

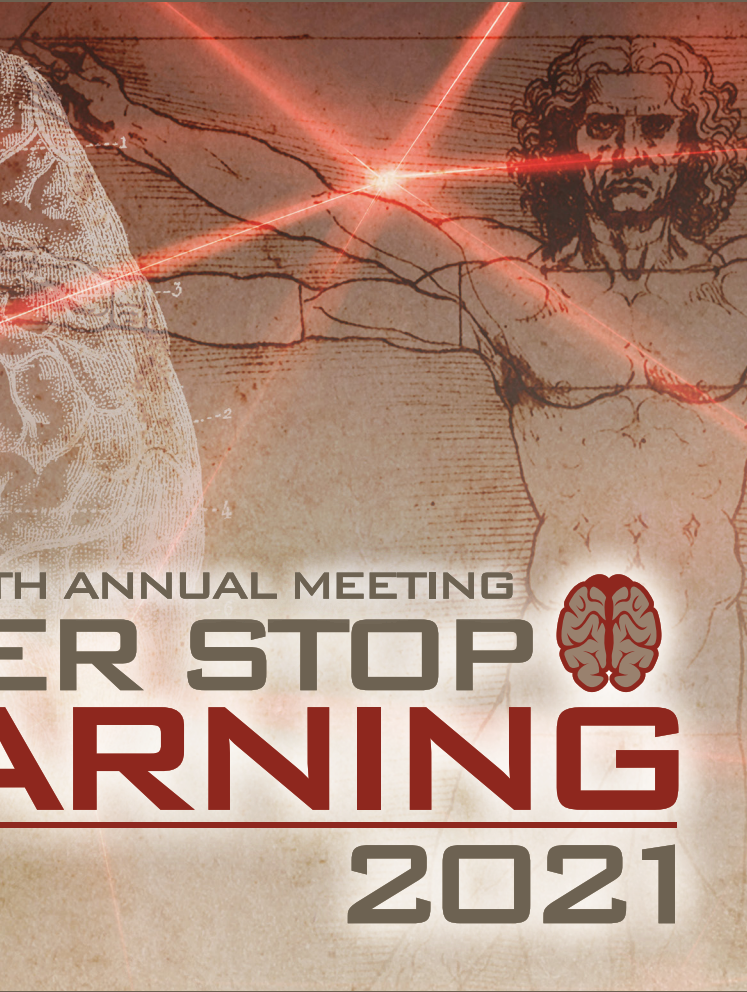
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THE BASIC AND TRANSLATIONAL PATHOLOGY RESEARCH JOURNAL

ABSTRACTS

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271 Are You Ready to Play Pathology Pyramid? A Study and Initiative in Alternative Methods of Learning, Teambuilding, and Confidence Promoting in Pathology Resident Education

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Disclosures: Christopher Attaway: None; Malary Mani: None; Danielle Fortuna: None

Background: Pathologic diagnoses are rooted in the art of describing and communicating. This art is an implicit part of pathology residency training, acquired through experiences but influenced by many factors. Our project assessed resident perceptions of their confidence to describe and communicate pathology and various impacting factors. Pathology Pyramid (PathP), a game-style session, complements the current curriculum with a team building, confidence-promoting exercise to strengthen this art.

Design: Pre-survey was given to residents before starting PathP to assess confidence in describing findings, participation in educational sessions, and interest in new learning events. Scale from 1 to 10 was used (i.e. 1: strongly disagree). To play PathP, a resident receives an image (histology or gross) via email, and describes findings to their team (who at this time do not see the image). The team answers prompts (i.e. "What is the organ?", "Diagnosis?", etc.) based on the description provided. Highly descriptive terms are key but must exclude direct words in the diagnosis. Hosted virtually (x3), all trainees were invited. After these sessions, post-survey was issued. Group statistics, with division of junior (J; PGY1,2) and senior (S; PGY3,4) groups, were evaluated.

Results: From pre-survey (Fig1), questions (Q) 5,7,8 have higher mean responses and were related to descriptive terms and interest in tutorials on describing/presenting in various venues. Additional Q of interest involve voluntary participation in slide sessions to describe findings (Q2) and likelihood of being "called on" affecting attendance (Q6). Q2 mean was 5.6 (J=5.8,S=4.3). Q6 mean was 4.9 but differed between J and S groups (J=4.3,S=7.3). Survey comments do endorse current slide sessions as very valuable for learning and comradery. J and S rate their abilities to describe histology to peers and attendings highly (Q9,10), but there is variation among J and S to do so in a group setting (Q11,range 1-10). For all Q, there were no significant differences between J and S groups by Mann-Whitney tests. Within J and S groups, Q show wide ranges. By post-survey, overall, PathP was entertaining (mean=8.875), deemed a less stressful "hotseat" experience (mean=7.5), helpful with descriptive terms (mean=6.125), and impactful in teambuilding (mean=9.125) especially during COVID-19.

Figure 1 - 271

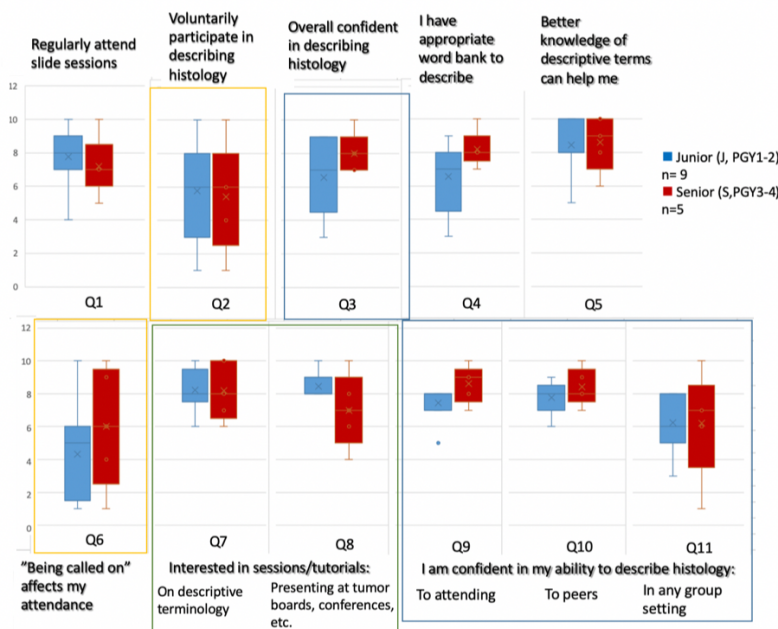


Figure 1. Boxplots showing PathP pre-survey results. Y-axis represents survey response. Scale 1-10 (i.e. 1=strongly disagree). Related questions are grouped by boxes.

Figure 2 - 271

Conclusions: PathP highlights diversity of learning pathways irrespective of PGY status. Confidence in articulating and describing findings is a fluid and ongoing process. PathP offers a comfortable space to instill confidence and help erode potential barriers in presenting, while fostering comradery among residents. Our PathP game focuses on “using our words” in a group setting, honing the art that connects us to community and patients. Future plans include creating more educational activities in the same spirit of PathP.

272 Resident and Pathologist Perceptions of Changes to the Canadian Royal College Anatomical Pathology Examination in Response to COVID-19

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Disclosures: Katherina Baranova: None; Emily Goebel: None; Jason Wasserman: None; Allison Osmond: None

Background: For the 2020 cohort of graduates from anatomical pathology residency programs in Canada, the COVID-19 pandemic resulted in a dramatic change in the Royal College (RC) assessment process with the elimination of the oral and practical (microscopic slide examination) component of the exam and administering only a written (theoretical) component. Our study sought to determine stakeholder opinions and experiences surrounding RC assessment.

Design: A national survey was developed to determine resident and pathologist opinions on the changes to the RC exam as a result of the COVID-19 pandemic. The survey was distributed electronically to residents and pathologists across Canada. The data were analyzed using quantitative and qualitative methods.

Results: In total, 57 residents (29% of an estimated 200 Canadian residents) and 185 pathologists (16% of an estimated 1,142 anatomical pathologists) responded. 67% of pathologists disagreed with the decision to eliminate the oral and practical components of the exam compared with 30% of residents ($p = < 0.00001$). When surveyed on whether the RC examination should be eliminated entirely, 95% of pathologists indicated they would be against this, compared to only 34% of residents ($p = < 0.00001$). Perception on changes to the 2020 RC exam were similar with both groups indicating they felt the practical component was more important to assess compared to the written component. Analysis of narrative comments identified several common themes on assessment and the role of the exam, including the need for objectivity and standardization and the problem of failure-to-fail. However, pathology residents identified numerous elements of their performance that can be assessed only through longitudinal evaluation that a single exam would potentially miss. Pathologists tended to view these aspects of performance as laden with bias.

Conclusions: The COVID-19 pandemic brought swift changes to the format of the 2020 RC exam, calling into question the format of the exam and the effect of these changes. Perceptions of the role of examination differed, with a significant difference between pathologist and resident perceptions on need for the RC exam. Our results address stakeholder perceptions on a major change to examination and licensing as a result of the COVID-19 pandemic, and perceptions on the utility of the RC exam moving forward.

273 Resident and Pathologist Perceptions of Changes to Assessment and its Implications in Competency-Based Medical Education Anatomical Pathology Residency Training Programs

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Disclosures: Katherina Baranova: None; Emily Goebel: None; Jason Wasserman: None; Allison Osmond: None

Background: It has been said that “if you want to change student learning then change the assessment process”. To that end, pathology residency programs across Canada recently implemented competency-based medical education (CBME). The impact of this change on student learning is not yet known. Our study sought to determine how assessment has changed with the implementation of CBME and the perceived importance of different methods of evaluation.

Design: A national survey was developed to determine resident and pathologist opinions on the changes in assessment as a result of CBME implementation. The survey was distributed electronically to residents and pathologists across Canada. The data were analyzed using quantitative statistics.

Results: In total, 57 residents (29% of an estimated 200 residents) and 185 pathologists (16% of an estimated 1,142 anatomical pathologists) responded. Pathology residents and pathologists perceived local written (theoretical) and practical (microscopic slide) examination practices to have changed fairly little with the implementation of CBME, however residents receive more frequent formative feedback. When compared to other forms of assessment, such as local and national written, practical and oral examinations, day-to-day resident assessment was perceived to be most important in CBME with 70% of residents and 85% of pathologists indicating it assessed residents very well. Local written and practical examinations were felt to be less important in assessing resident's competence in pathology. 22% of residents felt local written exams assessed their competence very well compared to 32% of pathologists (p-value > 0.05). 33% of residents felt local practical exams assessed their competence very well compared to 59% of pathologists (p-value < 0.005). In terms of standardized assessment, 60% of pathologists felt the Canadian Royal College Anatomical Pathology examination evaluated resident competencies very well, compared to 17% of residents (p-value < 0.00001).

Conclusions: Perceptions of resident assessment were examined in light of the shift to a CBME Anatomical Pathology residency training program across Canada. Resident feedback has increased in frequency with CBME implementation and day-to-day longitudinal evaluation was felt to be most important for assessing resident competence by both residents and pathologists. However, there is a significant difference in the perceived importance of formal and standardized examination between residents and pathologists. Our results will help guide future innovation in medical education by characterizing different stakeholder perspectives on assessment practices in CBME.

274 Preliminary Report Release by Surgical Pathology Fellows- Results of a Pilot Study to Increase Fellow Independence in a Safe Learning Environment

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Disclosures: Jennifer Boland Froemming: None; Karen Fritchie: None; Malvika Solanki: None; Carrie Bowler: None; Rondell Graham: None; Joseph Maleszewski: None; Loren Herrera Hernandez: None

Background: Increasing resident and fellow independence as they progress through training is a cornerstone of medical education. However, this is particularly challenging in pathology training programs, due to the stringent regulatory environment and high stakes of generating a final pathology report. Regardless, conditional independence is an ACGME accreditation requirement, and therefore pathology training programs must seek ways of providing graduated responsibility in safe and deliberate fashion.

Design: For a 1-week pilot period, board-certified surgical pathology fellows (Anatomic Pathology, American Board of Pathology) were allowed to independently manage cases sent from outside institutions for confirmatory review before additional treatment was undertaken at our facility. Preliminary reports were released at their discretion, then visible in the electronic medical record. Safety measures included a coded comment in each report, conversion to final report by an attending (goal <48 hours), and an 8 case limit for pending preliminary reports.

Results: Participating fellows (n=4) released 59 preliminary reports out of 101 total cases reviewed (58%), and elected to show the remaining cases to an attending pathologist without releasing a preliminary report. The fellows shared cases with a subspecialty pathologist before releasing a preliminary report in 32% of cases. In 5 cases (8%), the attending pathologist chose to show a subspecialty pathologist after the preliminary was released by the fellow. 55 preliminary reports (93%) were finalized in <48 hours. The median time from accessioning to preliminary report was 0.22 days (range 0.07-4.04). For cases with a preliminary report, the median time from accessioning to final report was 0.96 days (range 0.14-10.1), compared to a median of 1.05 days (range 0.06-25.9) for cases where no preliminary report was released. There was only 1 case with a difference in diagnosis between the preliminary and final report that was deemed potentially significant, but this did not adversely impact patient care. The pilot was endorsed by all 4 fellows (100%) as a positive experience, greatly increasing their independence and responsibility. Faculty and allied health staff feedback was also very positive.

Conclusions: Preliminary report release is an effective way to increase surgical pathology fellow autonomy in a safe learning environment, and will be adopted as our standard practice with additional data collection over the first 6 months of implementation.

275 An Impact of COVID-19 Pandemic on Pathology Resident Training

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Disclosures: Satyapal Chahar: None; Lomesh Choudhary: None; Ram Ahuja: None

Background: The COVID-19 pandemic has had a significant impact on resident training and education in the field of Pathology. This study aims to identify the tangible effects and resultant changes in education for pathology trainees that have resulted from the pandemic.

