop effective new test strategies to prevent hospital-acquired *C. difficile* infection. His "STOP *C. difficile* Project", funded by a \$2.4M grant from the Gordon and Betty Moore Foundation, lowered the rate of hospital-acquired *C. difficile* in the 10 participating units at UC Davis Medical Center (UCDMC) by a dramatic 30% over baseline. Dr. Christopher Polage's work and activities in the area of *C. difficile* testing exemplify the spirit and intent of the Choosing Wisely campaign.



**Jason Baron, MD, Anand Dighe, MD,  
and John Branda, MD**

*Massachusetts General Hospital, Department of Pathology*



The Division of Laboratory and Molecular Medicine within the Department of Pathology at the Massachusetts General Hospital (MGH) hosts a highly active, division-wide laboratory utilization management (UM) program that includes participation from all division faculty under the leadership of Kent Lewandrowski, MD. Drs. Jason Baron, Anand Dighe and John Branda serve key roles within this UM program. In his role as a Medical Director in the MGH Core Lab, Dr. Baron's particular areas of UM focus include data analytics and reference laboratory ("sendout") testing. Dr. Baron has developed data-mining approaches to identify tests that are frequently misused and may represent potential UM targets as well as metrics to monitor utilization and guide utilization improvement initiatives. As Director of the MGH Core Laboratory, Dr. Dighe oversees UM initiatives throughout the lab. Dr. Dighe often leverages our hospital's computerized provider order entry systems to improve utilization and he has developed strategies to optimize clinician test selection and electronic clinical decision support for laboratory test ordering. Dr. Branda, Associate Director of the MGH Microbiology Laboratory, leads UM efforts to optimize in-house and sendout microbiology testing. Dr. Branda has developed and implemented numerous testing algorithms, reflex protocols, guidelines and educational initiatives.

The team was nominated by Barbara Caldwell, a past Chair of the Council on Laboratory Professionals, who heard their presentation at the ASCP 2015 Annual Meeting. "I was intrigued by their utilization tools, the discussion of benchmarking and restrictiveness – structure needed to go forth into a new era of utilization management, as well as their focus on the importance of obtaining clinical buy-in," she said. "The metrics they currently use in their institution to provide the data to guide and monitor impact of utilization management initiatives demonstrate best practice strategies on this topic."

**Dana Altenburger, MD, FASCP, FCAP**

*Medical Director of the Laboratory at Advocate  
BroMenn and Eureka Hospitals*



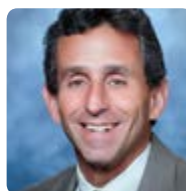
Dana Altenburger, MD, FASCP, has successfully implemented strategies of appropriate test utilization. As Chair of the Advocate Bromenn Medical Center's Blood Utilization Committee, she has decreased inpatient blood product usage by 46% over the past three years. In conjunction with local allergists, she has reduced screening batteries for allergy testing. Aligning with the cardiologists, she has eliminated CK-MB testing for myocardial infarction. Virtually all 1, 25-OH

vitamin D tests (in lieu of 25 Vitamin D) have been eliminated unless certain criteria are met. She has eliminated certain coagulopathy testing, (i.e. MTHFR) and has eliminated the work up for clotting disorders for patients who develop a first episode of deep vein thrombosis (DVT) in the setting of a known cause. She eliminated hypercoagulable testing for in patients with acute thrombotic events, delaying this until the appropriate outpatient venue. "I knew this was something I could do as a pathologist to provide a benefit to our hospital. It's a concrete thing where you can see the results," said Dr. Altenburger.

**Scott Weingarten, MD and Ellen Klapper, MD**

*Cedars-Sinai Health System, CA*

*Scott Weingarten, MD, Senior Vice President,  
Chief Clinical Transformation Officer*



Cedars-Sinai Health System integrated more than 100 "implementable" (i.e., a computer would have to understand the recommendation) Choosing Wisely recommendations into its electronic health record system. The health system created alerts for ordering providers throughout the hospital, medical group, and many of its private practice physicians. "We believe that we are the first health system in the country to 'hard wire' a large number of Choosing Wisely recommendations into our EHR," says Dr. Weingarten. Cedars-Sinai first implemented the vitamin D screening recommendation and found reasonable acceptance by physicians to the alert. By looking at cancelled orders and decreased rate of ordering per 1,000 patients, annualized cost-savings of over \$400,000 were found from the single vitamin D recommendation alone. These, and many other recommendations, have been translated into day-to-day practice. In the aggregate, Cedars-Sinai has seen an annualized cost-savings of more than \$6 million per year and improved the quality and safety of care from implementing Choosing Wisely recommendations across the health system.

*Ellen Klapper, MD, Medical Director, Division of  
Transfusion Medicine Cedars- Sinai Medical Center,  
Dept of Pathology; Past President for California Society  
of Pathologists*



Dr. Klapper has collaborated with specialists from throughout the hospital to come to a consensus to use evidence-based, best practice guidelines for utilization for all blood components. These guidelines were subsequently integrated into electronic medical record system and best practice alerts were created that pop up and notify the ordering provider should the patient falls outside of those guidelines. These efforts have led to a sustained reduction in transfusions outside the established guidelines and that translates into improved patient safety because unnecessary transfusions have the potential to expose the patient to known risks, without evidence of benefit. The laboratory has also introduced several processes into the electronic ordering system to reduce duplicative and unnecessary test requests.

## Geisinger Medical Laboratories

### Test Utilization Committee

Representative: Conrad Schuerch

Team Members: Kelly Baldwin, Brandi Bradrick, Jeanene Contreras, Harold Harrison, N Sertac Kip, Troy Klinger, Philip Krebs, Diana Kremitske, Jordan E Olson, Dean Parry, Bonnie Salbert, Wayne Short, Patricia Tsang, Marc Williams, Mike Weaver, Bret Yarczower

*Geisinger Health System, Danville, PA*



The Geisinger Medical Laboratories test utilization efforts formally began in 1996 and evolved over time to a broader purpose of assuring the medical appropriateness of laboratory testing, developing systems and policies regarding use of laboratory tests and facilitating standardized laboratory utilization practices. Various methods are employed by the Geisinger Laboratory Utilization Committee to fulfill this charge. The committee operates with a multidisciplinary, team-based approach comprised of laboratory professionals from various levels – pathologist director and staff, physicians from clinical specialties and Geisinger Health Plan Company, and participants from finance, clinical informatics and pharmacy.

The group has tackled various test utilization opportunities in anatomic and clinical pathology using a variety of modalities to effect change. Among these efforts include routine review of test utilization data, provider education and feedback, accessible consultative services from pathologists, communication tools, test preauthorization processes linked in the electronic health record (EHR), reflex testing protocols, decision support and order set tools in the EHR, and elimination of select, inpatient standing orders. Also blood management tactics supported by a system Transfusion Medical Director and hospitalist infrastructure produced remarkable results in reducing blood transfusions.

## Ilan Rubinfeld, MD, MBA

*Associate Chief Medical Officer, Henry Ford Health System, MI*



As Associate Chief Medical Officer, Dr. Rubinfeld has spearheaded several laboratory-related initiatives and projects, including his roles in the system-wide Medical Laboratory Formulary Committee (MLFC) and Laboratory Utilization Taskforce (LUTF) and integrating them with the health system's Epic councils. The system's novel Laboratory Formulary mechanism helps the lab collaborate with clinical peers, improve provider workflow, and mine data to identify opportunities for cost-effective and medically-indicated laboratory testing in both inpatient and outpatient settings. This work is done under the aegis of the 13-member MLFC (on which Dr. Rubinfeld represents the hospital providers) that comprises executive level system leaders. Under MLFC, the multidisciplinary LUTF now includes more than 20 members from primary and specialty care, Epic, finance and analytics, and has more than 12 projects around laboratory utilization and Choosing Wisely recommendations in the pipeline. This consortium has worked on several projects, including reduction of overutilization of troponin testing and eliminating the ordering of daily labs. Dr. Rubinfeld has met personally with every leader in nursing and operations and on the physician council to advocate the merits of appropriate test utilization. This synergistic combination of laboratory and system resources has allowed for the calculation of both upstream and downstream costs and benefits, capturing the metrics and rapid deployment of solutions in Epic. Going beyond system resources and by leveraging Stanson Analytics tool to work with Epic, LUTF, under Dr. Rubinfeld's leadership, will coordinate and serve as the node for implementation of more than 70 laboratory testing-related Choosing Wisely recommendations across the health system.

