

The State of the Job Market for Pathologists

Evidence From the College of American Pathologists Practice Leader Survey

David J. Gross, PhD; W. Stephen Black-Schaffer, MD; Robert D. Hoffman, MD, PhD; Donald S. Karcher, MD; Edith Lopez Estrada, BA; Stanley J. Robboy, MD; Michael B. Cohen, MD

• **Context.**—Disagreement exists within the pathology community about the status of the job market for pathologists. Although many agree that jobs in pathology were harder to come by earlier this decade, recent evidence suggests improvement is occurring.

Objective.—To assess the state of the job market for pathologists.

Design.—We analyzed data from the 2018 College of American Pathologists Practice Leader Survey. This survey contains data from 253 practice leaders on practices' hiring (and retrenchments) in 2017, the skills and level of experience being sought, success in filling those positions, and expectations for hiring in the next 3 years.

Results.—Among the surveyed practice leaders, 115 (45.5%) sought to hire at least 1 pathologist in 2017, and together tried to fill 246 full-time equivalent positions that year, of which 93.5 full-time equivalents (38%) were newly created. This hiring was not limited to larger,

academic-based practices, but also occurred among smaller practices and practices based in nonacademic hospitals, independent laboratories, and other settings. Although some practices retrenched (60 full-time equivalents in 2017), the net increase was a healthy 187 full-time equivalents. Practices most frequently sought pathologists who had at least 2 years of experience, but the level of experience identified with the "optimal" candidate varied by desired areas of subspecialty expertise. Practice leaders also reported expected growth in hiring, with the number of positions they hope to fill in the next 3 years exceeding those vacated by retirement.

Conclusions.—Our findings support the proposition that the demand for pathologists is strong, at least at the current time.

(*Arch Pathol Lab Med.* 2020;144:420–426; doi: 10.5858/arpa.2019-0356-CP)

The job market for pathologists has been, and continues to be, of great concern to pathology organizations, to the community of practicing pathologists and pathologists in training, and to medical students who are considering whether to specialize in pathology. Even though the number of pathologists trained each year is below that of those expected to retire or otherwise leave the workforce¹—a projection supported by a recent report of a dramatic decline in the number of active pathologists in the United States between 2007 and 2017²—and despite emerging evidence of

an easing job market for new-in-practice pathologists³ and of increases in advertisements for pathology jobs,⁴ some medical students and pathology trainees continue to see a tight market. Commentary on social media sites, such as studentdoctor.net, as well as a recent commentary in the *Journal of the American Medical Association*,⁵ suggests that the job market for those seeking pathology positions remains bleak. Some of the perception is likely a residual effect of a change in pathology training that resulted from a 2002 decision by the American Board of Pathology to rescind its requirement that residents complete a "credentialing year" after completing 4 years of residency. This change inadvertently resulted in a temporary but substantial oversupply still 4 years later, when 2001 residency matriculants entered the job market (after completing their credentialing year) at the same time as 2002 matriculants (who had completed their now-mandated 4 years of residency training). This one-time oversupply had the unintended consequence of trainees who could not find jobs taking an extra year (and often 2 years) of training. The result has made those with extra training more competitive in the job market than graduates with no additional training. This trend has continued during the ensuing years and has created an impression among medical students that few jobs in pathology exist.⁶

Accepted for publication September 23, 2019.

Published online January 23, 2020.

From the Policy Roundtable, College of American Pathologists, Washington, DC (Dr Gross and Ms Lopez Estrada); MGH Pathology Service, Massachusetts General Hospital, Boston (Dr Black-Schaffer); the Department of Pathology, Microbiology & Immunology, Vanderbilt University Medical Center, Nashville, Tennessee (Dr Hoffman); the Department of Pathology, School of Medicine and Health Sciences, The George Washington University, Washington, DC (Dr Karcher); the Department of Pathology, Duke University Medical Center, Durham, North Carolina (Dr Robboy); and the Department of Pathology, Wake Forest Medical Center, Winston-Salem, North Carolina (Dr Cohen).

The authors have no relevant financial interest in the products or companies described in this article.

Corresponding author: David J. Gross, PhD, College of American Pathologists, 1001 G Street, NW, Suite 425 West, Washington, DC 20001 (email: dgross@cap.org).

Also see p. 416.