Design: An electronic survey regarding Pathology trainee perceptions and experiences in relation to COVID 19 was created via Google Form. The questionnaire was distributed to the pathology trainees via twitter and email. The survey was also shared with all Pathology residency program coordinators across the USA and Canada.

Results: 118 trainees responded to the questionnaire. 43% reported a significant decrease in specimen volume whereas 40% reported slight decrease in specimen volume. 20% reported cancellation of educational lectures before shifting to a virtual platform for didactic purposes. However, 73% reported shifting of all educational

activities to virtual platforms. 53% cited cancellations of grand rounds, whereas 17% reported cancellations of grand rounds led by guest speakers. 15.4% reported perceptibly major changes in schedule, while 6% reported additional work responsibilities. 57 took COVID tests and 20% were quarantined. 5.1% were pulled to perform supplemental clinical duties, while 30.7% were kept as a backup for clinical duties, and 2.6% volunteered for extra clinical duties. 5.2% reported that they were not able to start their training on time due to the pandemic. 15.7% expressed inconvenience taking board examinations during pandemic, while 7% withdrew from exam. Use of online education resources as reported by 89% of respondent. 14% took help to manage with kids. 44% reported duration of family separation due to pandemic. 97.5% reported change in sign-out culture.

Conclusions: This pandemic has significantly impacted pathology training in various aspects including training, education and well-being. Residents harbored anxiety and stress regarding board exam delays or uncertainties, inadequate exam preparation time, family separation and compromised safety. Exact quantification of educational loss varied from program to program. Significant decrease in specimen volume and detrimental changes in sign out culture are indicators of compromise in resident education due to the pandemic. This pandemic has extended the use of digital pathology and virtual platforms to a higher extent. Free virtual educational resources provided by various pathology organizations were critically important interventions during this pandemic, which contributed to resident education. The pandemic has shown that developing a comprehensive infrastructure to overcome the loss of educational opportunities is of paramount importance to alleviate stress and anxiety among trainees.

276 A Paradigm Shift in Sign-Out Practice During Pandemic and its Effect on Resident Education: A National Survey Study

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Disclosures: Satyapal Chahar: None; Lomesh Choudhary: None; Ram Ahuja: None

Background: Unprecedented situation created by the COVID-19 pandemic enforced changes in pathology sign out practice. This study aimed to understand residents' perspective about the impact on their education due to the paradigm shift in sign-out practice.

Design: An electronic survey was created by using google forms, containing multiple choice and short answer questions. The survey was forwarded to pathology trainees via social media and was shared with residency program coordinators across the USA and Canada.

Results: 118 responses were analyzed. Only 3 (2.5%) respondents reported no change in sign-out practice. Combination of multiple sign-out approaches was experienced the most frequently, approximately 47.5%. Digital only sign-out reported by 23 (19.5%) respondents. Dual scope sign-out with face mask and/or see through partition was reported by 17 (14.4%) trainees. Approximately 11% respondents reported passing slides to the attending and getting feedback on the phone or email. Using a multi headed scope to practice social distancing reported by 13 (11%) participants. Growing fear and anxiety among faculty and trainees about getting contracted by COVID-19 resulted in frequent skips in one to one sign-out and/or significant reduction in duration of sign-out. Additionally, compared to seniors, PGY1 believed that the pandemic is more disruptive, less sign-out time, and lack of face to face interaction with the attending, making their transition to pathology residency even more difficult.

Conclusions: Quick adoption of digital learning tools and integration of virtual platforms is critical to mitigate the effect on pathology residency training. This pandemic crisis has melted down the inertia to use unfamiliar tools to some extent. Sign-out strategy, including duration of sign-out, should be according to the trainee's PGY level as well as background training and exposure in pathology.

277 Online Teaching Program for Post Graduates in Pathology: A Virtual, Collaborative, Free-to-Register, Curriculum-Based, Long-Term Pathology Learning Portal

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Disclosures: Gaurav Chatterjee: None; Sweta Rajpal: None; Anita Borges: None

Background: The ongoing Covid19 pandemic, in addition to creating major challenges for healthcare delivery, has completely paralysed traditional medical education in India as well as all over the world. In this time of unprecedented crisis of medical education, online webinar-based curriculum can be an effective alternative.

Design: A group of Pathologists based in academic institutes and private practice (Admin group), conceived the idea of the program “Online Teaching Program for Post Graduates in Pathology”. An online webinar-based (WebinarJam platform), thorough, curriculum-based, supplementary learning platform was created for Pathology residents as well as practising Pathologists (Figure 1). The curriculum was fixed by the admin group co-ordinating with broad core groups and assigned chapter leaders. A pool of expert Pathologists was chosen for delivering the lectures that included problem-solving approaches. A large group of moderators was selected across India and beyond to run the sessions. After many trials and modifications, a model of "2-parallel-system on Tuesday and Thursday", "Presenter-2 moderators-chairperson" for lectures and "alternate-Monday", "Presenter-4 residents-moderator" for slide-seminars was adopted (Detailed in figure 1). Features of the audience interaction (live chat with moderators, poll questions, video playing) were liberally used to keep the participants involved.

Results: We have already conducted 28 lectures and 9 slide-seminars, in addition to the initial 16 trials. The sessions have included 33 presenters/chairpersons and 56 moderators so far (Figure 2), and have been attended by residents and practising Pathologists across India and 35 other countries (93.5% participants across all sessions were from India, followed by Bangladesh, Nepal, Myanmar, Indonesia, Asia-other, Africa, Europe and South-America). The median(range) of registration and live attendees were 1910 and 1567/lecture (1098-3069 and 862-2293); 1869 and 1517/slide-seminar (1340-2928 and 1157-2320). The median running-time and average live-room time/attendee of a session were 105 and 64 minutes/lecture(46-142 min and 40-80 min); 134 and 64 minutes/slide-seminar(91-145 min and 65-98 min). On feedback evaluation, more than 95% of participants found the program helpful and 62% attended more than 50% of the sessions.

Figure 1 - 277

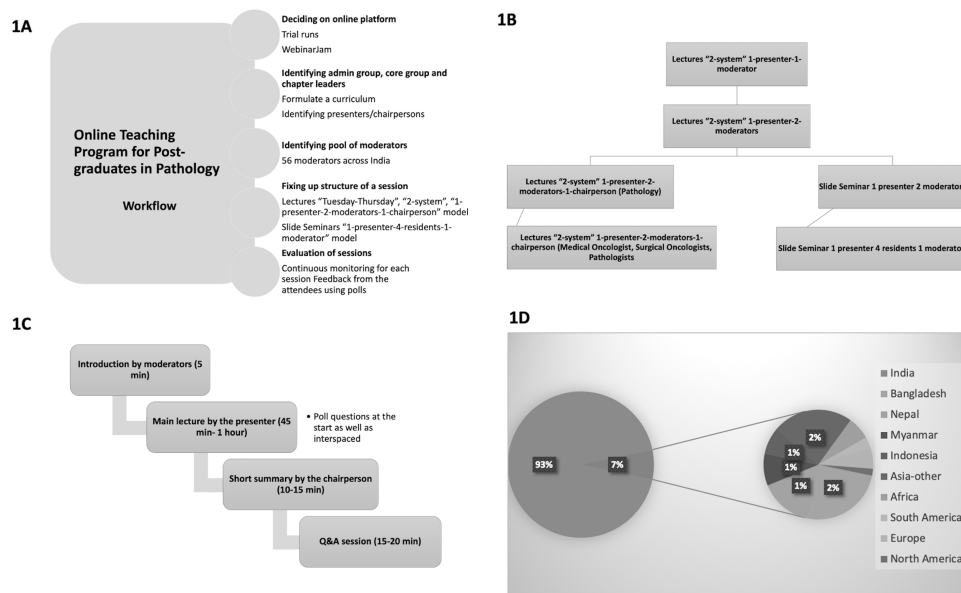


Figure 1: Figure 1A shows the step-by-step workflow for establishing OTPPGP. Figure 1B shows the evolution of structure of sessions. Figure 1C depicts typical timeline of a lecture. Figure 1D shows an overview of attendees from different parts of the world

Figure 2 - 277

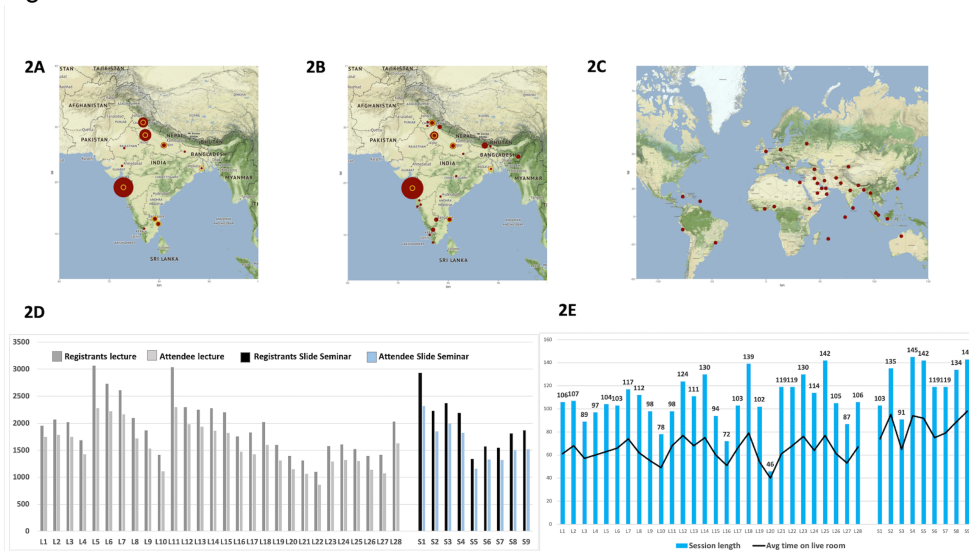


Figure 2: Figure 2A and 2B show the distribution of presenters/chairpersons (n=33) and moderators (n=56) across different parts of India (The size of the red circle corresponds to number from a particular region). Figure 2C depicts the distribution of attendees from different parts of the world. Figure 2D shows the total number of registrations and live-room attendees in each session. Figure 2E shows the running time and average time spent by an attendee in the live room in each session

Conclusions: we have established an online, curriculum-based, collaborative, supplementary learning portal for Pathology residents. The program is regularly attended by >1000 residents as well as practising Pathologists. We plan to conduct a total of 175-180 lectures and 35-40 slide seminars over 2-years. Our model of collaborative, online learning can be adopted to tide over the crisis of medical education due to the ongoing pandemic and can also be used to propagate uniform teaching standards among a larger number of participants even after the pandemic ends.

278 The Utility of Digital Pathology in Improving Diagnostic Skills of Pathology Trainees in Commonly Encountered Pigmented Cutaneous Lesions during the COVID-19 Pandemic: A Single Academic Institution Experience

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Disclosures: Woo Cheal Cho: None; Pavandeep Gill: None; Phyu Aung: None; Jun Gu: None; Priya Nagarajan: None; Doina Ivan: None; Jonathan Curry: None; Victor Prieto: None; Carlos Torres-Cabala: None

Background: Digital pathology has become an integral part of pathology education during the COVID-19 pandemic, during which practicing social distancing by minimizing the frequency of 1:1 sign-out while maintaining an effective training environment without significantly compromising trainees' learning opportunities was necessary. We evaluate the utility of whole slide images (WSIs) in reducing diagnostic errors in pigmented cutaneous lesions (PCLs) among Pathology Fellows without subspecialty training in dermatopathology (DP).

Design: We selected 10 cases of 4 commonly misdiagnosed PCLs: seborrheic keratosis, actinic keratosis, melanoma in situ lentigo maligna (LM) type, and LM melanoma. All cases had deidentified WSIs (Aperio). The cases and two sets of online surveys, each composed of 10 questions with 4 multiple choices, were distributed to Pathology Fellows at our institution. Two weeks were given to complete each survey, with a two-week interval between the assessments. Identical WSIs were used for both surveys to minimize variations in subjects' scores based on diagnostic level of difficulty. Participants were blinded, and the order of questions was modified in the second survey. Following the first survey, brief image-based teaching slides as a self-assessment (SA) tool (estimated review time of 10 min), were distributed to trainees. Pre- and post-SA scores were analyzed. Fisher's exact test was used to assess the difference in scores between the two surveys.

Results: 19 of our 28 (68%) Surgical Pathology and subspecialty Fellows participated in the first survey. The median score on the initial assessment was 5 (range, 0-9). 11 of 19 (58%) fellows completed the second survey following SA. The median score post-SA was 8 (range, 3-9). 7 of 11 (64%) participants improved their scores, with 1 fellow improving his/her score by 8 points. No fellow scored less post-SA than on the initial assessment. Fellows' scores improved throughout all 4 types of lesions, with 100% correction on invasive LM melanoma post-SA. Overall, a statistically significant difference ($p=0.003$) was observed between the two survey individual scores.

Conclusions: Our study demonstrated the utility of WSI-based self-assessment learning as a source of improving diagnostic skills of pathology trainees in a short period of time. This is particularly important in the era of COVID-19 when returning to fully normalized traditional in-person sign-out and teaching may remain uncertain in the foreseeable future.

279 A Pathology Resident Focused Point System for Improvement of Educational Experience and Quality in Surgical Pathology

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Disclosures: David Escobar: None; Sharlene See: None; Raven Rodriguez: None; Jennifer Pincus: None; Kruti Maniar: None; Luis Blanco Jr.: None

Background: Surgical Pathology (SP) is a foundational area of study in Anatomic Pathology (AP) training programs. Ensuring a well-trained and successful workforce in the face of increasing knowledge requirements including fields of molecular diagnostics and informatics while fulfilling the oversight criteria of the Accreditation Council for Graduate Medical Education (ACGME) are priorities for program directors. Balancing service and education goals is a source of ongoing evaluation. This abstract describes efforts to devise a simple-to-use method of quantifying and tracking daily grossing activity and capping the workload, in response to rising specimen volumes.

