

Identifying the Challenges of “Small” Pathology Residency Programs and Creating Collaborative Solutions

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Abstract

The majority of pathology residency training programs in the United States are considered to be small training programs. Small training programs, regardless of specialty, encounter unique challenges that have been documented in the literature. With the implementation of the Next Accreditation System (NAS), and other Accreditation Council for Graduate Medical Education (ACGME) Common Program Requirements, adequate personnel and other resources are necessary. An online survey was conducted on the pathology program directors' section listserv to help identify characteristics and challenges of small pathology residency training programs. A discussion group on small pathology residency programs was held at the 2015 Association of Pathology Chairs/Program Directors annual meeting, where the results of the survey were discussed and small breakout groups followed the discussion of the survey. The results of the online survey and discussion groups are discussed in this paper.

Keywords

board pass rate, challenges, solutions, small pathology residency programs

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Introduction

When the Accreditation Council for Graduate Medical Education (ACGME) launched the new accreditation standards in 2011, classified broadly under the subheadings of supervision, duty hours, and patient hand offs, its chief executive officer, Dr Thomas J. Nasca, is cited as stating that the changes would be more of a challenge for the smaller programs.¹ Although not specifically defined by Dr Nasca, the smaller residency programs intuitively became known as those programs ill-equipped to immediately adapt to the shifting paradigm of residency training education under the new ACGME standards, in particular its duty hour requirements. Additional challenges unique to the smaller training programs have been published to some degree in the literature in other disciplines, such as family medicine, surgery, and pediatrics² and are largely centered on a lower board passage rate. In pediatrics, the larger the program, the higher the board pass rate, and programs with fewer than 12 board-qualifying candidates yearly are at significantly higher risk of noncompliance with the ACGME/Review Committee

(RC) for Pediatrics board passage rate standard set at 70%.² Similarly, Falcone et al, in 2013, noted that program size in family medicine was significantly associated with both a program's 3-year and 5-year aggregated board passage rate and that board passage rate was the second most common citation by ACGME. Furthermore, studies suggest that surgery residents in larger training programs outperform residents in smaller training programs on their annual in-service

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examination scores, which are often used as a predictor of subsequent board passage rate.³ The reasons cited for the observed association between program size and board examination success have included everything from less established curricula, to less funding for residency education initiatives, and diminished quality of both residents and faculty at smaller sized institutions, though confounding variables and the use of incentives have also been shown to be influential.

In the field of pathology, where nearly two-thirds of the ACGME-accredited pathology residency programs (89 of 142, 63%) have approved total complement sizes of less than or equal to 16 residents, the influences of program size on program performance, resident performance, and a variety of other programmatic metrics may be underappreciated. There is currently no published data on either real or perceived challenges that are unique to these smaller pathology residency programs, and, as such, no clear tools have yet been developed to either support or enhance the success rates of these smaller learning environments.

Methods

A survey on perceived challenges to small pathology residency programs (Appendix A) was sent out on the Program Directors Section (PRODS) of the Association of Pathology Chairs (APC) listserv between April 15, 2015, and April 24, 2015. Based upon a previous PRODS survey on Pathology residency program curriculum,⁴ a small program in pathology was defined as having 16 or fewer residents. Programs that reported more than 16 residents were excluded from the study. Thirty-two program directors completed the survey; however, 4 of these programs had more than 16 residents, and their results were excluded from the survey. The responses from 28 (31.5%) of 89 programs with 16 residents or fewer are discussed. The number of programs that have 16 residents or fewer was determined by reviewing each program on the ACGME Web site for the number of RC for Pathology-approved residency positions.⁵ The accuracy of this review varies according to the number of temporary increase in complement that is approved by the RC for Pathology; however, there were 1 or 2 programs that noted they had a temporary increase in complement due to off-cycle residents, and they were included in the results if their normal complement of residents was 16 or less. Program directors who provided responses that were equivocal or required further explanations were contacted directly by e-mail for clarification. Their response on the survey was corrected, if necessary. Subsequent to the data analysis of the survey results, the authors organized and facilitated a break-out session at the 2015 APC/PRODS annual meeting. Participants in the session were assigned to one of five groups that were assigned a discussion topic based on the top 5 perceived challenges that had been identified previously in the pre-program electronic survey of small pathology residencies. Each group was asked to review its assigned 'challenge' and brainstorm about potential collaborative solutions that might work to overcome the challenge. The groups' topics and talking points are detailed in Appendix B.

