CORRESPONDENCE

Comparison of SARS-CoV-2 Reverse Transcriptase Polymerase Chain Reaction and BinaxNOW Rapid Antigen Tests at a Community Site During an Omicron Surge

TO THE EDITOR: We congratulate Schrom and colleagues (1) on their important study on the diagnostic performance of rapid antigen and molecular testing of different sampling specimens for SARS-CoV-2. However, we question their conclusion that throat swabs (also called *oropharyngeal swabs*) are inferior to anterior nasal swabs.

The authors state that "throat (tonsillar) swabs" were collected from a subgroup of participants in the study but do not report further on the swab type (that is, the material and design) and sample technique. It is therefore unclear whether the posterior oropharyngeal wall—considered the essential specimen collection site for throat swabs—was also sampled in this study, as recommended by the Centers for Disease Control and Prevention (2). If no specimen from this site was included in the sample, it should be defined as a "tonsillar swab" instead of a "throat swab."

Details on how the investigators trained the laboratory assistants in collecting throat swabs before the study are also needed. Collecting throat swabs requires special anatomical knowledge and clinical skills to visualize and swab the posterior oropharyngeal wall without touching the tongue and cheek. Therefore, the Centers for Disease Control and Prevention recommends that only trained health care providers should collect throat swabs in order to avoid false-negative results. Although the laboratory assistants in Schrom and colleagues' study were certified and experienced in collecting nasal swabs, their experience with throat swabs may have been limited. As they collected all the throat swabs during a single day, many of these may have been obtained at the initial stage of a learning curve (3).

Finally, whether the laboratory assistant collected 1 swab for antigen testing and a new swab for molecular testing is unclear. Furthermore, were the throat swabs subsequently collected after the 2 nasal swabs, or was the order randomized? If the laboratory assistants collected throat swabs last, the sample quality might decrease because of participant discomfort during the third and fourth swabs.

The sensitivity of throat swabs for SARS-CoV-2 using molecular testing is much lower in Schrom and colleagues' study (58/96 [60%]) than in a systematic review that reported a difference in sensitivity of 12 percentage points for throat swabs compared with nasal swabs (4). The greater sensitivity of throat swabs reported in previous studies may indicate that the laboratory assistants in Schrom and colleagues' study performed a suboptimal throat sample procedure. However, direct comparison is difficult because specimen collection descriptions are missing; these should be reported according to the Standards for Reporting of Diagnostic Accuracy guidelines (5).

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Disclosures: Disclosures can be viewed at www.acponline.org/authors/icmje/ConflictOfInterestForms.do?msNum=L22-0256.

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References

1. Schrom J, Marquez C, Pilarowski G, et al. Comparison of SARS-CoV-2 reverse transcriptase polymerase chain reaction and BinaxNOW rapid antigen tests at a community site during an Omicron surge. A cross-sectional study. Ann Intern Med. 2022;175:682-90. [PMID: 35286144] doi:10.7326/M22-0202
2. Centers for Disease Control and Prevention. Interim Guidelines for Collecting and Handling of Clinical Specimens for COVID-19 Testing. 2022. Accessed at www.cdc.gov/coronavirus/2019-ncov/lab/guidelines-clinical-specimens.html on 6 June 2022.
3. Todsen T, Bohr A, Hovgaard LH, et al. Valid and reliable assessment of upper respiratory tract specimen collection skills during the COVID-19 pandemic. Diagnostics (Basel). 2021;11. [PMID: 34829333] doi:10.3390/diagnostics11111987
4. Tsang NNY, So HC, Ip DKM. Is oropharyngeal sampling a reliable test to detect SARS-CoV-2? Authors' reply [Letter]. Lancet Infect Dis. 2021;21:1348-9. [PMID: 34363770] doi:10.1016/S1473-3099(21)00402-3
5. Bossuyt PM, Reitsma JB, Bruns DE, et al; Standards for Reporting of Diagnostic Accuracy. Towards complete and accurate reporting of studies of diagnostic accuracy: the STARD Initiative. Ann Intern Med. 2003;138:40-4. [PMID: 12513043]

IN RESPONSE: We appreciate Drs. Todsen and Benfield's request to clarify the method of specimen collection used in our study. Samples were collected by trained and certified technicians or health care professionals who were bilingual (Spanish and English) and had been working for at least 1 year at the Unidos en Salud outdoor walk-up community testing site. Collection of multiple swabs from individual clients using standardized procedures has been done commonly at this site over the past 2 years and is a familiar procedure. The training for sample collection included review of oral pharynx anatomy and practice sample collection, with time for questions and feedback by the health professional trainer. Puritan 6-inch sterile standard foam swabs with polystyrene handles (Puritan Medical Products) were used for sample collection.

As recommended in the Centers for Disease Control and Prevention guidelines cited by Drs. Todsen and Benfield, the health provider inserted the swabs into the posterior pharynx and tonsillar areas; rubbed the swab over both tonsillar pillars and the posterior oropharynx; and avoided touching the tongue, teeth, and gums. The sample collection procedures were described to participants in their preferred language. We did not randomize the order of nasal (first) and oral (second) specimen collection. No change was observed in providers' standard collection procedure during collection because of "participant discomfort." On the days the specimens for the study were collected, there was onsite oversight by study physicians for collection of the samples.

We are continuing to systematically evaluate the performance of rapid tests as SARS-CoV-2 variants evolve and the symptoms that persons are experiencing change. We will aim to include this important information on specimen collection according to guidelines in subsequent reporting.

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