

Facing Omicron and Future New
Variants of
SARS-CoV-2 Virus

January 2022



Government Medical Officers' Association

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1. Introduction

COVID-19 pandemic originated in Wuhan, China in the latter part of 2019 and was 1st detected in Sri Lanka in early 2020, with detection of the first foreign patient on the 27th of January, 2020 and the first local patient on the 11th of March, 2020.^{1,2} Since then, the world has experienced several waves of the COVID-19 pandemic, even with the vaccination program in place. Though the periodic rise in numbers could be attributed to lapses in public health measures, emergence of new variants of SARS-CoV-2 virus has also contributed to these spikes.

In keeping with the usual nature of viruses, SARS-CoV-2 virus has also developed many mutations over time. These mutations have contributed to changes in initial viral properties causing changes in disease spread, disease severity and effectiveness of vaccines.³

WHO as the international body of United Nations responsible for public health, has been monitoring emergence of new viral variants in order to initiate prompt actions in the event of detecting a variant that could potentially cause a great public health burden. In this regard, the WHO has defined Variants of Interest (VOIs) and Variants of Concern (VOCs).⁴

The most recent variant, B.1.1.529 later named Omicron, was reported from South Africa in November 2021. With the rapid spread and hence increased hospitalization rates, the Technical Advisory Group on SARS-CoV-2 Virus Evolution (TAG-VE) declared Omicron variant as a VOC.⁵

Research on this new variant is still underway and the transmissibility and disease severity are not well established. The initial data indicated an increase in the rate of hospitalization in South Africa.⁶ However, at present, the rate of spread is declining in South Africa, while more than 110 countries have reported patients infected with Omicron and currently available data indicates a reduction in hospitalization compared with the Delta variant.⁷

¹ Epid.gov.lk. 2022. [online] Available at: <https://www.epid.gov.lk/web/images/pdf/corona_virus_report/sitrep-sl-eu-28-01.pdf> [Accessed 10 January 2022].

² Epid.gov.lk. 2022. [online] Available at: <https://www.epid.gov.lk/web/images/pdf/corona_virus_report/sitrep-sl-en-12-03_10.pdf> [Accessed 10 January 2022].

³ Who.int. 2022. Tracking SARS-CoV-2 variants. [online] Available at: <<https://www.who.int/en/activities/tracking-SARS-CoV-2-variants/>> [Accessed 11 January 2022].

⁴ Who.int. 2022. Tracking SARS-CoV-2 variants. [online] Available at: <<https://www.who.int/en/activities/tracking-SARS-CoV-2-variants/>> [Accessed 11 January 2022].

⁵ Who.int. 2022. Classification of Omicron (B.1.1.529): SARS-CoV-2 Variant of Concern. [online] Available at: <[https://www.who.int/news/item/26-11-2021-classification-of-omicron-\(b.1.1.529\)-sars-cov-2-variant-of-concern](https://www.who.int/news/item/26-11-2021-classification-of-omicron-(b.1.1.529)-sars-cov-2-variant-of-concern)> [Accessed 10 January 2022].

⁶ Who.int. 2022. Update on Omicron. [online] Available at: <<https://www.who.int/news/item/28-11-2021-update-on-omicron>> [Accessed 11 January 2022].

⁷ WHO (2021) 'Enhancing readiness for Omicron (B.1.1.529): Brief and Priority Actions for Member States', 2021(November), pp. 1. [online] Available at: [https://www.who.int/publications/m/item/enhancing-readiness-for-omicron-\(b.1.1.529\)-technical-brief-and-priority-actions-for-member-states](https://www.who.int/publications/m/item/enhancing-readiness-for-omicron-(b.1.1.529)-technical-brief-and-priority-actions-for-member-states) [Accessed 10 January 2022].