Design: Residents at our institution (a large academic surgical pathology practice with >50,000 specimens per year) follow a three-day cycle for SP (Figure 1). SP rotations are fourteen 4-week rotations spread across three to four years of AP training. A committee comprised of chief residents and faculty undertook devising a point system for capping the number of major specimens a resident is responsible for grossing (Day 1). Point values (1 point = 15 minutes grossing time) were assigned to typical specimens across all subspecialties (n=100), reflecting an idealized average grossing time per specimen as determined by a group of full-time pathology assistants (PAs) and resident representatives from all PGY levels. The point cap ranged from 24 to 30 points from PGY1 to PGY3/4, overall targeting a maximum 9 hour grossing workday. A semi-automated Microsoft Excel™ spreadsheet was developed to allow residents to easily input data related to specimen type with corresponding point values into a "tracking spreadsheet." This spreadsheet, with oversight from a designated senior resident, determines if a resident has reached the daily point cap. Specimens received in excess of the point cap are transferred to the PA bench.

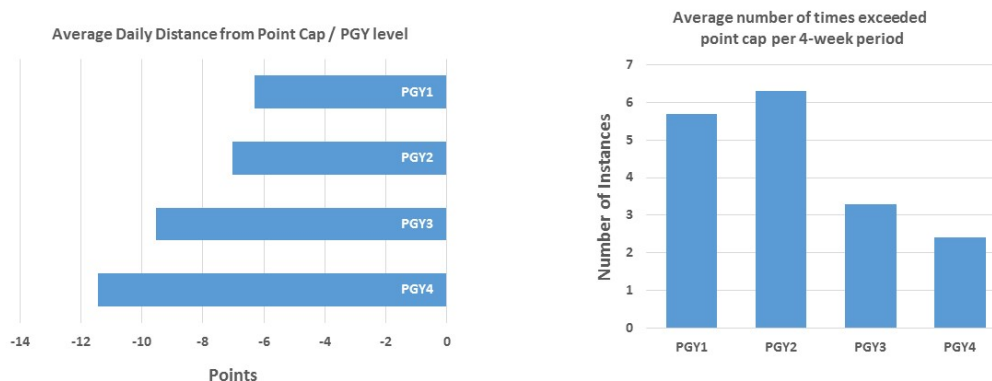
Results: Residents grossed a daily average of 19.0 points (285 minutes) (range: 15.5-22.1 points) prior to the SARS-CoV-2 pandemic (data from during the pandemic is currently under analysis and will be included at time of presentation of this abstract). PGY1/PGY2 residents were significantly more likely to meet the point cap and transfer excess specimens (Figure 2). PGY1/PGY2 residents showed a significant, if modest, reduction in daily duty hours when comparing the first year of point system implementation to the prior academic year (PGY1: 10.1 to 9.8hr and PGY2: 10.7 to 10.2hr, overall $p<0.05$). Qualitatively, evaluations of the SP rotation showed that resident satisfaction with the SP rotation increased.

Figure 1 - 279

SP Three-Day Cycle

Day 1: Grossing	Day 2: Frozens/Biopsies & Previewing	Day 3: Signout & Prepping Specimens
<ul style="list-style-type: none"> All specimens assigned to the day's bench until afternoon cut-off: 2:00pm for breast specimens 3:30pm, all others Specimens received after 2:00/3:30pm are assigned to following day's resident 	<ul style="list-style-type: none"> Frozen service (2 separate benches) Biopsies Previewing, when histology releases cases 	<ul style="list-style-type: none"> Additional previewing as necessary Signout with attending Finalize cases or order IHC as necessary Prep cases that arrive after 2:00/3:30pm for next day's grossing

Figure 2 - 279



Conclusions: Utilizing a point system in surgical pathology can improve pathology resident educational experience and satisfaction while maintaining high-value hands-on surgical pathology training. A team approach including PAs, residents, and program leaders with continuous monitoring will ensure the enduring success of this innovation.

280 The Novel Use of Social Media and Digital Technology in Communication, Marketing and Recruitment During COVID-19 #Openhouse

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Disclosures: Lianna Goetz: None; Gustavo Torres: None; David Haddock: None; Elizabeth Shultz: None; Amy Peiffer: None; Nicole Williams: None; Evelyn Potochny: None; Bing Han: None; Melissa George: None

Background: The medical student to pathology pipeline has been a topic of concern in the past decade with a steady decline in the percentage of US graduates entering pathology residency. In light of the COVID-19 pandemic, most medical schools have suspended visiting-student clinical rotations and electives which has severely impacted pathology residency recruitment. Additionally, this has created obstacles for medical students without access to

pathology rotations at their home institutions limiting their exposure to the specialty, and networking opportunities. We present a medical student outreach model using social media and digital technology that both increases the exposure of medical students to pathology and helps improve recruitment into the field.

Design: Over a period of 1 month, trainees at Penn State Hershey Medical Center collaborated with program leadership and the institution's marketing and social media teams to develop a virtual open house leveraging digital platforms (Zoom[®], Twitter[®], Facebook[®]) to aid in medical student recruitment. Four posts were created using Twitter[®] and Facebook[®] social media platforms to promote the event. A strategy was developed to encourage participants to submit questions to the department beforehand. A communication and feedback mechanism was employed through virtual break-out rooms for quality engagement. The number of post impressions, engagements, detail expands, profile clicks and retweets were assessed. The number and types of questions were also assessed.

Results: The number of impressions on posts shared by the institution, faculty and trainees was 5, 730. There were 244 engagements with posts, 105 post detail expands, 39 profile clicks and 21 retweets. The Facebook reach was 399. The number of medical students who pre-registered for the event were 73 in total with 51 in attendance. 51 questions were submitted by applicants with the majority regarding the program's structure (31%). Medical students, trainees and faculty reported a high level of satisfaction. The collaboration resulted in capturing the interest of some candidates who might not have applied to Penn State's Pathology program otherwise.

Conclusions: We demonstrate that even during a pandemic with social distancing restrictions, barriers to outreach can be overcome using social media and digital technology. These tools can be utilized even in a post-pandemic era to help improve communication, marketing and recruitment into the field of Pathology.

281 100 Years of the Pathology Medical Student Fellowship: Impacts on Undergraduate Education and Career Choices

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Disclosures: Phoebe Hammer: None; Karen Ireland: None; Donald Houghton: None; Alexis Jagers: None; Anya Coleman: None; Olivia Snir: None; Megan Troxell: None; Nicole Andeen: None

Background: The pathology medical student fellowship is a unique, immersive educational experience offered at our institution. Review of institutional archives describe a medical student “Fellowship in Pathology” founded in 1919. We sought to characterize the impacts of this 100-year-old program.

Design: We determined the specialty match, residency program, and location of each student fellow graduate in our department records (n = 145). We conducted an email-based survey to all former pathology student fellows, distributed to 76 student fellows (52%) based on availability of contact information.

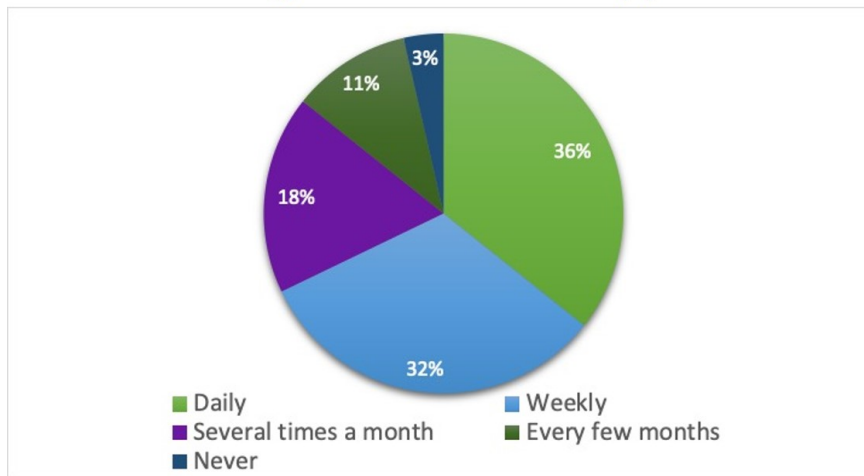
Results: Of the 145 recorded pathology student fellows who graduated between 1924-2020, 34.5% matched into pathology. Between 2001 and 2020, 52.8% of students at our institution who matched into pathology had completed the fellowship. The most popular non-pathology specialty chosen by student fellow graduates was internal medicine (14.5%) (Table).

We received 42 survey responses (response rate 55%). Prior to starting the student fellowship, 26.2% of respondents were undecided in specialty choice, while 14.3% indicated pathology as their primary field of interest. Of the survey respondents who have completed training, 54.2% practice in academic settings (pathologists = 57.9%, non-pathologists = 51.7%). In the non-pathologist group (n = 28), we asked how frequently physicians used the skills gained during the student fellowship year, with 35.7%, answering that they used these skills daily (Figure). When asked what skill(s) gained the physicians found most useful, 82.1% selected “interpretation of pathology results”, 82.1% selected “improved communication with multidisciplinary teams”, and 78.6% selected “knowledge of pathophysiology of disease.”

Specialty Choices	Student fellows (n = 145)
Pathology	34.4% (50)
Internal Medicine	14.5% (21)
Surgical Subspecialty*	6.2% (9)
Emergency Medicine	6.2% (9)
Radiology/Interventional Radiology	4.8% (7)
General Surgery	4.13% (6)
Pediatrics	4.13% (6)
Obstetrics & Gynecology	3.44% (5)
Anesthesia	3.44% (5)
Neurology	3.44% (5)
Psychiatry	2.76% (4)
Dermatology	1.38% (2)

Figure 1 - 281

How often do graduates use skills and knowledge gained during their Pathology Medical Student Fellowship year?



Conclusions: We describe the educational benefits, specialty choices, and career impacts of pathology student fellows at our institution to generate improved understanding and further discussion on the impact of these programs on medical education. Moreover, our study highlights its benefits for physicians in all fields of medicine.

282 A Survey of Canadian Laboratory Medicine Resident Wellness During the COVID-19 Pandemic

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Disclosures: Rachel Han: None; Ekaterina Olkhov-Mitsel: None; Cherry Pun: None; Elan Hahn: None; Sameer Shivji: None; Susan Done: None; Fang-I Lu: None

Background: Physicians face a higher rate of burnout compared to the general population. This is especially true during the residency training period, where trainees often experience a rapid increase in professional responsibilities and expectations. Stressors caused by the COVID-19 pandemic only further increase the toll on physician wellness. The objective of this study was to identify the current state of laboratory medicine resident wellness across Canada, as well as the demographic, academic and personal factors associated with burnout in this group.

Design: An online survey was sent to laboratory medicine residents across Canada from August-October 2020. Oldenburg Burnout Inventory (OBI), which assesses levels of disengagement (D) and exhaustion (E), was used to assess for burnout. Patient Health Questionnaire-9 (PHQ-9) was used to assess for depression. Demographic, academic and personal information was collected and compared between residents with and without D and E using Chi-square and Student's T-tests, with statistical significance set at P≤0.05 (Table 1).

Results: 79 residents completed the OBI and PHQ-9. 50 (63%) reported experiencing burnout, with 38 (48%) experiencing D and 47 (59%) experiencing E; while 37 (47%) reported experiencing depression, with 11 (14%) reporting symptoms of moderate to severe depression that would warrant immediate treatment. D and E scores correlated strongly with PHQ-9 results (p=0.024 and p<0.01 respectively). Residence in Canada > 20 years, dissatisfaction with one's career, perceived inability to take time off for physical or mental illness and stress related to personal finances were significantly associated with D, while dissatisfaction with one's career, lack of peer support and a pathologist mentor, perceived inability to take time off for physical or mental illness and a high level of fatigue were significantly associated with E. Though 58 (75%) residents reported having access to wellness

activities, and 57 (74%) reported having access to wellness resources either through their residency training programs or institutions, these initiatives did not significantly affect the rate of D and E. 62.1% reported having residency program wellness activities canceled or modified due to the COVID-19 pandemic, and 55.4% reported having their personal circumstances affected by the pandemic due to impacts on physical and mental health (including acquiring COVID-19 infection), changes to their training, modified or canceled certification examinations, inability to gather and travel, financial stress and childcare issues.

