

Use of antigen rapid diagnostic tests to gauge the level of COVID-19 infections in South Sudan

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South Sudan confirmed the first case of COVID-19 on 5 April 2020. Since then, the country has experienced two waves. By the 42nd epidemiological week only 247,059 samples were tested and 12,293 cases confirmed with a positivity of 5%. South Sudan is still on alert despite a decrease in confirmed cases for six consecutive weeks as of 28 October 2021.^[1]

To gauge the level of COVID-19 infections in the country the National Task Force (NTF) on COVID-19 issued a directive to “carry mass testing to both public and private institutions through rapid diagnostic tests.”^[2] This directive was driven by the recognition that there is currently inadequate COVID-19 testing in the country, with most (>80%) of the samples tested coming from Juba (mostly from pre-travel screening at eight private laboratories).^[3]

Recognizing the need to optimize testing in South Sudan, the Ministry of Health (MOH) issued guidelines in March 2021 for use of antigen rapid diagnostic tests (Ag-RDTs) as an alternative to the nucleic acid amplification test (NAAT). These guidelines were approved by the Medical Advisory Panel (MAP) and referenced in the “Updated MAP-COVID-19 Travel Guidelines March 2021.” Additionally, the MOH developed an implementation plan for the rollout of Ag-RDTs including the procurement of 10,000 Ag-RDT kits, training of 380 healthcare workers across 112 health facilities, and incentives for state trainers and healthcare workers in the facilities.

As of 15 December 2020, three Ag-RDTs have received World Health Organization (WHO) Emergency Use Listing (EUL) approval for detection of SARS-CoV-2 viral antigens:

1. Standard Q COVID-19 Ag test from SD Biosensor Inc.
2. Abbott-Panbio COVID-19 Ag test for nasopharyngeal swab specimens.
3. Abbott-Panbio COVID-19 Ag test for nasal swab specimens.

Available WHO reports on the three Ag-RDTs show that they meet the minimal performance requirements compared to the NAAT gold standard.

To implement the NTF guidance on the use of Ag-RDT for COVID-19 testing, the Epidemiological Surveillance Technical Working Group recommends the following:^[4]

1. Response to suspected outbreaks of COVID-19 in remote settings, institutions, or congregate communities where access to PCR testing is not immediately available.
2. Outbreak investigations by rapid response teams in closed settings like schools, prisons, workplaces, etc.
3. Monitor trends in incidence among health workers and other essential workers in counties with widespread transmission.
4. Testing asymptomatic and symptomatic contacts of confirmed cases. Contacts of PCR-confirmed cases with negative Ag-RDT result should be quarantined until confirmed negative with a PCR test.
5. In counties with widespread community transmission, Ag-RDTs can be used for early detection of symptomatic cases and isolation of positive cases in health facilities, prisons, schools, and screening of front-line health workers.
6. Mass testing using Ag-RDT in non-congregate settings such as government ministries, private companies, offices of non-government organizations, or other workplaces undertaken to investigate a suspect outbreak or to rapidly identify cases in an institution located in a county experiencing widespread community transmission.
7. For case finding (i.e., suspected cases, symptomatic patients/or travellers, and contacts of confirmed cases).