

responses. This project was approved by the institutional review board at the University of Kansas Medical Center. **Results (if a Case Study enter NA):** Notably, there was an overall decrease in clinical laboratory testing and overtime work for laboratorians during the first months of the COVID-19 pandemic. Respondents noted a lack of pay increase during the pandemic; however, some received in-kind gifts and messages of support in recognition of their essential work. MLPs reported better (or unchanged) job satisfaction and morale in their respective workplaces.

**Conclusion:** The response to the testing needs by health-care facilities and clinical laboratory leadership can influence the job satisfaction of MLPs, perceptions toward their work, and overall morale during the initial phase of the pandemic. Additionally, cost-reducing measures further shaped the perceptions of MLPs while impacting the operational efficiency of clinical laboratories.

### Challenges of Conducting Point-Of-Care Testing Operations During The COVID-19 Pandemic In The Municipal Public Health System Based Ambulatory Care And School Health Clinics In New York City

*T. Sherpa,<sup>1</sup> T. Choesang,<sup>1</sup> S. Ahmad,<sup>1</sup> F.M. Huq Ronny<sup>1</sup>; <sup>1</sup>Laboratory Service, Gotham Health NYCHHC, New York, New York, UNITED STATES*

**Introduction/Objective:** Our New York City Municipal Public Health System based multisite ambulatory clinics and school-based clinics, offer various waived POCT (point of care tests) and provider performed microscopy (PPM). To ensure standardization and quality of POC testing across our health system, our laboratory service conducts system wide centralized implementation, monitoring and oversight of the POCT operations in regard to regulatory compliance, test performance, quality control and training. With the emergence of the COVID-19 infection in the New York City, like all other clinical laboratories, our ambulatory care clinics encountered numerous hurdles and challenges. Here we elaborated the issues that we encountered and how we managed to overcome during the COVID-19 Pandemic.

**Methods/Case Report:** We categorized the challenges that affected our managers as well as field level laboratory operations and have devised a plane to deal with COVID-19 related predicaments.

**Results (if a Case Study enter NA):** Among the staffing issues, staff relocation to the acute care hospital laboratories during the peak of the pandemic caused massive delay or cessation of POCT operations in our ambulatory care clinics. Manual result entry, for COVID-19 testing, at the patient portals due to lack of interface with the reference testing labs, staff shortages and frequent absences due to illness and fatigue were primary

issues noted at technical level. Furthermore, there were notable delays in the processing of paper works and new staff recruitments. The lack of and significant delays in the critical laboratory supplies was another major management issue.

**Conclusion:** Given the vastness and complexity of our multisite ambulatory care network, the COVID -19 pandemic impacted our ambulatory care clinic POCT operation in a very challenging way. However, our timeliness, coordinated interventions, close communications and initiatives handled the obstacles that arose very effectively to the ensure quality of POC testing, patient safety and quality care across our health system.

### Impacts of the Virtual Landscape During the COVID-19 Pandemic on the 2020 Application Cycle

*H. Cutshall,<sup>1</sup> C. Amerson,<sup>1</sup> N. Singh,<sup>1</sup> R. Hattaway,<sup>1</sup> S. Rais-Bahrami,<sup>2</sup> B. McCleskey<sup>3</sup>; <sup>1</sup>Medical School, University of Alabama at Birmingham School of Medicine, Hoover, Alabama, UNITED STATES; <sup>2</sup>Urology, University of Alabama at Birmingham, Birmingham, Alabama, UNITED STATES; <sup>3</sup>Pathology, University of Alabama at Birmingham, Birmingham, Alabama, UNITED STATES*

**Introduction/Objective:** In response to the COVID-19 pandemic, the 2020 application cycle adapted to a mostly virtual setting. This project focused on the impact of these changes on the 2020 application cycle with the elimination of in- person away rotations and interviews, as well as the implementation of new virtual opportunities for learning and interacting with residents and programs. **Methods/Case Report:** This study was conducted through an anonymous survey sent out to programs that engaged in social media usage in the 2020 application cycle. The survey was made available to program directors, faculty, residents and the matched applicants and focused on their usage and opinion of impact of virtual opportunities, virtual interviews and social media encounters.

**Results (if a Case Study enter NA):** A total of 17 program directors/faculty, 17 residents and 19 matched applicants completed the survey across 91 programs surveyed. Virtual opportunities that were offered across these programs include: open houses, sub-internships, didactic lectures, grand rounds, Q&A sessions, and virtual facility tours. Responses showed that 4 programs (16%) moved applicants up on their rank list based on pre-interview virtual interactions. From the applicant perspective, 13 (76.5%) said virtual opportunities impacted the way they evaluated programs with 13 (68.4%) ranking programs higher and 3 (15.7%) ranking programs they otherwise would not have ranked. On the other hand, 21 faculty/residents (80.7%) felt that applicants missed out on fully experiencing the program due to lack of in person interviews and away rotations. However, 14 programs (56%)

interviewed more candidates and offered more interview days during the 2020 application cycle. Applicants also applied to a greater number of programs with 42% of surveyed applicants applying to more than 50 programs, however none attended more than 30 interviews.

**Conclusion:** In conclusion, adaptations in response to the COVID-19 pandemic have provided an unexpected opportunity to explore the impact of the virtual landscape on residency recruitment.