More recent analyses of the pathologist job market conclude that in general, pathology trainees can find satisfying jobs in reasonable amounts of time. In a recent survey of first-time job seekers during 2012 through 2016, most respondents reported they found a job within 1 year of searching.³ Nearly one-third of those respondents received multiple job offers, and there was a high level of satisfaction with the job that they chose. Unpublished results from 2017 show similar, if not better, job search experiences.⁷

Although the existing evidence sheds light on the job market from the perspective of new-in-practice pathologists and the records of pathology residency program directors, to date there is no literature from the perspective of pathology practices about their experiences in hiring pathologists and their plans for future hiring. Such evidence provides an important perspective to help us better understand the pathologist job market. To aid in this understanding, the College of American Pathologists (CAP) collected data from pathology practices about their demand for hiring practicing pathologists. The data come from the 2018 CAP Practice Leader Survey, which practice leaders throughout the United States received. This article uses these data to answer the following questions: (1) To what extent are there jobs in pathology? (2) What are the characteristics of practices that are hiring pathologists? (3) To what extent does hiring reflect growth in the demand for pathologists versus replacement for retirees and other departing pathologists? (4) What are the areas of expertise most in demand? (5) To what extent are employers willing to consider newly trained pathologists (<2 years)? (6) Were practices able to find qualified candidates for all of their open positions?

SURVEY INSTRUMENT

To better understand the job market for pathologists, the CAP Policy Roundtable included a series of questions about the job market in its 2018 Practice Leader Survey.⁸ This survey was sent to 2709 leaders and practice managers in 47 states and the District of Columbia. This list was compiled from several sources, including national databases of pathology practices and laboratories that bill Medicare for pathology services (sometimes supplemented by Internet searches for practice leaders or practice managers of those practices) and of hospital executive leaders; lists of laboratories that use the CAP's Laboratory Improvement Programs; and names of CAP laboratory inspectors and engaged leaders. We believe that there is a substantial amount of duplication in this list because we have found some cases of the same businesses operating under different names (for example, a practice associated with a particular hospital may be listed in one source as part of that hospital and in another source under a separate name). To prevent duplicate responses from practices, the survey instructions specified that there should be only one response per practice, and that the survey should be completed by the person with the primary responsibility for overseeing the practice (or by that person's designee). Although there are no rigorous data on the number of pathology practices in the United States, experts from the CAP estimate that this number is between 1400 and 1500. Responses were received from 346 practices.

The CAP Practice Leader Survey asked practice leaders the following questions about the job market for pathologists:

1. In 2017, how many pathologist positions did your

Full-Time Equivalent Pathologists in Practice	No. (%) of Practices
<2	30 (11.9)
2–5	106 (41.9)
6–10	44 (17.4)
11–25	34 (13.4)
26–50	13 (5.1)
>50	14 (5.5)
Not given	12 (4.7)

- practice seek to fill? How many positions were eliminated?
2. Of the pathologist position(s) you sought to fill in 2017, how many were new and not a replacement for an existing position?
3. For the pathologist position(s) that were open in 2017, which areas of expertise were required?
4. How many years of practice would you like your optimal pathologist candidate to have in each of the following areas of expertise?
5. Was your practice able to fill the open pathologist position(s)? If not, why was your practice unable to fill the open position(s)?
6. In 2017, how many pathologist positions were eliminated in your practice?
7. Why did your practice eliminate those positions?
8. Within the next 3 years, how many pathologists do you expect to hire or to retire from your practice?

Because the survey also asked demographic questions about the practices, we were able to analyze responses by practice setting and other variables.

RESULTS

Respondent Characteristics

Of the 346 practice leaders who responded to the survey, 253 provided data on staffing levels. Assuming that there are 1400 to 1500 pathology practices in the United States, this corresponds to us having data from at least 17% of pathology practices. Overall, 136 respondents (53.8%) led practices of 5 or fewer full-time equivalent (FTE) pathologists, and 180 respondents (71.2%) led practices of 10 or fewer FTE pathologists. By contrast, 27 respondents (10.6%) led practices that had 26 or more FTE pathologists. (The remaining 12 respondents [4.7%] did not provide data on practice size.) See Table 1 for details.