	Disengagement			Exhaustion		
	N	%	p	N	%	p
Demographic factors						
Age (years)						
20-29	14/32	44	0.289	16/32	50	0.249
30-39	24/44	55		30/44	68	
40-49	0/2	0		1/2	50	
50+	0/1	0		0/1	0	
Gender						
Female	16/36	44	0.552	23/36	64	0.647
Male	22/43	51		24/43	56	
Current level of training (post graduate year (PGY))						
1	6/16	38	0.245	7/16	44	0.076
2-3	20/34	59		25/34	74	
4-5	12/29	41		15/29	52	
Canadian (CMG) vs international (IMG) medical graduate						
CMG	30/56	54	0.129	32/56	57	0.507
IMG	8/23	35		15/23	65	
Residence in Canada >20 years						
Yes	34/59	58	0.004	36/59	61	0.636
No	4/20	20		11/20	55	
Marital/family status						
Never married	19/40	48	0.393	24/40	60	0.3
Married	18/36	50		22/36	61	
Widowed	0/2	0		0/2	0	
Divorced/Separated	1/1	100		1/1	100	
Number of dependents						
0	23/46	50	0.474	28/46	61	0.334
1	7/14	50		8/14	57	
2	4/8	50		6/8	75	
3	2/6	33		3/6	50	
4	0/2	0		0/2	0	
5	2/2	100		2/2	100	
6	0/1	0	0/1	0		
Academic/work factors						
# calls per week	3.91 (vs. 2.55)		0.118	3.48 (vs. 2.81)		0.402
# research projects	3.27 (vs. 2.92)		0.697	3.22 (vs. 2.91)		0.741
# leadership roles	1.13 (vs. 1.22)		0.768	1.24 (vs. 1.09)		0.620
Hours worked per week						
<40	5/8	63	0.469	5/8	63	0.232
40-59	17/38	45		21/38	56	
60-79	9/22	41		11/22	50	
80+	6/9	67		8/9	89	
Rotation workload						
Very low	1/1	100	0.506	1/1	100	0.235
Slightly low	4/6	67		5/6	83	
Adequate	20/46	44		23/46	50	
Slightly high	12/24	50		16/24	67	
Very high	0	0		0	0	
Overall academic performance						
Below average	2/3	67	0.052	3/3	100	0.076
Slightly below average	10/17	59		13/17	76.50	
Average	21/39	54		22/39	56.40	
Slightly above average	2/15	13		5/15	33.30	
Above average	2/3	67		2/3	66.70	
Fellowship after residency						
Yes	18/45	40	0.096	23/45	51	0.259

No	9/12	75		9/12	75	
Unsure	10/20	50		13/20	65	
Career satisfaction						
Very dissatisfied	2/2	100	0.003	2/2	100	0.001
Somewhat dissatisfied	6/8	75		8/8	100	
Somewhat satisfied	27/50	54		31/50	62	
Very satisfied	2/17	12		4/17	24	
Peer support for academic issues						
Yes	28/62	45	0.302	32/62	52	0.013
No	9/15	60		13/15	87	
Staff pathologist mentor						
Yes	16/37	43	0.417	16/37	43	0.009
No	21/40	53		29/40	73	
Wellness activities from residency program						
Yes	25/58	43	0.303	31/58	53	0.282
No	6/10	60		7/10	70	
Unsure	6/9	67		7/9	78	
Time off for physical or mental illnesses						
Yes	22/54	41	0.049	25/54	46	0.001
No	15/23	65		20/23	87	
Time off for maternity/paternity leave						
Yes	30/68	44	0.058	39/68	57	0.594
No	7/9	78		6/9	67	
Time off for vacation						
Yes	32/71	45	0.072	40/71	56	0.198
No	5/6	83.3		5/6	83	
% allotted vacation days taken						
<30	2/4	50.0	0.480	3/4	75	0.137
30-59	6/13	46		10/13	77	
60-89	12/19	63		13/19	68	
90+	17/41	42		19/41	46	
Access to institutional wellness resources						
Yes	25/57	43.9	0.271	33/57	58	0.987
No	2/5	40.0		3/5	60	
Unsure	10/15	67		9/15	60	
Access to institutional ombudsperson						
Yes	11/23	48	0.623	10/23	44	0.267
No	0/1	0		1/1	100	
Unsure	26/53	49		34/53	64	
Personal factors						
Regular primary care physician						
Yes	25/53	47	0.686	33/53	62	0.25
No	11/21	52		10/21	48	
Peer/family support outside of the work setting						
Yes	32/68	47	0.357	38/68	56	0.191
No	4/6	67		5/6	83	
Hours spent on physical activity per week						
0	4/8	50	0.978	6/8	75	0.361
1-4	23/49	47		30/49	61	
5-9	8/15	53		6/15	40	
10+	1/2	50		1/2	50	
Hours slept per night						
<4	2/2	100	0.183	2/2	100	0.113
4-6	16/29	55		20/29	69	
7-9	18/43	42		21/43	49	
10+	0	0		0	0	
Fatigue level negatively impacted on work duties						
Never	3/4	75	0.051	2/4	50	<0.001
Rarely	6/24	25		6/24	25	
Sometimes	13/25	52		16/25	64	
Usually	11/16	69		15/16	94	
Always	3/5	60		4/5	80	
Healthy balanced diet						
Yes	19/35	54	0.358	17/35	49	0.115
No	17/39	44		26/39	67	
Ability to pursue hobbies and interests						

Never	2/3	67	0.776	3/3	100	0.178
Rarely	8/16	50		12/16	75	
Sometimes	17/35	49		18/35	51	
Usually	8/19	42		9/19	47	
Always	1/1	100		1/1	100	
Stress from personal finances						
Yes	13/20	65	0.045	14/20	70	0.202
No	18/47	38		25/47	53	
Recent diagnosis of severe physical illness						
Yes	2/2	100	0.129	2/2	100	0.225
No	32/70	46		40/70	57	
Lifetime diagnosis of severe physical illness						
Yes	4/5	80	0.128	4/5	80	0.308
No	30/67	45		38/67	57	
Recent diagnosis of severe mental illness						
Yes	1/4	25	0.375	3/4	75	0.472
No	32/67	48		38/67	57	
Lifetime diagnosis of severe mental illness						
Yes	7/14	54	0.556	8/14	57	0.958
No	25/55	46		31/55	56	
Recent substance abuse issue						
Yes	2/2	100	0.129	2/2	100	0.225
No	32/70	46		40/70	57	
Lifetime substance abuse issue						
Yes	2/3	67	0.489	2/3	67	0.771
No	31/67	46		39/67	58	
Residency program wellness activities affected by the COVID-19 pandemic						
Yes	26/46	57	0.082	26/46	57	0.723
No	10/28	36		17/28	61	
Personal circumstances affected by the COVID-19 pandemic						
Yes	21/41	51	0.622	26/41	63	0.302
No	15/33	46		17/33	52	

Conclusions: Burnout and depression are significant issues affecting approximately half of laboratory medicine residents in Canada. Residency programs should focus wellness efforts on academic and personal factors with the most significant impacts on resident wellness, especially during the COVID-19 pandemic.

283 Onboarding a Resident-Level Gross Photo Competition to Improve Quality and Engagement

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Disclosures: Linh Ho: None; Michael Arnold: None; Michael Clay: None; Nicholas Collins: None; Ellie Hong: None; Susan Potterveld: None; Rebecca Wolsky: None; Amber Berning: None; Christina Arnold: None

Background: In attempts to increase the quality of the gross exam and photographs and improve academic engagement, we implemented a resident-level gross photography contest.

Design: Surgical pathology residents were invited to submit gross photographs during their 8-week surgical pathology rotation (4-5 residents per rotation). Submissions were uploaded to an online survey along with the respective image description, and judges voted for their top 3 photographs. Judging criteria were developed from a review of guidelines developed at other academic centers. For the 1st contest, all surgical pathology faculty were invited to judge (n=27). For the 2nd competition, at the residents' request, all pathology residents (n=24) were also invited to judge (total=27 faculty + 24 residents=51). A plurality of votes determined the winning photograph for the rotation, and the prizes included a \$10 gift card for lunch, an announcement distributed through the department, and inclusion on the winner's curriculum vitae. To assess the photographs' quality, all photographs were scrambled, and additional judges (3 pathology faculty and 1 resident) who had not previously voted scored all gross photographs on a 0-10 point scale (0=unacceptable, 5=average, 10=outstanding).

Results: The following judging criteria were developed and utilized:

1. Clean background
2. Specimen surface unobstructed by ink stains and tissue fragments
3. Specimen centered in the frame
4. Frame zoomed in as far as possible without cutting off the specimen
5. Well-lit surface
6. Specimen in focus
7. Ruler present in the corner

Over the 16-week time-frame, there was increased interest in submissions from the residents (n=11, one resident submitted 6). As a result, by the 2nd contest, each resident was limited to a maximum of 4 photographs per rotation (n=12). We also identified an increase in survey participation: 1st contest =7/27 respondents, 26%, vs 2nd contest=27/51 respondents, 53%. The average quality ratings per contest were similar: 1st contest= 6.9 vs 2nd contest= 6.4, P=0.43.

Conclusions: A gross photography contest is an easy tool to implement to improve engagement: the contest resulted in increased numbers of submitted gross photographs and academic engagement through increased voting over the two rotations. While we have not yet demonstrated improved quality of the photographs, we suspect this is due to a lack of formal feedback. Moving forward, each judge will have the opportunity to share feedback on each photograph with the entire resident group.

284 **Restructuring Residency Training During the Pandemic: The Pennsylvania Hospital (PAH) Experience**

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Disclosures: Christopher Julien: None; Alice Dobi: None; Rifat Mannan: None

Background: Pathology residency training has historically been based on in-person interactions, including didactics, slide sessions and sign-out of cases. COVID-19 pandemic has presented a unique challenge to the traditional structure of resident education, as these in-person interactions have been decreased and, in some cases, eliminated. In our program at PAH, we sought to restructure the curriculum with a focus on safety and maintaining high educational standards.

Design: Since the beginning of the pandemic (early March, 2020), several measures were introduced to restructure the residency program. Two questionnaires were distributed among trainees and faculty members to evaluate their experience.

Results: The different measures introduced were: “platooning” of residents (creating a reserve team) during the peak of the pandemic; protected sign-out methods, either in-person, (with mask and plexiglass barriers), or virtually with video conferencing software; transitioning daily consensus conference, tumor boards and department meetings into an “online” format. Resident education was converted to an “online” format that included didactics and slide seminars, grossing lectures, journal clubs, board review sessions, invited online guest lectures and slide seminars from across the country (including 1 speaker from India). The residents were encouraged to access/attend open access online educational resources and lectures. All residents (n=9) and faculty members (n=6) participated in the survey. The survey results are displayed in the tables. Overall, most residents expressed satisfaction about the measures taken to address their education, safety and wellness. The majority (67%) preferred online educational resources over the conventional tools that were utilized during the pre-pandemic period. However, most residents expressed concern about the impact of reduced autopsy volume on their training. The faculty members were more in favor of in person interactions over remote methods and were either neutral (67%), or satisfied (33%) with the effectiveness of online learning tools.

Table 1: Resident Survey	
Questions	Response (%)
How satisfied are you with the measures adopted by the program to address your educational/learning objectives during the pandemic?	<ul style="list-style-type: none"> • Satisfied (44) • Very Satisfied (56) • Neutral (0) • Dissatisfied (0) • Very dissatisfied (0)
How did the quality of training and education at your program change during the pandemic compared to the pre-pandemic period?	<ul style="list-style-type: none"> • Improved (56) • Same as before (44) • Worsened (0)
What are the different options that were used for your educational activities/didactic sessions during the pandemic? (check all that apply)	<ul style="list-style-type: none"> • In person faculty lecture/slide seminar like before (22) • In person faculty lecture with social distancing and wearing masks (33) • Online faculty lecture/slide seminar via video conferencing (100) • Online guest lecture(s) via video conferencing (100) • Online journal clubs/case presentations (89) • Online lectures from affiliated institutes (e.g. Hospital of the University of Pennsylvania) (89) • Access to available online resources/lectures (89) • Online consensus conference (89)
What are the different online resources that you have used during the pandemic? (check all that apply)	<ul style="list-style-type: none"> • CAP virtual lectures (44) • USCAP free lectures (56) • pathCast lectures (100) • Online Pathology Qbanks (89) • ExpertPath (78) • Pathology Outlines (100) • Johns Hopkins Surgical Pathology Unknown Conference (11)
How do you rate the online lectures/archived online resources as a learning tool, compared to the conventional methods utilized during the pre-pandemic period?	<ul style="list-style-type: none"> • Better (67) • Same (33) • Worse (0)
What are the sign-out methods that you have used during the pandemic? (check all that apply)	<ul style="list-style-type: none"> • In person "double-scoped" sign-out, while wearing masks (67) • In person "double-scoped" sign-out while wearing masks and across a plexiglass barrier (89) • Remote sign-out using video conferencing software (such as Microsoft Teams) (100) • In person sign-out on a multiheaded scope with social distancing (44) • No in person or remote sign-out with the attending; preview and feedback only (22)
How do you feel about the educational value of the new sign-out methods as compared to before?	<ul style="list-style-type: none"> • Same as before (63) • Worse (25)

	<ul style="list-style-type: none"> • Better (12)
How do you feel about the educational value of the remote sign-out (using video conferencing) compared to in-person sign-out methods?	<ul style="list-style-type: none"> • Same (67) • Worse (22) • Better (11)
How do you feel about the volume of autopsies that you have had during the pandemic, and how it has affected your autopsy education?	<ul style="list-style-type: none"> • Very satisfied (0) • Satisfied (0) • Neutral (67) • Dissatisfied (33) • Very dissatisfied (0)
How satisfied are you with the different wellness initiatives taken by the program during the pandemic?	<ul style="list-style-type: none"> • Very satisfied (44) • Satisfied (56) • Neutral (0) • Dissatisfied (0) • Very dissatisfied (0)
Do you feel that adequate measures have been taken by the program to ensure the safety of the trainees during the pandemic?	<ul style="list-style-type: none"> • Yes (100) • No (0) • Not sure (0)

Table 2: Faculty Survey

Questions	Response (%)
Do you think residents' learning opportunities have been adversely affected because of the pandemic?	<ul style="list-style-type: none"> • Yes (50) • No (17) • Not sure (33)
How has the pandemic affected the case volume that you are seeing on your service?	<ul style="list-style-type: none"> • Decreased initially but almost back to pre-pandemic period now (67) • Decreased initially but slightly increased later (17) • No change (16) • Slight decrease (0) • Significant decrease (0)
Do you feel that the current work volume is sufficient for resident education?	<ul style="list-style-type: none"> • Yes (83) • No (17) • Not sure (0)
Which of the following sign-out methods have you adopted during the pandemic? (check all that apply)	<ul style="list-style-type: none"> • In person "double-scoped" sign-out wearing masks (33) • In person "double-scoped" sign-out wearing masks and across plexiglass barrier (50) • Remote sign-out using video conferencing software (such as Microsoft Teams) (33) • In person sign-out on a multiheaded scope with social distancing (0) • No in person/remote sign-out with attending; preview and feedback only (0)
How satisfied are you with the teaching/learning efficiency of the new sign-out methods compared to the pre-pandemic period?	<ul style="list-style-type: none"> • Very satisfied (33) • Satisfied (17) • Neutral (50)

