

## Report

### COVID-19 Testing in Sri Lanka: An Overview

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#### **1. Introduction**

Despite the best efforts of health workers on the frontlines in combatting the virus thus far, recent increases in the number of cases demonstrate that the public health crisis presented by COVID-19 is far from averted.

As we attempt to phase out of the lockdown that the country has been in over the last month, it is clear that new challenges will emerge, with new policy mechanisms required to deal with them. As we have seen even in countries where transmissibility was thought to have fallen to zero<sup>1</sup>, the phasing out of the lockdown is likely to result in a second wave of infections. The extent of this spread and the damage it inflicts will be determined by the efficacy of policies undertaken during this period.

Given the expectation of this second wave, increased COVID-19 testing represents a key part of any successful strategy, providing us with the detailed information required to coordinate an effective response. This report will illustrate why high levels of testing are crucial, looking at the various factors influencing the testing process in the Sri Lankan context and suggesting ways that testing capacity may be increased. It will also highlight issues of confidentiality, media ethics and the use of state power with regard to testing; examining how the protection of individual rights does not hinder, but instead facilitates the achievement of positive public health outcomes.

The recommendations put forward have been informed by interviews carried out with health professionals, studies from public health organisations and where relevant, examinations of successful practices, undertaken by countries with an analogous profile.

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<sup>1</sup> <https://www.telegraph.co.uk/news/2020/04/21/singapore-went-leading-global-covid-19-efforts-having-cases/>

## 2. The Testing Process

There are a number of testing methods that have been carried out globally, however the utility of different forms of testing differ based on context and the extent to which the virus has already spread throughout a country.

### Methods of Testing

- *Polymerase Chain Reaction (PCR) testing*, involves the detection of RNA from the virus. These tests are the gold standard in COVID-19 detection because of their ability to allow us to identify cases from the beginning of the infection, detecting structures from the virus itself.
- *Antibody or IgG/IgM testing*, on the other hand, involves the detection of antibodies produced in the body of the individual who is infected, where detection can only occur 7-10 days after infection.

### Suitability for Community Testing

Given Sri Lanka's circumstances, where the focus is on early detection of COVID cases in the community, PCR tests represent the most reliable method currently available. This is due to their ability to detect cases from the very beginning of an infection, which is especially important with regard to the detection of hidden cases within the community.

There have previously been calls by organisations such as the Government Medical Officers Association (GMOA) to carry out mass antibody testing. However, in the current context in which we are attempting to carry out early detection to prevent the spread of the virus, these tests are not a diagnostically useful substitute for PCR testing. Indeed, in certain states in Australia, for instance, these tests have been prohibited or had strict conditions attached to their use to prevent the proliferation of misleading information about the presence or absence of the illness.<sup>2</sup>

### Antibody Testing at a Later Stage

Despite this, antibody testing may come to be useful at a later stage of our response, as well as for specific epidemiological purposes lying outside of the need for early detection. In countries where there has already been widespread infection within the community, such as the UK, these tests may be useful for checking how many people have already caught the disease. However, for present purposes in Sri Lanka, it is clear that PCR testing must be focused on in order to paint an accurate picture of the extent of the spread within the community.

## 3. Ministry of Health PCR Testing Strategy

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<sup>2</sup> <https://www.tga.gov.au/covid-19-point-care-tests>

At the initial stages PCR testing capacity was limited with regard to machines, test kits, swabs and viral transport media. As such, the Ministry of Health's case definition was restricted in order to ensure that tests were being efficiently used.<sup>3</sup>

When testing was initially expanded within hospitals, the expansion of testing was not accompanied by a correspondingly high increase in the number of cases detected. Thus, the relatively low rate of testing was argued to be in line with cost-benefit principles at that stage.<sup>4</sup>

The strategy thus relied on the health system's strengths with regard to contact tracing<sup>5</sup>, preventing transmission through the identification and quarantining of individuals most at risk, instead of testing individuals in the community (mass-scale testing) or random checking.

However, the recent expansion of testing in the community has resulted in a high yield of asymptomatic COVID positive individuals. This has resulted in a postponement of plans to end the shutdown in Colombo, Gampaha, Kalutara and Puttalam districts. This increase in the number of positive cases once community testing began, indicate that there are more hidden cases in the community than previously believed.