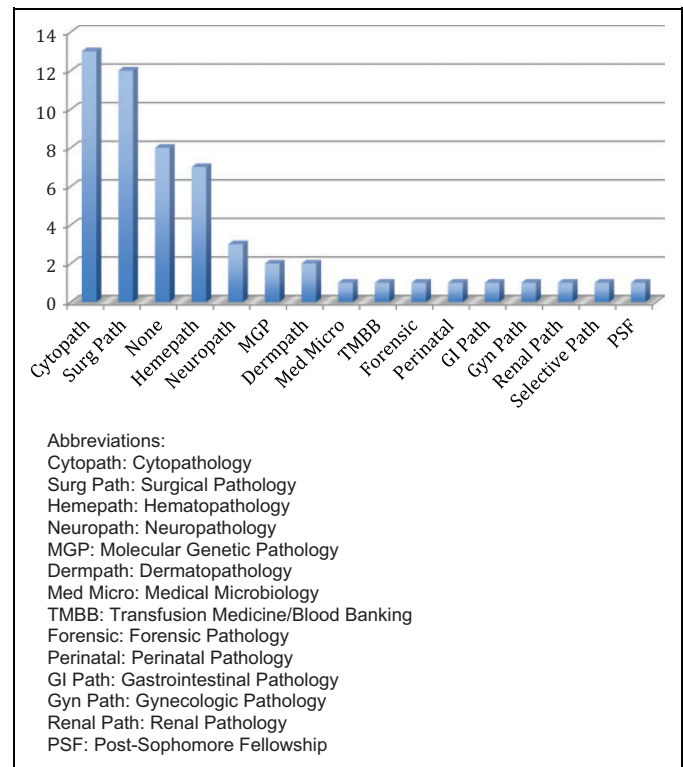


Figure 1. Distribution of the number of small programs with various fellowships.

Results

Of the 28 programs with 16 or fewer residents who responded to the survey, the ACGME-approved positions included 9 programs with 16 positions, 7 programs with 12 positions, 4 programs with 10 positions, 2 programs with 9 positions, and 6 programs with 8 positions. The actual number of approved positions filled by residents was different: 6 programs had 16 residents, 1 program had 14 residents, 2 programs had 13 residents, 6 programs had 12 residents, 1 program had 11 residents, 4 programs had 10 residents, 1 program had 9 residents, and 7 programs had 8 residents.

Using the ACGME definition of a core faculty member as "All physicians who devote at least 15 hours per week to resident education and administration are designated as core faculty members,"⁵ 5 programs listed 6 to 10 core faculty members, 17 programs listed 11 to 20 core faculty members, and 5 programs listed 21 to 36 core faculty members (one program did not respond to this question). Based upon the number of residents and the number of core faculty members, the faculty-to-resident ratio was calculated for each program. Seven programs have a faculty-to-resident ratio less than one, 13 programs have a faculty-to-resident ratio of 1 to 1.5, 6 programs have a faculty-to-resident ratio of 1.6 to 2, and 1 program has a faculty-to-resident ratio of greater than 2 (one program did not respond to this question).

The most common fellowship offered by small pathology programs is cytopathology (13 programs), followed by surgical pathology (12 programs). Eight programs reported having no