	<ul style="list-style-type: none"> ● Dissatisfied (0) ● Very dissatisfied (0)
Do you feel that the new sign-out methods have adversely impacted patient care?	<ul style="list-style-type: none"> ● Yes (0) ● No (100) ● Not sure (0)
How safe do you feel with the sign-out measures employed during the pandemic?	<ul style="list-style-type: none"> ● Very safe (50) ● Safe (17) ● Neutral (33) ● Unsafe (0) ● Very unsafe (0)
Which of the following methods have you adopted for resident didactic sessions? (check all that apply)	<ul style="list-style-type: none"> ● Online slide seminar via video conferencing (100) ● Online lecture via video conferencing (67) ● Plan to adopt the above (17) ● In person lecture with social distancing and wearing masks (0) ● In person slide seminar with social distancing and wearing masks (0)
How satisfied are you with the educational value of the current teaching methods as compared to the pre-pandemic period?	<ul style="list-style-type: none"> ● Very satisfied (17) ● Satisfied (16) ● Neutral (67) ● Dissatisfied (0) ● Very dissatisfied (0)
How satisfied are you with the measures adopted by the department for resident training during the pandemic?	<ul style="list-style-type: none"> ● Very satisfied (33) ● Satisfied (17) ● Neutral (50) ● Dissatisfied (0) ● Very dissatisfied (0)
How satisfied are you with the measures taken by the department to ensure the safety of the faculty and the trainees during the pandemic?	<ul style="list-style-type: none"> ● Very satisfied (50) ● Satisfied (50) ● Neutral (0) ● Dissatisfied (0) ● Very dissatisfied (0)

Conclusions: Multiple changes have been made to the residency program at PAH since the onset of the COVID-19 pandemic. Overall, the trainees are satisfied regarding their education and safety, with the exception of the autopsy service. The faculty members have more reservations about the effectiveness of the online educational methods.

285 Practical Scientific Writing and Publishing in Anatomic Pathology: A Pilot Curriculum for Pathology ResidentsLevon Katsakhyan¹, Alec Jacobson¹, Anna Budina¹, Zubair Baloch¹¹Hospital of the University of Pennsylvania, Philadelphia, PA**Disclosures:** Levon Katsakhyan: None; Alec Jacobson: None; Anna Budina: None; Zubair Baloch: None

Background: Scientific writing and publishing is an essential aspect of anatomic pathology, but in the initial stages of residency training, it may seem nebulous. While many residents will learn about scientific writing and publishing by trial and error, a structured curriculum centered around these topics would be beneficial. The purpose of this study was to identify knowledge gaps in scientific writing and publishing within the cohort of our residency, and create a structured introductory curriculum focused on topics least familiar to the residents.

Design: An online 18-question anonymous Likert attitude scale questionnaire was distributed to all pathology residents at our institution. Based on the responses, a tailored curriculum of four lectures, focused on the areas of least familiarity, was developed and delivered by select experts in the field via a virtual platform. A second anonymous questionnaire was administered following the completion of the curriculum.

Results: 27 of 31 residents (87%) responded to the initial questionnaire; 22(81%) were MD's and 5 (19%) were MD/PhD's. Distribution per post-graduate year (PGY) residency class was as follows: 7(26%) PGY1, 7(26%) PGY2, 7(26%) PGY3, 6(22%) PGY4. Six (22%) residents had previously taken a scientific writing course. Areas identified of least familiarity were: "editor's approach to a manuscript", "constructing a cover letter and formatting a complete manuscript for submission", and "communication with editors and reviewers". Eight residents participated in at least 3 of 4 lectures and completed the pre and post survey. Distribution per residency class was as follows: 2(25%) PGY1, 3(37%) PGY2, 2(25%) PGY3, 1(13%) PGY4. The post curriculum survey demonstrated an interval increase in the familiarity with each addressed topic. Mean pre and post curriculum scores for the final cohort of 8 residents are summarized in Figure 1.

Figure 1 - 285

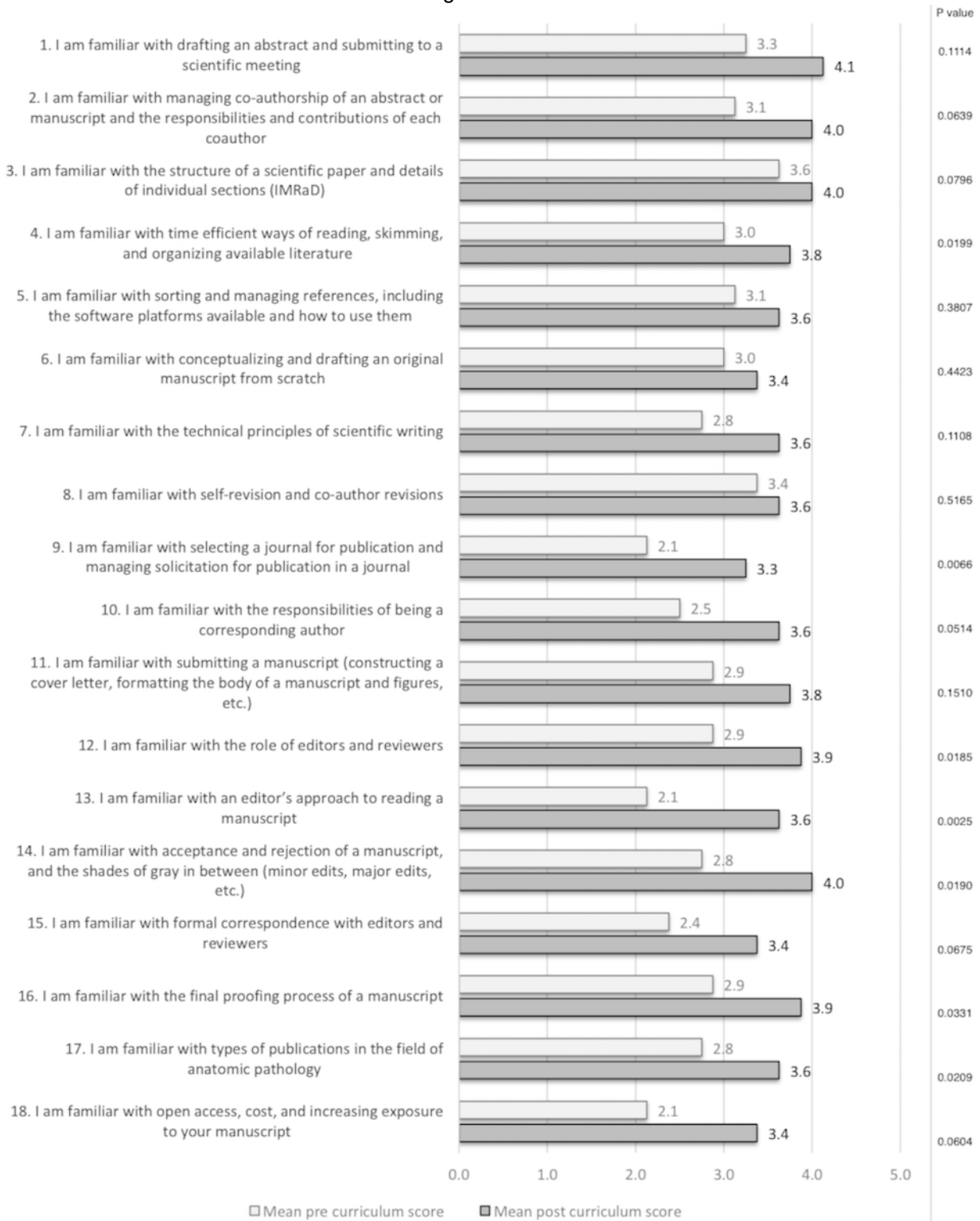
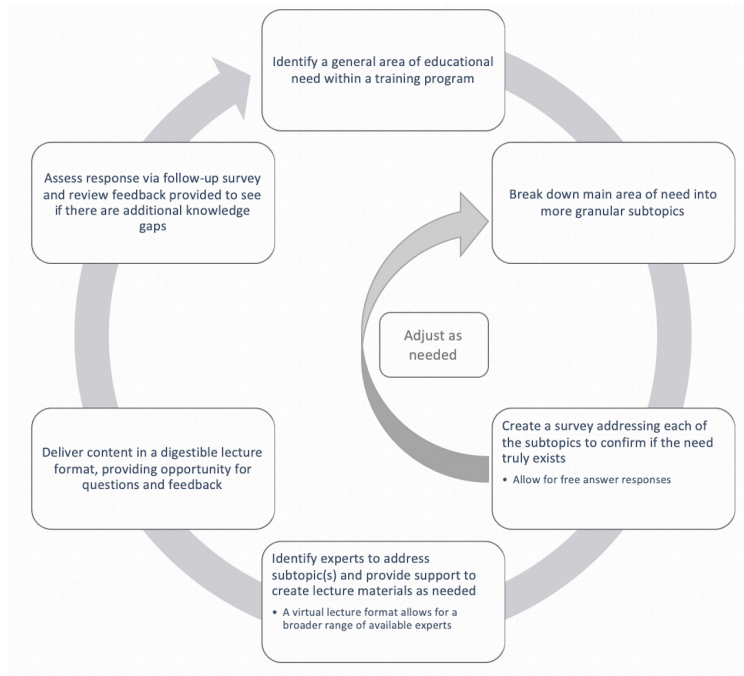


Figure 2 - 285



Conclusions: Development of novel curricula, particularly those not included in preexisting didactics, is vital to the continuing education of pathology residents. This study identifies a generalizable algorithmic approach to identify a knowledge gap and develop a targeted novel curriculum to effectively address the educational need. (see Figure 2).

286 Remote Anatomic Pathology Education: Gauging Growth in Student Comprehension of Fundamental Concepts in Pathology Following a Remote Pathology Course

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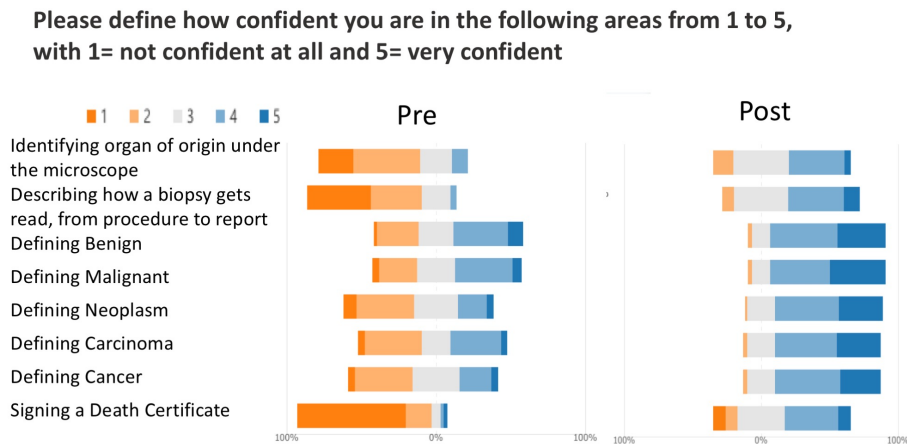
Disclosures: Lisa Koch: None; Tessa Olmstead: None; Oliver Chang: None; Elizabeth Parker: None

Background: The COVID-19 pandemic has created a unique opportunity to expose medical students in all phases of their education to anatomic pathology through a remote classroom experience. Pre-clinical medical education often provides insufficient depth of knowledge for students to feel confident defining fundamental concepts in pathology such as “neoplastic,” “benign,” or “malignant.” These terms are important not only for students interested in pathology as a career, but for students who may not become pathologists, but will nevertheless interface with this language. We took this opportunity to gauge student knowledge, and enhance student understanding of our field.

Design: We designed a remote clerkship experience, held over 3 separate sessions, with a total of 70 enrolled medical students. Pre-class and post-class surveys were distributed to all remote anatomic pathology course students, with a total of 69 complete responses. These surveys asked students to define their confidence with pathology terminology and concepts on a Likert scale of 1-5.

Results: Final survey responses were received from 69 of 70 students. Across all questions, students expressed greater understanding of pathology terminology and concepts by the end of the course. For example, for the term “neoplastic” alone, our beginning survey showed that roughly a quarter of students felt confident with their definition by rating their understanding as either 4 or 5 out of 5. By the end of the course, three quarters of students would rate their understanding as 4 or 5 out of 5.

Figure 1 - 286



Conclusions: Remote learning during the COVID-19 pandemic was effective in increasing medical student confidence in pathology terminology and concepts. Student growth in understanding of fundamental concepts in pathology as measured by change in responses between pre- and post-course surveys was dramatic. Specifically, significant improvement was seen in ability of students to define terminology commonly seen in pathology reports, as well as confidence in their ability to understand concepts that are fundamental to both pathology and medicine in general. This experience, borne out of crisis, provides an example of how pathology educators can reach more medical students and effectively increase awareness and understanding of our field.

287 Citywide Interhospital Sarcoma Cyber Conference: An Educational Platform in the Virtual Era Creating a New Outlet for Collaboration and Broadening Exposure to the Challenging Field of Bone and Soft Tissue Pathology

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Disclosures: Katie Louka: None; Aileen Grace Arriola: None; Paul Zhang: None; Wei Jiang: None; Shuanzeng Wei: None; Lea F. Surrey: None

Background: Bone and soft tissue (BST) pathology encompasses a wide range of diagnoses, many of which are rare. Most hospitals do not have the case volume to support a dedicated BST pathologist. Without constant exposure to such cases and limited availability of ancillary studies in smaller centers, general pathologists find signing out these cases to be very challenging. In late 2019, five large academic centers in Philadelphia, including the pediatric hospital, decided to utilize advancing technology in virtual meeting platforms to create a “Sarcoma Cyber Conference” (SCC) to supplement educational deficiencies in BST and promote collaboration.

