social impacts) will be performed once sufficient evidence is available and when full market authorization has been granted.

E. Affordability and viability

As mentioned, the initial survey of DOH and DTI on the cost of rapid antigen in the Philippines shows that the median costs of rapid antigen testing (based on charge) are PhP 700 and PhP 1,000 for non-hospital-based and hospital-based government facilities, respectively. Among the private institutions, the median costs recorded (based on charge) are PhP 1,500 and PhP 1,800 for non-hospital-based and hospital-based facilities, respectively.

V. Recommendations *(as 27 September 2021)*

A. The HTAC **maintains that RT-PCR remains the standard diagnostic test for COVID-19**, and would like to emphasize that the following *interim recommendations on rapid antigen testing are subject to change* pending new evidence.

B. We reiterate the previous HTAC recommendation that rapid antigen tests when positive are most useful in immediately identifying COVID-19 cases and therefore can be used to initiate contact tracing, epidemiological surveillance and clinical management. In *Table 2*, HTAC recommends the **use cases, intended population, sample specimen, interpretation of results, repeat antigen testing and contact tracing**.

Table 2. HTAC Recommendations for Rapid Antigen Testing

Recommended Use Cases *[UPDATED]*	The HTAC **does not recommend the use of rapid antigen tests** for indiscriminate use in mass screening, for return-to-work clearance and for COVID-19 diagnosis in individuals with low index of suspicion (i.e., asymptomatic and no history of exposure). Rapid antigen tests are currently recommended **by HTAC only for very specific purposes:** ● For **targeted screening and diagnosis of suspected and probable cases of COVID-19** (i.e., with a high index of suspicion), meeting the clinical and/or epidemiologic criteria in the hospital or community settings as defined below: ● *Suspected cases of COVID-19* are individuals: ○ with acute onset of the following signs and symptoms adopted on the WHO clinical criteria, (Fever, cough, general weakness/fatigue, headache, myalgia, sore throat, coryza, dyspnea, anorexia/nausea/vomiting, diarrhea, altered

	mental status, anosmia (loss of smell) or ageusia (loss of taste)) **OR** ○ satisfying the following epidemiology criteria): ■ Residence or work in an area with high risk of transmission of virus (e.g. congregate settings) ■ Residence or travel to an area with community transmission ■ Work in any healthcare setting ● *Probable cases of COVID-19* are: ○ Individuals meeting the above clinical criteria AND is a contact of a probable or confirmed case or linked to a cluster of COVID-19 cases ○ Suspect cases with chest imaging suggestive of COVID-19 ○ Individuals with sudden onset of anosmia (loss of smell) or ageusia (loss of taste) in the absence of any other identified cause. ○ Death, (1) not otherwise explained; **AND** (2) in an adult with respiratory distress preceding death; **AND** (3) was: (a) contact of a probable or confirmed case; **OR** (b) linked to a COVID-19 cluster. *(Note: Added fourth criterion was also included in the WHO definition of probable COVID-19 case dated 07 August 2020)* ● For testing of patients in the hospital setting, where the turnaround time is critical, to guide patient cohort management in order to minimize transmission of COVID 19 among healthcare workers and other patients. (Hospitals are high-risk settings among healthcare workers and patients.) Otherwise, use RT-PCR in case of elective procedures; ● For targeted screening and diagnosis of suspect and probable cases of COVID-19 (as defined above) in presumptive outbreaks where the result of the RT-PCR test of a one suspect case has not yet been released and in settings where RT-PCR is not immediately available or when delayed release of result or prolonged turnaround time is expected (i.e., more than 48 hours).

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For local border screening at points of entry for individuals travelling from areas:

with a confirmed outbreak (DC 2020-0397);
with a suspected outbreak (Interim Guidance Document on Cholera Surveillance, 2017);
with a presumptive outbreak (where the result of the RT-PCR test of one suspect case has not yet been released, and in settings where RT-PCR is not immediately available, where delayed release of the result, or a prolonged turnaround time is expected based on HTAC Recommendation on the used of Rapid Antigen Test published April 2021);
classified as moderate or high-risk based on average daily attack rate /Two Week Growth Rate (ADAR/2WGR), or as reported by the DOH-Epidemiology Bureau for areas under Alert Level 1 to 4; and,
with unknown ADAR/2WGR even if fully vaccinated (wherein high prevalence/incidence can be assumed due to some localized reported and/or unreported outbreaks).

For local border screening of working individuals who cross borders at least 2-3 times per week, results of RAgT should be valid within 48 hours after the conduct of the test.

</td></tr>
<tr><td>Intended Population
[UPDATED]</td><td>

In general, the RAgT can be used for individuals with a high index of suspicion:

Symptomatic individuals with or without known exposure (For symptomatic individuals, RAgT is recommended to be performed within the first 5-7 days after the onset of symptoms for best results.)
Asymptomatic individuals with exposure (For asymptomatic individuals with exposure, the RAgT is recommended to be performed from 4 to 11 days after exposure, even before symptoms develop.)