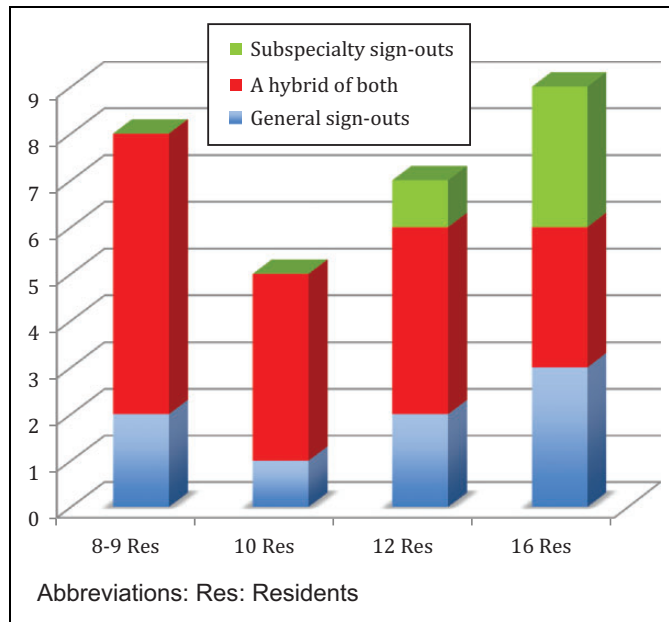


Figure 2. Method of surgical pathology sign-out by size of program.

fellowship programs, and to round out the top 5 responses, hematopathology fellowships (7 programs) and neuropathology fellowship (3 programs) were offered. There were a large number of diverse subspecialty pathology fellowships offered by small residency programs (Figure 1). Examining the likelihood of programs to offer fellowship training based upon program size, 8 programs with 16 residents have fellowships, 6 programs with 12 residents have fellowships, 4 programs with 10 residents have fellowships, and 2 programs with 8 residents have fellowships. Programs that did not have fellowship training programs included 5 programs with 8 or 9 residents, 1 program with 10 residents, 1 program with 12 residents, and 1 program with 16 residents.

The majority of small pathology residency programs (57.1%) have a hybrid approach to surgical pathology sign-out that includes general surgical pathology combined with subspecialty sign-outs. The second most common method of sign-outs in surgical pathology is a generalist approach (28.6%). The least common method of surgical pathology sign-outs is pure (organ based) subspecialty sign-outs (14.3%). Pure subspecialty sign-outs were not done in programs with 10 residents or less, although the most common method of surgical pathology sign-outs in these programs was a hybrid of general and subspecialty sign-outs. Pure subspecialty sign-outs began showing up in programs with 12 residents or more, with a third of programs with 16 residents having pure subspecialty sign-outs (Figure 2).

The required number of anatomic pathology months among small programs varied considerably from 5 months on the low end to 30 months on the high end. The most common number of required anatomic pathology months among small programs was bimodal at 24 and 26 months, with 27 months being the second most common. The range of surgical pathology months varied from 2 months to 21 months, with the most common

number of surgical pathology months again being bimodal at 12 and 16 months, with the second most common response at 15 and 18 months. The number of pathologists' assistants (PAs) also varied greatly from 0 to 13 PAs. The top 3 responses for the number of PAs was 3 PAs at 7 programs, 2 PAs at 5 programs, and 0 PAs at 4 programs.

Of the small pathology programs, 71.4% have a dedicated or free-standing autopsy rotation, and 28.6% of programs combine their autopsy experience with other rotations. Three programs combine autopsy with surgical pathology. Two programs integrate autopsy in all anatomic pathology rotations. One program places their residents on call from less busy rotations to cover the autopsies, and 1 program is in the process of switching from an integrated rotation to a dedicated autopsy rotation.

In smaller pathology residency programs, a PA or physician extender was the most common mechanism (32.1%) for coverage when the resident is absent. The second most common mechanism of coverage was evenly split at 28.6% between a resident being pulled from another service and "other." "Other" included a mixture of other residents and attendings; a combination of PAs, faculty members, and residents from another service; or a combination of PAs, residents from another service, and the student postsophomore fellow. The least common mechanism of coverage when a resident is absent is to have the faculty members cover the service in 10.7% of small pathology residency programs.

The range of total number of required clinical pathology rotations among small pathology programs varied from 10 months to 21 months. The most common number of required clinical pathology rotations was 18 months found in 16 programs, with a distant second of 20 months at 4 programs, and 2 programs require 19.5 months of clinical pathology.

The number of rotations that require resident coverage at small pathology residency programs varied from 1 month to 24 months. The most common number of months that require resident coverage was evenly split between 2 months, 6 months, 8 months, and 12 months found at 2 programs each.

