

Testing strategy: prioritization according to epidemic stage

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1.1. CONTEXT

On July 28th, the operational test capacity for COVID-19 PCR in the country is estimated at 30.000 tests. In the past 7 days, the daily number of tests performed ranged between 12.000 and a peak of more than 20.000 tests on 28/7.

Several actions have already been taken to upscale the capacity (work in progress). But with an increasing number of new cases (leading to a higher number of contacts to be tested), a need to investigate more clusters and local or larger outbreaks, and the expected increase in number of tests to be performed in autumn/winter (co-circulation of other respiratory virus), it is important to set testing priorities according to the level of virus circulation, in order to use the available resources in the most optimal way.

The aim of this advice is therefore to set the testing priorities by stage of the epidemic, to be applied according to the available test capacity at that moment. Since the goals are different by stage (e.g. mitigation vs. containment, different priorities are identified. It should also be recalled that testing is only one part of the overarching strategy to control the epidemic. Priorities will be influenced by other measures, circumstances and evolutions (e.g. travel restrictions, strict social distancing measures, suspension of non-essential medical activities, availability of PPE and laboratory materials, other sampling techniques ...) and cannot be uncoupled from these.

This advice only concerns the prioritization of testing. Other important aspects of the testing strategy will be addressed separately (sample type, pooled testing, multiplex tests).

1.2. RECOMMENDATION

1.2.1. Prioritization by stage of the epidemic

In the document "Processus d'identification signal et gestion des situations de cas groupés ou de recrudescence de nouveaux cas d'infection à COVID-19 dans la population – volet Santé", elaborated jointly by Sciensano and the federal and federated health authorities, criteria were set to define several stages of the epidemic (pre-alarm/alarm/epidemic). For each stage, a list of persons that should be tested is presented in the table in Annex 1, by order of priority. The GEES also proposed a color scheme for distinguishing the different stages of the epidemic, based on similar criteria as those set by the health authorities. However, a classification by color is also used for other settings (e.g. travelers and classification of countries), based on other thresholds, which is confusing for the health professionals and the general population. To avoid adding to the confusion, the GEES color coding was not used for test prioritization. In general, a unified use of thresholds/color classification system should be implemented.

Of note is that the thresholds are not absolute and should always be interpreted according to qualitative parameters to characterize the threat. Also important is that the table presents the priority order for testing if the capacity is insufficient, according to the indications for testing as they have been identified previously. This does not mean that there is an obligation to test all the categories listed.

1.2.2. Prioritization in case of a local outbreak

The staging and prioritization in the table (Annex 1) correspond to a classification at national level. In case of an outbreak at local level (collectivity, municipality or larger geographical zone), specific target groups for testing can be identified. This should be done on a case by case evaluation by the competent regional health authorities, depending on the epidemiological characteristics of the outbreak (age groups, subpopulations or specific communities, geographical spread...). It is not possible to define a

unique strategy for large scale testing for “a cluster or local outbreak”. However, at regional level, several guidelines for specific settings have been developed. ECDC is also working on a guidance document for specific outbreak investigations, e.g. in nosocomial settings, potential ‘superspreading’ events (e.g. mass gatherings), and other special occupational settings, expected during the month of August. Depending on its applicability, this document may be used to adapt the current guidelines when appropriate or prepare new guidelines.

In general, large scale testing in case of an outbreak is only useful if it can be performed within a short time period (1-2 weeks), in a more or less closed community (closed collectivity or travel restrictions).

Additional large scale testing (e.g. through a testing street in a town or for cultural/sports events) can only be performed if it is based on a parallel system to the existing capacity, in order to not interfere with routine testing capacity, which must remain available for at least the priority groups levels 1 to 3 for the stage of pre-alarm, and levels 1 to 4 for the other two stages (cfr table Annex 1). This implicates additional resources for sample collection (or different sampling technique, see further), administrative labeling and laboratory analyses.

1.2.3. Other recommendations

- Testing can never replace quarantine !
- The RAG reiterates its previous advice not to perform large scale testing of asymptomatic persons for general screening (e.g. employers of a company, sportspeople...): the result of the test is a snapshot, and only says something about the day of the test itself. Even if a test is negative on this day, it does not mean that the person is not infected; he/she may still be in the incubation period and therefore become contagious a few days later. Testing of asymptomatic persons is only useful if there has been a possible exposure (close contacts) or in case of a cluster/outbreak, to identify and stop possible chains of transmission. If new technologies become available (such as saliva testing), additional target groups could be identified for screening of asymptomatic infections, such as regular screening of health care workers (HCW) in nursing homes, providing that the test capacity is available, and if it is not competing with the priority targets identified in the current advice.
- A national coordination body is needed to follow-up and manage the laboratory capacity at national/subnational level, with possible flow of resources (reagents, swabs) and/or samples between laboratories within a province and between provinces/regions. Actions are ongoing to improve this (including discussions with RIZIV/INAMI for reimbursement agreements).
- Laboratory results should ideally be available within 24h after sampling, to rapidly trigger contact tracing and quarantine for contacts. If this is not possible and the capacity is exceeded at national level (despite coordination by a national body), then testing should be prioritised following the priority groups identified.
- Laboratories should have more information on the reason of the test (several categories on the e-form), to be able to decide which test should be performed first, within their own capacity, following the same priorities set. This is foreseen but not implemented yet.
- Information on the reason for testing is also important to assess the proportion of positive cases resulting from increased contact tracing and screening, versus an increase in symptomatic persons. This is key to understand and evaluate the dynamics of the epidemic.
- Physicians (general practitioners and emergency wards in hospitals) should be in charge of testing of symptomatic persons that fulfil the criteria of a ‘possible case’ as defined in the case definition as priority, as such persons require clinical evaluation.
- All persons with an indication for testing should be counselled by a health care worker on the significance of a positive or negative test result, and the importance to adhere to hygiene measures, quarantine and participation to contact tracing.
- Other sampling techniques should be explored, such as saliva samples, which would allow to be self-sampled by the population. Several studies are ongoing in Belgium. A RAG advice on this topic will be prepared by the end of August. This advice will also explore the possibility of pooling samples. However, even using other sampling techniques, the (pre- and post-analytical) workload at the laboratory will persist and should be taken into account.

