Pathologists Will Prevail

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“We can’t complacently sit back and think that everything is going to be ok.”

—Calum McClelland

“Strategy without tactics is the slowest route to victory. Tactics without strategy is the noise before defeat.”

—Sun Tzu

Many thanks to Gross and colleagues3 for their article in this month’s Archives of Pathology & Laboratory Medicine entitled “The State of the Job Market for Pathologists.” Their study included 253 practice leaders from around the country and, based on the data collected and assessed, concluded that “the demand for pathologists is strong, at least at the current time.” Their article follows several others in the last few years that have examined the pathologists’ job market, and some factors that may influence it. In 2013, Robboy and colleagues4 predicted a decline in the number of pathologists beginning in 2015; and in 2015, Robboy and colleagues noted that—based on “an aging population, advances in biomedical technology, and changing roles in capitated, value-based and team-based medical care systems”—“[i]n the future, pathologists will likely have to assume new roles, develop new expertise, and become more efficient in practicing medicine…” In 2017, Gratzing and colleagues found that “[p]athology residents and fellows seeking their first position[s] have faced a relatively stable job market during the last 5 years, with most accepting positions with which they were satisfied.” A 2019 article by Shyu and colleagues, examining aggregate salary, benefits, or access to partnership track. There were no significant differences with regard to difficulty finding a nonfellowship position[s] in pathology. There were no significant differences with regard to difficulty finding a position, overall satisfaction with the position accepted, salary, benefits, or access to partnership track.18

We all want there to be a continuing positive job market outlook for pathology trainees in the future. I believe there are 3 major national (indeed international) challenges that pathologists will need to address soon for the profession to continue to succeed and thrive, and for residents’ and fellows’ job outlook to remain positive. These are (1) scope of practice creep, (2) consolidation and centralization of hospitals, and (3) artificial intelligence (AI) and digitalization. For pathologists’ ultimate success, these all must be considered and addressed.

SCOPE OF PRACTICE CREEP

Scope of practice creep has not been adequately addressed by pathology’s academy. Yet, there is discussion regarding scope of practice creep that is relevant to pathologists.10 Scope of practice creep is continuing in medicine because of “[b]usiness forces, of course…[a]lso, health care plans will pay for it.”11 “Rather than train more doctors, it’s quicker and cheaper to grant lesser-trained professionals similar privileges. There’s a standard rationale that’s given: (1) We’re not competing; (2) We work under supervision; [and] (3) We know when to refer.”11 But again one may ask, “[w]hy don’t we just train more physicians? Because the cost of training more physicians will break the hospital’s bank.”11 “Medicare reimbursements have not kept up with these training costs. …[and] the organization which accredits training programs—the Accreditation Council for Graduate Medical Education (ACGME)—imposes limits on the number of consecutive hours that a doctor in training may work. This duty hour limitation adds to the cost of training…[estimated]…as high as one million dollars per

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hospital.”11 Of course, “[h]ow this affects patient safety and treatment outcome remains to be seen.”12

As scope of practice creep continues, it has been thought to contribute to the diminution of the “medical tribe”—“a tribe of international doctors who would welcome me anywhere in the world, who spoke a common language and had a common culture and ethos…[providing a] sense of community and belonging [that is] important to a person’s mental health.”12 This diminution of the “medical tribe” may contribute to burnout, depression, and disenchantment with the profession of medicine.12 The Texas Medical Association has pursued a stance to push back on scope of practice creep.13,14 It is important also to consider that to allied health professionals, physicians’ concern with scope of practice creep may appear defensive.15

Pathologists’ assistants, histotechnologists, cytotechnologists, laboratory technicians, and PhD clinical laboratory staff all work intimately with pathologists daily, with well-defined job descriptions and roles for everyone, as a mutually supportive team. Yet, the above-noted financial pressures, consolidations, as well as a predicted reduction in pathologist workforce, are testing the boundaries of these roles.

Pathology is a new medical profession; pathologists were not formally recognized nationally as independently practicing physicians until 1965.16 And pathologists make up a small percentage of physicians (about 0.2%) and of the general population (about 0.006%).17 These also increase the scope of practice risks for pathologists.

**CONSOLIDATION AND CENTRALIZATION OF HOSPITALS**

There is a continuing national trend toward closure of hospitals, especially rural hospitals, and the consolidation of hospitals.18 “[R]ural hospital closures are associated with sizable declines in county employment and aggregate wages. The declines are likely to be more severe in counties with lower total employment and a higher share of hospital employment and payroll. Many other counties remain at risk of especially severe economic consequences if their hospitals close.”19 “Loss of access to care is arguably the most fundamental concern for communities facing hospital closures. The effects of access to care on community health are well-documented… and poorer health may lead to economic consequences such as increased worker absences and lower productivity.”19 In fact, a 2019 Navigant analysis has shown that 1 in 5 rural hospitals—“hospitals considered highly essential to the health and economic well-being of their communities”—are at high risk of closing.20 My state, Mississippi, “has more rural hospitals at risk of closing than any other state in the country, meaning the most medically underserved state could soon lose even more doctors.”21 Forty-eight percent of Mississippi’s hospitals are at “high financial risk”—more than double the national rate.21