When asked what the issues program directors of small pathology residency programs encounter, the 5 most common responses in descending order were recruiting medical students (12 programs), first time anatomic pathology and clinical pathology (AP/CP) board pass rate (8 programs), less flexible with curriculum (7 programs), lack of fellowship training programs (6 programs), and lack of research/scholarly activity for residents (6 programs; Figure 3).

Program directors of small pathology residency programs were asked what were the most common ACGME citations they received. The most common responses were "no citations" (16 programs), board pass rate (6 programs), curriculum-related (3 programs), and facilities (2 programs). There were no citations in scholarly activity, institutional support, or evaluations. A summary of some of the main demographic characteristics of the small pathology residency programs including numbers of core faculty, numbers of in-house fellowships, and other curriculum features is shown in Table 1.

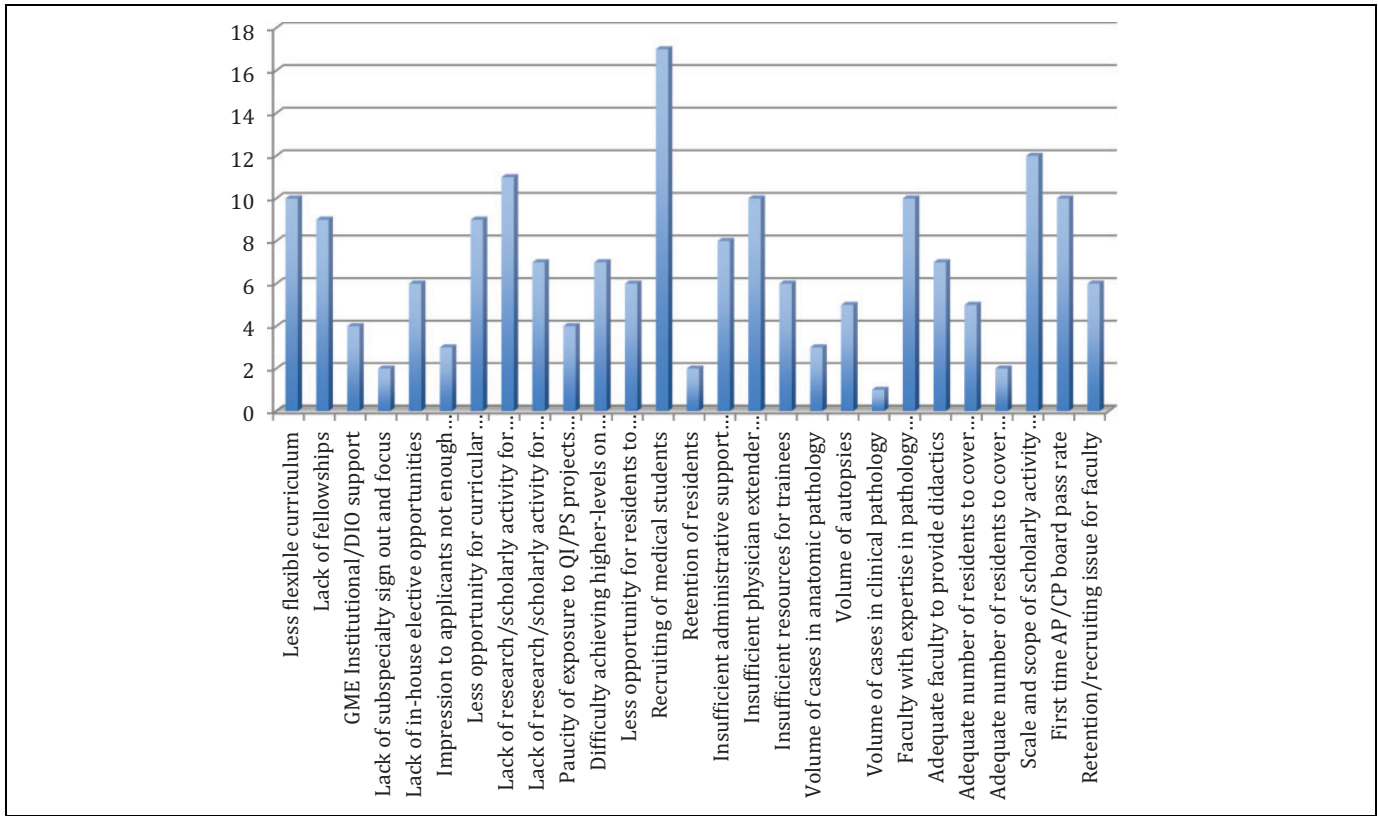


Figure 3. Issues that are encountered at smaller pathology residency programs. Note: Full text of each issue is written out in Appendix A (#14).