Simultaneously, member countries of United Nations are expected to strengthen surveillance including carrying out gene sequencing with reporting and sharing the data.⁸

With the increased incidence of COVID-19 across the world, concerns were raised about the effectiveness of the vaccines against Omicron which was found to have more mutations than the previous viral variants. Available research has shown some immunity against the Omicron following booster doses, even though the efficacy was not up to the level of Delta variant.⁹

However, vaccination remains a vital step in containing SARS-CoV-2 Omicron variant, along with adherence to public health measures.¹⁰

1.1 Measures to face Omicron and new variants

Since the recent variant of SARS- CoV-2; Omicron has been declared a VOC by WHO, several actions are recommended for the affected countries. These include “enhancing surveillance and sequencing of cases; sharing genome sequences on publicly available databases, such as GISAID; reporting initial cases or clusters to WHO; performing field investigations and laboratory assessments”.¹¹

Further, all countries are expected to adhere to public health measures, which have been designed according to the requirements of each country despite the status of the vaccination programmes.¹²

Considering the current situation of Sri Lanka, the need in addressing following aspects to achieve control of COVID 19 is identified.

1. Defeating myths on vaccination and promoting booster dose
2. Promoting testing facilities including self-testing
3. Strengthening of Home-Based Care Management System
4. Continuing Practice of DReAM concept
5. Promoting Research and Evaluation

⁸ Who.int. 2022. Classification of Omicron (B.1.1.529): SARS-CoV-2 Variant of Concern. [online] Available at: <[https://www.who.int/news/item/26-11-2021-classification-of-omicron-\(b.1.1.529\)-sars-cov-2-variant-of-concern](https://www.who.int/news/item/26-11-2021-classification-of-omicron-(b.1.1.529)-sars-cov-2-variant-of-concern)> [Accessed 10 January 2022].

⁹ Planas, D. *et al.* (2021) ‘Considerable escape of SARS-CoV-2 variant Omicron to antibody neutralization’. [online] Available at: <<https://www.biorxiv.org/content/10.1101/2021.12.14.472630v1>> [Accessed 12 January 2022].

¹⁰ Who.int. 2022. Update on Omicron. [online] Available at: <<https://www.who.int/news/item/28-11-2021-update-on-omicron>> [Accessed 11 January 2022].

¹¹ Who.int. 2022. Classification of Omicron (B.1.1.529): SARS-CoV-2 Variant of Concern. [online] Available at: <[https://www.who.int/news/item/26-11-2021-classification-of-omicron-\(b.1.1.529\)-sars-cov-2-variant-of-concern](https://www.who.int/news/item/26-11-2021-classification-of-omicron-(b.1.1.529)-sars-cov-2-variant-of-concern)> [Accessed 10 January 2022].

¹² WHO (2021) ‘Enhancing readiness for Omicron (B.1.1.529): Brief and Priority Actions for Member States’, 2021(November), pp. 14. [online] Available at: [https://www.who.int/publications/m/item/enhancing-readiness-for-omicron-\(b.1.1.529\)-technical-brief-and-priority-actions-for-member-states](https://www.who.int/publications/m/item/enhancing-readiness-for-omicron-(b.1.1.529)-technical-brief-and-priority-actions-for-member-states) [Accessed 10 January 2022].

2. Defeating myths on vaccination and promoting booster dose

2.1 Vaccines against SARS-CoV-2

Emergence and progression of SARS-CoV-2 led to expedited research and development of efficacious vaccines against the virus to achieve a reduction in disease morbidity and mortality, with modified yet unabridged clinical trials.¹³ The ensuing research on efficacy of such vaccines and worldwide data on vaccination status have revealed a remarkable reduction in disease-related adverse outcomes including disease mortality rates.¹⁴

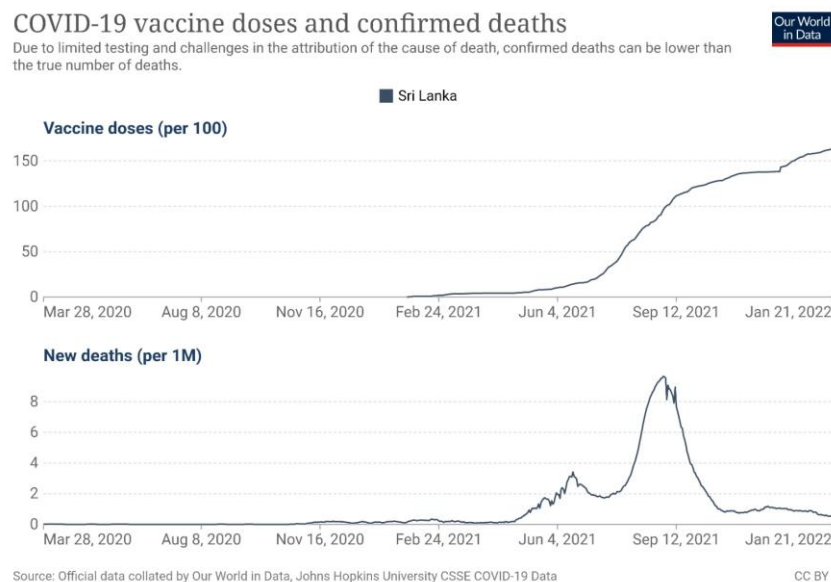


Figure 1: The progress of the vaccination programme and the pattern of COVID-19 disease mortality rate in Sri Lanka.¹⁵