Any attempts to phase out of the lockdown will inevitably encounter complications as a result of these hidden cases, as we have seen in various countries. In Singapore, where transmissibility was thought to have been brought down to zero through a similar system of contact tracing, ending the shutdown coincided with a significant spike in the number of cases.<sup>6</sup> It is likely that any potential reopening of the economy will open the door for community transmission of the virus, no matter how effective contact tracing may have been thus far.

#### **4. Testing Data and Policy**

Currently, those being tested according to Ministry of Health guidelines<sup>7</sup> are:

- Those with acute respiratory illness (e.g. cough, shortness of breath, sore throat) who have/have had a fever returning to Sri Lanka from any foreign country.
- Those with acute respiratory illness and have been in close contact with a confirmed or suspected COVID-19 case.

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<sup>3</sup> According to health professionals working with the Ministry of Health who were interviewed for this report.

<sup>4</sup> *ibid*

<sup>5</sup> This is the process of identification of persons who may have come into contact with an infected person and the subsequent collection of further information in order to reduce infections in the population.

<sup>6</sup> <https://edition.cnn.com/2020/04/18/asia/singapore-coronavirus-response-intl-hnk/index.html>

<sup>7</sup> [http://www.epid.gov.lk/web/images/pdf/Circulars/Corona\\_virus/scan-160.pdf](http://www.epid.gov.lk/web/images/pdf/Circulars/Corona_virus/scan-160.pdf)

- Those with acute respiratory illness and who have/have had a fever who have travelled to or reside in a location designated as a high risk area (as defined by the epidemiology unit) 14 days prior to the onset of symptoms.
- A patient with acute pneumonia regardless of travel or contact history.
- A patient with fever who is in respiratory distress regardless of travel or contact history without a definable cause.
- Any person irrespective of the presence of symptoms with an epidemiological link to a confirmed COVID-19 case.

In the past week, the number of tests being conducted has been at a rate of over 600 a day,<sup>8</sup> before the Ministry of Health's welcome decision to begin increasing rates of testing to over a thousand a day on the 23<sup>rd</sup> of April<sup>9</sup> (with 1141 people being tested that day).<sup>10</sup>

At the beginning of the outbreak, it may have indeed been the case that a smaller number of tests allowed us to paint an accurate picture of the level of the outbreak. However, as the virus continues to spread, these samples become less and less representative, with more hidden cases spreading throughout the community. Further increasing rates of testing will be essential in order to provide a clearer map of the extent of transmission.

A study by the Institute for Health Policy called for testing to be expanded to include all those stipulated by the Ministry of Health's guidelines, in addition to:

- PCR testing of all arrivals,
- IgG/IgM testing of non-close/secondary contacts,
- PCR testing of all ICU admissions,
- PCR testing of all hospital deaths suspected to have infectious origins,
- Either PCR testing of saliva of all outpatients with both fever and respiratory symptoms, or testing of a systematic sample, and
- Individuals suspected by a doctor to have contracted COVID-19 who do not fit the case criteria.

As highlighted, reopening the economy may require a significant increase in testing capacity as the number of people who begin to meet these criteria rises. In countries where the spread of the virus has been effectively contained, such as Vietnam, testing is carried out at a rate of 750 per confirmed case, in comparison to 27 tests per case in the Sri Lankan context.<sup>11</sup>

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<sup>8</sup> These numbers were obtained through interviews with health professionals working with the Ministry of Health on the COVID-19 response.

<sup>9</sup> <http://www.ft.lk/front-page/COVID-19-cases-soar-to-368-with-29-sailors-testing-positive/44-699185>

<sup>10</sup> These numbers were obtained through interviews with health professionals working with the Ministry of Health on the COVID-19 response.

<sup>11</sup> <https://ourworldindata.org/what-can-data-on-testing-tell-us-about-the-pandemic>  
<https://covidsl.com/>

Of course, strategies cannot be transplanted from other countries wholesale. There are the specificities of context that need to be considered and health policy must be adjusted accordingly. However, the question of testing is one that is applicable cross contextually and is indispensable for the formulation of effective measures to deal with the spread of the virus.

