

Challenges of Conducting Point-Of-Care Testing Operations in the Municipal Public Health System Based Ambulatory Care Clinics in New York City

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ABSTRACT

Introduction: Our New York City Municipal Public Health System- based multisite ambulatory clinics that offer various waived POCT (point of care tests) and provider-performed microscopy (PPM) to our communities, 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 regarding regulatory compliance, test performance, quality control and training. With our day-to-day POCT operations, like all other clinical laboratories, our ambulatory care clinics encounter various hurdles and challenges. Here we elaborated on the issues that we encounter and how we manage to overcome them.

Method: We categorized the challenges that affect our managerial as well as field level laboratory operations and have devised ways to deal with those POCT operational issues.

Result: Among the staffing issues, rapid staff turnover causes significant delays or cessation of POCT operations in our ambulatory care clinics, due to orientation, re-education and ensuring competency to the staff, that conducts POCT in our clinics. Besides, supply shortages, staff shortages and absences due to illness and overwork are the issues, noted at the laboratory field operational level. Delays in the processing of paperwork and new staff recruitments and in the laboratory supply chains are notable management issues.

Conclusion: Even though the vastness and complexity of our multisite ambulatory care network sometimes affect our ambulatory care clinic POCT operation in a very challenging way, our timely, planned and coordinated intervention, close communication and initiatives handle those issues very effectively to ensure the quality of POC testing for the patient safety and care across our health system.

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Abbreviations

LSL: Limited-service laboratory; POCTs: Point-of-care tests; PPM: provider-performed microscopy

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The municipality based ambulatory care clinics of Gotham Health were first run under separate acute care hospital clinical laboratory limited-service laboratory (LSL) licenses owned by New York City. Our ambulatory care clinics of Gotham sites located through-out New York City's five boroughs, offer waived point-of-care tests (POCTs) and provider-performed microscopy to local populations, and also send out the all-other clinical tests to the different reference clinical laboratories (1).

Regarding test performance, quality control, regulatory compliance, and training, there was a great deal of variation existed among the clinics, before inception of these clinics under Gotham Health laboratory services. To reduce negative effects caused by variations in POCT processes, and to standardize and to enhance POCT operations across Gotham Health, the system-wide transfer of LSL from acute care hospitals was carried out by our laboratory services for the centralized deployment, monitoring and supervision. The successful implementation of POCT necessitates the involvement of a diverse team, specifically the laboratory professionals and the patient care team, who performs the POCTs in our clinics. Perhaps the most important success factor in the implementation is to understand the challenges of each phase and of the POCT performers at the operational level. This understanding may directly influence quality management techniques, such as performance indicators.

Currently, our qualified laboratory staffs maintain and update standard operating procedures, conduct quality assurance and validation of novel tests and devices, offer competency exams, and assist the clinical staff members, (who performs the POCTs and collects specimens for referral in those clinics i.e. PCA/Phlebotomists/Nurses/LPNs) adhere to state and federal regulations, currently in 28 clinics that make up the system (2).

This standardization allows quicker training and troubleshooting for the clinical teams doing POCTs. It ensures faster and more efficient delivery of the results to the providers of the POCTs they order. After the ambulatory care laboratory activities are implemented successfully, the quality metrics also significantly improve (3,4).

For the successful implementation and for better understanding, we have ascertained and categorized the challenges affecting laboratory operations at the field and managerial levels. In order to solve those POCT operational issues, we have also developed strategies. We collected study data through the daily inputs and periodic qualitative interviews of our laboratory and clinical staffs to identify the factors influencing the operational issues of POCT in our ambulatory care clinics at Gotham Health. This was required because such problems, which have been shown to be made worse by the recent COVID-19 pandemic (5), directly impact POCT performances and lead to a decline in test numbers throughout the system. We obtained the POCT results from Telcor, our POC middleware, and verified the figures with Cerner, our laboratory information system. The combination of all those qualitative interviews, inputs from the clinical and laboratory staffs, changes in the POCT numbers collectively help us ascertain the issues. The major challenges that we categorically identified, were rapid clinical staff turnover, delays in the processing of paper works and new staff recruitments, supply chain delays, specimen processing, triage and dis-patch to reference lab delays, transportation and pickup schedule delays, result reporting delays to physicians and patients.

More specifically, among the staffing issues, rapid turnover of clinical staff (i.e., RNs, PCAs, and other nursing assistants) disrupts orientation, re-education, and competency assessments for the staff members who perform POCT in our clinics, which results in significant delays or cessation of operations. Other noteworthy staffing issues at the laboratory field operational level include staff shortages and absences due to illness and overwork, as well as delays in the processing of paperwork during the recruitment of new staff. These issues are improving, but were particularly accentuated during the recent COVID-19 pandemic (5).

Delay in the laboratory supply chains is another management and operational issue, often caused by global delays, lack of raw materials and logistic delays. Both those staffing and supply chain disruptions often cumulatively and directly impacted and caused delays in specimen processing, triage and dispatch to reference lab delays, transportation and pickup schedule delays and result reporting delays to physicians and patients.

In order to address these challenges, we have implemented a number of strategies, including centralized, coordinated education planning and timely delivery of that planning to the nursing and clinical staffs; close monitoring of the laboratory service staff and re-source utilization; prompt communication and triage with the clinical staff regarding supply; transportation issues; and ongoing monitoring and follow-up with the laboratory services staff regarding illness, absence, or acute staff shortage. In order to address supply shortages and avoid the daily workflow from stopping, a number of strategies were investigated and put into practice, including switching vendors, borrowing from and lending to other ambulatory care clinic laboratories, occasionally even from acute care hospital labs, using alternative test supplies, lowering par levels in inventory and most importantly close and continuous communication between vendors and providers, administration and laboratory staff as having supplies available for daily workflow is essential to the continuity of patient care (5,6). Therefore, to monitor and improve care quality and compliance, we created and carried out system-wide laboratory internal audits to measure the effective-ness of these problem-solving strategies and noticed significant improvement in our laboratory workflow and overall quality in laboratory operations and in patient care (7).

The larger size and complexity of our multisite ambulatory care network can occasionally present a number of challenging issues for our ambulatory care clinic POCT operation but our prompt, planned and coordinated intervention, close observation and communication and swift initiatives effectively manage those problems to guarantee the quality of POC testing for patient safety and care throughout our health system, which is among the nation's largest municipal-based public health care systems.

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Conflicts of interest/Competing interests

The authors declare no conflict of interest.

Authors' contributions

TS and SA contributed to data collection, manuscript drafting and project planning. FHR involved in project planning, manuscript preparation and editing. All authors approved the final version for submission.

Ethical Consideration

Not applicable.

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