

Evaluation of a SARS-coV-2 variant surveillance program in a health network in Los Angeles, California

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Background: Throughout the COVID-19 pandemic, COVID-19 variants have emerged affecting community epidemic responses. We developed a program to monitor SARS-CoV-2 strains at a private university/health care system in Los Angeles.

Objective: Evaluate the strengths and weaknesses of a COVID-19 variant surveillance program.

Methods: We evaluated the program using the CDC Surveillance Systems framework. We extracted patient and student data from medical records (demographics, medical history, social history, immunizations), and clinical laboratory data. SARS-CoV-2 variant type was identified using digital droplet (dd) RT-PCR.

Results: Of the eight selected characteristics for evaluation, five were fully successful, two partially, and one required improvement. The fully functional components included the need for COVID-19 variant surveillance (usefulness), the ease of adding staff (flexibility, stability), cooperation alongside university administration (acceptability), and high accuracy of the ddRT-PCR variant assay (sensitivity). Data quality and simplicity fluctuated in effectiveness. Missing data ranged from 97.3% (reported mask usage, 1693/1736) to 0.5% (test result date: 9/1736). Data access was complex. Timeliness was hindered by the mean 73.5-day lag between the positive SARS-Co-V-2 test result and ddRT-PCR analysis. Weekly an average of 56.7 cases were data entered. Timeliness improved after January 1, 2022 with the addition of more staff.

Conclusion: COVID-19 surveillance among a large university population was feasible. Complex access to health data, student samples, and different accuracy levels in student and patient populations provided challenges. Timeliness was contingent upon the program's simplicity. Our findings should inform future university disease surveillance programs.