Design: Multiple virtual meeting platforms were tested before deciding on one that was mutually agreeable, easy to use, share, was secure, and provided multiple screen sharing options. Once a platform was selected, a consistent time and “place” was chosen (noon on the second Friday of every month). Calendar links to the SCC were shared with all citywide institutions. Each founding institution was responsible for presenting cases either through formal presentations with clinical history, radiology, and pre-taken pictures in a PowerPoint format, or using the camera on their microscope to show slides live, while others utilized scanned digital slides.

Results: The first SCC took place on 2/14/20 with 18 attendees, consisting of only pathologists (PGY1 to experienced subspecialists). There have been a total of six SCC since, with a steady growing number of participants (maximum of 52 attendees in one session). Attendee mix has grown to not only include pathologists, but also surgeons, radiologists, and oncologists. This multidisciplinary audience has promoted collaboration through learning about new local clinical trials, created awareness of new ancillary tests available through local institutions, led to improvements in diagnostic reporting, and even led to the discovery of additional cases of rare tumors from other institutions creating the opportunity for future research and publications. As the pandemic hit, the benefits of this platform became even more apparent. In addition to an interesting case conference format, SCC also provides a forum for general pathologists to present active cases to multiple BST specialists for quick curbside consults.

Conclusions: The reach of this conference is much further than anticipated and continues to grow. It has become an invaluable asset during the pandemic, allowing for continued collaboration during this period of social distancing. We look forward to discovering all the possibilities this new educational platform will reveal.

288 Anatomic Pathology Sign-Out Experiences During the Pandemic: A Multi-Institutional Experience

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Disclosures: Rifat Mannan: None; Christopher Julien: None; Alice Dobi: None; Sarah Findeis: None; Huaibin Mabel Ko: None

Background: The COVID-19 pandemic has affected society in many ways, and the practice and teaching environments in pathology are no exception. During this difficult time, alternate sign-out (SO) options have been implemented to address the need for higher safety measures while attempting to preserve the training environment. We sought to assess different SO experiences adopted across the United States and their perceived effectiveness.

Design: An online questionnaire was created to focus on the areas of: technology, safety, sign-out procedures, and perceived effectiveness of these changes. The questionnaire was distributed to both trainees (defined as residents and fellows) (Ts) and practicing pathologists (PPs) across different institutions in the country.

Results: Results of the survey are presented in Table 1. The questionnaire was answered by 139 respondents, comprising residents (n=56), fellows (n=19) and PPs (n=64) from at least 27 institutions. The most commonly adopted SO options were: in person sign-out (IPSO) on a double-headed microscope, wearing masks, either with or without a plexiglass barrier, IPSO on a multi-headed microscope, or remote sign out (RSO) using video conferencing software. On a scale of 1 to 5 (with 5 being very satisfied), a majority of Ts and PPs perceived the new SO method as “satisfactory” in regards to safety (75%; n=103, average ratings Ts=3.8, PPs=4.2). Specifically, when rating RSO versus IPSO, a majority viewed RSO as “better” (48%; n=59, Ts=30, PPs=29) or having “no difference” (38%; n=47, Ts=29, PPs=18) compared to IPSO. For educational content, when comparing RSO and IPSO, a majority perceived no difference (47%, n=58, Ts=38, PPs =20), but 44% viewed RSO as “worse” (n=54, Ts=24, PPs= 30). Of note, PPs were significantly more likely than Ts to perceive educational content in RSO as “worse” rather than “better” or “no difference” (p=0.0482). RSO was also perceived as worse on teaching/learning efficiency (63%; n=77, Ts=35, PPs=42) and interactiveness (64%; n=79, Ts=35, PPs=44). With respect to interactiveness in particular, PPs were significantly more likely than Ts to perceive the interactiveness in RSO as “worse” rather than better or no difference (p=0.0215). For patient care, there was no perceived difference between the two methods (75%; n=91, Ts=50, PPs=41).

Table: Survey results

Questions	Responses (%)
<p>What is your level of practice in pathology?</p>	<ul style="list-style-type: none"> • PGY1 (10) • PGY2 (12) • PGY3 (7) • PGY4 (11) • Fellow (14) • Practicing pathologist <p>(<5 years in practice) (17)</p> <ul style="list-style-type: none"> • Practicing pathologist <p>(5-10 years in practice) (10)</p> <ul style="list-style-type: none"> • Practicing pathology <p>(>10 years in practice) (20)</p>
<p>Which of the following sign out methods have you adopted during the pandemic? (check all that apply)</p>	<ul style="list-style-type: none"> • In person "double-scoped" sign-out, wearing masks (53) • In person "double-scoped" sign-out wearing masks and across plexiglass barrier (45) • In person sign-out on a multiheaded microscope with social distancing (42) • Remote sign-out using video conferencing software (such as Microsoft Teams) (55) • No in person/remote sign-out with attending; preview and feedback only (20) • Others
<p>Which of the following options will you prefer for sign-out (based on safety and educational value) during the pandemic? (check up to 2)</p>	<ul style="list-style-type: none"> • In person "double-scoped" sign-out, wearing masks (31) • In person "double-scoped" sign-out wearing masks and across plexiglass barrier (42) • In person sign-out on a multiheaded microscope with social distancing (29) • Remote sign-out using video conferencing software (such as Microsoft Teams) (40) • No in person/remote sign-out with attending; preview and feedback only (8)
<p>How satisfied are you with the teaching/ learning efficiency of the new sign-out methods compared to the pre-pandemic period?</p>	<ul style="list-style-type: none"> • Very satisfied (21) • Satisfied (37) • Neutral (29) • Dissatisfied (10) • Very dissatisfied (4)
<p>How do you think that the new sign-out methods have impacted patient care as compared to the pre-pandemic period?</p>	<ul style="list-style-type: none"> • Better (3) • Worse (17) • Same as before (80)

<p>How safe do you feel with the new sign out measures employed during the pandemic?</p>	<ul style="list-style-type: none"> • Very safe (40) • Somewhat safe (35) • Neutral (20) • Somewhat unsafe (5) • Very unsafe (0)
<p>Have you participated in remote sign out over a video conferencing software (such as Microsoft Teams)?</p>	<ul style="list-style-type: none"> • Yes (64) • No (36)
<p>Which of the following video conferencing platforms have you used for remote sign out? (check all that apply)</p>	<ul style="list-style-type: none"> • Zoom (26) • Blue Jeans (3) • Microsoft Teams (35) • Google Meet (0) • WebEx (8) • None (19) • Skype (3) • Other (8)
<p>Based on your experience, what is your opinion on the technical aspects of the remote sign out method? (on a scale of 1 to 5, where 5 is the best)</p>	<p>Internet connectivity</p> <ul style="list-style-type: none"> • Very satisfied (43) • Satisfied (34) • Neutral (18) • Dissatisfied (4) • Very dissatisfied (2) <p>Audio Quality</p> <ul style="list-style-type: none"> • Very satisfied (34) • Satisfied (48) • Neutral (13) • Dissatisfied (5) • Very dissatisfied (2) <p>Image Quality</p> <ul style="list-style-type: none"> • Very satisfied (16) • Satisfied (39) • Neutral (27) • Dissatisfied (13) • Very dissatisfied (5) <p>Ease of Use</p> <ul style="list-style-type: none"> • Very satisfied (27) • Satisfied (36) • Neutral (27) • Dissatisfied (5) • Very dissatisfied (5)

<p>Do you have any preference for a particular video conferencing platform over others for remote sign out?</p>	<ul style="list-style-type: none"> • Yes (36) • No (62) • Not applicable (2)
<p>If yes, which platform do you prefer?</p>	<ul style="list-style-type: none"> • Zoom (33) • Microsoft Teams (49) • Blue Jeans (1) • Google Meet (0) • WebEx (6) • 5 (3) • Other (6) • Not Applicable (3)
<p>Concerning the following parameters, how do you rate remote sign out over in-person sign out methods? 1- better; 2- worse; 3- no difference</p>	<p>Educational content</p> <ul style="list-style-type: none"> • Better (9) • Worse (44) • No difference (47) <p>Teaching/learning efficiency</p> <ul style="list-style-type: none"> • Better (11) • Worse (63) • No difference (26) <p>Interactiveness</p> <ul style="list-style-type: none"> • Better (12) • Worse (64) • No difference (24) <p>Patient care</p> <ul style="list-style-type: none"> • Better (4) • Worse (21) • No difference (75) <p>Safety (risk of infection)</p> <ul style="list-style-type: none"> • Better (48) • Worse (14) • No difference (38)
<p>13. In a post-COVID world, will you prefer remote sign out over in-person sign out</p>	<ul style="list-style-type: none"> • Yes (14) • No (65) • Not sure (21)

Conclusions: The results of the survey reflect varied SO methods that have been adopted across the country during the pandemic. Modifications were perceived as providing adequate safety from infection, as well as patient care. However, there was also a perception of worse teaching/learning efficiency and interactiveness. PPs were significantly more likely than Ts to perceive the educational content and interactiveness in RSO as “worse.”

289 Pathology-Specific Residency Application Scoring Metric: An Attempt to Decrease Bias in Applicant Selection

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Disclosures: Lauren McLemore: None; Sara Achrati: None; Mary Berg: None; Patrick Henn: None; Julie Rosser: None; Von Samedi: None; Cassie Xu: None; Lindsey Westbrook: None

Background: To increase diversity and decrease bias in the residency candidate selection process, we aimed to create a standardized holistic application scoring metric specific to a pathology residency program.

Design: Initial metric design was based on the “EAST-IST Study” published by Bosslet et al., which was validated in pulmonary critical care training programs. Building from the standard components of the U.S. Electronic Residency Application System (ERAS) application, we solicited our residency recruitment committee (a team of eight pathology faculty and trainees) for additional pathology-specific variables to include in the scoring metric. Multiple rounds of surveys were completed by each member of the group to determine which variables to include/exclude and, subsequently, how much weight should be assigned to each. From the results of these surveys, average weights were calculated to establish a point value for each included item.

Results: A twenty-three question scoring tool (including five questions specific to the field of pathology) and grading key were created. The scoring tool was published online through the online survey platform Formsite (see Figure 1).

Conclusions: As part of an effort to decrease discrimination in the process of selecting program applicants for interview, a standardized pathology-specific ERAS application scoring metric was developed. To further ensure objectivity, two pathology faculty members will score each application. The average of those scores will be used to create a rank list to determine which candidates will be invited for interview. We are currently implementing this scoring tool for the 2020-2021 interview season.

290 Towards Harmonization of Training Requirements, Training, Board Certification and Practice in Cytopathology: Data from the American Board of Pathology Surveys

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Disclosures: Ritu Nayar: None; Aaron Douglas: None; Rebecca Johnson: None

Background: Cytopathology (CYP) is the most common subspecialty certification (approximately 28%) issued by the American Board of Pathology (ABPath). Currently there are 93 CYP fellowships overseen by the Accreditation Council for Graduate Medical Education (ACGME). Over the past decade, the practice of CYP has undergone significant changes. Practice data has been collected from “new” in practice pathologists to see how well training aligns with practice and the ACGME has updated some training requirements. As part of its vision of promoting excellence in the practice of pathology, the ABPath has been leading a number of efforts to collect data to allow for better harmonization of training, training requirements, board certification and the practice of pathology and its subspecialties. Herein we present data collected from CYP certified pathologists and CYP fellowship program directors (PDs) regarding current practice/training in CYP and their perceptions of the ABPath CYP certification examination.

Design: In order to provide guidance to Cytopathology PDs, the ACGME and the ABPath, two surveys were performed; one directed to CYP PDs (n=93, 70.96% response rate) and the other to CYP diplomates between 1 to 13 years post-residency, doing continuing certification (CC/MOC) reporting in 2019 (n=631, 31.5% response rate). The small & selected subset of diplomates is a limitation of this study.

Results: 86% of CYP diplomate respondents are staff pathologists in a group setting; 21% medical school faculty and 55% work in a setting with 2-5 cytopathologists. Most CYP diplomates do not practice full time CYP- only 11% do >50% CYP and 56% do <25% CYP service. A third (35%) have a second fellowship in a surgical pathology (SP); 96% practice SP which accounts for >50% service for 67%. Among the CYP training programs, 97% are in academic settings. Differences in specimen types/volumes, techniques of specimen acquisition/preparation, and institutional requirements lead to inconsistencies in fellow exposure to performance and onsite evaluation of fine needle aspiration (FNA) procedures, as well as varied exposure to cytologic specimen interpretation and graduated responsibility. The ACGME requires fellows to evaluate at least 2000 cytologic specimens- 500 each of gynecologic, non-gynecologic and FNAs representing a variety of organs/spectrum of pathologic entities; however this does not account for changing practice patterns. ACGME also recommends graduated responsibility with only oversight supervision as appropriate, before completion of training. (See Table 1, Figs 1 & 2).