Of the 253 respondents, 225 (88.9%) were based in 1 of 4 settings (Table 2): nonacademic health centers/hospitals unaffiliated with an academic health center (N-AHCs; 79 respondents [31.2%]); academic health center hospitals (AHCs; 57 respondents [22.5%]); independent laboratories (I-Labs; 46 respondents [18.2%]), and nonacademic health center/hospital owned by, managed by, or affiliated with an AHC (Affiliated; 43 respondents [17.0%]). Average practice size among the 241 respondents who provided data on practice size ranged from an average of 30.1 FTE pathologists in practices based in an AHC to 3.5 FTE pathologists in practices based in forensic laboratories or medical examiner offices. In total, these 253 practices accounted for an estimated 2822.5 FTE pathologists in 2017.

Table 2. Distribution of Full-Time Equivalent (FTE) Pathologists in Survey Respondents' Practices, by Practice Type (n = 253)

Practice Setting	Acronym	Respondents, No. (%)	FTE Pathologists	
			Average	Median
Nonacademic health center hospital unaffiliated with an academic health center hospital	N-AHC	79 (31.2)	6.5	4.0
Academic health center hospital	AHC	57 (22.5)	30.1	19.5
Independent laboratory	I-lab	46 (18.2)	8.9	3.0
Nonacademic health center/hospital owned by, managed by, or affiliated with an academic health center hospital	Affiliated	43 (17.0)	7.2	3.4
Government or military hospital or laboratory	Govt	17 (6.7)	3.6	3.0
Forensic laboratory/medical examiner's office	Forensic	7 (2.8)	3.5	3.0
Central or main laboratory for health care system or independent delivery network	Central	4 (1.6)	9.7	3.8

Overview of Net Change in Pathologist Positions Among Respondents' Practices

Of the 253 respondents, 115 (45.5%) reported that their practice sought to hire at least 1 pathologist in 2017. A total of 55 practices sought to fill 1 position (including 5 practices that sought to fill a position for <1 FTE), whereas the remaining 60 practices sought to fill between 2 and 7 positions (Table 3).

Overall, these 115 practices sought to fill a total of 249 positions—243 full FTE positions and 6 partial FTE positions, accounting for 246 FTEs. Of these 246 FTEs, 93.5 FTEs (38%) were newly created positions; that is, not sought to fill a preexisting position that became vacant through retirement, death, or other reasons. The remaining 152.5 FTEs (62%) were to fill a preexisting position (Table 4).

Some surveyed practices also reduced pathologist staffing. A total of 34 of the 253 respondents eliminated a total of 60 pathologist positions in 2017—58 FTEs and 2 partial FTEs. (A single practice reported eliminating 10 positions [Table 4].) The result was a net increase of 189 open positions for pathologists in 2017 among these 253 respondents' practices, including 185 FTE and 4 partial FTE positions.

Characteristics of Practices Hiring Pathologists in 2017

To better reflect the trends occurring in the many different kinds of pathology practices, we disaggregated the data found among the similar types of practices. First, we analyzed differences in hiring patterns by both practice size and practice setting. Not surprisingly, a direct relationship existed between practice size and the number of practices

seeking to hire (Table 5). Only 37 of the 135 practices of 5 or fewer FTE pathologists (27%) sought to hire a pathologist in 2017, and they sought to fill only a total of 40 positions (or just more than 1.0 per hiring practice, on average). By contrast, 25 of the 27 practices with more than 25 FTEs (93%) sought to hire a pathologist in 2017 and together sought to fill a total of 95 positions (or 3.8 pathologists per practice, on average). As expected, smaller practices have fewer retirements or other reasons for a vacancy, and hence few hiring needs in any given year.

Practices in AHCs accounted for most of the positions offered (130 of the 246 open positions; 52.8%) despite representing only 57 of the 253 responding practices (23%; Table 6). Of those 57 practices based in AHCs, 41 (71.9%) sought to hire at least 1 pathologist in 2017, compared with 41 of the 122 practices (34%) based in N-AHC or Affiliated hospital-based practices and 15 of the 46 practices (32.6%) based in I-labs.

Expertise and Experience Levels Sought by Practices

Nearly half of the practice leader respondents—47 of 111 (42.3%)—reported that they sought pathologists with general skill sets, that is, no specific subspecialty expertise required (Table 7). Among the top areas of subspecialty expertise sought in 2017 were hematopathology, gastrointestinal pathology, cytopathology, leadership expertise (eg, chair, program director), and breast pathology.

