

COVID-19: Lab medicine expect due respect

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Commentary

In the Editorial of May 2020 issue of JFMPC on the COVID-19 pandemic preparedness, the members of our healthcare fraternity have raised many important issues.^[1] I am taking proud privilege to supplement unarticulated issues regarding preparedness and safety issues of the human resources related with all the levels of the primary health care laboratory services in this pandemic.

Unmitigated Pandemic

As a decade-long medical teacher of laboratory medicine, I feel that the laboratory services are working round-the-clock with the molecular epidemiologists as the backbone of control of this pandemic. Currently, I am working with all the fellow clinicians at this oldest medical college of Asia in unison with the entire frontline healthcare providers uncompromisingly since World Health Organization declared this pandemic at the beginning of this year. The chain of care of the CoVID-19 patients is managed holistically. Central labs are providing high quality of service ranging from sample collection from fever/flu clinics and in-patients departments, through testing to organization of report to the dedicated units for early decision and prompt care for best possible prognosis.

Lab Services at the Forefront

All the healthcare personnel in the lab services are providing great jobs by taking this pandemic as a challenge to combat. Specially

trained technicians themselves collect samples with utmost care and high precision risking their lives of getting infected in close contact with all the suspects and cases—samples include throat and nasal swabs, blood, and other secretions and body fluids. The sample tubes are packed in three-layer containers and transferred to lab; processing of different samples are done in the dedicated centrifuge instruments; vacutainers are de-capped under laminar airflow to minimize aerosolic spreads of infection (hospital-acquired infections, HAI); follows processing and testing under optimal protections of “Universal precautions” and “Biomedical waste management.” Truly, SARS-CoV-2 pandemic is exhausting already overburdened laboratory services, though the special tests have been compromised in the wake of “new normal” situation; human resource shortages are reported when laboratory personnel are infected and quarantined for stipulated periods. SARS CoV-2 virus has proven its noxious capacity to ravage civilization like a brushfire since the first case was reported in end of 2019. It need not mention that laboratory diagnosis is the mainstay in the SARS-CoV-2 pandemic that is the novel as well as the lifetime experience for all the healthcare providers in the world, in general and India, in particular. In the midst of the greatest disaster of this millennium, critical role of supportive services from research of newer diagnostic tool for improvement of rapid as well as correct diagnostic techniques cannot be underrated any more. The natural history of SARS CoV-2 is showing tortuous pathways by the virus in prepathogenesis and pathogenesis phases. Literature supports RT-PCR based detection of viral RNA from respiratory system samples as the mainstay of diagnosis; alternatives are ELISA, CBNAAT. Different research groups attempted to discriminate severe cases by correlating with varied laboratory abnormalities of high levels of ALT, D-dimer, LDH, Ferritin, IL-2R, IL-10, IL-6, TNF- α and CRP with down-regulation of IFN- γ expression, and lower Lymphocyte, CD4 and CD8 counts.^[2,3]

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No Compromise to Quality and Safety

The chain of events in the laboratory viz. identification of RNA-dependent RNA polymerase gene by RT PCR and other tests with comparable sensitivity and specificity remains the indispensable means for precise diagnosis of CoVID-19 infections for symptomatic cases. Further, for the asymptomatic contacts as well as carriers of infections, precise laboratory tests are also tools to prevent community transmission. Thus, it is crystal clear that the stakeholders have to improve utilization of expertise and competency of lab medicine personnel for higher precision of the molecular diagnosis in this critical situation in all the countries of the world. Other related issues are cropping up in different set ups even in developed countries. The provision of continuous supply of optimum quality of personal protective equipment (PPE) for consistent and correct use can save valuable healthcare services manpower. The samples sent for CoVID-19 testing, which are pharyngeal swabs and body secretion with highest probabilities of presence of the virus, from the most high-risk sources should follow Clinical and Laboratory Standards Institute (CLSI) guidelines in letter and spirit. All these need exigency of the preparedness of the labs to focus more on the essential tests that is corroborative about pandemic. We need to maintain a safe distance of two meter at workplace management, define turnaround time (TAT), use specialized kits to prevent spread among laboratory workers, which are expected by these unrecognized segment of “frontline warriors.” Further, CLSI expects optimum manpower organization with special attention to stress management of this segment of supportive healthcare services, who are relentlessly working without any recognition. American Association for Clinical Chemistry (AACC) mainly focused on narrowing on chemistry and immunochemistry analyzer, TAT maintenance, and human resource care in terms of work schedule and emotional quotient.^[4,5] Research groups also stressed on Good Laboratory Practices and Universal precautions in all the phases during this pandemic, from collection, transfer, processing, analysis, storage to disposal of samples. Frequent disinfection of the total lab services area with freshly prepared 0.1% Sodium Hypochlorite and Glutaraldehyde is “must” component of the system approach till the pandemic is over. Appropriate isolation rooms for centrifugation with earmarked donning and doffing areas can only minimize SARS COV-2 related health hazards.^[6]

To Summarize the Key Points

The laboratory investigation is the most important aspect of early diagnosis for prompt intervention to interrupt the chain of transmission from primary health care level. Therefore, there is an urgent need of holistic approach from the improvement of diagnostic tests with higher sensitivity and specificity, collection to reporting with universal precaution, and upgrading the laboratory infrastructure and biomedical waste management system. We have to spearhead our fight for the coming days not only by the updated logistics but also utmost care for healthcare worker “with a human face” for optimum output by giving tribute to all.

Take Home Message

“Justice delayed is justice denied”—the primary healthcare providers related with laboratory services should be honored and protected for the best outcome to halt this global disaster.

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Conflicts of interest

There are no conflicts of interest.

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