The RAgT is not recommended for use by individuals with a low index of suspicion (i.e., asymptomatic individuals without history of exposure)

<table>
<tr><th></th><th>WITH history of exposure</th><th>WITHOUT history of exposure</th></tr>
<tr><td>WITH symptoms</td><td>HIGH index of suspicion: Recommended for rapid antigen testing</td><td>HIGH index of suspicion: Recommended for rapid antigen testing</td></tr>
<tr><td>WITHOUT symptoms</td><td>HIGH index of suspicion: Recommended for rapid antigen testing</td><td>LOW index of suspicion: NOT recommended for rapid antigen testing</td></tr>
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		Applicable to guide patient cohort management to minimize transmission of COVID 19 to healthcare workers and other patients	

- The intended population for RAgT includes individuals with the following exposure:
    - People in **close contact with a suspected, probable or confirmed case** (e.g., household members, workmates). Examples would be:
        - Face-to face contact with a suspected, probable or confirmed case within 1 meter and for at least 15 minutes;
        - Direct physical contact with a suspected, probable or confirmed case;
        - Direct care for a patient with probable or confirmed COVID-19 disease without using recommended personal protective equipment;
        - Other situations as indicated by local risk assessments
        - Note: Window of exposure to suspected, probable or confirmed case is anywhere between 2 days before or within 14 days of onset of symptoms.

    - People coming from the following areas**:**
        - **with a confirmed outbreak (DC 2020-0397);**
        - **with a suspected outbreak** (Interim Guidance Document on Cholera Surveillance, 2017)**;**
        - **with a presumptive outbreak** (where the result of the RT-PCR test of one suspect case has not yet been released, and in settings where RT-PCR is not immediately available, where delayed release of the result, or a prolonged turnaround time is expected)**;**
        - classified as **moderate or high-risk** based on average daily attack rate /Two Week Growth Rate (ADAR/2WGR), or as reported by the DOH-Epidemiology Bureau **for** areas under Alert Level 1 to 4; and,
        - with unknown ADAR/2WGR even if fully vaccinated (wherein high prevalence/incidence can be assumed due to some localized reported and/or unreported outbreaks)

	○ People residing in the following areas: ■ **closed or semi-closed institutions** (as defined in DM 2020-0468), ■ **crowded areas** (i.e., more than one person per three square meter circular area or those sharing common facilities) **with presumptive outbreak** (as defined above**) or confirmed outbreaks** (per DC 2020-0397) ■ **areas with a high positivity rate (***i.e., ≥5%, in accordance with WHO standards***) averaged over a seven-day period** ○ People **working in areas with presumptive outbreak** (as defined above**) or confirmed outbreaks** (per DM 2020-0397) ● If sufficient testing capacity is available, serial rapid antigen testing *at least weekly* in congregate settings (e.g., workplaces, prisons, nursing homes) with **moderate transmission** and *at least twice weekly* for areas with substantial or **high community transmission** is recommended (*US CDC Interim Guidance for SARS-CoV-2 Testing and Screening at Institutions of Higher Education, 2021*). ● Finally, the HTAC **does not recommend the use of RAgTs to issue clearances for return to work or for earlier release from quarantine** because of the likelihood of false negatives.
Sample Specimen	The specimens to be collected for RAgT must be nasal, nasopharyngeal and/or oropharyngeal swabs.
Interpretation of Results	● It is recommended that **individuals with positive rapid antigen test results (positive for COVID-19)** be isolated and managed as COVID-19 cases. ● For **individuals with a high index of suspicion and who tested negative using rapid antigen tests should be isolated until they can be confirmed negative by RT-PCR or repeat antigen results (DM 2021-0169).** ○ The confirmatory RT-PCR test for those who tested with negative rapid antigen test result should be done at least within 48-72 hours from the initial antigen test. **It is important to always correlate the test results with the overall clinical and epidemiological context (e.g., history of exposure).** The previous recommendation was for a confirmatory RT-PCR test for those who test negative.

	However, this was found impractical in community settings where RT-PCR laboratories may not be accessible.
Other recommendations	Other overarching recommendations of the HTAC are as follows: ● Publicize standards on diagnostic performance to address the observed wide variability of performance in all COVID-19 testing kits in the market ● Strengthen system for monitoring and evaluation of compliance of manufacturers to regulatory standards and post-marketing requirements. Departmental constraints must be addressed to enable strict compliance and to add teeth to implementation. ● Testing (using RAgTs or NAATS) should be used in addition to other health measures such as minimum public health standards (including the use of face masks/face shields), physical distancing, ventilation, quarantining/isolation, symptom-based screening and contact tracing ● The HTAC is actively on the watch for evidence as it is rapidly evolving, and shall update its recommendation when new information becomes available.