Having identified the importance of vaccination against COVID-19, World Health Organization had developed a strategy to equally distribute the vaccines in order to minimize the negative impact on health systems. The goal was set to achieve full vaccination of 10% of the world's population by end of September 2021, 40% by end of December 2021 and 70% by end of June 2022.

Unfortunately, there is an evident inequality in vaccine distribution depending on the financial status of countries hindering the goal of diminishing the disease burden, regaining socio-economic status that had been there prior to the current pandemic and reducing the risk of emergence of new variants of the virus.¹⁶

Even with the increased production of approved vaccines against SARS-CoV-2 virus, many countries have been unable to meet the above goals. Though economic instability

¹³ Hodgson, S., Mansatta, K., Mallett, G., Harris, V., Emary, K. and Pollard, A., 2021. What defines an efficacious COVID-19 vaccine? A review of the challenges assessing the clinical efficacy of vaccines against SARS-CoV-2. *The Lancet Infectious Diseases*, 21(2), pp.e26-e35.

¹⁴ Moghadas, S., Vilches, T., Zhang, K., Wells, C., Shoukat, A., Singer, B., Meyers, L., Neuzil, K., Langley, J., Fitzpatrick, M. and Galvani, A., 2021. The Impact of Vaccination on Coronavirus Disease 2019 (COVID-19) Outbreaks in the United States. *Clinical Infectious Diseases*, 73(12), pp.2257-2264.

¹⁵ Our World in Data. 2022. COVID-19 Data Explorer. [online] Available at: <<https://ourworldindata.org/explorers/coronavirus-data-explorer?zoomToSelection=true&time=earliest..2022-01-21&uniformYAxis=0&pickerSort=asc&pickerMetric=location&Metric=Vaccine+doses+and+confirmed+deaths&Interval=7-day+rolling+average&Relative+to+Population=true&Color+by=test+positivity=false&country=~LKA>> [Accessed 22 January 2022].

¹⁶ WHO (2021) 'Strategy to Achieve Global Covid-19 Vaccination by mid-2022'. Available at: https://cdn.who.int/media/docs/default-source/immunization/covid-19/strategy-to-achieve-global-covid-19-vaccination-by-mid-2022.pdf?sfvrsn=5a68433c_5.

would have contributed to this failure, myths circulated among the public should not be ignored.

2.2 Myths on COVID vaccines and legal implications

As of 20th January 2022, 64.56% of the population of Sri Lanka has been fully vaccinated. However, the rate of booster dose administration seems to be lagging with just 22.47% of the population receiving it.¹⁷

