The Clinical Pathologist as Consultant

Marisa B. Marques, MD,1 John Anastasi, MD,2 Edward Ashwood, MD,3 Beverly Baron, MD,2 Robert Fitzgerald, MD, PhD,4 Mark Fung, MD, PhD,5 Mathew Krasowski, MD, PhD,6 Michael Laposata, MD, PhD,7 Theresa Nester, MD,8 and Henry M. Rinder, MD,9 for the Academy of Clinical Laboratory Physicians and Scientists

The dictionary defines a consultant as “one who gives professional advice or services; expert.”1 More than most medical specialists, the role of a clinical pathologist can be heterogeneous: overseeing laboratory testing processes; hands-on patient care, especially in transfusion medicine and hemostasis; performing traditional microscopic pathology; developing algorithms for optimized testing and diagnosis; or some unique combination of these functions. One pathway that unites all clinical pathologists is that they are consultants in the process of testing that provides more than three quarters of the data used for clinical decision making.2

It is customary to divide the testing process into preanalytic, analytic, and postanalytic phases.3 The second component is traditionally considered the domain of clinical pathologists. The laboratory technical staff and activities within the laboratory are clearly paramount to ensure quality patient care.4 However, the first and third components of testing are just as squarely in the purview of clinical pathologists as they are for the health care providers who order laboratory testing and receive the results.

In the preanalytic phase, the primary physician poses a clinical question and selects a laboratory assay to answer it, but it is the clinical pathologist who must build and validate the assay such that there is clinical value to its answer. Moreover, all of the variable details inherent to the preanalytic phase must be accounted for by the clinical pathologist. The complexity of the preanalytic phase is well illustrated by the myriad of genetic abnormalities that, during the past 3 decades, have been linked to clinical conditions. As molecular diagnostic testing has increased exponentially, it has become more difficult for primary physicians to keep pace with the indications for and interpretations of such tests. Moreover, modern physicians are faced with a large number of test options, thereby increasing the risk of an erroneous or unnecessary test selection that may lead to a delay in diagnosis and additional overall costs. Thus, the need for expert consultation with a clinical pathologist before selecting laboratory tests may be critical to enhancing the efficiency of patient care.

The responsibilities of clinical pathologists further extend into the postanalytic phase of the testing process to assist primary physicians in reviewing the results and, oftentimes, making an interpretation and/or recommending a future course of action. Because physicians may be unsure as to how to explain test results, they run the risk of inadequate follow-up actions, including further testing and/or therapy decisions based on false assumptions. A common scenario that exemplifies this issue is choosing to transfuse plasma into a bleeding patient with a prolonged partial thromboplastin time. Unless the causes of a prolonged partial thromboplastin time are explored and the bleeding linked to such cause, plasma may be ineffective. Transfusion complications, including transfusion associated-circulatory overload and transfusion-related acute lung injury, may be unintended consequences of misguided therapy.

The need for transfusion medicine and hemostasis consultation is well recognized by other physicians. In an anonymous in-house survey of 114 respondents from at least 15 different medical specialties (M.B.M.; personal communication), 88% agreed or strongly agreed that transfusion medicine/hemostasis pathologists provided relevant input for a range of patient management issues; 83% agreed that consultation by transfusion medicine/hemostasis pathologists improved the ability to diagnose bleeding or thrombotic disorders. Three quarters of respondents asserted that pathologists contribute...
important information that positively affects transfusion and hemostasis treatment decisions, while 96% stated that the availability of a clinical pathologist was absolutely essential when advice was needed.

Clinical pathology consultation is not limited to hemostasis and transfusion; the recognized need for clinical pathology input is global, as demonstrated by a similarly conducted survey of family practice physicians at their annual meeting (M.B.M. and M.L.; personal communication). When offered the following: “My clinical performance would benefit if there were a mechanism for simple and effective consultation on the selection of laboratory tests, particularly the more complex assays” and “My clinical performance would be enhanced if complex clinical laboratory evaluations were provided with a patient specific narrative interpretation (written report), the same way this information is provided in radiology and anatomic pathology,” 92% agreed or strongly agreed with both statements. The vast majority of respondents (85%) also agreed that “I would be more cost effective in the care that I deliver if I had easy access to expert advice on the selection of laboratory tests and the interpretation of test results.” These provocative data bring up a critical question: How can clinical pathologists be most effective as consultants? First and foremost, clinical pathologists must be available to assist other clinical colleagues at all times. Moreover, clinical pathologists must be included in conferences, rounds, case discussions, and tumor boards and be active participants in planning for future health care needs at the local and national levels. A recent status report from the Centers for Disease Control and Prevention emphasized the integral role of clinical pathology and, further, recognized the importance of laboratory medicine as extending across clinical, research, and public health domains.


The Education Committee of the ACLPS has renewed its commitment to the training of clinical pathologists in consultation skills. In this issue of the Journal, we are embarking on a new series of invited reviews (“Pathology Consultation on...”) aimed at concisely providing practical advice in clinical pathology. The inaugural article, written by Gary E. Stack, MD, PhD, focuses on the status of warfarin pharmacogenetics testing and the questions commonly asked by our colleagues. Stack concisely demonstrates that complex, genotype-guided dosing algorithms are available but still preliminary; randomized clinical trials are still required to refine these algorithms and define their ultimate use. We hope that pathology residents will find this and future reviews useful and pertinent to the clinical pathology curriculum.

From the 1University of Alabama, Birmingham; 2University of Chicago, Chicago, IL; 3ARUP Laboratories, University of Utah, Salt Lake City; 4VA Medical Center, University of California San Diego; 5University of Vermont, Burlington; 6University of Iowa, Iowa City; 7Vanderbilt University, Nashville, TN; 8Puget Sound Blood Center, University of Washington, Seattle; and 9Yale University, New Haven, CT.

References