<p>Towards Harmonization of Training Requirements, Training, Board Certification and Practice in Cytopathology: Data from the American Board of Pathology (ABPath) Surveys</p>	
<p>TABLE 1- SUMMARY OF SURVEY DATA</p>	
<p>Survey #1 - Practicing pathologists certified in Cytopathology, in their 1st to 13th year of practice, surveyed during ABPath two year continuing certification (CC/MOC) reporting.</p>	
<p>A. Diplomates daily practice of Cytopathology (percentage of respondents)</p> <ul style="list-style-type: none"> ● >90% - Interpret FNA biopsy, non-gyne, cell blocks ● 70-80% - ROSE FNA, interpret core biopsy/TP and Gyne cytology ● 55-65% - ROSE touch preps, anal cytology, tumor boards, billing /coding ● 20-45% - Lab admin (42), perform superficial FNA (38), teaching (32) ● <20% - Perform US FNA (13)/ core bx (7); research:clinical (21)/basic (3) ● Primary screening (no CT prescreen): FNA-50%, nongyne-42%, gyne/anal -6% 	
<p>B. Diplomate Perceptions on training received in fellowship relative to what is needed in their current role in the practice environment (See Fig 1)</p>	
<p>C. Diplomates’ perception of ABPath Cytopathology subspecialty examination emphasis of major areas in the exam and type of questions</p> <ul style="list-style-type: none"> a. <u>Emphasis about right:</u> FNA, nongyn, gyn, IHC (>80% in molecular diagnostics, patient management, lab management, and 68-75% in touch prep/core biopsy) b. <u>Emphasis too little and too much-</u> similar percentages for touch prep/core biopsy, molecular diagnostics, patient/laboratory management 	

- c. Question types perceived as most reflective of knowledge/competency in CYP
 - i. Most reflective- glass slides(52%), practical (25%)
 - ii. Least reflective- written (15%), virtual slides (8%)

Survey # 2 - Cytopathology Fellowship Program Directors (PDs)

A. Key takeaways from program data regarding exposure to various aspects of Cytopathology and fellow responsibilities.

- Laboratory volumes
 - FNA/ touch prep/core biopsy exposure to specimen interpretation from sites such as kidney, bone, soft tissue and breast is variable and low in many programs (<25 annually).
 - Gynecologic cytology: total volumes are below 10,000 in 35% of programs and exposure to anal cytology is <100 annually in 50%
 - Non-gynecologic cytology: seems adequate in most programs
- Fellow performance of procedures
 - Marked variability in performance and ROSE of superficial and image-guided FNA and touch preparations/ core biopsies
- Graduated responsibility:
 - Independent responsibility with only oversight supervision during the course of fellowship:
 - ROSE- image /non-image guided FNA - 98% (48 program responded)
 - Perform non-image guided FNA biopsy - 87% (47 program)
 - Perform image-guided FNA biopsy -71% (38 programs)
 - Release of report with review by attending in 24-48 hrs- 59% (39 prog)
 - Release of report with no review by attending -25% (32 programs)

B. PD Perceptions on ABPath Cytopathology Certification Exam Blueprint

- PD knew that the ABPath website has blueprints/grids of content and descriptions for all its examinations
 - Yes-65%, No-35%
- PDs suggestions regarding distribution of questions on the 2019 ABPath CYP subspecialty examination grid (See Fig 2)
 - Need to decrease - Lab administration, kidney, bone/ soft tissue, breast, cervical
 - Need to increase- Head/neck, salivary, urinary, respiratory/lung, body cavity fluids, pancreaticobiliary/ GI.

Figure 1 - 290

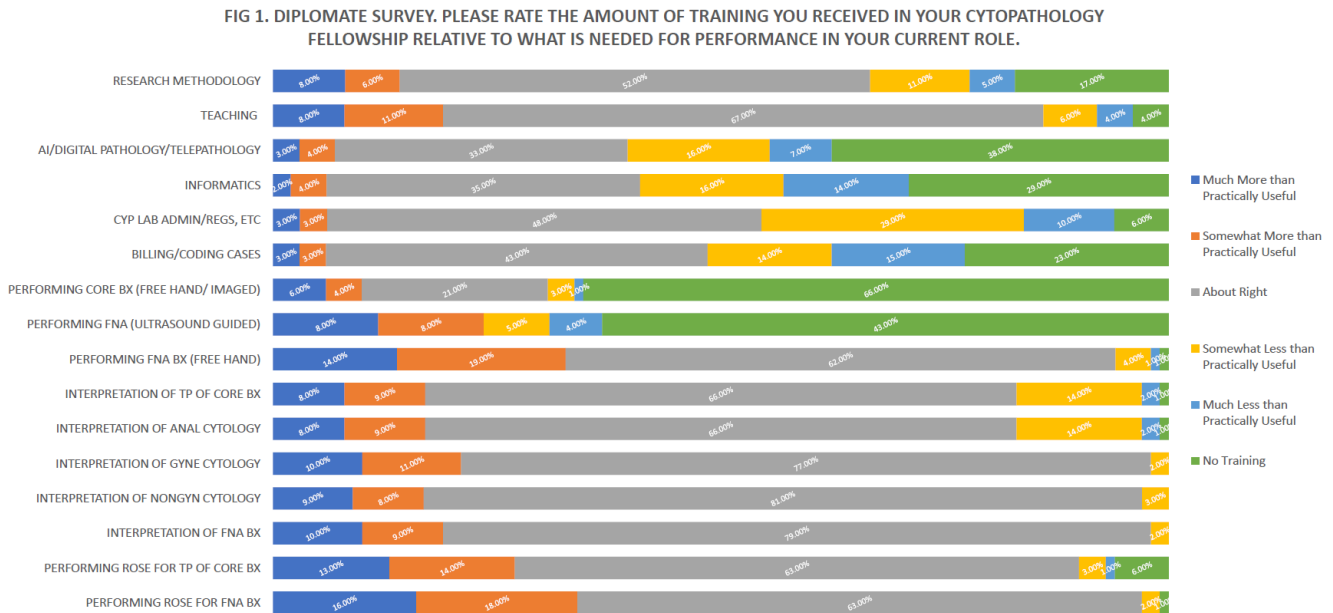
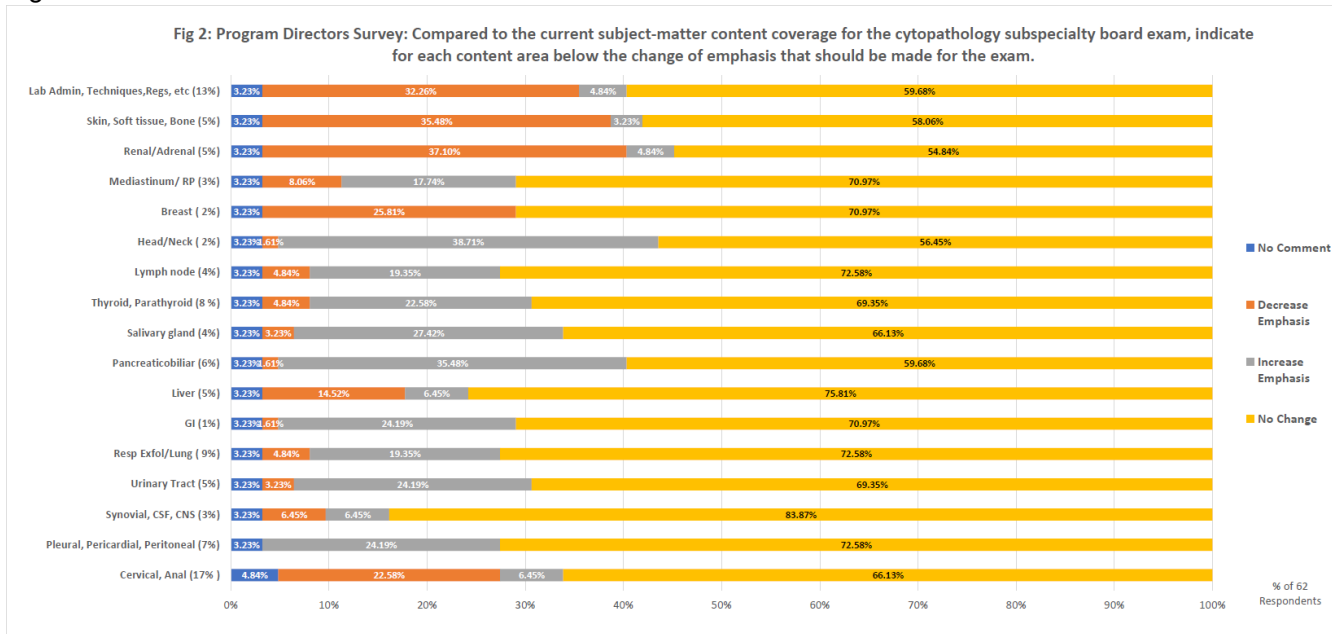


Figure 2 - 290



Conclusions: Further discussion among the major stakeholders is warranted to better align training, training requirements, practice and board certification in Cytopathology. Evolving changes in clinical practice and incorporation of new technologies impact training programs and differing needs in different practice settings remain a challenge.

291 Novel Pathology Residency AP/CP Core Curriculum Improves RISE Exam Scores by Implementing Six Adult Learning Strategies

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Disclosures: Janna Neltner: None; Robert McDonald: None; Morgan McCoy: None; Derek Allison: None; Therese Bocklage: None

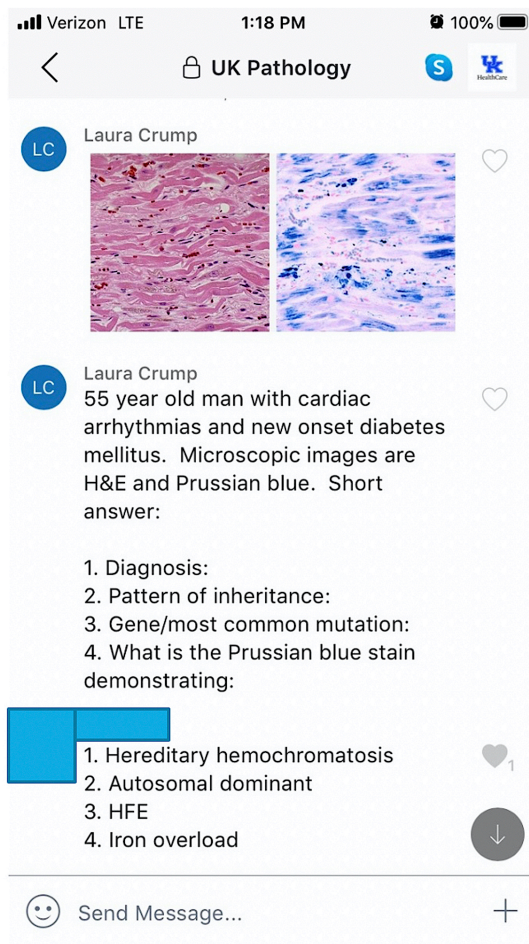
Background: Pathology residents undertaking clinical and anatomic training must learn a wide variety of information. Residents often begin their training with diminished fundamental knowledge (such as in normal histology) compared to residents graduating medical school > 10 years ago. Additionally, despite extensive, evidence-based research confirming the benefit of active learning, many residents exhibit suboptimal study habits. We designed a pathology core curriculum that would encompass basic training in anatomic and clinical pathology and that would employ adult learning strategies.

Design: We designed a two year curriculum covering major organ systems in anatomic pathology, microbiology, hematopathology, clinical chemistry, blood banking, bioinformatics and molecular genetics. We employed six strategies of adult learning (spacing, interleaving, concrete examples, dual coding, elaboration, and retrieval practices). Formal teaching occurred as didactic lectures (minority), team-based learning, unknown case conferences, rapid case reviews, and texted questions via phone. In particular, we used commercial software to conduct and track retrieval practices (RPs). RPs comprised test questions covering new and previously taught material. Questions included multiple choice, short answer, matching, true-false, and image labeling. Tests were reviewed 2-4 days after the retrieval practice was administered. We also provided instruction in good study techniques ("the study cycle"). We conducted a survey of residents and faculty regarding the new curriculum.

Results: After one year of the new curriculum, residents sat for the annual RISE exam. Average improvement per resident was on par with the national average EXCEPT for areas covered by the first year of the PCC. In these areas, average score improvement was **twice** the national average. As expected, fourth year residents performed the best on RPs followed next by third and second year residents whose results clustered together followed last by first year residents. All residents and 50% of relevant faculty completed the online survey. The new curriculum was preferred by both residents and faculty, and both groups regarded the new curriculum as more effective for long term learning. Residents were split in favoring RP multiple choice questions rather than a mix of question types.

Surgical Pathology Content	Average RISE Score for Three Prior Exams	Average RISE Score Post PCC
PGY1	391	403
PGY2	396	453
PGY3	459	485
PGY4	518	548
POINT CHANGE	Three Prior Exams	Exam Post PCC
PGY1 to 2	+2.6	+43
PGY2 to 3	+56.7	+69
PGY3 to 4	+37.3	+61

Figure 1 - 291



Conclusions: The new, two year curriculum, predicated on principles of adult learning, shows initial significant success in knowledge retention.

292 Development of Frozen Section Laboratory Simulation Curriculum: Improving Educational Experience in a Large Surgical Pathology Fellowship Program

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Disclosures: Erica Reed: None; Carrie Bowler: None; Grant Harrison: None; Stefan Brettfeld: None; John Gross: None; Hong Jiang: None; Karen Fritchie: None; Jennifer Boland Froemming: None; Malvika Solanki: None

Background: Simulation (SIM) based training provides an interactive platform for trainees to apply their skills in a controlled environment, and has been shown to improve knowledge retention and confidence. Our surgical pathology fellowship program recently implemented a Frozen Section (FS) Simulation curriculum with a positive impact on the learners. Herein, we discuss the expansion and further development of SIM curriculum.

Design: Pathology fellows trained at external residency programs (n=7) individually participated in 30-minute SIM experience. New SIM scenarios (n=3) were added to the original curriculum, focusing on different organ systems with varying complexities and challenges of intraoperative FS consultation. The learners participated in surgical list review, gross-microscopic correlation, and communication with the surgical team. The simulation was live streamed for the other fellows to observe. After the SIM, a group discussion ensued with learning points, challenges, and suggestions from the observers. Participants filled out pre- and post-SIM surveys, which also included multiple open-ended questions for qualitative assessment.

