Education and Training in Pathology and Laboratory Medicine

Michael L. Wilson, MD

From the Department of Pathology and Laboratory Services, Denver Health, Denver, CO, and Department of Pathology, University of Colorado School of Medicine, Aurora.

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In this issue of the Journal, we begin a series of articles that address a wide variety of issues in education and training in pathology and laboratory medicine. The issues of education and training are complex and become increasingly so each year. Because of this, the editors believe that publishing this series in early 2014 will provide a reference point for future assessments of efforts to teach and train in the many disciplines that comprise our branch of health care.

A common question in the context of this series is, “What is the difference between education and training?” Certainly the two terms are often used interchangeably (or without any consistency), and, although distinct, do overlap in some important ways. Broadly speaking, education is the teaching of students: those who have yet to receive academic degrees. In contrast, training is what graduates receive in preparation for a job or professional activity. In some areas of the world, residents (or registrars, as they are called in most countries) are students earning a degree as well as trainees earning a certificate. Even in the United States, this is common for residents in fields such as dentistry, in which “degree programs” are in contrast with the “certificate programs” that most medical residents undertake. Another difference is that students generally pay for education, whereas trainees generally receive payment for their training. Last, education usually occurs in a college, university, or recognized teaching hospital. Although most training also occurs in teaching hospitals, many hospitals and clinics provide training but do not participate in formal education. Perhaps the easiest way to summarize the differences between education and training is that education imparts knowledge, whereas training is learning the practical application of that knowledge.

Why are these distinctions important? There are many reasons. First, the two activities have different goals: student education may be either an end unto itself (ie, conferring a degree), or a qualifying step toward postgraduate education. Training, in contrast, generally results in qualification of the trainee to perform certain tasks independently. Trainees may opt to pursue further training, for which the initial training is a qualifying step, but pursuit of further training is usually optional. The most common example is residency training: one can complete training and practice as an independent practitioner, or one can pursue fellowship training for subspecialization. Second, most education occurs before training, at an earlier point in careers. Third, funding sources, accreditation, and other administrative aspects of education and training differ substantially. Fourth, for the most part, education per se is largely conducted in classrooms, seminars, and laboratories, with minimal direct interaction with the outside world. There are obvious exceptions to this, such as for undergraduate student teachers or interns, but by and large the generalization holds true. Training, on the other hand, almost always occurs in the “real world” of practice, where much closer and direct supervision is required. Fifth, assessment of progress in education generally is limited to testing, whereas assessment of progress in training occurs via evaluations made by direct observation. It is true that completion of training alone is insufficient for certification by a board, which requires sitting for written and/or oral examinations, but most training assessment is not done via examination. Last, while education and training typically occur in different settings, the obvious and important exception is in academic health care, where faculty members both educate and train. Thus, the two activities are distinct but overlap in important ways.
Education and training share one other characteristic, one that remains critically important but elusive. This is the alignment of workforce needs, public policy, and allocation of resources. Readers of the Journal are all too familiar with the impending retirement of many laboratory professionals at a time when many training programs have closed, merged, or decreased the number of trainees. Readers are also familiar with the lack of effective public policy in the United States, where medical students with ever-increasing educational debt have little choice but to pursue high-paying medical specialties for their careers, at a time when what is needed are physicians to serve in primary care. Rather than base the number of residency training slots on what is needed for the public good, particularly to shift the emphasis from treatment to prevention of chronic diseases, or to provide financial incentives such as aggressive loan repayment/forgiveness, we continue to train residents in health care systems that are, for the most part, geared toward treatment and not prevention. There are a few notable exceptions, but overall we lack any public policy for addressing workforce needs.

Knowing where we want or need to go, however, is only part of the knowledge needed to develop sound, long-term public policy for education and training. The other part is where to begin. In this case, the first article in the AJCP series on education is one of the best examples of what is referred to as a needs assessment or, in Lean terminology, the “current state.”¹ This summary, generated by a coalition of academic laboratory professionals and ASCP staff members, is a comprehensive, thorough analysis of current American clinical laboratory workforce capacity, the resources devoted to sustaining that capacity (through the surrogate marker of wages), as well as estimates of future needs. The information reported in this article is objective and derived from a diverse and large set of settings. It provides a solid basis on which to align our education and training with workforce development.

A similar survey regarding the pathologist workforce was recently undertaken by the Workforce Project Work Group of the College of American Pathologists and published in Archives of Pathology and Laboratory Medicine.² The authors of this survey noted that the results of previous workforce surveys “have varied between a state of equilibrium and predictions of shortage.” The goal of this publication was to examine workforce supply; a companion article will address workforce demand.

In reviewing a number of health care workforce surveys results published during the past 30 to 40 years, it is striking how often the results of many surveys do vary “between a state of equilibrium and predictions of shortage.” Part of the reason for this can be explained by differences in methodology (particularly on the demand side of the equation), by some of the underlying assumptions used for calculations, and by changes in patterns of health care delivery and technology. Most importantly, the long cycle of training health care workers, particularly physicians, makes long-term workforce predictions difficult, if not impossible.

It may not be possible to predict the future, but in order to plan and allocate resources for future education and training we are forced to do so. In order to mitigate the uncertainty of such efforts, the only practicable approach is to define the current state as carefully and accurately as possible using those methods available to us. Despite its limitations, such an approach provides a solid starting point to align education and training efforts with workforce development needs. It also provides an objective source of data for guiding current public policy and professional advocacy. As Sophocles once stated, the truth is the strongest argument.

References