### Utilization of 2D Barcode Technology to Create Surgical Pathology Reports

Z. Qu,<sup>1</sup> E. Qu,<sup>1</sup> J. Huang,<sup>1</sup> M.A. Micale,<sup>1</sup> E. Li<sup>2</sup>;  
<sup>1</sup>Pathology, Beaumont Health System, Royal Oak, Michigan, UNITED STATES; <sup>2</sup>Computer Sciences, University of Michigan, Ann Arbor, Michigan, UNITED STATES

**Introduction/Objective:** After professional transcription service is eliminated, pathologists inevitably undertake the task of diagnostic data entry into pathology report by adapting a variety of methods such as speech recognition, manual typing, and pre-texted command. Errors and inefficiency in reporting remain common problems, especially for information with unusual syntax such as genotype or nucleotide sequences. To overcome these shortcomings, we introduce here a novel application of a well-established technology as a complementary method, namely 2-dimensional (2D) barcode symbology.

**Methods/Case Report:** Commonly used diagnostic wordings of pathology reports including specimen type, surgical procedure, diagnosis, and test results are collated and organized by organ (specimen type) and by their frequency of usage/occurrence. Next, 2D data matrix barcodes are created for these diagnostic wordings using an on-line tool ([www.free-barcode-generator.net/datamatrix/](http://www.free-barcode-generator.net/datamatrix/)). The 2D barcodes along with their text are displayed on the computer screen (or printed out as a booklet). A 2D barcode scanner (Symbol LS2208, Motorola) was used to retrieve the text information from the barcodes and transfer into the pathology report. To assess the efficacy of this barcode method, we evaluated the time of data entry into reports for 117 routine cases using an on-line stopwatch and compared with those by other data entry methods.

**Results (if a Case Study enter NA):** Unlike manual typing or speech recognition, the barcode method did not introduce typographic or phonosemantic errors since the method simply transferred pre-texted and proof-read text content to report. It was also faster than manual typing or speech recognition, and its speed was comparable to that of the pre-text method integrated in LIS but did not require human memorization of innumerable text commands to retrieve desired diagnosis wordings.

**Conclusion:** Our preliminary results demonstrated that the diagnostic data entry time was reduced from 28.5% by other methods to 22.1% by the barcode method although

due to the small sample size, statistical analysis was not conclusive.

### Laboratory Testing Patterns by Day of Hospital Stay for Medical and Surgical Hospitalizations

B. Brimhall,<sup>1</sup> M. Whitted,<sup>1</sup> A. Windham,<sup>1</sup> J. Fernandez<sup>2</sup>; <sup>1</sup>Department of Pathology & Laboratory Medicine, University of Texas Health, San Antonio and University Health System, San Antonio, Texas, UNITED STATES; <sup>2</sup>University Health System, Department of Finance Decision Support, San Antonio, Texas, UNITED STATES

**Introduction/Objective:** Studies of laboratory test utilization and costs by specific hospital day of stay (DOS) have yet to be widely published. Evaluation of laboratory test use by DOS would be helpful to better predict laboratory test reduction as hospital length of stay (LOS) is shortened, since testing on the final day of hospitalization is likely to differ from the average daily figures.

**Methods/Case Report:** Using an internal cost accounting database, we evaluated laboratory tests and costs by hospital DOS over one year (2017) at a large health system (N=133,139 hospital days). To evaluate changes over the first days of hospitalization, we set day 1 of hospitalization as a baseline and determined subsequent days as a percentage of day 1 figures. We also calculated laboratory variable cost as a percent of aggregate variable costs per DOS. We limited our analysis to the first week of hospitalization. We employed Medicare Severity Diagnosis Related Groups (MSDRG), used by the US Centers for Medicare and Medicaid Services (CMS), to aggregate hospital encounters into medical or surgical hospitalizations using MSDRG grouping methods.

**Results (if a Case Study enter NA):** For medical inpatient stays, average laboratory tests (variable costs) were 10.8 (\$74.11) on day 1, 7.7 (\$38.53) on day 2, and 5.8 (\$23.75) on day 3, with little change over the next four hospital DOS. Laboratory testing, as a percent of day 1 testing, for days 2-7 was: 70.7%, 53.4%, 54.3%, 54.5%, 55.1%, and 54.0%. Laboratory variable costs represented 7.8% of aggregate variable costs on hospital day 1 and declined sequentially over days 2-7: 5.6%, 4.3%, 3.9%, 3.8%, 3.8%, and 3.5%. For surgical hospitalizations, average laboratory tests (variable costs) were 18.2 (\$130.02) on day 1, 11.9 (\$57.38) on day 2, and 8.4 (\$35.32) on day 3. As with medical stays, there was little change over the next four hospital DOS. Laboratory testing, as a percent of day 1 testing, for days 2-7 was: 65.6%, 46.1%, 44.6%, 46.3%, 45.9%, and 44.9%. Laboratory variable costs represented 3.2% of aggregate variable costs on hospital day 1 and remained essentially unchanged over the following days (range 3.3%-3.7%).

**Conclusion:** Laboratory variable costs are highest on the first day of hospitalization and decline over subsequent days to flatten by day 3.