Table 1. Summary of Findings of Small Pathology Residency Programs Based on Numbers of Residents.

Program Size	Actual # of Filled Positions (Range)	# Core Faculty Members (Range)	# Fellowships	Sign-out Style (Sub = Subspecialty)	Average # of Pathology Assistants	Autopsy Free-Standing Rotation, Yes:No
8-9 residents	8-9 residents	7-15	0-1	General < hybrid	0-5	6:2
10-12 residents	10-13 residents*	13-21	0-4	General < hybrid > sub	0-10	7:4
13-16 residents	12-16 residents	11-36	0-5	General = hybrid = sub	1-13	7:2

Abbreviations: ACGME, Accreditation council for Graduate Medical Education. * Program with temporary ACGME approval for off-cycle resident.

Discussion

Through a preprogram survey of program directors, we were able to identify key challenges that programs face with 16 or fewer residents. Among a list of 27 possible challenges posed by the authors, recruitment of medical students, board pass rate, lack of fellowship programs, less flexibility with the curriculum, and inadequate opportunities of scholarly activity were the most common themes. Program directors discussed the challenges in more detail and offered possible benefits related to small programs and possible collaborative solutions.

There are generally few students in medical school who choose pathology for a career. For some of those students applying for pathology residency, the intimate nature of a small program, one-on-one more personalized teaching, and perhaps greater attention to career goals may be attractive. However,

overarching issues such as less complex cases, the need to send out subspecialty specimens to larger laboratories, and limited resources are real for many small program directors who find it difficult to recruit from this small pool of applicants. Overlapping with the general themes identified, having few or no fellowship programs and an imperfect board pass rate at small programs may also affect medical student recruitment. Financial support for review courses and for educational materials was an additional factor. Inevitably, these are questions that most applicants have when interviewing and choosing a program for residency.

The pathology board pass rate is an outcome that is closely monitored by the ACGME, an important one to all program directors regardless of specialty or size. Board pass rate has been documented in the literature as being problematic for

small programs in other specialties.³ For a small pathology program that has only 2, 3, or 4 residents taking the board in any given year, even 1 fail will be a significant detriment to the pass rate. The same small program may not be able to fund a review course for the residents or provide adequate education resources that residents need or would like to be available. With a potentially less flexible curriculum, residents may not feel as though they are exposed to enough case material to be sufficiently prepared to sit for the board examination.

Several program directors based on postinterview surveys anecdotally discussed that the number one reason that applicants did not choose their program was because of lack of fellowships. Our survey results reflected a similar consensus. Applying for a fellowship within the same institution as residency has several benefits: faculty are known, ease of process and transition, and one could avoid the cost and hassle of relocating. While one could argue that the training of a resident may be better with or without a fellow, many would agree that a fellow adds to the educational environment and general academic atmosphere of a training program and shares the educational responsibility with the faculty. There may be limited subspecialty opportunities for residents in programs with no or few fellowships.

The ACGME Pathology Program Requirements include several highly subspecialized areas such as medical renal and molecular pathology. Small programs that do not provide these services ultimately need to outsource the resident experience. Further, with a smaller number of residents, there is typically not a resident on each clinical pathology service every month. Residents may benefit from learning from each other when on clinical rotations and when there is only 1 resident, a portion of that experience may be lost. Having to cover services each month such as surgical pathology and autopsy decreases the time that residents may use for subspecialty experiences, research, and electives.