### ASCP Effective Test Utilization Advisory Board

As the work of the Steering Committee expands beyond releasing recommendations, the need for subject matter experts has become evident. ASCP receives many recommendation submissions from its membership, but each release is limited to five recommendations. An Advisory Board with subject matter experts will be invaluable to help review submitted recommendations, supporting materials and assist in prioritizing submissions.

#### **Mission Statement**

The Advisory Board Members provide subject matter expertise to guide the development of ASCP's future priorities and recommendations. Members will also be advocates for the Choosing Wisely initiative; sharing locally and regionally why it is a unique opportunity for pathology and laboratory medicine leaders to positively impact clinical outcomes and cost reduction. Efforts include identifying strategies to overcome communication, organizational, and systems barriers to implementing Choosing Wisely Best Practices.

#### **Member Responsibilities**

- Review proposed (potential) recommendations based on their expertise that will be provided one week in advance of each Steering Committee conference call, provide a review of the pertinent literature, join in the conference call to discuss their evidence-based recommendations, provide input on prioritization, and review comments and edits. An Advisory Board Member may be asked to write a supporting statement with the recommendation that is relevant to their expertise.
- Members only need to participate in Steering Committee conference calls when their expertise is required. We trust that Advisory Board members will regularly attend the Board conference calls, but recognize that attendance is not always possible. When a member cannot participate, we ask that the agenda materials be returned with edits and comments or indicate that no changes are needed. Appointments are annual, with the potential for renewal.



Opportunities:

- Develop local Choosing Wisely initiatives and contribute to the national discussion.
- Examine local utilization and determine other Choosing Wisely priorities based on local practices.
- Participate in a discussion to possibly expand the ASCP initiatives and create further, possibly discipline specific lists:
  - » Anatomic pathology
  - » Molecular and genetic testing
  - » Clinical chemistry
  - » Surgical pathology
  - » Cytopathology
  - » Microbiology
  - » Hematopathology
  - » Immunohematology

As of 2022, the steering committee received approximately 800 interested pathologists and lab professionals:

- Partner organizations include AABB, American Association for Clinical Chemistry (AACC), Association for Molecular Pathology (AMP), Association of Public Health Laboratories (APHL), American Society for Clinical Laboratory Science (ASCLS), American Society of Hematology (ASH), American Society for Microbiology (ASM), Clinical Laboratory Management Association (CLMA), National Society for Histotechnology (NSH)

Experts from 11 specialties:

- Surgical Pathology, Cytopathology, Forensic Pathology, Molecular Pathology (except for genetics/genomics), Molecular genetics/genomics, Clinical Chemistry, Transfusion Medicine, Hematology/Hematopathology, Microbiology, Serology, Toxicology/Prescription Drug Monitoring, Other

Other opportunities:

- Submitting nominations for the ASCP Choosing Wisely Champions Program
- Abstract submissions (poster or panel) to highlight your successes with your ASCP colleagues
- Featuring your institution's Choosing Wisely initiatives (via ASCP Blog, Newsletters)
- Participation in the National Pathology Quality Registry

A woman in a white lab coat and safety glasses is looking down at a piece of equipment in a laboratory setting. The background is slightly blurred, showing other lab equipment and a clean, professional environment. The entire image has a purple overlay.

# PARTNERSHIPS

For 10 years, the ASCP has partnered with various institutions and groups to advance the goal of effective test utilization. This section highlights the work we've done with the National Kidney Foundation (NKF), American Society for Clinical Laboratory Science (ASCLS) and the American Society for Microbiology (ASM) and groups within the society that engage clinicians, payors and patients.

## ASCP and the National Kidney Foundation (NKF)

Of the almost 85 million Americans at risk for developing Chronic Kidney Disease (CKD), approximately 37 million people will develop CKD, yet only about 10% (3.6 million) will be aware they have this condition. CKD is asymptomatic at its onset, and its progression can be slowed or halted in its early stages. Guidelines recommend regular CKD testing for people at risk for CKD, including those living with diabetes or hypertension.<sup>1</sup> Currently, 94% of patients with hypertension and 61% with diabetes do not receive tests necessary to detect and assess CKD.

The American Society for Clinical Pathology (ASCP) and the National Kidney Foundation (NKF), together with the nation's leading laboratories and clinical laboratory societies, are collaborating to remove barriers to CKD testing. The collaboration helps standardize the tests used to detect CKD, improve comparison of test results across laboratories, increase early recognition of the disease and promote patient awareness of the condition when it is most treatable.

The ASCP/NKF collaboration is the first to combine the resources and talents of leading clinical laboratory societies, multiple laboratory providers, and a patient advocacy group to advance improvements in CKD laboratory testing. The CKD Intercept Objectives are:

1. Establish protection and preservation of kidney health as a national public health priority
2. Provide training and materials for clinicians to apply CKD interventions in practice
3. Engage CKD patients in ongoing interactions to ensure they have the information<sup>2</sup>

This collaboration recommended a new CKD assessment and diagnosis test profile termed the “Kidney Profile” based on evidence-based clinical practice guidelines,<sup>1</sup> that recommend two tests (i.e., eGFR and the urine albumin/creatinine ratio [uACR]) for CKD assessment. Laboratories offering the “Kidney Profile” simplify ordering of the tests to detect and diagnose CKD by pairing them together under one laboratory requisition form or electronic health record order. Streamlining CKD test ordering will help eliminate the need to order each test individually and increase the ease of monitoring results when reported together. The “Kidney Profile” also makes it easier for people at risk for CKD to better understand and track their kidney health.

NKF and ASCP also recommend that laboratories use the same equation to estimate GFR and rename the microalbumin test to one that more accurately reflects what it is measuring, namely albumin-creatinine ratio in urine. Standardized ACR reporting using milligrams per gram will make it easier for clinicians to compare results received from different labs.

The recommendation of a new test profile for CKD assessment and diagnosis was included in ASCP's fifth list of recommendations that was submitted and approved by the ABIM Foundation:

*Don't request just a serum creatinine to test adult patients with diabetes and/or hypertension for CKD; use the Kidney Profile (serum Creatinine with eGFR and urinary albumin-creatinine ratio.)<sup>3</sup>*

ASCP and NKF continue to work together to promote CKD awareness through engaging laboratories, informing clinicians, educating the public and involving patient representatives.



[www.kidney.org/news/national-kidney-foundation-american-society-clinical-pathology-leading-laboratories-and](http://www.kidney.org/news/national-kidney-foundation-american-society-clinical-pathology-leading-laboratories-and)

[www.ascp.org/content/get-involved/institute-of-science-technology-policy/ckd-assessment-and-diagnosis](http://www.ascp.org/content/get-involved/institute-of-science-technology-policy/ckd-assessment-and-diagnosis)

### **American Society for Clinical Laboratory Science and the American Society for Microbiology Partnerships on Choosing Wisely**

In 2021, the ASCLS and ASM formed a partnership agreement with ASCP's Choosing Wisely campaign. Both societies have been requested to appoint a representative to become a member of our Effective Test Utilization Steering Committee. As a two-year commitment, the society representatives will provide subject matter expertise in development of recommendation lists, advocate for the Choosing Wisely initiative and provide input from the societies regarding effective test utilization. To date, the ASCLS has developed a list of 10 recommendations and the ASM developed five, with another one underway.