- The definition of a symptomatic case might need to be assessed again during winter time, to narrow it down (if test capacity is not sufficient).
- Previous RAG advices on testing strategy are still valid and can be find here:
Measures for returning travellers: https://covid-19.sciensano.be/sites/default/files/Covid19/20200701_Advice_RAG_quarantine%20for%20travellers_1.pdf
Recommendations for contacts: https://covid-19.sciensano.be/sites/default/files/Covid19/20200422_Advice_RAG_guidelines%20contacts.pdf

1.3. ELEMENTS OF DISCUSSION

- The priorities are set at national level, since the situation can evolve rapidly and regional clusters can quickly spread to other provinces/regions. Especially in case of local increase of incidence, support from other provinces/regions is crucial.
- Despite continuous improvements made, it is currently still not possible to fulfil the theoretical test capacity with the available manpower/resources, in the absence of a coordination at national level.
- Coordination and increase of number of testing centers according to the level of virus circulation is also crucial.
- As a basic rule, priority should be given to persons that are not/cannot be put in quarantine, compared to people who have to stay in quarantine anyhow e.g. contacts of cases and returning travellers. For that reason, returning travellers have not been included anymore in the priorities for testing during the stage of widespread circulation of the virus.
- There should be concordance between this prioritization and the one available on the e-form.
- For close contacts, performing 1 test is of higher priority than 2 tests (as soon as possible after identification of the contact, except for persons professionally in contact with people at risk of severe disease for whom the test is performed at the end of the quarantine period).
- Testing contacts is only useful if all symptomatic cases are tested.
- Although the general recommendation for HCWs presenting symptoms is that they should stay home, or, if the continuity of service is compromised, work with adequate PPE, testing of symptomatic HCWs has been identified as a priority because pauci-symptomatic positive COVID-19 staff can be dedicated to COVID services. Moreover, surveillance and data with regards to the extent of infection among of HCWs has been lacking so far. Finally, if a HCW develops compatible symptoms, it is essential for him/her to know whether these are COVID-19-related or not, in order to alleviate the stress impact of continuous high-risk exposure to the virus..
- Testing for surveillance purposes, for COVID-19 and influenza, remains a high priority, but this has not been added to the priority listing, since the analysis are performed by the Virology laboratory of Sciensano, which is not involved in the clinical diagnosis of COVID-19 cases.

The following persons participated to this RAG advice:

Annelies Aerssens (UZGent); Leïla Belkhir (UCL); Brigitte Bouton (AViQ) ; Steven Callens (UZGent); Laura Cornelissen (Sciensano); Bénédicte Delaere (CHU-UCL Namur); Michèle Gerard (CHU St Pierre); Herman Goossens (UA); Alice Hannecart (Sciensano); Daniel Te-Din Huang (CHU-UCL Namur); Sofieke Klamer (Sciensano); Tinne Lernout (Sciensano); Pierrette Melin (ULiège); Paul Pardon (FOD); Stefan Teughels (Wachtposten Vlaanderen); Steven Van Gucht (Sciensano); Dirk Wildemeersch (AZG).

Observer : Patrick Waterbley (SPF Santé Publique).

Annex 1: Prioritization by level of alert

Order of priority	“Pre-alarm” Cumul Inc 14d < 15/100.000	“Alarm” Cumul Inc 14d 15-50/100.000	Epidemic Cumul Inc 14d > 50/100.000
1	Symptomatic	Symptomatic	Hospitalized symptomatic
2	Cluster investigation in collectivity	Cluster investigation in collectivity	Cluster investigation in collectivity
3	Close contacts 2 tests	Close contacts 1 test	Symptomatic HCWs
4	New entry in a nursing home	New entry in a nursing home	New entry in a nursing home
5	Non COVID-19 hospitalizations in risk services	Non COVID-19 hospitalizations in risk services	Non hospitalized symptomatic belonging to risk group for severe disease
6	New entry in a residential collectivity other than nursing home	New entry in a residential collectivity other than nursing home	Non COVID-19 hospitalizations in risk services*
7	Returning travelers from red zone	All new non COVID-19 hospitalizations	New entry in a residential collectivity other than nursing home
8	Returning travelers from orange zone	Close contacts 2 nd test	All new non COVID-19 hospitalizations
9	Pre-travel request**	Returning travelers from red zone	All symptomatic
10		Pre-travel request**	Close contacts 1 test

* If reaching peak of wave with the interruption of non-essential hospital activities (as observed during the first wave), this group would represent a limited number and should figure also at priority level 5

** Not recommended but requested by some countries