One observation from the current survey, as compared with the previous PRODS survey on curriculum of all sized programs,⁴ is that within programs with 16 or fewer residents, there was an apparent difference in survey results when comparing programs with 10 or fewer residents versus programs with 11 to 16 residents. Pure subspecialty pathology sign-outs were not seen in programs with 10 or fewer residents, whereas programs with 12 to 16 residents had pure subspecialty sign-outs. In addition, programs with 16 residents were equally divided among the 3 sign-out methods (Figure 2). Programs with 12 to 16 residents were more likely to offer subspecialty fellowship training, whereas programs with 8 to 9 residents were more likely to not offer subspecialty fellowship training. Pathologists' assistants were found almost equally distributed through all programs, regardless of size; however, all programs with 10 or 16 residents had PAs. Citations on first-time board pass rate were seen in all small programs; however, programs with 10 or 12 residents had fewer first-time board pass rate citations than programs with 8 to 9 or 16 residents. Having in-service examination benchmarks for each postgraduate year level was a suggestion of interest and one that may set a tone of

early and ongoing preparation for the board examination as well as pathology milestones achievement. Problems with scale and scope of scholarly activity resources available for faculty or residents were a problem with programs with 8 to 10 residents and not seen as a problem in programs with 12 to 16 residents. Further, there may be research opportunities for the resident that are not initially obvious. Programs should promote resident applications for small stipends or grants through a variety of national organizations that can help to offset the cost of an outside away rotation. Problems with retention and recruiting faculty were seen in programs with 12 to 16 residents, whereas this was not reported as a problem with programs with 8 to 10 residents.

Finally, a major area of concern for small programs is the lack of research and scholarly activities available for residents. Along with a general national decrease in funding for research, smaller programs are faced with lack of time in the schedule for residents to become involved in projects and lack of flexibility with required rotations. Further, there may be increased pressure for faculty to complete service work leaving little time for academic endeavors.

While the challenges were the basis of our discussion, our goal was to brainstorm possible collaborative solutions and promote ideas for the future of residency education. Many programs have affiliate sites where residents complete rotations either as training requirements or for electives. Carr et al describe a mutually beneficial relationship of an academic pediatric residency program and a local Children's hospital in an effort to overcome decreasing inpatient case numbers and exposure to complex cases.⁶ In a similar way, small pathology programs are encouraged to think about possible affiliate sites beyond the traditional academic hospital that can offer specific experiences for the residents that are not offered in the home institution. A broader training experience in a variety of practice settings may be seen as a highlight of the program to applicants. In addition to program affiliates, collaborative partnerships could be established between cohorts of small and larger sized programs. Such partnerships could be developed based on the smaller programs' curriculum needs and/or on the larger programs' areas of expertise along with types of fellowship programs. The extent of the partnership might involve experiential training to include away rotations for the residents stationed within the smaller programs or, alternatively, might focus solely on telecommunication sharing of joint didactic sessions or passive learning experiences. The APC office currently has technology that will allow PRODS to organize webinars for lectures to residents. Additional ways of covering specialized topics may include greater involvement of residents with tumor boards or a longitudinal lecture series with outside guest speakers. With new and easy lecture capture programs, small training programs might consider joint didactics with larger programs in some specialized areas. Opportunities for networking between the smaller and larger programs could be facilitated by the APC/PRODS and begin by the formation of either listserv subgroups or break-out sessions at the annual

professional meetings for those interested in starting such a collaborative network.

While many of the findings addressed here are not entirely specific to small pathology programs, there seem to be additional barriers that small programs encounter compared to larger training programs. We encourage the sharing of curricular innovations and educational resources that work well in any small program possibly through a small program listserv or open online forum and recommend an ongoing conversation to promote excellence in all residency programs big or small.