#### **American Society for Clinical Laboratory Science (ASCLS)**

Founded as a Task Force in 2017, the ASCLS Choosing Wisely committee develops Choosing Wisely recommendations in consultation with the ASCLS Scientific Assemblies and Board of Directors. Committee members and reviewers represent the Medical Laboratory Science disciplines of Clinical Chemistry, Microbiology, Immunology, Immunohematology, Molecular Diagnostics, Hematology, Hemostasis, and Laboratory Administration. Our many Medical Laboratory Science educators incorporate Choosing Wisely recommendations in course modules prepared for undergraduate and graduate Medical Laboratory Science students, Physician Assistant and Nurse Practitioner programs, entry-level Nursing programs, and Pathology residents. The Committee's activities are ongoing, and we invite recommendation suggestions from throughout the in vitro diagnostics industry



#### **AMERICAN SOCIETY FOR MICROBIOLOGY**

#### **American Society for Microbiology (ASM)**

Clinical and Public Health Microbiology Committee (CPHMC) Mission: To advance and promote the practice of clinical and public health microbiology by developing and delivering professional development content for members to increase their knowledge, enhance their skills, and contribute to the profession. To achieve its mission, the CPHMC offers professional certification, online education, mentoring, accreditation of postgraduate education programs, development of evidence-based guidelines, and monitoring of issues that impact the practice and profession-coding, reimbursement, personnel standards and workforce.



[illegible][illegible]

### Building Trust Initiative

In 2018, the ABIM Foundation embraced a new focus—examining issues of trust in health care and how trust contributes to better health care outcomes, increased patient satisfaction and greater physician well-being.<sup>4</sup>

*Building Trust* is an ABIM Foundation (ABIMF) initiative that aims to elevate the importance of trust as an essential organizing principle to guide operations and improvements in healthcare. The ABIMF will identify and promote best practices in building trust by collaborating with organizations across various healthcare sectors. This initiative builds on the Foundation's open call in 2019 to healthcare stakeholders to share trust-building practices.<sup>5</sup>

The ABIM Foundation, building on its commitment to improve health care by advancing medical professionalism, launched the of a Trust Practice Challenge to gather existing practices that help build and maintain trust throughout the healthcare system. A “practice” could involve interactions between clinicians and patients, among clinicians, between clinicians and health systems/hospitals, or between patients and health systems/hospitals. Exemplary trust-building practices we have heard about include, among others, disclosure of medical errors and subsequent apologies, guarantees of quality service levels, and endorsement of clinicians during care transitions.<sup>6</sup>

In late 2019, ASCP was invited to join the Building Trust Initiative because of our work in Choosing Wisely and the unique role of pathology and laboratory medicine in the health care field.

In 2020, the ASCP became a partner in this initiative and submitted its work on **Patient Champions** to share how this practice nurtures trust between patient and laboratory practitioners.

**See next page for details.**



BUILDING  
TRUST



**NAME OF PRACTICE:****ASCP Patient Champions:  
Patient Advocacy and  
Education through  
Understanding the Role of the  
Laboratory in Patient Care****How does the practice work?**

Educated patients are empowered patients. Patients who are empowered feel more in control of their diagnosis, treatment, and management options. Empowered patients create a more collaborative environment between themselves, their caregivers, and their healthcare practitioners. Patients who are educated about their diagnoses and prognoses and who advocate for their own healthcare decisions have higher levels of trust with their practitioners.

ASCP's Patient Champions program empowers patients by educating them about diagnostics, laboratory tests, and pathology follow-up care using real-life stories of patients, our Patient Champions. Educating patients about the crucial role the laboratory plays in patient care and helping patients understand their diagnoses and lab results increases collaboration and trust between patients and their healthcare practitioners.

Through ASCP's Patient Champions program, patients, advocates, and caregivers receive information about how pathology and laboratory medicine is involved in their care. Specifically, Patient Champions resources explain why tests are performed and how. Additionally, Patient Champions educational flyers describe laboratory tests associated

with specific diagnoses or conditions, such as thyroid diseases or diabetes. These resources help patients understand why certain tests are important and what the results mean.

In addition to education, transparency is crucial to achieving high-quality patient care. Many patients, however, do not know about or understand the role of pathology and laboratory medicine. Educating patients about this cornerstone of medicine through real life patient stories increases trust, confidence, and understanding of the entire healthcare system.

**What skills and competencies does the practice rely on?**

The practice relies on a number of skills and competencies for the pathologist and laboratory professional. The ASCP Patient Champions program has created resources to help ASCP members speak to patients about their diagnoses and laboratory results more effectively. On the patient side, the educational materials are developed using easy to understand terms, descriptions, and graphics.

**How did the practice come to be?  
Was it addressing a particular  
problem or opportunity?**

Many patients are unaware of the role of pathology and laboratory medicine, despite its critical role in high-quality patient care. Timely and accurate diagnostics are necessary to treat patients and cure patients from illnesses and conditions. When patients do not understand the role of pathology and laboratory medicine,

they are less likely to advocate for themselves and to trust the overall healthcare system. If patients do not know which tests are ordered and why, they are not as likely to take an active role in their care or the care of their family and friends. Healthcare is a collaborative environment that centers around the patient. The more we educate and empower patients, the higher quality care we all create together.

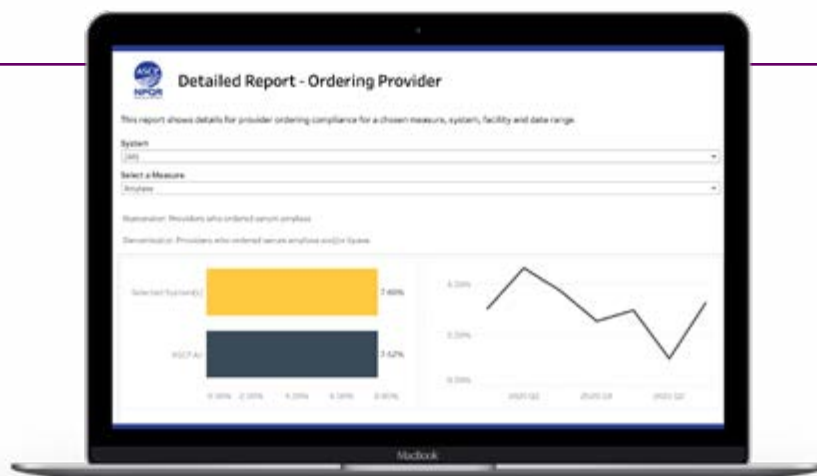
**Is there quantitative or qualitative evidence for the practice's effectiveness? Are there other reasons to believe that it is building trust?**

The ASCP Patient Champions program has received and collected qualitative evidence that the program is effective in increasing awareness of pathology and laboratory medicine. Additionally, qualitative evidence suggests that the Patient Champions educational resources increase trust between patients and the overall healthcare system.

Currently, the program is collecting quantitative evidence concerning the program's effectiveness.

**Is the practice scalable or used at more than one location?**

The practice is scalable and available for any patient, healthcare practitioner, advocate, or institution interested in furthering patient education. All resources are available online, and multiple partner organizations use the ASCP Patient Champions materials to empower their patients and constituents.



## NPQR and ASCP Choosing Wisely

In 2017, ASCP launched the National Pathology Quality Registry (NPQR), a benchmarking platform that uses validated laboratory data to drive improvement in patient care. In order to establish timely and relevant quality measures, ASCP members were surveyed to assess their top priorities for improvement. Not surprisingly, laboratory test utilization was one of the issues that rose to the top of the list.

ASCP developed an entire suite of measures that use Choosing Wisely recommendations as their foundation. Through the use of real-time analytics, the NPQR tracks ordering provider compliance with established Choosing Wisely recommendations such as cardiac enzyme monitoring for acute myocardial infarction, amylase versus lipase ordering in cases of suspected acute pancreatitis, Vitamin D screening patterns, among others. The NPQR allows for the operationalization of these measures into a practical tool that can be used to affect change for our patients.