A high rate of testing per case, as achieved by Taiwan, allows for a more accurate map of the epidemiological terrain. As the infection spreads throughout the country, this high number of tests per case gives us greater certainty about the true number of infected people. The accuracy of such information is crucial in a context where even knowledge of one further case could have huge ramifications for policy.

Crucially, PCR test based surveillance will also allow early warnings of potential outbreaks. Such detailed knowledge of where infection is likely to take place is crucial for the execution of an effective exit strategy. That is, it will allow us to make decisions with regard to timelines and specific courses of action as we attempt to return to normal public life.<sup>12</sup> For instance, this knowledge will allow us to know which areas are most safe to phase out of lockdown first and which specific regulations we may be able to relax.

## **5. Expanding Testing Capacity**

### *1. Sri Lanka's Current Testing Capacity*

PCR testing requires PCR test kits (including reagents), PCR machines, viral transport medium and swabs. After issues with initial shortages, viral transport media are now being manufactured by the Medical Research Institute (MRI) and the Sri Lanka Institute of Nanotechnology (SLINTEC) is at the final stages of locally manufacturing swabs.<sup>13</sup>

There are currently 13 testing centres in the country. In addition to these testing centres, there are a number of facilities with PCR machines, which have been unable to conduct testing due to the non-availability of other necessary infrastructure such as biosafety cabinets.<sup>14</sup> At the moment there are 34 hospitals in which samples are collected, with these hospitals having the necessary trained staff to conduct sampling<sup>15</sup>. If requested equipment, such as biosafety cabinets, are provided, testing can take place at a rate of approximately 1350 tests per day.<sup>16</sup>

Professional bodies such as the Ceylon College of Physicians, Sri Lanka Medical Association and Sri Lanka College of Microbiologists have called for an increase of testing capacity to at

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<sup>12</sup> <https://ccpsl.org/wp-content/uploads/2020/04/Exit-strategy-CCPSL-English-presentation.pdf>

<sup>13</sup> <https://www.slintec.lk/slintec-produces-swabs-for-covid-19-tests/>

<sup>14</sup> An enclosed laboratory work space for working with materials contaminated with pathogens.

<sup>15</sup> [http://epid.gov.lk/web/images/pdf/corona\\_virus\\_report/sitrep-sl-en-24-04\\_10.pdf](http://epid.gov.lk/web/images/pdf/corona_virus_report/sitrep-sl-en-24-04_10.pdf)

<sup>16</sup> According to estimates provided by health professionals working with the Ministry of Health.

least 1500 tests per day.<sup>17</sup> The aforementioned study undertaken by the Institute for Health Policy, estimates that a minimum of 2055 tests per day will be necessary to bring transmissibility to zero, with 6000 tests a day being the ideal amount.<sup>18</sup>

## II. Methods of Expanding Testing Capacity

There are a number of cost effective measures which may be taken in order to increase testing capacity, which shall be examined below.

- *Making Use of PCR Machines Outside of the Health System* - There are a number of PCR machines in science faculties and research institutes where they are used for genetic testing on plant material for instance. However, the staff and the infrastructure at these institutions are not equipped to handle highly infective material. One possible solution is for PCR machines to be transported and pooled in current testing centres, where staff trained to operate them are available.
- *Purchasing More PCR Test Kits* - The most significant limiting factor is the availability of PCR testing kits, which are in short supply. The kits being used currently are those that have been donated by Singapore.<sup>19</sup> Given the current price of a testing kit at 4000-5000 rupees when bought in bulk, it may be more cost effective to prioritise the purchase of PCR testing kits as opposed to machines, whilst making better use of the PCR machines available.
- *Making Use of 'GeneXperts'* - In addition to PCR machines already available in the country, machines called 'GeneXperts' (which are currently being used to test for tuberculosis) may also be used for COVID-19 testing. The reason these cannot be used at the moment is a lack of cartridges, which would allow for the testing of COVID-19 as opposed to tuberculosis. However, these cartridges have been promised to the Ministry of Health by UNICEF.<sup>20</sup>

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<sup>17</sup> <https://slma.lk/wp-content/uploads/2020/04/Press-Statement-Testing-for-COVID-19-Final-converted.pdf.pdf>

<sup>18</sup> <http://www.ihp.lk/blogs/ravi/wp-content/uploads/2020/04/IHP-Sri-Lanka-PCR-Testing-Requirements-v1.0-1.pdf>

<sup>19</sup> <https://www.mfa.gov.lk/sl-hc-singapore-facilitates-12500-covid-19-test-kits-to-sl/>

<sup>20</sup> According to health professionals working with the Ministry of Health who were interviewed for this report.