Practice leaders were asked to identify the years of experience that the preferred candidate would possess. For many positions, regardless of subspecialty expertise being sought, a relatively large number of practice leaders identified 2 to 5 years of experience (Figure). There was

Table 3. Distribution of Pathologist Positions to be Filled in 2017, by Number of Full-Time Equivalent (FTE) Positions (n = 253)

No. of FTE Positions Practice Sought to Fill in 2017	Respondents, No. (%)
None	138 (54.5)
One or more	115 (45.5)
1 ^a	55 (21.7)
2 ^b	26 (10.3)
3	11 (4.3)
4	10 (4.0)
5+ ^c	13 (5.1)

^a Includes 4 practices that sought to fill a position of <1 FTE.

^b Includes 1 practice that sought to hire 1.5 FTEs.

^c Maximum = 7.

Table 4. Open Positions for Practicing Pathologists, 2017

	No. of Positions	FTE Positions
Sought to hire	+249 positions (243 full FTE and 6 partial FTE)	246
Positions eliminated	−60 positions (58 full FTE and 2 partial FTE) ^a	59
Total net change in open pathology positions	+189 positions (185 full FTE and 4 partial FTE)	187

Abbreviation: FTE, full-time equivalent.

^a Excludes 1 eliminated position of 0.1 FTE.

Practice Size (Full-Time Equivalent Pathologists)	Responding Practices, No. (%)	Practices Seeking to Hire, No. (%)	Positions That Practices Are Seeking to Fill, No. (%)
5 or fewer	136 (53.8)	37 (32.2)	40 (16.3)
6–10	44 (17.4)	21 (18.3)	31 (12.6)
11–25	34 (13.4)	26 (22.6)	60 (24.4)
>25	27 (10.7)	25 (21.7)	95 (38.6)
Did not provide data on practice size	12 (4.7)	6 (5.2)	20 (8.1)
Total	253 (100)	115 (100)	246 (100)

substantial variation in how often recently trained pathologists (<2 years in practice) and later-in-practice pathologists (6 to 10 years in practice) were defined as the preferred candidate, whereas those in practice more than 10 years were infrequently identified as preferred, except in leadership positions.

Two important caveats should be considered when interpreting the Figure. First, our survey asked about “optimal candidate” but not about the candidate who was eventually hired (in other words, the “acceptable candidate”). It could be that the pathologist hired had more, or less, experience than what the practice leader defined as the “optimal” years of experience. Second, the survey question did not clarify whether fellowship training years would be considered as years of experience. Thus, it is possible that some respondents looking for a pathologist with 2 years of fellowship training may have chosen the “2–5 years” option when answering these questions.

Ability of Practices to Fill Open Positions

For the most part, pathology practices filled all open positions. Of the 123 respondents whose practices sought to hire at least 1 pathologist in 2017, 37 practices (30%) reported that they were not able to fill all their open positions. Of these 37 practices, 24 were able to fill some of their open positions. An additional 13 practices could not fill any open positions, including 3 for which the practice lost funding or eliminated the position because of a lack of need.

Practice Setting	Responding Practices, No. (%)	Practices Seeking to Hire, No. (%)	Full-Time Equivalent Positions Seeking to Hire, No. (%)
N-AHC	79 (31.2)	24 (20.9)	34.5 (14.0)
AHC	57 (22.5)	41 (35.7)	130 (52.8)
I-lab	46 (18.2)	15 (13.0)	36 (14.6)
Affiliated	43 (17.0)	17 (14.8)	21.5 (8.7)
Govt	17 (6.7)	10 (8.7)	11 (4.5)
Forensic	7 (2.8)	5 (4.3)	6 (2.4)
Central	4 (1.6)	3 (2.6)	7 (2.8)
Total	253 (100)	115 (100)	246 (100)

Abbreviations: AHC, academic health center; Govt, government; I-lab, independent laboratory; N-AHC, nonacademic health center.

