Home-based testing as an approach to estimate influenza vaccine effectiveness in South Africa, 2022 – a pilot study

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Abstract

Background. Surveillance programmes for influenza and other respiratory pathogens are important to generate vaccine effectiveness (VE) estimates and to inform vaccine composition. We aimed to explore the feasibility and acceptability of home-based testing. **Methods** In 3/9 provinces in South Africa, we established a self-referral system for individuals aged [?]18 years with respiratory symptoms of [?]10 days duration. Following electronic consent, swab collection material was delivered to participants who also completed a questionnaire including self-reported vaccination status. Swabs were tested by PCR for influenza, respiratory syncytial virus (RSV) and SARS-CoV-2. A test negative methodology was used to estimate influenza VE. **Results** Of 1456 samples collected between 1 December 2021 and 31 August 2022, 73 (5%) tested positive for influenza, 38 (3%) tested positive for RSV and 394 (27%) for SARS-CoV-2. We subtyped 55% (40/73) of the influenza positive specimens; 16/40 (40%) were influenza A (A(H1N1)pdm09; 10/40 (25%)A (H3N2)) and all 14/40(35%) influenza B were B/Victoria. Only 20% (279/1451) of participants reported influenza-like illness case definition symptoms of fever and cough. Influenza vaccine coverage was 11% (157/1454). The overall influenza VE was 26% (95% confidence interval, -73%;69%). Of the completed acceptability questionnaires, 123/127 (97%) participants would make use of the service again. 36% (46/127) of enrolled participants were recruited through the testing centre's webpage and 13% (17/127) through social media. **Conclusions** Home-based swabbing was feasible and acceptable. We were able to calculate an influenza VE, although a large sample size and verification of vaccine status may improve the VE estimate in the future.

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