Appendix A

Small Program Discussion Group Survey

1. Name of program director
2. Name of institution
3. Number of residents in program
4. Number of core faculty (as defined by ACGME)
5. Number of fellowships offered (please list types)
6. General or subspecialty surgical sign-out
7. Total number of required anatomic pathology (AP) rotations
8. Total number of required surgical pathology rotations
9. Total number of pathology assistants on surgical pathology service
10. Do you have a dedicated (free-standing) autopsy rotation? (yes/no)
If “no,” please explain.
11. Who covers when a resident is absent?
 - a. Resident is pulled from another service
 - b. Physician extender/pathologists’ assistant
 - c. Faculty member
12. Total number of required clinical pathology (CP) rotations
13. Number of rotations (both AP and CP) in program that require resident coverage
14. Please indicate which of the following is/are an issue that you have had in your program:
 - a. Less flexibility with curriculum as services need to be covered
 - b. Lack of fellowships
 - c. Institutional graduate medical education (GME) support
 - d. Lack of subspecialty sign out and focus
 - e. Lack of in-house elective opportunities
 - f. Impression that there aren’t enough cases (to applicants)
 - g. Less opportunity for curricular innovation
 - h. Lack of research or scholarly activity opportunities for faculty
 - i. Lack of research or scholarly activity opportunities for faculty
 - j. Paucity of exposure to quality improvement/patient safety (QI/PS) projects for residents
- k. Difficulty achieving higher-levels (level 4 or above) on certain milestones (please list which)
- l. Less opportunity for residents to network in-house (less opportunity for hosting of guest or nationally known speakers)
- m. Recruiting of medical students
- n. Retention of residents
- o. Insufficient administrative support (clerical)
- p. Insufficient physician extender support (pathologists’ assistants [PAs], diener, histotechnologists)
- q. Insufficient resources to offset book funds, resident travel, board review courses, and so on for trainees
- r. Volume of cases in anatomic pathology
- s. Volume of autopsies
- t. Volume of cases in clinical pathology
- u. Faculty expertise in pathology subareas (neuropathology, genomics, informatics, lab management, or other, please be specific)
- v. Adequate faculty to provide didactics
- w. Adequate numbers of residents to cover services especially when leave is taken
- x. Adequate numbers of resident to cover call
- y. Scale and scope of scholarly activity resources available for faculty or residents
- z. Board passage rate
 - aa. Retention/recruiting issue for faculty
15. Which of the following “themes” best describes any ACGME citations that your program has received?
 - a. No citations
 - b. Scholarly activity
 - c. Curriculum
 - d. Facilities
 - e. Institutional support
 - f. Board pass rate
 - g. Evaluations
16. What items would you like to see covered at the discussion group session?

Appendix B

Challenges and Potential Solutions, Potential Benefits of Small Pathology Programs—Feedback From Small Breakout Groups on the Top 5 Concerns

Group 1: Recruiting Medical Students

Challenges

1. Having less complex specimens than larger hospitals
2. Send out of cases, eg, medical renal biopsies, eye specimens
3. No or fewer number of fellowships, eg, neuropathology (NP) fellowship
4. Marketing resources to recruit residents
5. Less staff support for maintaining residency programs

6. Board pass rates, one resident failure in a smaller program affects pass rate statistics greater than in bigger programs
7. Supporting extra service such as practice test taking

Potential solutions to the challenges

1. Develop collaborative relationships with programs that offer fellowships
2. Have residents do away rotations at larger institutions for special topics. Funding; residents do away rotations for areas program is deficient, eg, fine needle aspirate (FNA) services
3. Attempt a survey of potential interviewees that turned down the invitation to interview to find out why
4. Bring in specialist speakers to come to teach your residents on special topics, eg, renal pathologist came quarterly basis to lecture, when sending out medical renal biopsies
5. Have highest quality residents maintain standards; good residents in program attracts good residents

Potential benefits for small programs

1. Residents of smaller programs may receive more individual attention
2. Smaller programs often have faculty with greater interest in teaching over research
3. Closer relationships and bonding between residents

Group 2: First Time AP/CP Board Pass Rate

Challenges

1. A person that fails the boards will affect the pass rate for a smaller program than a larger program; small set denominator skews adverse board pass events against small programs, “especially ultra small programs” ACGME flexibility for pass rate—citation hurts
2. #1 is tied to recruitment issues, United States Medical Licensing Exam (USMLE) scores, correlated to board pass rate, a circular issues. This also relates to lack of fellowships programs—readdress fellowship match?
3. Is this a true “challenge?” Is the board pass rate different at small vs big?