### III. Role of the Private Sector

The private sector may have an important role to play in allowing scarce government resources to be retained, whilst allowing those who do not meet the Ministry of Health's conditions to be tested. The government recently announced that the private sector would be involved in PCR testing.<sup>21</sup> However, this involves the government paying for tests to be conducted using PCR machines in the private sector. It does not involve the loosening of restrictions with regard to the ability of private individuals to get themselves tested.

Private sector PCR testing of private individuals who wish to be tested is currently permitted; however, this is on the condition that people are:

- Charged no more than 6000 rupees,
- That they meet the Ministry of Health's stipulations required for testing as highlighted previously, and
- That they are admitted to the hospital.<sup>22</sup>

These conditions were set so as to prevent the exploitation of patients as well for the ease of tracing positive individuals by the epidemiology department.

The price cap was put in place to ensure that the private sector did not exploit the anxieties of the general public and indeed there is a sound argument to be made that some price cap should be in place. However, the level of the price cap of 6000 rupees is currently financially unfeasible given the costs of both testing and admission. This may be avoided either by setting the price cap at a slightly higher amount or preferably by foregoing the requirement that those who get tested have to be admitted.<sup>23</sup> In combination with a system in which individuals can provide a sample to be tested at any government hospital (as will be explored in the next section), this may allow for a much higher testing coverage in future.

## 6. Encouraging Testing

Apart from considerations of capacity, we must consider how we may ensure that people who contract the virus are willing to get tested.

Though indeed individuals have a responsibility to their fellow citizens to disclose symptoms and get tested if they believe themselves to be infected, many aspects of the current process may discourage people from doing so. Castigation of those who avoid getting tested, without considering those factors which may cause this avoidance, is counterproductive with regard to the achievement of public health goals. Instead, structural

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<sup>21</sup> <http://www.themorning.lk/private-hospitals-to-conduct-pcr-tests/>

<sup>22</sup> [http://www.epid.gov.lk/web/images/pdf/Circulars/Corona\\_virus/scan127.pdf](http://www.epid.gov.lk/web/images/pdf/Circulars/Corona_virus/scan127.pdf)

<sup>23</sup> Issues regarding ease of tracing when patients are not admitted will be addressed in section 6.1.

issues must be dealt with to make it as likely as possible that those who develop symptoms do get tested.

In addition to ensuring access to information by making it widely available in all three languages, steps must be taken to make testing more accessible for individuals who, whilst informed, may be discouraged or face barriers to testing. These include:

- I. Reducing the difficulty of the testing process by allowing samples to be collected at any government hospital and transporting the samples for testing.
- II. Addressing economic issues that may prevent individuals from being tested.
- III. Ensuring privacy of COVID positive individuals.
- IV. Maintaining public trust in the health response by preventing the abuse of state power.

#### *I. Difficulty of the Testing Process*

If an individual believes that they may have contracted the virus, the process of getting tested is a fairly difficult one. Currently one is unable to go home after providing a sample for a test. Those suspected of having the virus are admitted to a group isolation unit, where they are required to stay till a swab is taken and until results are available.

If someone does not believe their condition is serious enough to warrant going through this process (where the range of people tested is to be expanded as per the suggestions highlighted previously), we may lose out on the possibility of detecting a COVID-19 case at the outset.

One alternative to this may be to allow patients to provide a sample at any government hospital, with this sample being transported to a testing centre without the need to admit them until results come back (unless treatment is necessary). This would require providing instructions to staff at each government hospital with regard to the handling of samples.

The risk of being unable to track someone with a positive diagnosis who may cause further infections, can be easily mitigated and must also be weighed against the possibility of patients not testing in the first place.

