Looking into the Laboratory Staffing Issues that Affected Ambulatory Care Clinical Laboratory Operations during the COVID-19 Pandemic

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Abbreviations: POCT, point of care tests; PPM, provider-performed microscopy; LSL, limited-service laboratory licenses

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ABSTRACT

Objective: Our New York City Municipal Public Health System-based multisite ambulatory and school-based Gotham Health clinics offer waived point-of-care tests and provider-performed microscopy to the local communities. Our Gotham Health laboratory service conducts system-wide centralized implementation, monitoring, and oversight of the POCT operations. Laboratory staffing has always been an issue for us as there is a decades-long shortage of laboratory staff, primarily licensed medical technologists and technicians, in New York, like many other states. Our clinical laboratory operations team struggled to hire qualified people even before the COVID-19 pandemic onset. It has faced more significant challenges with the emergence of SARS-CoV-2 pandemic cases in New York City and across the country since mid-March 2020.

Methods: As staffing continues to be a struggle, it directly affected the POCT performances and a system-wide reduction in the test numbers during the pandemic. We investigated to identify the factors that made staffing more challenging.

Results: The impact on our POCT started after laboratory staff relocated to the acute care hospital laboratories to provide testing support during the pandemic’s peak. That caused significant delays or complete cessation of POCT operations in the clinics due to a lack of oversight support. We also experienced the risk of more vacated positions where staff already feel overworked, overwhelmed, and emotionally drained, causing professional burnout. The significant challenges identified are noncompliance with vaccine mandates resulting in job dismissal and voluntary resignations in exchange for higher-paying laboratories. Finally, the other challenges identified were frequent sick calls due to mental fatigue, retirement of seasoned staff, and inability to attract qualified technologists to meet the demands of increasing test-ordering patterns.

Conclusions: Determining the factors that culminated in the staffing issues becoming more challenging during the COVID-19 pandemic in our ambulatory care clinic laboratory operations will help us in future crisis planning and mitigation.

Originally, Gotham Health ambulatory care clinics were operated under different New York City owned acute care hospital clinical laboratory limited-service laboratory (LSL) licenses. Gotham sites across New York City’s 5 boroughs include ambulatory care clinics and school-based clinics that offer waived point-of-care tests (POCTs) and provider-performed microscopy to local communities and send out tests to the reference laboratories.

A wide range of variability existed among the clinics concerning regulatory compliance, test performance, quality control, and training. To decrease adverse effects due to variability in POCT procedures, standardization and quality improvement of POCT across Gotham Health ambulatory care clinics were implemented. Laboratory services executed a plan for system-wide LSL transfer from acute care hospitals to ambulatory care laboratory service for centralized implementation, monitoring, and oversight of POCT operations. Thus, having around 50 clinics system-wide, our qualified laboratory personnel update and provide standard operating procedures, perform quality assurance and validation of new tests/devices, provide competency assessments, and help clinical staff maintain compliance with state and regulatory agencies.1 With standardization, the clinical teams who perform POCTs get expeditious training and troubleshooting, and the providers get the results

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of the POCTs they order much faster and more efficiently. Overall, after the successful implementation of the ambulatory care laboratory operations, the quality metrics get improved markedly.

Across the nation, clinical laboratories are severely understaffed, and the trend has been an ongoing issue for over 2 decades. Licensure states such as New York incur further complications due to the qualifications a candidate must acquire before seeking employment. Gotham Health’s clinical laboratory operations team, which had already been struggling to hire enough people before the COVID-19 pandemic onset, is facing more considerable challenges. The group’s difficulties went from a simmer to a rolling boil with the emergence of SARS-CoV-2 pandemic cases in New York City in early 2020.

On March 20, 2020, the Governor of New York issued an executive order requiring all nonessential businesses to be closed and limiting any concentration of individuals outside their homes to prevent the spread of SARS-CoV-2. For most of the Gotham Health clinical laboratory operations team, which conducts the monitoring and oversight of the POCT, closure and social distancing requirements in response to the COVID-19 pandemic resulted in the suspension of POCT operations system-wide. For ambulatory site clinics that enlist drawing stations the COVID-19 pandemic resulted in the suspension of POCT operations and the inability to attract qualified technologists to meet the demands allowing laboratory administrators to attend to priority laboratory work-flows processes, the relative sparsity of interested and eligible candidates, and increasing vacancies in the other clinical laboratories. Meanwhile, one of the laboratory technicians received an offer from a higher-paying private laboratory, and another laboratory technologist nearing retirement stepped down due to health issues and stress due to increasing workload.

Backfills were submitted to fill the increasing vacancies for Gotham Health. Posted vacancies were advertised for as much as 2 weeks with no qualifying responses from potential candidates. At the request of laboratory operations, team vacancies were published as “until filled” to allow laboratory administrators to attend to priority laboratory work-flow tasks while awaiting resumes of qualified candidates for review. Unfortunately, due to the comparative low pay offered (in comparison to the private hospitals and laboratories), shortages across the nation, and New York State licensure requirements, resumes for review were few or none.

Materials and Methods
As the laboratory staffing issue directly affected POCT performances and a system-wide reduction in test numbers and that was accentuated during the pandemic, our study data were collected using qualitative interviews and employee feedback to identify the factors that made staffing issues more challenging in our Gotham health ambulatory care clinics. We obtained the POCT numbers from our POC middleware Teclor and also verified the numbers through our Laboratory Information System, Cerner.