[www.ascp.org/content/get-involved/institute-of-science-technology-policy/npqr](http://www.ascp.org/content/get-involved/institute-of-science-technology-policy/npqr)



## Choosing Wisely and Patient Champions Connection

The ASCP Patient Champions program educates patients and caregivers about the role of the laboratory in patient care, so they can leverage that knowledge to ensure they are choosing the treatments that work best for them. When patients have more insight into their laboratory and pathology results, they can better participate in their own care. Through educational content, including flyers explaining laboratory tests related to specific diagnoses, videos, courses, and social media content, the Patient Champions program empowers patients by understanding what laboratory tests analyze, what results mean, and which tests are important to their diagnosis and overall health care.

The Patient Champions program is closely aligned with the Choosing Wisely campaign, as both identify the right test at the right time with the patient in mind. Choosing Wisely approaches this from the pathology and laboratory medicine side, and Patient Champions approaches this from the patient side. The ultimate goal of both programs is to create optimal healthcare for all.

[www.ascp.org/content/patient-champion/about/patient-champions](http://www.ascp.org/content/patient-champion/about/patient-champions)

## ASCP Patients' Advocate Award

The ASCP recognizes the ABIM Foundation for its Choosing Wisely Initiative to help providers and patients engage in conversations about the overuse of tests and procedures and support efforts to help patients make smart and effective care choices. Recognizing the importance of providers and patients working together, leading healthcare provider organizations, have joined Choosing Wisely to help improve the quality and safety of healthcare in America. Choosing Wisely is part of multi-year effort led by the ABIM Foundation to support and engage physicians in being better stewards of finite healthcare resources.



Lee H. Hilborne, MD, MPH, FASCP, DLM(ASCP)<sup>CM</sup>, Chair of the ASCP Effective Test Utilization Steering Committee presented the ASCP Patients' Advocate Award to ABIM Foundation President, Daniel Wolfson in Philadelphia, PA on October 6, 2016.

A scientist wearing a white lab coat, a white face mask, and blue gloves is working in a laboratory. The scientist is using a yellow and white pipette to transfer liquid into a multi-well plate. The background is a blurred laboratory setting with various equipment and containers. The entire image has a light blue overlay.

# RESEARCH AND OTHER REPORTS

Lee H Hilborne, MD, MPH, FASCP, DLM(ASCP)<sup>CM</sup>, Greg Sossaman, MD, MACSP,  
Barbara Caldwell, MS, MASCP, MLS (ASCP)<sup>CM</sup>, SH<sup>CM</sup>, Steven Kroft, MD, MASCP

Choosing Wisely and other laboratory medicine stewardship guidelines have been designed around the patient-centric and fiscally prudent principle of reducing testing that adds no value to patient care, and that even may be associated with increased risks.<sup>8,9</sup> An example of the latter is iatrogenic anemia due to excessive blood drawn for laboratory tests.<sup>10</sup> Conveniently, the same strategies that have been promulgated to improve care and reduce expenses related to laboratory testing may be deployed to help mitigate supply chain issues.

1. Eliminating tests with little or no clinical utility
2. Curtailing the practice of standing orders that generate test requests and supply consumption frequently absent clinical need
3. Stopping the practice of “rainbow draws” in emergency departments
4. Evaluating computerized test panels for clinical usefulness
5. Implementing reflex testing and algorithms (ie, are second-tier level tests ordered before obtaining results of first-tier level tests)
6. Embedding of laboratory personnel (such as laboratory professionals with the new doctorate degree in clinical laboratory science [DCLS]) into multidisciplinary caregiving teams and clinical workflows, in order to provide just-in-time consultation and ensure that only tests that add maximum value to patient care are selected



necessity is the mother of invention, and crises spur innovation and collaboration; laboratorians who have previously had difficulty gaining traction for stewardship programs may suddenly find many eager partners where few existed previously. At least this has been the experience of the authors of this commentary.

Through such initiatives, laboratories can reduce unnecessary services, decrease the total cost of care and, most importantly, assure that resources are available to deliver the quality patient care that improves clinical outcomes and patient satisfaction. Critically, we must also ensure that the tactics, workflows, and stewardship infrastructure that have been catalyzed by COVID-19 are sustained beyond the duration of the crisis. For example, the evidence base derived from emergency interventions that would never have been implemented during normal times for fear of adverse outcomes (eg, significantly restricting the indications for coagulation testing due to an acute shortage of sodium citrate anticoagulant [blue top] tubes) may enable permanent changes in ordering culture. COVID-19 has undoubtedly been a horrific global catastrophe with an almost inconceivable human cost, but we would be irresponsible to not use the opportunities it has presented us to improve health care moving into the future.

[academic.oup.com/ajcp/advance-article/doi/10.1093/ajcp/aqac035/6539925](https://academic.oup.com/ajcp/advance-article/doi/10.1093/ajcp/aqac035/6539925)



## Laboratory Supply Chain Shortage Effects on Laboratory Workforce and Effective Test Utilization

By Lee H. Hilborne, MD, MPH, FASCP, DLM(ASCP)<sup>CM</sup>, Edna Garcia, MPH, and Iman Kundu, MPH

<https://criticalvalues.org/news/item/2022/05/10/laboratory-supply-chain-shortage-effects-on-laboratory-workforce-and-effective-test-utilization>

Recently, members of the ASCP's Effective Test Utilization Committee released an American Journal of Clinical Pathology (AJCP) editorial addressing laboratory supply shortages and how these issues have created "a health care crisis, including for the practice of laboratory medicine."<sup>1</sup> The editorial, Laboratory Supply Shortages: Turning Crisis to Opportunity, provided strategies for laboratories to help mitigate this issue while "delivering quality patient care that improves clinical outcomes and patient satisfaction."<sup>1</sup>

To help understand and quantify the scope of supply chain issues in the laboratory, we surveyed both the ASCP Choosing Wisely Advisory Board and ASCP membership. We asked the participants about the impact of supply chain issues on their laboratory, the initiatives they undertook to address them, and any suggestions to reduce unnecessary supply consumption.

Qualitative analysis of the survey responses shows nationally that the laboratory supply shortages affected not only the timely acquisition of laboratory reagents and supplies, but also the job satisfaction and well-being of laboratory personnel. According to survey respondents, the laboratory materials most commonly in short supply include blood collection tubes, reagents, needles, pipette tips, syringes, media, COVID-19 test kits and personal protective equipment (PPE) (Table 1). Respondents also indicated that supply chain issues consume critical time at the expense of rendering diagnoses. Many participants reported that when using alternative supplies or methods (Table 1), they "scramble to do validations and procedure changes and training on the fly," which leads to reporting delays. Staff time becomes divided between validating alternative supplies and performing testing. This disrupts workflow, leading to stress and burnout (Table 1). Outsourcing tests to reference laboratories and borrowing supplies from other hospitals were common due to insufficient laboratory materials to complete tests on time (Table 1).

**Table 1. Impact of supply chain issues in the laboratory. (n=138)**

Themes	Count	%
Laboratory supply shortage	88	63.8
Taking away critical time from diagnosing cases	53	38.4
Utilize alternative methods, vendors or supplies	36	26.1
Outsourcing	18	13.0
Stress and burnout	12	8.7

Due to the impact of supply chain issues in the laboratory, survey respondents undertook several measures to alleviate effects on laboratory operations (Table 2). Employing alternative test supplies (e.g., switch to serum separator tubes when lithium heparin tubes were unavailable, use different collection tube size, use different series of slides) was the most common strategy. Other strategies included changing suppliers and borrowing or loaning supplies from other laboratories, within or outside the hospital system. In some cases, the respondents reported sending tests to reference laboratories.

The second most common initiative was testing conservation strategies, including decreasing extra tube draws, stopping rainbow draws in emergency departments, and identifying ways to conserve reagents. Efforts also included changing ordering practices (e.g., stopping physicians from placing daily morning or other recurrent laboratory draws) and encouraging effective test utilization. Other initiatives included ordering supplies in advance, closer inventory monitoring and continuous external (e.g., vendor) and internal (e.g., providers and hospital administration) communication about the supply chain shortage issue.