Results: From 6 responses to the pre-SIM survey and 6 responses to the post-SIM survey, all respondents reported that the SIM experience: 1) mimicked real-life situations they encountered in the FS lab; 2) increased confidence in communication with team members and surgical staff; 3) improved understanding of multitasking, organization and prioritization of work; and 4) emphasized learning rather than performance. Participants considered debrief time essential to learning. They all felt better prepared at the FSL after completing the simulation. Participants (n=3) in the qualitative assessment stated that live streaming and group debriefing added more value to their experience. Additionally, they felt that 4 different scenarios with new distractors covered many of the challenges they have encountered. One learner participated in the SIM twice, and felt better prepared for the second exercise.

Conclusions: Addition of multiple scenarios with real-life distractions improved our fellows' readiness and confidence for the FS environment. Peer observation and group debriefs enriched trainee learning. Designing multiple SIM scenarios and feedback received from fellows (n=15) over 2 years has helped us enhance the educational experience for our surgical pathology fellows. In the future, we plan to further expand our curriculum with mock surgical list preparation and scenarios with increasing complexity to supplement the original curriculum.

293 Increase In High-Risk Deceased Donors And Organ Disposition Rate Overtime In An Organ Procurement Organization

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Background: Despite the increase in recovered deceased organ donors for transplants in the last decade, the number of people with end-stage organ failure in the transplant waitlist has remained disturbingly high. With the opioid epidemic contributing to deaths due to drug overdose, the trend of deceased donor pool has gradually shifted from older, sicker to younger, healthier donors. Previously organs from deceased donors belonging to CDC high risk category and those with communicable diseases often got discarded and even today organ utilization rate remains low. We sought to evaluate the trends and characteristics of the deceased donor pool including organ disposition rate from high-risk and non-high-risk category in our organ procurement organization.

Design: Deceased donors procured between January 2010 to August 2020 at our regional organ procurement organization were retrospectively studied. Deceased donors were divided into four quartiles, 32 months each. Baseline characteristics and organ disposition by risk stratification analysis was performed using Stata v12.0.

Results: Total of 2,573 (58.38% males) deceased donors were included (Table). In the age group category, highest percentage of donors' age range was from 18 to 65 years, (p-value 0.003) with the mean age of 41 years (p-value <0.001). Among the deceased donors, the predominant race was white (65.83%) followed by African American (26.70%) and other races (7.49%), p-value 0.2. Trends in causes of death primary reflected intoxication (prevalence increase from 9.6% to 50.0%) superseding cardiovascular, cerebrovascular and others, p-value<0.001. Increases in CDC high-risk prevalence was observed (from 12.5% to 28.7%) and any communicable disease (HCV, HIV, HBV or syphilis) prevalence (from 9.5% to 18.1%), (all p-value <0.001) (Figure 1). Organs transplanted from CDC-high risk and non-high-risk categories did not change significantly but showed an upward trend (Figure 2).

Baseline Characteristics of Deceased Donors from January 2010 to August 2020					
Variables	Quartile 1	Quartile 2	Quartile 3	Quartile 4	p-value
	01-'10 to 08-'12	09-'12 to 04-'15	05-'15 to 12-'17	01-'18 to 08-'20	
	n= 599	n=607	n= 627	n= 740	
Age (mean [SD])	41.9 (17.9)	42.2 (17.3)	39.2 (16.9)	41.1 (16.2)	<0.001*
Age Group (n, %)					0.003*
<18	52 (24.9%)	48 (23.0%)	58 (27.8%)	51 (24.4%)	
18-35	148 (20.9%)	147 (20.7%)	209 (29.4%)	206 (29.0%)	
35-65	333 (23.1%)	365 (25.3%)	319 (22.1%)	427 (29.6%)	
>65	52 (30.4%)	37 (21.6%)	33 (19.3%)	49 (28.7%)	
Gender					0.9
Male (n [%])	347 (57.9%)	354 (58.3%)	365 (58.2%)	436 (58.9%)	
Race					0.2
AA	173 (25.3%)	155 (22.7%)	153 (22.4%)	203 (30.0%)	
White	378 (22.4%)	414 (24.5%)	428 (25.4%)	468 (27.7%)	
Other	46 (24.0%)	38 (19.8%)	43 (22.4%)	65 (33.9%)	
Cause of Death					<0.001*
Intoxication	27 (9.6%)	29 (10.3%)	85 (30.3%)	140 (50.0%)	
Cardiovascular	119 (20.3%)	157 (26.8%)	159 (27.1%)	152 (26.0%)	
Other	221 (25.6%)	210 (24.3%)	209 (24.2%)	225 (26.0%)	
Cerberoascular	232 (27.6%)	211 (25.1%)	174 (20.7%)	223 (26.6%)	
CDC-High Risk					<0.001*
Yes	75 (12.5%)	82 (13.5%)	163 (26.0%)	212 (28.7%)	
Communicable Diseases					
HIV	2 (0.3%)	1 (0.2%)	1 (0.2%)	6 (0.8%)	0.16
HCV	26 (4.3%)	38 (6.3%)	73 (11.6%)	101 (13.7)	<0.001*
HBV	32 (5.3%)	27 (4.5%)	24 (3.8%)	43 (5.8%)	0.3
Syphilis (RPR)	3 (0.5%)	5 (0.8%)	8 (1.3%)	9 (1.2%)	0.5
Any of the above	57 (9.5%)	57 (9.4%)	96 (15.3%)	134 (18.1%)	<0.001*

Figure 1 - 293

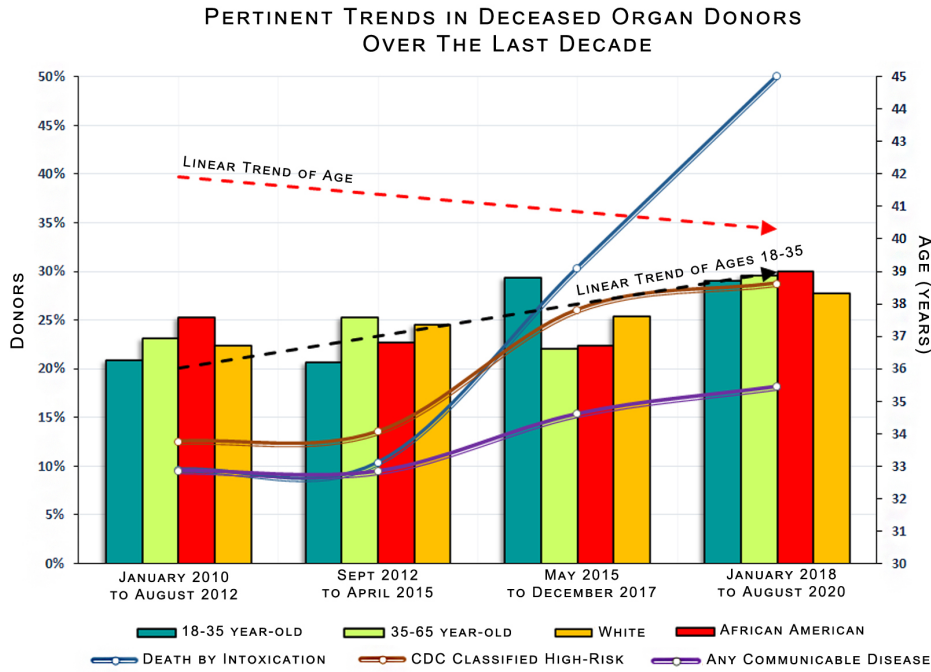
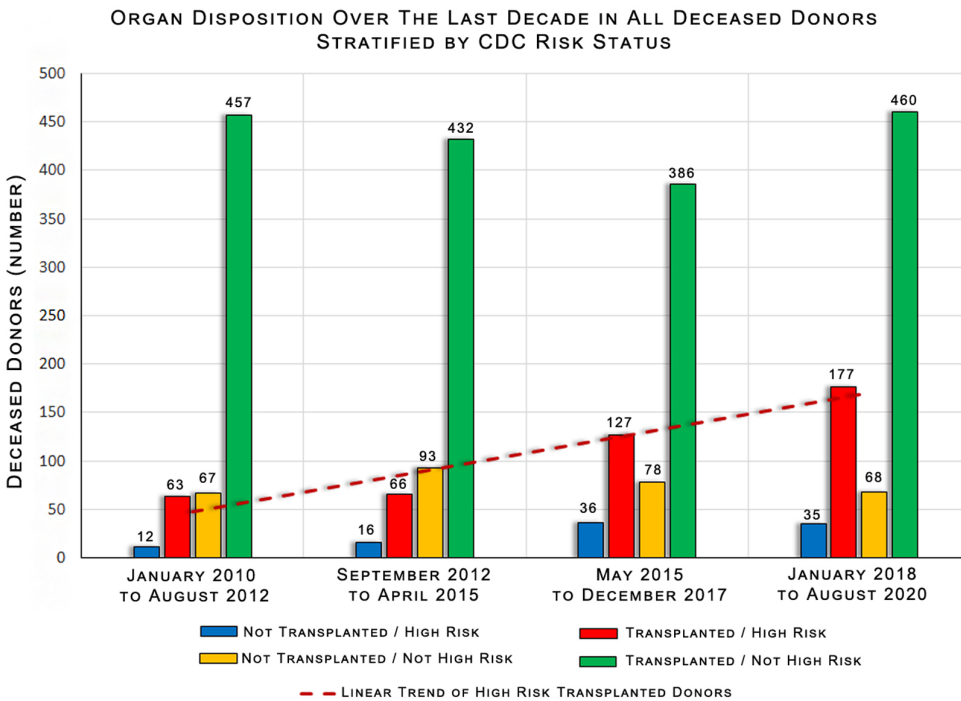


Figure 2 - 293



Conclusions: Organ transplantation may provide improved quality of life and increased patient survival. Increased awareness of newer, promising communicable diseases treatments and positive patient-physician behavior toward high-risk organ transplants can further reduce waiting time for end-stage-organ-failure patients. Studies are needed to evaluate the outcomes from such donors and to determine if strategies are needed to mitigate possible shortcomings.

294 Using Multiple Educational Tools for Conducting Virtual Surgical Pathology Fellowship Interviews—Innovation in the COVID Era

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Background: Interviews are a key component of the residency/fellowship selection process. The in-person interview is the gold standard used within post-graduate medical education. Given the current limitations set by the pandemic, programs had to be innovative to achieve similar outcomes within a virtual setting. Herein, we share our experience with implementing virtual interviews.

Design: A group of stakeholders informed what resources and strategies were needed for a comprehensive virtual interview experience. We selected behavioral interview questions to assess for skills possessed by successful fellows and created a Blackboard course to organize program content based on topics traditionally covered during in-person interviews. The Zoom platform was used to facilitate the interview experience. Applicants met in large groups with recent alumni, current fellows, and faculty, and 1:1 interviews were conducted with faculty via breakout rooms. 3D scan technology was used to give virtual tours of laboratories and sign-out areas, supplemented with real-time tours of these spaces via Zoom using cell phones. Finally, a virtual slide session was conducted by several faculty via Zoom.

Results: Analytics from Blackboard indicated the course was accessed by each interviewee (n=13) a mean of 45 times (range 25-82). The course was first accessed 4 days before the interview, with an increasing rate as the interview day approached. The course contained videos, images, and narrative descriptions about program faculty and features. The most frequently accessed content were videos: welcome messages by the Program Director/Associate Program Director (153), current/past trainee video messages (54), and institutional culture (25). Narrative content and images that were accessed included what to expect in the interview (39), getting to know the program faculty (38), interview panel (34), and learning experience (26). Post-interview, all applicants and interviewing faculty (8) unanimously provided positive feedback on the experience including the Blackboard course. They all felt the interview process went smoothly without any technological interruptions.

Conclusions: Because of our positive experiences using Zoom, Blackboard, and virtual 3D scans, we will continue to use these tools to supplement our in-person interview process. Furthermore, the virtual experience provides a cost effective option for both the applicants and the program, which can be a valuable tool for initial applicant screening.

295 Perceptions of a Remote Learning Pathology Elective for Advanced Clinical Medical Students

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Background: Due to the COVID-19 pandemic, our institution removed most medical students from in-person clinical clerkships in early March 2020. The change left fourth-year medical students with limited career-exploration rotation opportunities as few departments had the flexibility, capability, or infrastructure to provide remote clinical engagement.

Design: The Pathology department responded by transitioning a fourth-year clinical elective to an all-remote format composed of synchronous didactics, daily clinical signout utilizing digital microscopy, and asynchronous learning materials. Thirty-seven medical students completed two- or four-week anatomic pathology electives tailored to meet their career goals and to allow progression toward graduation. Institutional Review Board approval was granted to

survey students' perceptions of engagement in the remote learning environment. Quantitative and qualitative data were collected using a standardized school-wide end-of-rotation survey, an online survey developed by the authors, and students' self-directed learning goals for the rotation. Content analysis of open-ended survey responses was used to identify common themes of the course's strengths and areas for improvement.

Results: The remote pathology course scored higher on end-of-rotation surveys (4.85 of possible 5) when compared to all advanced clinical clerkships (4.52, n=156), all elective rotations (4.42, n=50), and the corresponding in-person pathology elective (4.73). Qualitative data of the core strengths in the remote environment included high educational value, flexibility of content and schedule, organization, tailoring to an individual's learning goals, and a positive education environment. Deficits included the inability to gross surgical specimens, inadequate observation or feedback about students' skills, and impaired social connections. Areas for improvement included requests for in-person experiences and development of themed tracks for career exploration.

Conclusions: Many aspects of anatomic pathology are well-suited to the remote learning environment. While the remote model may not be sufficient for students pursuing careers in pathology, it may be adapted to increase non-pathologists' understanding of interdisciplinary clinical collaboration with pathologists.