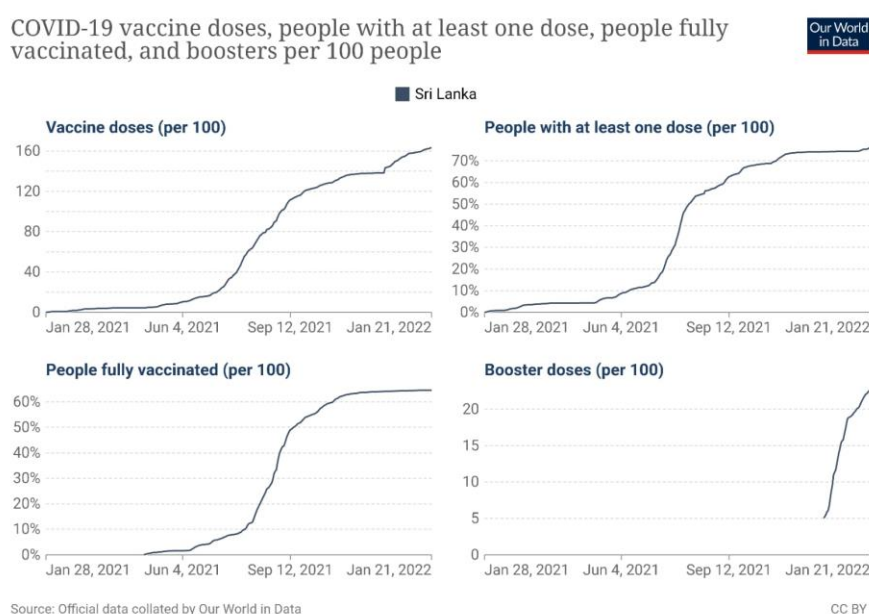


Figure 2: Progress of the COVID -19 vaccination programme in Sri Lanka¹⁸

The lack of willingness to receive the booster dose is concerning, considering the well-established immunization programme in Sri Lanka. At the early stages of vaccination against SARS-CoV-2, the public response had been favourable towards the vaccination programme.¹⁹ However, the current waning of interest might be driven by the myths and rumors regarding the vaccines.²⁰ It is important to take measures to counteract such myths and rumors by way of improving knowledge through reliable sources and by taking legal actions when the situation necessitates it.

In Sri Lanka, legal action for persons aiding and abiding spread of communicable diseases can be taken under the Penal Code.²¹ Further provisions of the Quarantine Ordinance can

¹⁷ Our World in Data. 2022. COVID-19 Data Explorer. [online] Available at: <<https://ourworldindata.org/explorers/coronavirus-data-explorer?zoomToSelection=true&time=2021-12-09..2022-01-20&facet=none&uniformYAxis=0&pickerSort=asc&pickerMetric=location&Metric=Vaccine+booster+doses&Interval=7-day+rolling+average&Relative+to+Population=true&Color+by+test+positivity=false&country=~LKA>> [Accessed 21 January 2022].

¹⁸ Our World in Data. 2022. COVID-19 Data Explorer. [online] Available at: <<https://ourworldindata.org/explorers/coronavirus-data-explorer?zoomToSelection=true&time=earliest..2022-01-21&uniformYAxis=0&pickerSort=asc&pickerMetric=location&Metric=Vaccine+doses%2C+people+vaccinated%2C+and+booster+doses&Interval=7-day+rolling+average&Relative+to+Population=true&Color+by+test+positivity=false&country=~LKA>> [Accessed 22 January 2022].

¹⁹ Wijesekara, N. et. al., 2021. Eighty-six percent of Sri Lankans Wish to Receive COVID-19 Vaccine: A Window of Opportunity for Rolling Out a Successful Vaccination Campaign. *International Journal of Community Resilience*. DOI:[10.51595/11111116](https://doi.org/10.51595/11111116)

²⁰ Centers for Disease Control and Prevention. 2022. COVID-19 Vaccine Facts. [online] Available at: <<https://www.cdc.gov/coronavirus/2019-ncov/vaccines/facts.html>> [Accessed 12 January 2022].

²¹ Penal Code Ordinance / Volume VI. [online] Available at: <<https://www.srilankalaw.lk/Volume-VI/penal-code-ordinance.html>> [Accessed 11 January 2022].

be used against persons who do not comply with directions given by the Proper Authorities under the Quarantine Ordinance.²²

2.3 Vaccination of children above 12 years of age

Following the initiation of global vaccination programme against COVID-19 in 2020, Sri Lanka received the first batch of AstraZeneca vaccines in March 2021. The limited vaccines were then distributed according to a priority list following recommendations of Strategic Advisory Group of Experts on Immunization (SAGE).

At the initial point the frontline healthcare workers, then the population above the age of 60 years and so on received the vaccine. By now, administration of vaccines is allowed for all above the age of 18 years and from the 7th of January onwards approval was granted for vaccination of children above 12 years with Pfizer vaccine.

However, with the current declining trend of vaccination, promoting vaccination of the children and reception of booster dose should be strengthened. Even though no vaccine has been recommended for children below 4 years of age, Pfizer-BioNTech vaccine has been recommended for children above 5 years of age with booster doses for children above 12 years by Centers for Disease Control and Prevention (CDC).²³ Other than the protection against the disease, vaccination of these children is expected to protect family members including unvaccinated younger siblings via the development of herd immunity and to allow them to attend schools and sports events, etc.