There are a number of measures that can be taken to deal with tracing individuals who test positive and have gone home. For instance, whilst those who test negative may be provided with their results via phone, those who test positive may have their results delivered in person by a Public Health Inspector, after which they may be taken for treatment. These same stipulations may also be applied to testing conducted in the private sector.



## II. Economic Deprivation

Barriers to testing as a result of economic deprivation must also be taken into account as part of an informed testing strategy.

As the economy once again reopens, many of those who may suspect that they have the illness but are not experiencing severe symptoms may choose not to undergo testing for fear of loss of income. This loss of income may be felt more acutely after already suffering financially during the lockdown period. For those in this position, the opportunity cost of the time spent being tested and being treated may seem too high, perhaps rendering them unable to support their families.

One possible way to mitigate this is to ensure that assistance is provided if necessary, for the families of those who test positive. This may be in the form of a package of essential items for instance, provided for the duration of a family member's admission. In addition to providing specific forms of assistance of this kind, the effects of economic deprivation and vulnerabilities must be taken into consideration more broadly as further testing strategies are formulated.

## III. Confidentiality, Privacy of Patients and Media Ethics

The role of the media must also be taken into account as one of the factors that may discourage individuals from being tested. Many individuals may be deterred due to the possibility of receiving unwanted media attention, or in many instances, racist backlash. Instances where the faces of COVID positive patients have been shown on television, in combination with an antagonistic media and public reaction, create a hostile environment for anyone who needs to be tested.

At the level of the health system, though the usual stipulations with regard to doctor-patient confidentiality apply (though there is an exception granted to the Government as per the Quarantine Ordinance<sup>24</sup>), there are currently no specific guidelines provided as per the privacy of those who test positive. Given the exceptional nature of this particular health issue, specific regulations may be necessary.

This will not however, solve the issues of privacy stemming from poor media ethics. Despite the release of guidelines on COVID reporting by the Ministry of Health<sup>25</sup>, television stations

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<sup>24</sup> The existing legislation underpinning the public health response, such as the Quarantine Ordinance and the Contagious Disease Ordinance, are both from the British colonial period. Legal infrastructure will need to be updated in order to cater to evolving public health needs, and for this to happen a reconvening of Parliament will be required.

<sup>25</sup> <http://www.ft.lk/news/Health-Ministry-issues-guidelines-on-COVID-19-reporting/56-698459>

continue to violate ethical standards.<sup>26</sup> This could significantly damage the public health response if left unresolved.

#### *IV. Preventing the Abuse of State Power*

Apart from our democratic responsibility to prevent the abuse of state power, it must be noted that our ability to do so is key to ensuring the success of the COVID-19 response itself.

Public willingness to cooperate with the government depends on trust that the crisis will not be used as an excuse to pursue ulterior political ends. As such it is crucial to ensure that those involved in implementing the public health response on the ground are unable to abuse their powers.

A government circular from the 8<sup>th</sup> of April revealed that many individuals had previously been quarantined ‘unnecessarily’ and ‘without any rationale behind (doing so)’.<sup>27</sup> Such occurrences are particularly worrying in a context in which the Muslim community have been made scapegoats for the spread of the virus.<sup>28</sup>

If Sri Lanka’s public health strategy is to be successful, it must be ensured that those involved in implementation are not able to quarantine individuals arbitrarily or use the ongoing public health initiative to conduct arrests for political purposes. Communities must be assured that implementation of the COVID-19 response is carried out on the basis of epidemiological evidence, and not racial or political prejudices.

In this regard, an effective COVID-19 response depends on public trust, which is in turn dependent upon the responsible and just use of state power. The efficacy of the public health strategy is thus not at odds with, but rather continuous with the general imperative to safeguard the rights of citizens and maintain democratic values.

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<sup>26</sup> <https://twitter.com/EthicsEye/status/1253634362433843202/photo/1> (Verité Research Media Ethics Project)

<sup>27</sup> [http://www.epid.gov.lk/web/images/pdf/Circulars/Corona\\_virus/scan168.pdf](http://www.epid.gov.lk/web/images/pdf/Circulars/Corona_virus/scan168.pdf)

<sup>28</sup> <http://www.ft.lk/front-page/GMOA-s-COVID-19-exit-strategy-advocates-racial-profiling/44-698943>