C. The HTAC likewise maintains its **previously recommended minimum sensitivity and specificity which are 80% and 97% for Rapid Antigen Tests,** respectively. These were adapted from the UK Medicines & Healthcare products Regulatory Agency and the World Health Organization Interim Guidance. Further to this, **RAgT must also satisfy the following 2021 recommended minimum regulatory, technical and operational specifications set by the HTAC** found in Table 3**.**

Table 3. Recommended specifications for RT-PCR kits using NPS/OPS and saliva specimens

Parameter	Requirement (HTAC recommendation 2020)	Requirement (updated as of 19 April 2021)
Regulatory Requirement	Must have a certificate of product registration (CPR) or emergency authorization (EA) from the FDA Philippines	Must have a certificate of product registration (CPR) or emergency authorization (EA) from the FDA Philippines
Test kit package content	It is desirable that rapid antigen test kits contain all materials and accessories necessary for the procedure.	It is desirable that rapid antigen test kits contain all materials and accessories necessary for the procedure.
Result output	Qualitative, result must be read visually or with a reader but must be operable using batteries	Qualitative, result must be read visually or with a reader but must be operable using batteries
Human resource training	Less than half a day to no additional training needed for healthcare	***Minimum of 4-hour long training needed for healthcare professionals to be able to***

	professionals to be able to optimize performance	***optimize performance Training module available at WHO (https://extranet.who.int/hslp/content/sars-cov-2-antigen-rapid-diagnostic-test-training-package)***
Biosafety concerns	Can be done without the need for BSL 2 or 3 facilities, provided that there is evidence that the live virus was deactivated early in the process	Can be done without the need for BSL 2 or 3 facilities, provided that there is evidence that the live virus was deactivated early in the process
Clinical Sensitivity	At least 80% sensitivity A useful assessment is the sensitivity of the test in patients with a rRT-PCR cycle threshold (Ct) below a specific value (e.g., 28 or 30)	At least 80% sensitivity A useful assessment is the sensitivity of the test in patients with a rRT-PCR cycle threshold (Ct) below a specific value (e.g., 28 or 30)
Clinical Specificity	At least 97% specificity	At least 97% specificity
Processing Time	Less than 2 hours from sample collection to result	Less than 2 hours from sample collection to result
Reference Standard	In-house laboratory RT-PCR test or if commercial RT-PCR test, must adhere to the specification stipulated in the HTAC Guidance Document on RT-PCR test kits	In-house laboratory RT-PCR test or if commercial RT-PCR test, must adhere to the specification stipulated in the HTAC Guidance Document on RT-PCR test kits
Sample Requirement in Validation Studies	Positive samples: minimum of 30 positive specimens Negative samples: 30 negative specimens Include details such as: ● specimen type ● specimen collection date ● date of onset of symptoms (if present) ● date of PCR testing ● severity of symptoms (if known) ● tests used to identify COVID19 patients, etc.	Positive samples: minimum of 30 positive specimens Negative samples: 30 negative specimens Include details such as: ● specimen type ● specimen collection date ● date of onset of symptoms (if present) ● date of PCR testing ● severity of symptoms (if known) ● tests used to identify COVID19 patients, etc.
Requirement for Independent Validation	Must have been validated by an independent or a third-party reputable government or private research institution including but not limited to the following: ● Research Institute for Tropical Medicine (RITM)	RAgTs must be authorized by the Philippine Food and Drug Administration, and validated by any of the following: ● Research Institute for Tropical Medicine (RITM) ● US Food and Drug Administration (US-FDA)

	• UP National Institutes of Health (NIH) • US Food and Drug Administration (US-FDA) • World Health Organization, Foundation for Innovative New Diagnostics (WHO-FIND) • Therapeutic Goods Administration (TGA, Australia) • Medicines and Healthcare products Regulatory Agency (MHRA, UK) • Japan Pharmaceuticals and Medical Devices Agency	• World Health Organization, Foundation for Innovative New Diagnostics (WHO-FIND) • Therapeutic Goods Administration (TGA, Australia) • Medicines and Healthcare products Regulatory Agency (MHRA, UK) • Japan Pharmaceuticals and Medical Devices Agency • ***Other DOH-designated institutions for test kit validation recognized by RITM in its letter to the Secretary of Health dated 01 April 2021 (Annex A) unless these laboratories are developing their own test kits***
Transport and Storage Requirements	The storage and working temperature can be 18 to 30 °C. It should be used in a controlled environment.	The storage and working temperature can be 18 to 30 °C. It should be used in a controlled environment.
Shelf-Life	Shelf-life should not be shorter than twelve (12) months at the time of delivery	Shelf-life should not be shorter than twelve (12) months at the time of delivery
Calibration Requirement	If calibration is required, it can be done onsite	If calibration is required, it can be done onsite
Cost of test kit ***[Updated]***	The cost of the RAgT kit should be significantly less than the cost of the RT-PCR test kit	The total cost of the initial and possible repeat testing using the RAgT kit should not exceed the *government price cap for Rapid Antigen Testing based on DOH Department Circular 2021-0323 (i.e., Php 960.00)*.