CDC is also recommending vaccination of children aged 5-11 years, following the claims of the children of this age group developing serious complications such as Multisystem Inflammatory Syndrome (MIS-C) following COVID-19 infection.²⁴ Conversely, the Medicine and Healthcare products Regulatory Agency of the United Kingdom has only approved the Pfizer-BioNTech vaccine for children above 12 years of age.²⁵

Nevertheless, the Food and Drug Administration (FDA) agency within the United States Department of Human and Health Services revised the emergency use authorization of Pfizer-BioNTech and approved administration of a booster dose for children aged 12-15 years. The FDA claimed to have made this amendment by reviewing data from Israel, a country that has expanded their vaccination for a 4th dose with no new reports on cases of myocarditis or pericarditis following the booster dose for the same age group.²⁶

²² Documents.gov.lk. 2020. PART I : SEC. (I) - GAZETTE EXTRAORDINARY OF THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA - 25.03.2020-QUARANTINE AND PREVENTION OF DISEASES ORDINANCE (CHAPTER 222). [online] Available at: <http://documents.gov.lk/files/egz/2020/3/2168-06_E.pdf>.

²³ Centers for Disease Control and Prevention. 2022. COVID-19 Vaccines for Children & Teens. [online] Available at: <<https://www.cdc.gov/coronavirus/2019-ncov/vaccines/recommendations/children-teens.html>> [Accessed 10 January 2022].

²⁴ Centers for Disease Control and Prevention. 2022. COVID-19 Vaccines for Children & Teens. [online] Available at: <<https://www.cdc.gov/coronavirus/2019-ncov/vaccines/recommendations/children-teens.html>> [Accessed 10 January 2022].

²⁵ GOV.UK. 2021. Information for UK recipients on Pfizer/BioNTech COVID-19 vaccine (Regulation 174). [online] Available at: <<https://www.gov.uk/government/publications/regulatory-approval-of-pfizer-biontech-vaccine-for-covid-19/information-for-uk-recipients-on-pfizerbiontech-covid-19-vaccine>> [Accessed 12 January 2022].

²⁶ U.S. Food and Drug Administration. 2022. Coronavirus (COVID-19) Update: FDA Takes Multiple Actions to Expand Use of Pfizer-BioNTech COVID-19 Vaccine. [online] Available at: <<https://www.fda.gov/news-events/press-announcements/coronavirus-covid-19-update-fda-takes-multiple-actions-expand-use-pfizer-biontech-covid-19-vaccine>> [Accessed 12 January 2022].

Even in Israel, where acceptance of vaccination for the adult population had been relatively high, a hesitancy in consenting for vaccination of children was observed. One major concern of the parents is the side effect profile of the vaccine.²⁷ Available research is mainly showing few cases of reported adverse effects including injection site redness and swelling, fever and lymphadenopathy with minimal cases of MIS-C, myocarditis or pericarditis.²⁸

It is evident that it is necessary to increase awareness on the global recommendations for vaccination of children using all forms of media. Whilst side effects due to vaccination such as myocarditis have been a growing concern, unrefined data from national data systems such as the Vaccine Adverse Event Reporting System (VAERS) of the United States has only shown 40.6 cases of myocarditis among per million second doses administered to males aged 12-29 years. Even though the hospitalization due to acute symptoms among those cases was 96%, at the time of review 95% had been discharged and there had been no reports of death and in the assessment of risks vs benefits of COVID-19 vaccination, the benefits clearly outweigh the risk of developing post-vaccination adverse events including myocarditis.²⁹ It must be noted that the rarity of the side effects and the higher risk of adverse outcomes due to the disease must be publicized.

Higher the proportion vaccinated greater the immunity within the community and better the herd immunity.

2.4 Booster dose for 18 years and above

As a country with a well-established health care system and a well-established immunization programme, Sri Lanka was able to reach the targets set by WHO in achieving 40% of vaccine coverage of the population by end of December 2021. 50% of the population was fully vaccinated by September 2021 well before the expected time.³⁰

With the continuous evolution of SARS-CoV-2 virus, 5 variants including Omicron have been declared as VOCs. The Technical Advisory Group on Covid-19 Vaccine Composition (TAG-CO-VAC) was established by WHO to address the health concerns of SARS-CoV-2 VOCs. Even with the initial data suggesting reduced effectiveness of available vaccines against Omicron, the TAG-CO-VAC recommends full vaccination and booster dose to protect against severe disease caused by Omicron.³¹

²⁷ Oren Heller, a., 2021. *What we can learn from Israel's COVID-19 vaccination of children*. [online] Brookings. Available at: <<https://www.brookings.edu/blog/up-front/2021/12/10/what-we-can-learn-from-israels-covid-19-vaccination-of-children/>> [Accessed 13 January 2022].