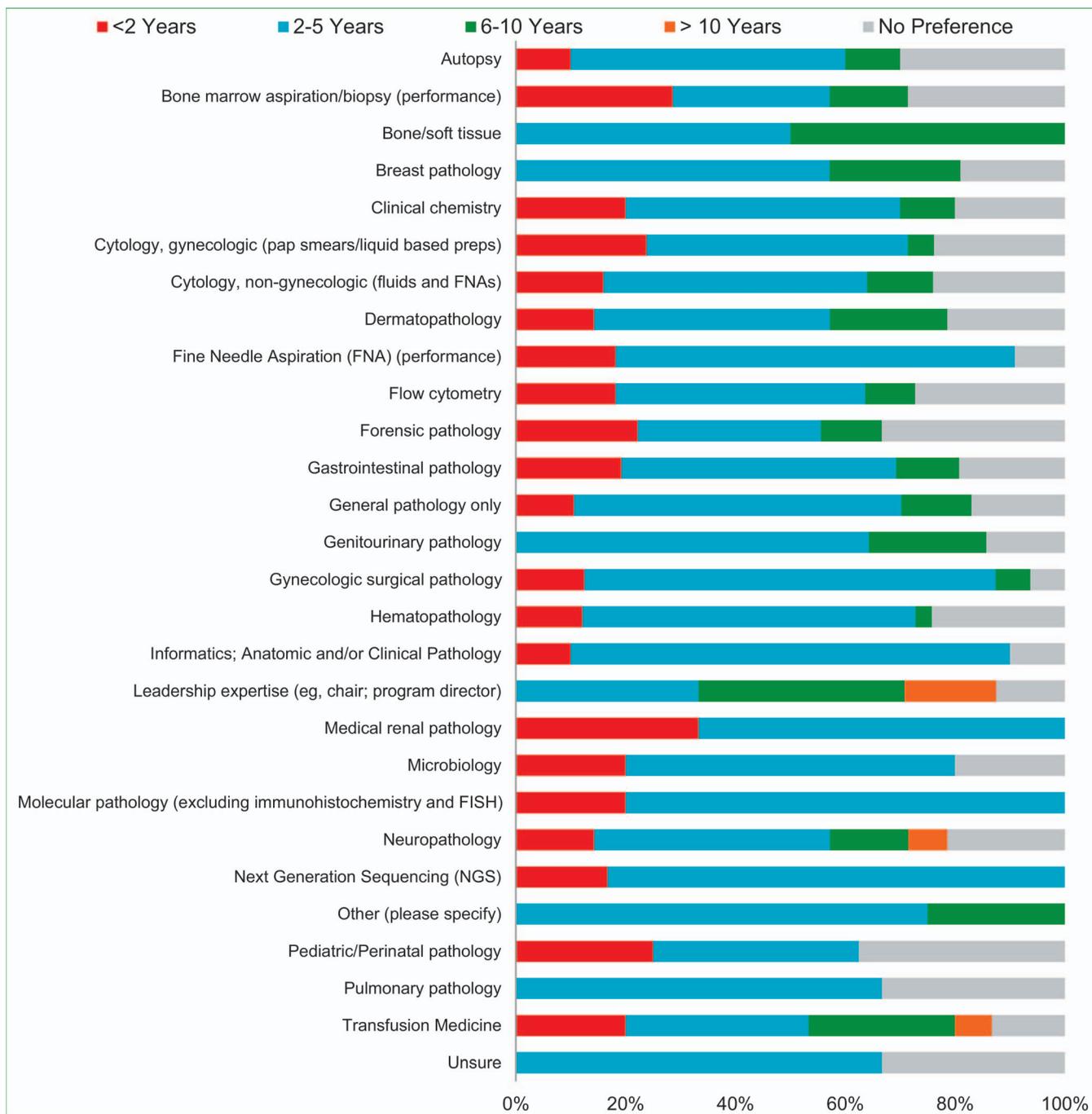
Rank	Area of Expertise	No. (%) of Practices Seeking This Expertise (n = 111)
1	General pathology only (no specific subspecialty expertise desired)	47 (42.3)
2	Hematopathology	33 (29.7)
3	Gastrointestinal pathology	26 (23.4)
4	Cytology, nongynecologic (fluids and fine-needle aspirations)	25 (22.5)
5	Leadership expertise (eg, chair, program director)	24 (21.6)
6 (tie)	Breast pathology	21 (18.9)
	Cytology, gynecologic (Papanicolaou tests/liquid-based preps)	21 (18.9)
8 (tie)	Dermatopathology	16 (14.4)
	Gynecologic surgical pathology	16 (14.4)
	Transfusion medicine	16 (14.4)
11 (tie)	Genitourinary pathology	14 (12.6)
	Neuropathology	14 (12.6)
13 (tie)	Autopsy	11 (9.9)
	Fine-needle aspiration (performance)	11 (9.9)
	Flow cytometry	11 (9.9)
	Molecular pathology (excluding immunohistochemistry and fluorescence in situ hybridization)	11 (9.9)
17 (tie)	Clinical chemistry	10 (9.0)
	Informatics; anatomic and/or clinical pathology	10 (9.0)
19 (tie)	Forensic pathology	9 (8.1)
	Pediatric/perinatal pathology	9 (8.1)
21	Bone marrow aspiration/biopsy (performance)	7 (6.3)
22 (tie)	Next-generation sequencing (NGS)	6 (5.4)
	Microbiology	5 (4.5)
24	Other	4 (3.6)
25 (tie)	Pulmonary pathology	3 (2.7)
	Medical renal pathology	3 (2.7)
27	Bone/soft tissue pathology	2 (1.8)