**Table 2. Initiatives to address supply chain issues (n=132)**

Themes	Count	%
Using alternative test supplies/vendors/labs	73	55.3
Testing conservation strategies	47	35.6
Ordering additional supplies	21	15.9
Continuing communication with vendor	10	7.6
Educate providers	10	7.6
Monitor inventory	9	6.8
Not in charge	5	3.8
Communication with hospital administration	3	2.3
Miscellaneous	14	10.6

To reduce unnecessary supply consumption, survey respondents suggested developing test utilization strategies and encouraging education and awareness for the entire laboratory community on better ordering practices (Table 3). The most common test utilization strategies suggested include expanding “Choosing Wisely” best practices,<sup>1,2</sup> limiting unnecessary and frequent testing, eliminating tests that lack clinical utility, advocating for federal government reevaluation of policies and regulations on test ordering, linking physician reimbursement for office visits with following medical necessity guidelines, and using laboratory stewardship to ensure the right tests are ordered for the right patient at the right time. Responders acknowledged the value of seeking staff ideas and involvement to promote best practices and dialogue.

Education and awareness are key to impactful promotion of effective test utilization. Key educational opportunities include:

- Laboratory stewardship generally and awareness of all stakeholders including researchers and providers on test ordering
- Exploring opportunities with physicians to reduce unnecessary testing
- Prioritizing urgent tests for patient care
- Providing guidelines for the new staff trainees
- Developing or improving communication between shifts to prevent duplicate testing
- Developing a national or international communication line to align those with shortages and those with surplus to help prevent waste.

Respondents recommended working with manufacturers to evaluate opportunities to extend reagent life and consolidating orders to better streamline the workflow. Knowing reagent and supply status through more frequent inventory, advance ordering (e.g.,

allowing an extra three to four weeks), exploring re-usable alternatives to disposable items and understanding alternative supply sources when surge demand exists can all ease strains during times of stress, [Table 3](#).

**Table 3. Suggestions to reduce unnecessary supply consumption (n=124)**

Themes	Count	%
Develop test utilization strategies	49	39.5
Education/Awareness	25	20.2
Other	34	27.4

The initiatives laboratories implemented to address the 2020-2022 laboratory supply chain issues and the suggestions presented by the survey respondents have short term gains by easing the shortages but will also promote appropriate and necessary quality patient care. There is also an urgent need for recommendations to address laboratory personnel well-being, especially the stress and burnout they are experiencing due to increased workload and other pressures. According to the report, *The Clinical Laboratory Workforce: Understanding the Challenges to Meeting Current and Future Needs*,<sup>3</sup> “the pandemic heightened awareness and urgency about the need to address staffing challenges that laboratories have long experienced, as well as identifying strategies to address work-life balance challenges and burnout among laboratory professionals.”<sup>3</sup> Further, the COVID-19 pandemic disrupted the laboratory workforce and may accelerate future shortages in clinical laboratory medicine.

Results from this survey provide a springboard for broader engagement, including sponsoring forums that focus on supply chain issues and the role of laboratory stewardship/Choosing Wisely. These interactions should promote solutions-based discussions and advocacy efforts. This is particularly relevant now as the value of laboratory medicine has new stature in response to the COVID-19 pandemic.

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## ASCP Engagement Survey Outcomes

The American Society for Clinical Pathology's (ASCP) Effective Test Utilization Steering Committee conducted a survey to determine whether their department/institutions have implemented any of ASCP's Choosing Wisely recommendations. Core questions include:

1. Have you implemented any of the ASCP's Choosing Wisely recommendations in your practice?
2. Which of the ASCP's Choosing Wisely recommendations have you implemented?
3. Have you implemented any of the ASCP's COVID-19 recommendations?
4. What are the ways you, your team, and/or your organization made an effective impact on test utilization (e.g. local policy)?

The survey was opened from 6/21/21 to 7/23/21 and received approximately 1,500 responses. Participants comprise of laboratory professionals (85.2%), pathologists (7.0%), pathology residents (0.3%) and other (7.4%). The top 10 states with the most respondents are from Texas (7.9%), California (5.7%), New York (4.1%), Pennsylvania (4.1%), Illinois (3.8%), Florida (3.6%), Minnesota (3.4%), North Carolina (3.4%), Georgia (2.7%) and Michigan (2.7%).

Data also show that respondents have a range of experiences, coming from various institutions:

**Table 1. Top facilities where participants work. (n=1,487)**

Facilities	Count	%
Academic hospital	418	28.1
Non-academic hospital	414	27.8
Government facility	95	6.4
Outpatient clinic laboratory	70	4.7
Physician's office laboratory	63	4.2
National reference laboratory / independent laboratory	54	3.6
Local reference laboratory / independent laboratory	51	3.4
Regional reference laboratory / independent laboratory	46	3.1
Veteran's Administration (VA), Veterans Health Administration (VHA)	43	2.9
Pathologists' laboratory/ Private Laboratory	40	2.7
Blood center or blood bank	33	2.2

**Table 2. Top departments where participants work. (n=1,487)**

Department	Count	%
Hematology/Coagulation	458	30.7
Chemistry/Toxicology	448	30.0
Microbiology/Virology/Infectious Disease	348	23.3
Core Lab	347	23.3
Blood Bank (Immunohematology)	334	22.4
Specimen Processing	322	21.6
Phlebotomy	306	20.5
Immunology	259	17.4
Send outs	221	14.8
Molecular Pathology/ Diagnostics	216	14.5
Point-of-Care	212	14.2
Administration	188	12.6
Anatomic Pathology	139	9.3
Histology	121	8.1
Cytology	88	5.9
LIS/QA/PI	88	5.9
Flow cytometry	68	4.6
Cytogenetics	52	3.5
Multiple Departments/All Departments	323	21.6
Other	108	7.2

When asked if they implemented any of the ASCP's Choosing Wisely recommendations in their practice, US programs have often turned to recommendations, even more internationally.

**Table 3. Rate of respondents who indicated that they implemented any of the ASCP's Choosing Wisely recommendations in their practice within the United States. (n=1,220)**

Response	Count	%
Yes	515	42.2
No	705	57.8

**Table 4. Rate of respondents who indicated that they implemented any of the ASCP's Choosing Wisely recommendations in their practice internationally. (n=216)**

Response	Count	%
Yes	143	66.2
No	73	33.8



Among ASCP Choosing Wisely recommendations, below is the list most commonly implemented by institutions:

**Table 5. Most commonly implemented tests. (n=683)**

Recommendations	Count	%	Recommendation #
<b>Anatomic Pathology</b>			
Do not order a frozen section on a pathology specimen if the result will not affect immediate (i.e., intraoperative or perioperative) patient management.	67	9.8	16
Do not use sputum cytology to evaluate patients with peripheral lung lesions.	65	9.5	20
Don't perform urine cytology for routine hematuria investigation.	61	8.9	33
Do not perform fluorescence in situ hybridization (FISH) for myelodysplastic syndrome (MDS)-related abnormalities on bone marrow samples obtained for cytopenias when an adequate conventional karyotype is obtained.	59	8.6	15
Do not routinely perform sentinel lymph node biopsy or other diagnostic tests for the evaluation of early, thin melanoma because these tests do not improve survival.	44	6.4	11
<b>Chemistry/Hematology</b>			
Don't use bleeding time test to guide patient care.	200	29.3	5
Don't test for myoglobin or CK-MB in the diagnosis of acute myocardial infarction (AMI). Instead, use troponin I or T.	176	25.8	9
Don't order an erythrocyte sedimentation rate (ESR) to look for inflammation in patients with undiagnosed conditions. Order a C-reactive protein (CRP) to detect acute phase inflammation.	133	19.5	6
Do not test for amylase in cases of suspected acute pancreatitis. Instead, test for lipase.	119	17.4	13
Don't perform population based screening for 25-OH-Vitamin D deficiency.	103	15.1	1
Don't order multiple tests in the initial evaluation of a patient with suspected non-neoplastic thyroid disease. Order thyroid-stimulating hormone (TSH), and if abnormal, follow up with additional evaluation or treatment depending on the findings.	101	14.8	10
Do not routinely order expanded lipid panels (particle sizing, nuclear magnetic resonance) as screening tests for cardiovascular disease.	97	14.2	12
Don't request just a serum creatinine to test adult patients with diabetes and/or hypertension for CKD; use the Kidney Profile (serum Creatinine with eGFR and urinary albumin-creatinine ratio.)	93	13.6	21
Don't perform Procalcitonin testing without an established, evidence-based protocol.	87	12.7	25
Avoid routine preoperative testing for low risk surgeries without a clinical indication.	83	12.2	3
Do not order red blood cell folate levels at all. In adults, consider folate supplementation instead of serum folate testing in patients with macrocytic anemia.	82	12.0	19
Don't test vitamin K levels unless the patient has an abnormal international normalized ratio (INR) and does not respond to vitamin K therapy.	77	11.3	7
Do not test for Protein C, Protein S, or Antithrombin (ATIII) levels during an active clotting event to diagnose a hereditary deficiency because these tests are not analytically accurate during an active clotting event.	70	10.2	18
Do not repeat hemoglobin electrophoresis (or equivalent) in patients who have a prior result and who do not require therapeutic intervention or monitoring of hemoglobin variant levels.	67	9.8	17
Avoid Thyroid Stimulating Hormone (TSH) screening in annual well-visits for asymptomatic adults, regardless of age.	64	9.4	32
Do not perform peripheral blood flow cytometry to screen for hematological malignancy in the settings of mature neutrophilia, basophilia, erythrocytosis, thrombocytosis, isolated anemia, or isolated thrombocytopenia.	61	8.9	24
Do not perform a hypercoagulable workup in patients taking direct factor Xa or direct thrombin inhibitors.	50	7.3	28
Don't prescribe testosterone therapy unless there is laboratory evidence of testosterone deficiency.	45	6.6	8
Do not monitor anti-platelet agent inhibition of platelet activity using platelet function or genetic testing.	45	6.6	35
Don't use plasma catecholamines to evaluate a patient for pheochromocytoma or paraganglioma; instead use plasma free metanephrines or urinary fractionated metanephrines.	41	6.0	29

Recommendations	Count	%	Recommendation #
Transfusion Medicine			
Don't transfuse plasma to correct a laboratory value; treat the clinical status of the patient.	114	16.7	22
Do not order a Type & Crossmatch for patients undergoing procedures that have minimal anticipated blood loss, historically low fraction of transfusion use, and a low transfusion index (ratio of transfused units to patients).	125	18.3	34
Microbiology (including molecular microbiology)			
Do not request serology for H. pylori. Use the stool antigen or breath tests instead.	122	17.9	14
Do not repeat Hepatitis C virus antibody testing in patients with a previous positive Hepatitis C virus (HCV) test. Instead, order Hepatitis C viral load testing for assessment of active versus resolved infection.	97	14.2	27
Do not routinely order broad respiratory pathogen panels unless the result will affect patient management.	92	13.5	30
Do not routinely test for community gastrointestinal stool pathogens in hospitalized patients who develop diarrhea after day 3 of hospitalization.	91	13.3	26
Do not generally use swabs to collect specimens for microbiology cultures on specimens from the operating room. For optimal recovery of microbes, tissue or fluid samples obtained in the operating room should be submitted, when available and adequate.	82	12.0	31
Don't perform low risk HPV testing.	79	11.6	2
Don't order IgM antibody serologic studies to assess for acute infection with infectious agents no longer endemic in the US, and in general avoid using IgM antibody serologies to test for acute infection in the absence of sufficient pre-test probability.	60	8.8	23
Molecular diagnostics			
Only order Methylated Septin 9 (SEPT9) to screen for colon cancer on patients for whom conventional diagnostics are not possible.	37	5.4	4
None of the above [ASCP 35 Choosing Wisely Recommendations]	192	28.1	

Including Our COVID-19 Guidance:

**Table 6. Most commonly implemented COVID-19 tests. (n=1,492)**

COVID-19 Recommendations	Count	%	COVID-19 Recommendation #
For symptomatic patients with a negative antigen test, confirm with a more sensitive test (i.e., PCR) if clinically indicated.	508	34.0	2
Do not order a respiratory viral panel (i.e., SARS-CoV-2 and other pathogens) for COVID-19 screening to evaluate asymptomatic patients following possible exposure or for return to work/school. Instead, order just the appropriate SARS-CoV-2 (COVID-19) PCR or antigen test.	444	29.8	4
Do not use serology testing for evaluating patients with upper or lower respiratory tract symptoms of acute COVID-19 infections, instead use nucleic acid amplification or antigen testing.	440	29.5	1
When antigen tests are used to evaluate an asymptomatic population, positive results should be confirmed using a RT-PCR method.	375	25.1	3
None of the above [ASCP COVID-19 Recommendations]	530	35.5	

While a significant number of respondents indicated that they implement the ASCP Choosing Wisely recommendations in their institutions, we still have a long way to go to increase awareness. The main reason for not implementing the recommendations was due to lack of awareness of choosing wisely campaign (47%), [Table 7](#). However, respondents reveal through their comments that even though they are unaware of the campaign, they are willing to “become more familiar with the concept and how it could successfully be integrated in to their current practices.”

Another reason of note is that, administration/management/leadership have not implemented recommendations (7.0%), [Table 7](#). Some respondents explained that in their facility, implementation of any test utilization practices is a process that takes time, while others indicate that their department has not been able to get buy in from providers outside of the laboratory.

**Table 7. Reasons participants who indicated they have not implemented the ASCP Choosing Wisely recommendations in their institution. (n=557)**

Theme	Count	%
Lack of awareness of Choosing Wisely Campaign	262	47.0
Not in charge of implementation	89	16.0
Does not apply to them (e.g. retired, no longer working in the lab, recommendations not used in their practice)	81	14.5
Administration/Management/Leadership have not implemented recommendations	39	7.0
Lack of time/resources (e.g. personnel shortage, time commitment)	12	2.2
Other	77	13.8

Respondents also provided the ways they, their team, and/or organization made an effective impact on test utilization. We found that each response needs to be evaluated at its own merit but some common themes are:

- Developing COVID-related testing strategies
- EMR/LIS related strategies (e.g. to avoid duplication of tests, promote QA – both internal and external)
- Consult review teams for ordered tests
- Having ETU/Lab stewardship committees (e.g. implement national lab stewardship standards)
- Educational and training activities
- Following guidelines/policies on test utilization by institution (e.g. use of local policies)

Lastly, an open-ended comment section was included in the survey that asked, for example, how we can engage more laboratory personnel or if you they specific topic suggestions. Qualitative analysis show that the majority of the participants want more awareness and engagement on Choosing Wisely, [Table 8](#). To increase awareness, participants suggested creating and disseminating white papers on how effective various interventions are; provide more information on what someone can expect when they put a certain Choosing Wisely recommendation in place, create a tool-kit that includes exactly what alert in the EMR works (because many alerts don’t work, others are counterintuitive),

host conferences for laboratory personnel using various types of communication channels (media/ social media advertising etc.), and/or develop monthly “brief updates” on the Choosing Wisely initiative in one of our popular pathology journals.

Participants also proposed engaging the provider (Physicians, Nurse Practitioners, PAs) community and educate them on appropriate testing. They also recommend that clients, administrators, and non-laboratory trained managers to be educated on appropriate testing as well. More importantly, there is a consensus that the field promote effective test utilization beyond the lab by sharing directly with MD’s and APC’s so they are aware and can use the lab as a resource.