²⁸ Walter, E., et al., 2021. Evaluation of the BNT162b2 Covid-19 Vaccine in Children 5 to 11 Years of Age. *New England Journal of Medicine*, 386(1), pp.35-46. DOI: [10.1056/NEJMoa2116298](https://doi.org/10.1056/NEJMoa2116298)

²⁹ Gargano JW, Wallace M, Hadler SC, et al. Use of mRNA COVID-19 Vaccine After Reports of Myocarditis Among Vaccine Recipients: Update from the Advisory Committee on Immunization Practices — United States, June 2021. *MMWR Morb Mortal Wkly Rep* 2021;70:977–982. DOI: <https://www.cdc.gov/mmwr/volumes/70/wr/mm7027e2.htm> icon.

³⁰ Who.int. 2021. *Sri Lanka vaccinates 50 per cent of total population, covering over 10 million with both doses*. [online] Available at: <<https://www.who.int/srilanka/news/detail/18-09-2021-sri-lanka-vaccinates-50-per-cent-of-total-population>> [Accessed 12 January 2022].

³¹ Who.int. 2022. *Interim Statement on COVID-19 vaccines in the context of the circulation of the Omicron SARS-CoV-2 Variant from the WHO Technical Advisory Group on COVID-19 Vaccine Composition (TAG-CO-VAC)*. [online] Available at: <<https://www.who.int/news/item/11-01-2022-interim-statement-on-covid-19-vaccines-in-the-context-of-the-circulation-of-the-omicron-sars-cov-2-variant-from-the-who-technical-advisory-group-on-covid-19-vaccine-composition>> [Accessed 12 January 2022].

The booster dose is not only to protect against the new variant Omicron but also to protect against previously identified virus strains such as the VOC Delta. This is because of the available evidence showing declining vaccine effectiveness after the second dose against those strains with time.³²



2.5 Tracing mechanism in public places

With the surge in numbers of COVID-19 cases and reluctance or ignorance shown by citizens' refusal of getting vaccinated against the diseases, many countries including Austria, Singapore, Sweden have declared their intention to mandate having proof of vaccination prior to entering public places.³³

This step is expected to prompt the unvaccinated to get the vaccination and to prevent them from gathering in public causing a rise in the risk of disease transmission.³⁴

However, the WHO neither approves nor opposes the government's decisions of directly mandating vaccination or indirectly mandating by establishing a policy that requires citizens to provide proof of vaccination when entering public areas, due to ethical considerations.³⁵

As practiced in other countries it may be suitable for similar actions to be taken in Sri Lanka. This will ensure that higher proportion of individuals will be vaccinated with the two main doses and the booster dose and prompt the development of herd immunity as well.

Therefore, tracing mechanisms for vaccination maybe implemented.

- Requesting a fully vaccinated vaccine card prior to entry at public places and institutions
- Further developing the online vaccination database so that the individual has access to their vaccination records

³²Epid.gov.lk. 2022. COVID-19 Weekly Epidemiological Update. [online] Available at: <http://epid.gov.lk/web/images/pdf/corona_virus_report/sitrep-gl-en-12-01_10_22.pdf> [Accessed 12 January 2022].

³³Reuters 2021. Factbox: Countries making COVID-19 vaccines mandatory. [online] Available at: <<https://www.reuters.com/business/healthcare-pharmaceuticals/countries-making-covid-19-vaccines-mandatory-2021-08-16/>> [Accessed 11 January 2022].

³⁴ Government Offices of Sweden. 2021. Proof of vaccination may be required for access to public gatherings and public functions. [online] Available at: <<https://www.government.se/articles/2021/11/proof-of-vaccination-may-be-required-for-access-to-public-gatherings-and-public-functions/>> [Accessed 11 January 2022].

³⁵ WHO (2021) 'COVID-19 and mandatory vaccination: Ethical considerations and caveats', *Policy Brief*, (April), pp. 13–17. Available at: <https://apps.who.int/iris/rest/bitstreams/1342697/retrieve>.