^a Respondents could choose more than 1 desired level of expertise.

A total of 21 practices with unfilled positions were in AHCs, 3 were in N-AHCs, and 2 were in Affiliated practices. Of the remaining unfilled positions, 2 were in government or military hospitals/laboratories, 2 were in forensic laboratories/medical examiners' offices, 2 were in independent laboratories, and 2 were in central laboratories.

A total of 12 practices with unfilled positions were practices of 11 to 25 FTE pathologists, 9 were practices of 2 to 5 FTE pathologists, 3 were practices of between 6 and 10 FTEs, and 9 were practices of more than 25 FTEs.

The most frequent reasons for not filling pathologist positions were an inability to find qualified candidates (19 practices), compensation expectations (10 practices), and geography/community (8 practices; Table 8).



Levels of expertise desired for pathologist positions, by years of experience of the "optimal" candidate, 2017.

Practice Leaders' Expectations for Hiring During the Next 3 Years

Our survey asked practice leaders to provide the number of FTE pathologist positions they expected to hire in the next 3 years and how many they expected to retire from practice.

In the aggregate, the expanded hiring outstripped the expected retirement rate, suggesting continued net growth in the demand for pathologists (Table 9). Of the 218 practice leaders who responded to expected future hiring, 144 anticipated hiring 298 FTE pathologists during the next 3 years. More than three-quarters of these positions were in AHCs (124 FTEs) or in nonacademic hospitals and medical

centers (N-AHCs and Affiliated) (103 FTEs). In addition to new hires, 209 practice leaders anticipated hiring to replace 211 FTE retirees. The largest number of expected retirements was in practices based in N-AHCs, where 90 retirements were expected, and AHCs, where 77 retirements were expected.

Considering both expected hiring and expected retirements during the next 3 years, respondents reported a *net increase* of 87 FTE pathologist positions, or an increase of 2.8% from the 3053 estimated FTE positions among survey respondents' practices. The largest increase was in AHCs, which reported an expected net increase of 47 pathologist

	No. (%)
Unable to find qualified candidates	19 (51.4)
Unable to meet compensation requests	10 (27.0)
Geography/community did not meet applicants' requirements	8 (21.6)
Other	6 (16.2)
Lost funding for the position	4 (10.8)
Applicant found workload too onerous	3 (8.1)
Unsure	3 (8.1)
Unable to offer career development and promotional opportunities	1 (2.7)
Unable to offer flex time or part time position as requested by applicant	0 (—)

^a Total responses exceed the number of unfilled positions (37) because respondents could choose multiple reasons.

positions among 45 responding practices (1.04 positions per practice; Table 10).

OBSERVATIONS AND CONCLUSIONS

Data from the 2018 CAP Practice Leader Survey are consistent with recent literature²⁻⁴ that suggests a healthy job market for pathologists. In our survey, 116 practices (45.8% of the 253 practices that responded to our survey questions on hiring practices) reported that they sought to hire 246 FTE pathologists in 2017. Accounting for positions that practices were unable to fill or that were reported as having been eliminated, this resulted in a net gain of 156 pathologist positions among these practices, or about 5% of their existing pathologist workforce. These numbers represent a continuation of a prior trend—unpublished survey data from the CAP's 2016 Practice Leader Survey revealed that 90 practices sought to fill 212 pathologist positions in 2015 (D.J.G., unpublished data, July 19, 2016). Although half of the hiring reported among respondents was among practices based in academic health center hospitals, about one-third of responding practices based in nonacademic hospitals sought to hire pathologists in 2017, as did about