Results and Discussion
The spread of SARS-CoV-2 among the public, health care workers, and laboratory staff pushed the acute care hospital clinical laboratories to the breaking point. In addition, during the COVID-19 pandemic’s peak, a severe staff shortage started in the acute care hospital clinical laboratories due to skyrocketed admissions and in-house testing. In response to the request from the acute care hospital laboratories, most of our Gotham Health laboratory technical staffs were temporarily relocated. The impact on our POCTs started after the laboratory staff relocated to the acute care hospital laboratories to provide testing support during the pandemic’s peak. That caused significant delays or complete cessation of POCT operations in the clinics due to a lack of oversight support. There was also increased risk of increased vacated positions where staff already feel overworked, overwhelmed, and emotionally drained, causing professional burnout. The other significant challenges identified are noncompliance with vaccine mandates resulting in job dismissal and voluntary resignations in exchange for higher-paying laboratories, frequent sick calls due to mental fatigue, the retirement of seasoned staff, and the inability to attract qualified technologists to meet the demands of increasing test ordering patterns and laboratory supply shortages affecting staffs.

Staffing Challenges and POCT Impact
The relocation of Gotham Health laboratory staff to the acute care hospital clinical laboratories during the pandemic caused staff disappointment due to changing shifts and work hours (regular hours for Gotham Health staff is, 8 AM–4 PM), changes in job type (POCT monitoring versus bench testing), and job relocation (ambulatory care clinics versus acute care hospital clinical laboratories that were overwhelmed with admitted SARS-CoV-2 patients) and health safety issues similar to those of any frontline healthcare worker.

The citywide introduction of COVID-19 testing also created more hardship for our Gotham Health laboratory staff. Difficulties included fundamental tasks performed by limited staffing of a pandemic magnitude (Pandemic magnitude was meant here as the perceived or real level of threat of a pandemic), monitoring sample collection and specimen processing, and manual result entries to individual patient charts, which imposed a vast challenge regarding the enormous volume of specimen processing. Interfacing of results was not an option during the onset of the pandemic. Due to this vast and unprecedented workload, the transferred laboratory personnel were pulled back from the acute care hospital clinical laboratories, trained, and deployed to the abovementioned tasks. Even after the manual test ordering and resulting interface with the referral laboratories (partial), the immense workload remained persistent for months due to exceedingly large backlogs and ongoing test volume. Furthermore, the orientation and training of nursing staff at many testing sites to access COVID-19 specimens in the laboratory information system also harnessed (harnessed was meant here as being engaged, tied up or occupied with) the POCT oversight staff. Not only the laboratory staff issues but also reduced number of outpatient visits, telecommuting by providers in the clinics, nursing staff shortage, and absence due to illness and fatigue were the other issues that affected the total POCT numbers in our ambulatory clinics.

Recruitment and Retention Issues
At this stage, one of our POCT Coordinators resigned due to a schedule conflict, creating a confusing vacuum. As well as this unexpected vacancy and resulting added workload, our laboratory operations grappled with frequent sick calls (due to COVID-19) and increasing complaints of professional burnout from the overworked, overwhelmed, and emotionally drained staff. Recruitment efforts for a new laboratory technician were initiated. Advertising and recruitment took a few months to identify and onboard a qualified candidate due to the pandemic slowing human resources processes, the relative sparsity of interested and eligible candidates, and increasing vacancies in the other clinical laboratories. Meanwhile, one of the laboratory technicians received an offer from a higher-paying private laboratory, and another laboratory technologist nearing retirement stepped down due to health issues and stress due to increasing workload.

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The New York State SARS-CoV-2 Testing Consortium survey, conducted in May 2021, showed the average of open positions at member institutions had climbed to 12% and qualified candidates for posted positions were scarce.9 Our difficulties in hiring qualified candidates were consistent with the survey findings. As the Covid-19 pandemic slowed the overall process of recruitment, applicant scarcity made it worse. We mitigated the issue by hiring temporary laboratory technicians.

Not only recruitment but also workforce retention became challenging. Laboratory management tactics such as daily staff huddles, prospective monthly scheduling, and staff appreciation were used to somewhat enhance the work-life quality of staff. However, unfilled positions remained a significant issue with overall and diffuse impact.

Supply Shortages
Another important factor that affected our staff was the shortages of laboratory supplies during the pandemic. The qualitative analysis of recent survey responses nationally showed that laboratory supply shortages affected not only timely acquisition of laboratory reagents and supplies but also the job satisfaction and wellbeing of laboratory personnel.5 Gotham Health faced these hurdles; that is, shortages of supplies of blood collection tubes, reagents, needles, media, COVID-19 test kits, and personal protective equipment consumed critical time to validate alternative supplies, make procedure changes, and training, which led to testing and reporting delays. Eventually, shortages disrupted laboratory routine workflow, leading to stress and burnout. Furthermore, outsourcing tests to reference laboratories and borrowing supplies from other ambulatory clinics were required due to insufficient laboratory materials to complete tests on time, adding additional stress on the laboratory staffs.

Strategies were examined and executed to combat supply shortages and prevent the cessation of daily workflow for Gotham. Processes were executed: changes in vendors, borrowing from and loaning to other acute care hospital and ambulatory care clinic laboratories, use of alternative test supplies due to the extended backorder of essential supplies needed for specimen collection, decreased par levels in inventory, and continuous communication between vendors and providers, administration, and laboratory staff. Although little could be done to mitigate staff workload and stress, having supplies available for daily workflow was essential to the continuity of patient care.

The COVID-19 pandemic experience revealed a much-needed conversation about the staffing challenges that laboratories have long experienced. The experience has also identified work–life balance challenges and burnout among laboratory staff, as it profoundly affects our ambulatory care laboratory workforce and may accentuate future hurdles in clinical laboratory operations.

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