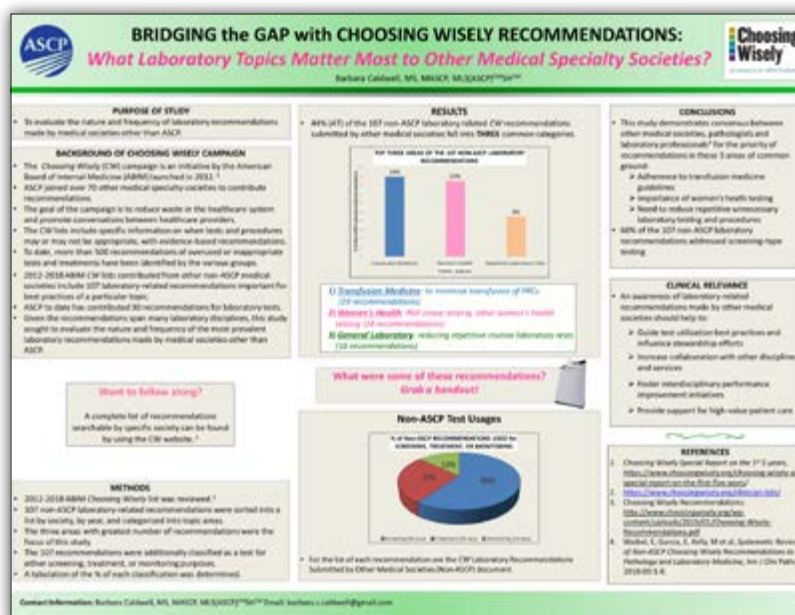
**Table 8. Qualitative analysis results of the comments from participants. (n=359)**

Theme	Count	%
Raise awareness and increase engagement within and outside the laboratory	75	20.9
Provided suggestions on testing recommendations	20	5.6
Found Choosing Wisely campaign helpful	18	5.0
Other/NA/None	246	68.5

There is an overwhelming interest in ASCP Choosing Wisely from the laboratory community since the ASCP joined the ABIMF’s Choosing Wisely Campaign in 2012, and the momentum on this initiative continues to grow in the field of laboratory medicine. From this survey, we found that in addition to the 737 ASCP Choosing Wisely Advisory Board Members we already have, an additional 307 participants expressed interest in becoming a member of this group. Also, 323 survey participants provided contact information to be part of ASCP Choosing Wisely activities of interest.

Results from this survey also provided us with topics we need to address in order to move the initiative forward:

- Need for widespread dissemination of the recommendations to increase engagement
- Advocate to include laboratory professionals and pathology residents in implementation
- Create more awareness of the ASCP Choosing Wisely Initiative through publications, conferences, social media and courses (teaching sessions)
- What is the message to C-suite (how to reach C-suite, upper management buy in)?





## Systematic Review of Non-ASCP Choosing Wisely Recommendations Relevant to Pathology and Laboratory Medicine

Elizabeth Waibel, MPH, Edna Garcia, MPH, Melissa Kelly, PhD, Ryan Soles, MA, Lee Hilborne, MD, MPH, FASCP, DLM(ASCP)<sup>CM</sup>

The laboratory team plays a critical leadership role in promoting and managing the delivery and use of healthcare resources—and initiating conversations regarding appropriate care with clinicians and patients. As part of its ongoing efforts to support patient-centered care and evidence-based medicine, ASCP conducted a survey to prioritize Choosing Wisely recommendations developed by non-ASCP participating organizations to determine the most relevant ones for effective use of laboratory services, allowing ASCP to identify opportunities for collaboration with other societies to optimize laboratory utilization. The report was published in the *American Journal of Clinical Pathology* in March 2018.

Data were collected via a two-part web-based survey distributed to a broad sample of pathologists and laboratory professionals from a variety of institutions. Pathologists' most relevant recommendation: "Do not transfuse more units of blood than absolutely necessary"; highest priority: "Do not transfuse more than the minimum number of RBC units necessary to relieve symptoms of anemia or to return a patient to a safe hemoglobin range (7-8 g/dL in stable, noncardiac inpatients)." Laboratory professionals' most relevant recommendation: "Avoid testing for a *Clostridium difficile* infection in the absence of diarrhea"; highest priority: "Do not routinely transfuse stable, asymptomatic hospitalized patients with a hemoglobin level greater than 7 to 8 g/dL." Most of the highest priority, most relevant recommendations among those surveyed concerned utilization of blood products and transfusion management.

Focusing on Choosing Wisely recommendations across disciplines should improve patient care and lower healthcare costs. Because there are hundreds of laboratory-related Choosing Wisely recommendations from multiple specialty organizations, there are many opportunities to foster interdisciplinary performance improvement initiatives. Pathologists and laboratory professionals are uniquely positioned to leverage their expertise and connections with multiple disciplines to improve overall utilization and healthcare quality. Systematic review of the ABIM's Choosing Wisely recommendations can help identify areas of overlap or consensus regarding reducing unnecessary laboratory testing and procedures. Analyzing recommendations from all organizations helps identify opportunities for collaboration to create programs for educating clinicians and influence physician and hospital policies. Because patient care is multidisciplinary, broad input from stakeholders is pertinent to advancing the goals of the Choosing Wisely campaign. This study contributed to these aims by analyzing the non-ASCP recommendations (ie, submitted by other specialty societies) to identify the top pathology- and laboratory medicine-related recommendations that are most relevant and highest priority for effective laboratory test utilization. In addition, the survey results help to identify areas of mutual concern for various specialty groups and identify potential opportunities for broader engagement and collaboration.



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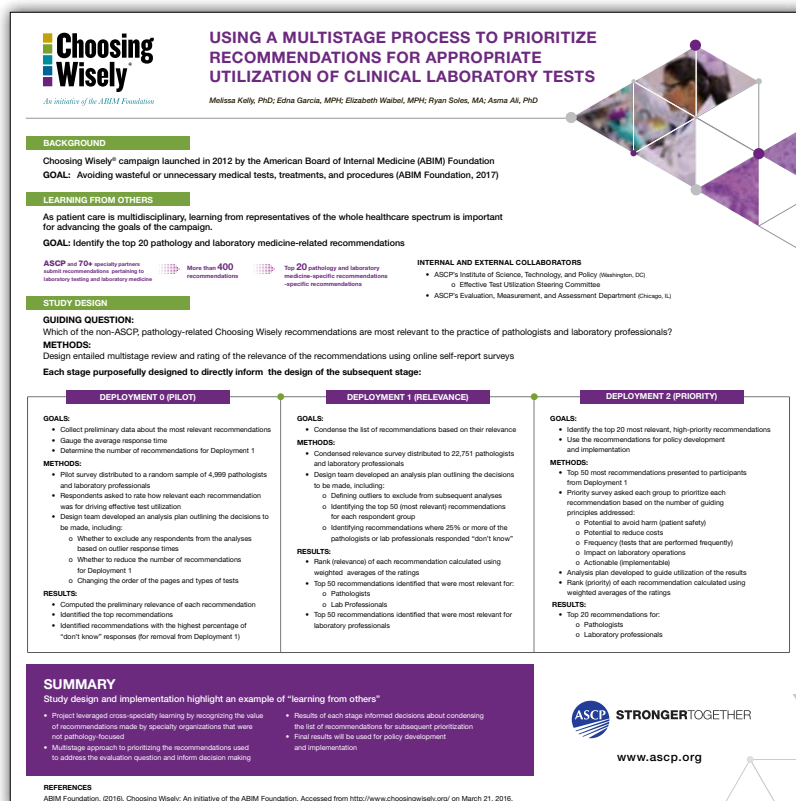
## Using a Multistage Process to Prioritize Recommendations for Appropriate Utilization of Clinical Laboratory Tests

Melissa Kelly, PhD; Edna Garcia, MPH; Elizabeth Waibel, MPH; Ryan Soles, MA; Asma Ali, PhD

On November 8, 2017 the ASCP presented a poster at the American Evaluation Association's Annual Meeting. The session examines the design and outcomes of a national initiative to eliminate the use of unnecessary medical tests, treatments, and procedures. The project leveraged contributions by diverse medical specialty organizations toward the aim of identifying recommendations that were most relevant and high priority to the practice of pathology and laboratory medicine. Guided by the intent to inform policy around test utilization to ultimately benefit patients, the study design was the central topic presented in the session. The intent of this session is to share best practices which led to meaningful utilization of the results.