Setting	No. of Responses	No. of FTE Pathologists Practice Leaders Expected to Hire	No. of FTE Pathologists Expected to Retire
Academic medical centers	45	124.0	77.0
Nonacademic hospitals/medical centers	113	103.0	90.0
Independent laboratories	45	37.0	26.0
Central labs	3	10.0	3.0
Government/military	15	15.5	9.5
Forensic/medical examiner	7	8.0	5.0

Abbreviation: FTE, full-time equivalent.

^a Data derived from the College of American Pathologists 2018 Practice Leader Survey.⁸

Practice Type	Expected Net Change in Pathologist Positions 2018–2020
AHCs	+47
Nonacademic health center hospitals unaffiliated with an AHC	–5
Nonacademic health center hospital owned by, managed by, or affiliated with an AHC	+18
Independent laboratories	+11
Government or military hospitals or laboratories	+6
Forensic laboratories/medical examiner's offices	+3
Central or main laboratories for health care system or independent delivery network	+7
Total	+87

Abbreviation: AHC, academic health center hospitals.

30% of responding practices based in independent laboratories.

The data revealed a wide range of skills and expertise being sought by hiring practices. A total of 47 practices (of 111; 42.3%) that were hiring pathologists sought general pathology skills. There was also substantial demand for many subspecialties. About 30% of practices (33 [29.7%]) sought expertise in hematopathology, and almost one-fourth (26 [23.4%]) desired skills in gastrointestinal pathology or in cytology (nongynecologic). A total of 24 practices (21.6%), mostly in larger or academic practices, wished for leadership expertise.

When it comes to hiring, practices often define the “optimal” candidate as having 2 to 5 years of experience. This definition of “optimal” candidate does vary somewhat by which subspecialty expertise is being sought. However, our survey does require some enhancements to better understand the relationship between experience and hiring. In particular, because our survey did not clarify whether “years of experience” included fellowship training, we do not know if preferences for pathologists with 2+ years of experience reflect a desire for pathologists with at least some fellowship or if it reflects concerns about readiness for practice even among new pathologists with fellowship training. Furthermore, although the survey asked about the desired experience levels of the *optimal* candidates, it did not ask about the years of experience of the *successful* candidates or even of *acceptable* candidates. We anticipate asking these questions in our next Practice Leader Survey (tentatively scheduled for 2020).

Although most of our questions were about the most recent hiring cycle by practices, the results are at least consistent with reports of a robust job market for pathologists. In contrast to concerns that pathologists are putting off retirement, 210 FTE retirements during the next 3 years were projected among the 209 practices whose leaders responded to questions about retirement. In addition, practices anticipated hiring about 40% more pathologists than would be needed to simply replace retiring pathologists.

These findings also may have implications for whether there are sufficient positions available to the approximately 600 new pathologists who enter the job market each year (an estimate based on the number of residency positions filled in each year in pathology, less attrition for the relatively small number of international students who return to their home countries). Unpublished estimates from CAP are that there are approximately 1400 to 1500 pathology practices in the United States (written communication from K. Jedlicka, May 2, 2019). Using the lower range of this estimate, a straight projection from the 253 practices in our survey would infer that the aggregate demand for pathologists in 2017 was about 1350 FTEs—or more than double the number of annual graduates from residency programs. Of course, there are reasons to think that the actual demand very well could be lower than the estimate obtained from a straight projection, including (1) whether our survey population underrepresents smaller practices (particularly practices of 1 to 5 FTE pathologists) that are less likely to hire a pathologist in a given year and overrepresents larger practices that tend to hire every year, and (2) that the average hiring per practice for these smaller practices, 0.29 in our survey, is far lower when considering all practices of this size. Indeed, the value of 0.29 hires per small practice is consistent with these practices hiring a pathologist once every 3.3 years, on average, but it is not unreasonable to think that even a 5-person practice may hire as infrequently as once every 10 years or more. In addition, demand for pathologists could be reduced by laboratory consolidation that is occurring in the United States (such as the recent acquisition of Pathologists Bio-Medical Laboratories by PathGroup⁹), with the trend toward larger central laboratories reducing the number of smaller laboratories and the relatively higher effort expended in quality assurance.¹ We performed sensitivity analyses that reflected these concerns, but even the lowest projections of estimated demand for 2017 were for 900 pathologists hired in 2017—a figure far in excess of the number of new pathologists entering the job market.

