In the letter “New rapid diagnostic tests: a real improvement for clinical use?” by Fernández-Santos et al. (1), concern is raised regarding use of rapid influenza detection tests (RIDTs) for detection of influenza A and B viruses in patients due to their varied sensitivities.

A rapid diagnosis of influenza virus provides the opportunity to initiate antiviral therapy, reduce unnecessary antibiotic prescriptions, and limit additional diagnostic testing (2–4). Several studies have documented the varied sensitivities of lateral-flow RIDTs, especially their poor performance when new influenza virus strains emerge. These performance issues were partly related to the assays’ chemistry and components and the need for a subjective interpretation of the test result. To overcome these issues, a new generation of objective-read RIDTs (BD Veritor and Quidel Sofia) were developed. Both assays use proprietary chemistry and an assay-specific algorithm to display the test results on a digital screen. Our study was designed to compare the performance of the BD Veritor assay with that of one of the most popular RIDTs in clinical use for the detection of influenza virus A and B (5). Also, according to a 2013 College of Pathologists (CAP) survey, the BinaxNOW influenza A&B assay was predominant among all of the RIDTs (approximately 33% of respondents used this assay [612/1,859 pathologists]).

The performances of RIDTs are well studied in various clinical settings, and several factors seem to influence their sensitivities, including patient age, duration of illness, influenza activity, viral subtype, specimen type, and reference method used (5). In a meta-analysis of 159 studies, the authors reported comparable pooled sensitivities for BD Directigen (57.2%) and BinaxNOW (57%) and a lower sensitivity for the QuickVue (48.8%) subjective-read RIDT for influenza A and B virus detection (5). In contrast, a recent review of the new-generation objective-read RIDTs (Veritor and Sofia) and our recent study documented significantly higher sensitivities for these tests than for the previous subjective-read RIDTs (6, 7). Although it is always a good idea to include both pediatric and adult populations in a study, we did not have access to respiratory specimens from adults because our hospital is a children’s hospital. The patient’s median age in our study was 48 months (interquartile range, 33 to 96 months).

An ideal rapid diagnostic test for influenza viruses A and B should be highly sensitive and specific and provide a fast turnaround time, ideally less than 30 min, for proper management of patients in busy outpatient settings during the flu season. The improved objective-read RIDTs are best suited for outpatient settings due to their ease of use, rapid turnaround times, and, now, improved sensitivities. Further improvement in sensitivities is possible with molecular technology; among more than 20 molecular tests cleared by the FDA for influenza virus A and B, the Alere i influenza A and B and Liat IQoom influenza A and B assays promise rapid turnaround times that are acceptable for a busy outpatient setting. It remains to be seen if either of these rapid molecular tests offers a better diagnostic performance than objective-read RIDTs. According to their package inserts, Alere i influenza and Liat IQoom have sensitivities of 98 to 100% and specificities of 94 to 98% for influenza virus A and B against the culture method. It should be noted that these data were obtained under strict clinical trial conditions, and their performance in routine clinical settings may vary. More research studies are needed by clinical laboratories to compare the performance of these rapid molecular assays with that of the objective-read RIDTs. Results from any influenza test should be evaluated by the clinician in the context of the pretest probability, taking into account the epidemiology of the infection and the clinical symptoms of the patients. Laboratorians should consider the strengths and weaknesses of these assays prior to selecting and implementing the influenza assay best suited for their clinical setting to provide accurate results to clinicians and to ensure the best patient outcomes.

**REFERENCES**


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