Study design and implementation highlight an example of “learning from others”:

- Project leveraged cross-specialty learning by recognizing the value of recommendations made by specialty organizations that were not pathology-focused
- Multistage approach to prioritizing the recommendations used to address the evaluation question and inform decision making
- Results of each stage informed decisions about condensing the list of recommendations for subsequent prioritization
- Final results will be used for policy development and implementation



## ASCP Choosing Wisely Photo Voice Video

### *Choosing Wisely: Successes, Challenges, Collaboration*

ASCP, in partnership with CSP, received \$50,000 to further support its Choosing Wisely education and dissemination initiatives in California from the ABIM Foundation. The target audience for these activities was primarily California pathologists and secondarily the broader community of other clinicians. ASCP has 635 pathologist members that practice in California (this number reflects data from 2015, total number of ASCP pathologist members in 2022 is 894). Many of these pathologists are also members of the CSP or attend continuing education programs and conferences sponsored by CSP.

In their positions as medical laboratory directors and staff personnel, pathologists have the capacity to influence other medical practitioners and clinicians regarding medical testing procedures. More than half (52%) of California pathologists work in hospital settings. In this capacity, they have the potential to dramatically influence patient care as part of the clinical care team and through their participation in hospital test utilization committees. California pathologists also work in reference labs (12%) where their practice may influence patient care across the state and across the country, and in medical schools (6%) where they have the potential to impact the next generation of clinicians. Pathologists possess a unique skill set to provide greater rationality to laboratory medicine in a way that helps clinicians offer better patient care and assists the system to reduce costs.

The ASCP-Choosing Wisely campaign aims to advance the message and recommendations of the ABIM Choosing Wisely program among California pathologists. The proposed ASCP–CSP project had four major goals:

1. Educating practicing pathologists, about the Choosing Wisely program and its recommendations;
2. Helping build pathologists' communication skills to facilitate conversations about inappropriate care with other medical clinicians;
3. Fostering attitudinal change regarding medical testing among pathologists; and
4. Identifying and addressing barriers and solutions for implementation of the Choosing Wisely recommendations.

ASCP and the California Society for Pathologists (CSP) developed a photovoice video project to feature accomplished pathologists and laboratory professionals discussing the Choosing Wisely campaign, educational program and implementation of the recommendations in their practices and institutions.

Photovoice Video featured at World Congress on Continuing Professional Development (CPD) Conference on March 2016 and the ASCP Annual Meeting 2016 in Las Vegas, Nevada.



<https://youtu.be/HXk8Ml21m94>



# NATIONAL EFFORTS

# ASCP is proud of the Laboratory Medicine Community for Leading National Efforts

## ASCP Choosing Wisely is Nationally Recognized

The US Government Accountability Office (GAO) released a report September 30, 2016 on Considerations for Expansion of the Appropriate Use Criteria that references ASCP's work in the area of effective laboratory test utilization.

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ASCP's Vitamin D recommendation testing was chosen and featured by ABIM Foundation grantees that are charged with promoting the Choosing Wisely Campaign in their region. [www.choosingwisely.org/in-action](http://www.choosingwisely.org/in-action)

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The ABIM Foundation released a **top 12 list** of Choosing Wisely recommendations that drove the largest decrease in unnecessary tests and procedures—the list included ASCP's recommendations on Vitamin D testing and preoperative testing for low-risk surgeries.

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Wellmark and Cigna Vitamin D policies cite ASCP.

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Consumer Reports featured two of our recommendations: Vitamin D, Preoperative testing

## Pathologists Earn Points for Choosing Wisely

For the American Board of Pathology (ABP), the Choosing Wisely recommendations from ASCP are an opportunity to recognize physicians who have been working to advance the campaign and reduce overutilization. Nearly 9,000 pathologists participate in ABP's Maintenance of Certification (MOC) program and complete one activity a year to improve practice, among other requirements. Pathologists can now fulfill their practice improvement requirement by implementing a Choosing Wisely recommendation in their hospital or lab.







# LEADING LABORATORIES

## Leading Laboratories Recognition Program: The future of effective test utilization (ETU) best practices

The Leading Laboratories designation recognizes laboratories that demonstrate an exemplary focus on elevating quality patient outcomes. Through this focus, they in turn increase the visibility and prominence of the medical laboratory team among clinical colleagues, hospital leadership, best-practice communities, and patients.

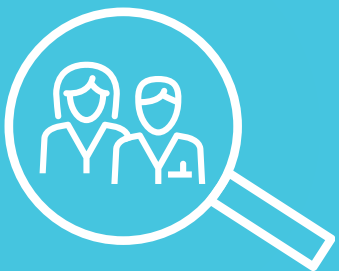
The Leading Laboratories Recognition Program was developed in collaboration between the American Society for Clinical Pathology and The Joint Commission. This designation was launched October 28, 2021, and is the gold standard for laboratory excellence. Beyond public recognition of a laboratory's meaningful achievements on our patients' behalf, Leading Laboratories also recognizes evidence of a laboratory team's commitment to the relevant, ongoing professional development of its team along with proof of laboratory leadership's commitment to their high-functioning team members.

Leading Laboratories demonstrate excellence in four key areas by elevating **Quality Outcomes**, supporting **Professional Development**, cultivating **Trusted Leadership**, and promoting **Laboratory Visibility**.





The four components of Leading Laboratories lends insight into ETU through the following potential indications and best practices:



### QUALITY OUTCOMES

Leading Laboratories are key contributors to the overall patient experience and by generating quality outcomes which support a patient-centric mission. Examples linked to ETU may include:

- Plans and metrics that drive ETU and decrease ineffective test ordering
- Clarity of test nomenclature and effective test ordering
- Application of proven and innovative principles to improve ETU processes, share best practices.



### PROFESSIONAL DEVELOPMENT

Leading Laboratories support professional development by advocating for a continuum of learning and skill-based activities that aid in improving team members professional knowledge, competence, skills, and effectiveness, including potential for:

- Processes and frameworks to support accurate clinician laboratory test ordering
- Communication between laboratory and clinical care teams to assure accuracy in the ETU life cycle and order protocols
- Laboratory team mentorship of clinical teams regarding test stewardship, while empowering a culture of safety.

Ultimately, the Leading Laboratories designation supports a positive, patient-centric mission, increasing visibility to the vital role laboratories play in a patient's healthcare journey. While the Leading Laboratories Recognition Program is new, it serves as an evidence-based platform to recognize additional best practice vignettes and real-life experiences to further enhance ETU outcomes.



### TRUSTED LEADERSHIP

Leading Laboratories' trusted leadership is aligned with articulating a clear mission in support of patient care. Likewise, effectively stewarding resources and engaging multidisciplinary teams and patients through respectful dialogue inspires trust-based professional relationships. Examples include:

- Trusted leaders who facilitate patient-centric multidisciplinary problem solving for ETU priorities
- Lab leadership serving as an essential source of ETU expertise, insight, and influence.

### LABORATORY VISIBILITY

Leading Laboratories increase visibility for their teams and the multi-specialty laboratory profession (as a whole) through active promotion. Recognizing the diagnostic laboratory's vital role in patients' healthcare journeys is elevated by:

- Serving as an active participant within healthcare organizations and communities that drive ETU
- Developing and leading processes for diversity, equity, and inclusion when considering reference range appropriateness for patients served by local laboratory system.

## Acknowledgments

The ASCP Choosing Wisely Initiative would not exist without the ongoing support and extreme dedication of our incredibly hard working team over the past ten years, among them: the Effective Test Utilization Steering Committee members, both past and present; the ASCP Communications, Creative, and Membership Teams; and so many others, including: the ABIM Foundation, ASCP Choosing Wisely Advisory Board members past and present, Choosing Wisely Champions, ASCP patient champions team, NPQR team for incorporating appropriate test utilization recommendations in its design and Leading Labs team.

This report, and our work moving forward, is dedicated to the laboratory community, patients and partners.

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