We recognize that our survey results are point-in-time estimates, that is, they reflect only 1 year of data. Certainly, more longitudinal research is needed to explore whether or not the strong job market is a one-off event or a trend. However, identification of a vibrant demand for pathologists in the current study is consistent with the CAP's 2016 Practice Leader Survey, as well as with the experiences of new-in-practice pathologists in finding jobs reported by others. For example, Gratzinger et al,³ looking at 5 yearly snapshots of the initial job search process for new pathologists, found that the job market for new pathologists “reveals remarkable stability” in that most respondents had been searching for a job for less than 1 year, that most had accepted a position at the time of the survey, and that most were satisfied or very satisfied with their job.³ A review of job advertisements for pathologists listed in PathologyOutlines.com from 2013 to 2017 revealed additional evidence of a stable job market, with increases in advertisements for pathology jobs each year during the 5-year period.⁴ Other

evidence from the Association of Pathology Chairs also shows large numbers of pathologists starting their first nontraining job after taking 1 or 2 years of fellowship training. A 2017 Association of Pathology Chairs survey of pathology residency program directors asked the directors about the number of 2012–2016 graduates who were known to have begun employment as a pathologist. According to an as-yet unpublished study, more than 70% of pathologists were employed in May of the second year after residency graduation, consistent with taking 1 year of fellowship training, and more than 90% were employed in a non-training position by May of the third year after residency graduation, consistent with taking 2 years of fellowship training (written communication from R.D.H., April 27, 2019). The figures in this 2017 Association of Pathology Chairs survey were slightly higher than those in a similar survey that the Association of Pathology Chairs conducted in 2013,³ suggesting that the job market for pathologists had improved in between these years.

We also recognize that not all of the demand for pathologists from our survey respondents was for pathologists just coming out of residency. Indeed, as the Figure shows, many practices identified the “ideal” candidate as having more experience. The next CAP Practice Leader Survey is scheduled for 2020. Specifically, we will clarify whether or not “0–2 years” of experience includes fellowship training. We intend to ask further questions about the ideal hire, as well as the experience of persons judged to be acceptable and eventually hired for the positions. We hope that this information will help us better understand both the demand for pathologists overall and the demand specifically for newly trained pathologists. We also encourage readers to express questions and areas of inquiry they consider important.

References

1. Robboy SJ, Weintraub S, Horvath AE, et al. Pathologist workforce in the United States, I: development of a predictive model to examine factors influencing supply. *Arch Pathol Lab Med.* 2013;137(12):1723–1732.
2. Metter DM, Colgan TJ, Leung ST, et al. Trends in the US and Canadian pathology workforces from 2007 to 2017. *JAMA Netw Open.* 2019;2(5):e194337.
3. Gratzinger D, Johnson KA, Brissette MD, et al. The recent pathology residency graduate job search experience: a synthesis of 5 years of College of American Pathologists job market surveys. *Arch Pathol Lab Med.* 2018;142(4):490–495.
4. Zynger DL, Pernick N. Understanding the pathology job market: an analysis of 2330 pathology job advertisements from 2013 through 2017. *Arch Pathol Lab Med.* 2019;143(1):9–10.
5. Lundberg GD. How many pathologists does the United States need? *JAMA Netw Open.* 2019;2(5):e194308.
6. Crawford JM, Hoffman RD, Black-Schaffer WS. Pathology subspecialty fellowship application reform 2007–2010. *Am J Clin Pathol.* 2011;135(3):338–356.
7. McCloskey C. The job market for newly trained pathologists. Presented at: CAP 2019 Spring Residents Forum; March 2019; Oxon Hill, MD.
8. College of American Pathologists. 2018 Practice Leaders Survey. <https://www.cap.org/advocacy/latest-news-and-practice-data/practice-surveys>. Accessed November 16, 2018.
9. PathGroup acquires Pathologists Bio-Medical Laboratories, expanding pathology services and clinical innovation [press release]. *Business Wire.* May 1, 2019. <https://www.businesswire.com/news/home/20190501005903/en/>. Accessed June 18, 2019.