Potential solutions to the challenges

1. Decrease emphasis on Board-passage rate—look at “global performance,” of graduates. Look at trends
2. Greater flexibility in interpretation of board pass rates for smaller programs.
3. Share board preparation techniques
4. Identification at-risk residents early
5. Institution benchmarks for resident performance on annual inservice examination

6. Corollary to A: Making test review material available; American Board of Pathology (ABP) start sharing retired questions
7. Provide reviews of available board prep courses
8. Small program network “subgroup of Program Directors Section [PRODS] listserv”
9. Tweak residents schedule to end of program to prepare for boards

Potential benefits for small programs

1. Small programs have flexibility to try innovations; can change curriculum before you do the Annual Program Evaluation
2. Faculty one-on-one education

Group 3: Lack of Fellowships

Challenges

1. Residency Recruitment, if no fellowship opportunities, have difficulty recruiting
2. If you don’t have internal fellowship opportunities, external rotation
3. Lack of internal fellowship, does program offer subspecialty sign-outs or not

Advantages

More one-on-one attention
Be able to rotate at other sites
Program is known to rotate to outside programs

Disadvantages

Residency recruitment
GME paycheck issues for outside rotations
Cost of outside rotations
Lack of subspecialty resident lacking instruction

Potential solutions to the challenges

1. Cost of outside rotations for subspecialty training can be subsidized
2. Subspecialty focused area for residents in general rotations, within existing faculty
3. Set up most popular fellowships

Potential benefits for small programs

1. More one-on-one sessions
2. Arranging outside rotations
3. Program is known to outside rotating students
4. If has own fellowships, the resident will think twice about outside fellowship opportunities

Group 4: Less Flexible With Curriculum

Challenges

1. Highly subspecialized ACGME requirements, eg, medical renal, dermatopathology, microbiology, need to outsource rotation
2. Outsourcing rotations—loss of control
3. Availability of subspecialized faculty (“breast pathologist, etc). Generalized sign-outs, but clinicians demand subspecialty sign-outs
4. No residents on service (clinical pathology) all the time

Potential solutions to the challenges

1. Concurrent Clinical Pathology Consult Service with other rotations.
2. Insuring robust didactic lecture series
3. Renal pathologist that the cases get sent out to will review the cases
4. Possibility of sharing didactic lectures with other local programs via telecommunication

Potential benefits for small programs

1. More personalized relation with faculty and residents
2. Mentoring residents better
3. Better assessment of each resident

Group 5: Lack of Research/Scholarly Activity for Residents

Challenges

1. It depends upon whether you are an academic based or a community based programs. These challenges vary by where you are
2. Financial resources—base of ongoing research (support) → no long research electives
3. Service work takes priority especially programs with large specimen numbers → no protected time
4. No flexibility in rotations → and splitting AP/CP
Relevance of research to residents; convincing residents to do research is a problem, although when it comes to hiring, one residents has papers on their c.v. and another resident has none, the one that gets the job is the one with publications
5. Lack of faculty time and interest

Potential solutions to the challenges

1. Collaborative research with clinicians—claim credit for collaborative work, especially if the institution has big oncology unit

2. Reduce the non-educational service work—rely more on PA’s
3. Seek outside sources of funding. Look at local resources, endowments, grants, intramural funds, even if transient, it is useful

Potential benefits for small programs

1. Closer relationship between faculty and residents
2. Fewer number of projects needed—less competition for research opportunities
3. Opportunity to stay on for fellowship; provides continuity.

Open Discussion

1. Resident research can include QI/PS, community based health projects
2. Residents can do QI/PS projects and present as poster presentation at USCAP
3. Resident projects on QI/PS can be used at the time of the hospital’s Clinical Learning Environment Review (CLER) - ACGME site visit
4. Department supports resident expense to meeting if presenting at the meeting
5. Four quality assurance projects and one academic project required to graduate (residents are told they must do at the beginning of residency)
6. Assign residents to a 6 month interval to support another residency program, eg, internal medicine—need help with an M&M, tumor board, the resident helps them while they are on an assigned pathology rotation.
7. Motivation of faculty: annual faculty evaluation changed, made them aware of what is required
8. If no subspecialty sign-outs, residents present at subspecialty tumor boards to include literature reviews when relevant to the cases.

Note: Transcripts of Notes Taken During Small Group Discussions at 2015 APC/PRODS Annual Meeting.

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