In addition to hospital closures, pathologists must also contend with hospital consolidation and centralization. And consolidation is already upon us; a Definitive Healthcare survey found that health care industry consolidation is the most important trend in 2019.22 These consolidations are rapidly occurring, “driven by significant regulatory changes, technological innovations, financial pressures[,] and market dynamics.”23 Deloitte models estimate that after consolidation in the next decade, only 50 percent of current health systems will likely remain.23

To some, “[t]here’s no mystery behind the hospital field’s realignment. It is a direct response to the changing needs of communities for more convenient care, continuous financial pressures to reduce its costs[,] and the ever present drive to improve its quality. Understanding that provides the most accurate and true basis for evaluating public policy.”24 The language around hospital closures, consolidation, and centralization typically focuses on the loss of primary care services and clinical services rather than the loss of ancillary services such as radiology and pathology. And while hospital consolidation presents both pros and cons,25 it is important for pathologists to consider that consolidation and centralization of hospitals, along with their laboratories and laboratory needs, may cause an increase in direct employment of pathologists by hospitals and hospital groups, and a reduction in the number of independent contractor positions and private group positions for pathologists. Small group practices may be hit particularly hard.

**ARTIFICIAL INTELLIGENCE AND DIGITALIZATION**

There are significant “fears over creeping automation of white-collar jobs. Once a concern solely of factory workers, today robots are marching into offices.”26 “In fact, there are many more AI use cases impacting white-collar jobs than blue collar jobs, an issue to which policy makers need to pay close attention.”27 “[H]ighly skilled professionals like doctors…are likely to see AI impact their jobs.”27 In fact, a 2018 Brookings Institution article noted that a query to experts by the Pew Research Center found that “half of these experts (48%) envision a future in which robots and digital agents will have displaced significant numbers of both blue- and white-collar workers—with many expressing concern that this will lead to vast increases in income inequality, masses of people who are effectively unemployable, and breakdowns in the social order.”28

In the past the institution of automation led ultimately to job creation, and fears of job loss have continuously been proved unfounded.1 One hopes that the past is an accurate predictor of the future, and that the widespread institution of AI will also lead to job creation. Unfortunately, there are several reasons why this might not be the case, and the institution of AI will in fact result in significant job loss. First, compared to the institution of new technology in the past, AI differs because it can be applied to essentially every industry.1 AI’s disruption will not be contained; its ability to “understand language, recognize patterns, and problem solve” provides it essentially unbridled disruptive potential.1 Further, the institution of AI differs from the institution of prior technologic advances because of its unprecedented speed of progress, and its ability to advance in a nonlinear fashion.1 And people tend to underestimate the impact of such speed and nonlinear advancement. “In the words of University of Colorado physics professor Albert Allen Bartlett, ‘The greatest shortcoming of the human race is our inability to understand the exponential function.’ We drastically underestimate what happens when a value keeps doubling.”1

Artificial intelligence now rules our lives—smartphones, social networks, virtual assistants, surveillance, health care, even art.29 It has even entered the presidential race.30 Andrew Yang’s Web site states “[a]dvances in automation and Artificial Intelligence (AI) hold the potential to bring about new levels of prosperity humans have never seen.
They also hold the potential to disrupt our economies, ruin lives throughout several generations, and, if experts such as Stephen Hawking and Elon Musk are to be believed, destroy humanity.  

Ultimately, it may be that the present, “in the loop” phase of AI may actually have a productivity effect—a tool, not a threat—whereas the near-future second, “on the loop” phase of AI may result in a displacement effect. If it takes the long run nearly all current jobs will go away.  

But there is reason for optimism. If you had predicted in the early 19th century that almost all jobs would be eliminated, and you defined jobs as agricultural work, you would have been right. In the same way…what we think of as jobs today will almost certainly be eliminated too. But this does not mean that there will be no jobs at all…”. [W]hile AI and automation may eliminate the need for humans to do any of the doing, we will still need humans to determine what to do.” And “[w]e are the only species self-aware enough to identify this mismatch between our brains and the technology we use. Which means we have the power to reverse these [dangerous] trends.  

Ultimately, though, AI and digitalization are likely to reduce the number of pathologists needed, with centralization of those pathologists into larger groups. And those pathologists could function in providing oversight and supporting quality functions, rather than providing primary diagnosis as pathologists do today.  

WILL PATHOLOGISTS SURVIVE?  

Absolutely! And thrive! Pathologists will prevail against these challenges by working together as a profession, and with our national societies such as the CAP, to proactively address concerns of scope of practice creep, tensions arising from continuing consolidation and centralization of hospitals, and the brave new world of AI and digitalization. Perhaps as we do so we can take solace that although we are a profession relatively new in origin and few in number, our place in medicine is central. As W. T. Councilman, MD, stated in his Massachusetts Medical Society’s 1898 Annual Oration: “Pathology being the study of disease, all that belongs to disease comes within its province.” Perhaps further words by Dr Councilman can provide guidance as we take on these new and future challenges: “Pathology must be more than a descriptive science. It must be explanatory.” Rather than struggling to merely withstand these challenges, let’s work hard to understand them, address them, and conquer them. Let’s use these then to elevate our profession for the betterment of our patients, and ourselves.  

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