2.6 Focus awareness to promote vaccines

We must take measures to ensure that the public is aware that vaccines provide immunity and herd immunity and additionally ensure that the vaccines are freely available.

Education of the public on the additional attributes of the booster dose must also be carried out.

- The attributes of the different types of vaccines and the local availability must be publicized.
- The safety, efficacy and effectiveness of the vaccines must be reported to the public: the public must be made aware that though the vaccines were developed in a relatively short time that they have been subjected to the same safety checks.
- Measures should be taken by the health authorities to make public aware of the real risk and benefits of the vaccination by counteracting the false propaganda of the anti-vaccine lobby.

2.7 Local programmes to trace and mop up non-vaccinated

The well-established ground-level public health system must be utilized to trace the vaccination status of the general public. The Medical Officer of Health (MOH) is the authority in public health at the grass-root level. The MOH together with his team should ensure that vaccination coverage has been achieved as with the general EPI program.

To further enhance vaccination:

- Development of a vaccination register for each MOH to maintain a local database to ensure completion of vaccination in the area
- Accessible vaccination locations to the public either based on MOH area or district-wise based on practicality
- Having mop-up campaigns in required and targeted areas

Some practical measures to be considered in defeating myths on vaccination and promoting booster dose;

1. Establishment of a District level pool of vaccinators

This may include staff members selected from each MOH area within a particular district, and this pool shall be mobilized to places such as BOI zones, workplaces and outreach clinics.

2. Facilitating Grama Niladhari level analysis of vaccination progress through National Immunization tracker to determine exact vaccination coverage

As an example, when a person is residing in a particular MOH area gets the vaccine from a different MOH area, that person should be included in the coverage analysis of the original MOH area.

3. Continuous surveillance and censoring of myths and misconceptions regarding vaccination

As an example, calls given to hotlines like 1999 and 247 must be collated periodically. In addition, random public surveillance should be done and public health messages must be developed and delivered targeting these findings specifically.

4. Organizing appreciation sessions of the staff members belonging to all staff categories who have contributed to the vaccination process at institutional and higher level as a measure of raising staff satisfaction

3. Promoting testing facilities including self-testing

3.1 Freely available Rapid Antigen Tests

Diagnostic testing is a pivotal component of disease control. From the initial period of COVID 19 pandemic Nucleic Acid Amplification Tests (NAAT) such as reverse transcription-polymerase chain reaction assays (RT-PCR), were used to diagnose the disease. With increasing disease burden less expensive and faster diagnostic tests were used.³⁶

These rapid diagnostic tests are designed to detect the antigens specific to the SARS-CoV-2 virus. The rapid antigen tests are easy to use, less expensive alternatives for PCR testing that at times was considered for self-testing. Self-testing will result in early diagnosing and isolation which will contribute to limiting the spread of disease.

WHO has acknowledged the availability of research both for and against self-testing using rapid antigen tests and the need for more conclusive evidence.³⁷

However, recently the Australian government has declared the distribution of free rapid antigen tests for residents with concession cards while the test kits will be available for other residents at commercial outlets such as pharmacies and supermarkets.³⁸

Canada has a Provincial Antigen Screening Program (PASP) that provides free rapid antigen test kits to high-risk communities including organizations and workplaces. The test will be performed by a health care professional or a trained individual, in this case, can do self-swabbing provided that the individual follows the appropriate training material.³⁹

Whether the freely available rapid antigen tests are performed by a trained person or performed by themselves, attention should be given to establish a mechanism to gather test data and a process to ensure biosafety and waste management measures.⁴⁰

³⁶ Who.int. 2022. *Interim Statement on COVID-19 vaccines in the context of the circulation of the Omicron SARS-CoV-2 Variant from the WHO Technical Advisory Group on COVID-19 Vaccine Composition (TAG-CO-VAC)*. [online] Available at: <<https://www.who.int/news/item/11-01-2022-interim-statement-on-covid-19-vaccines-in-the-context-of-the-circulation-of-the-omicron-sars-cov-2-variant-from-the-who-technical-advisory-group-on-covid-19-vaccine-composition>> [Accessed 13 January 2022].

³⁷ Who.int. 2022. *Interim Statement on COVID-19 vaccines in the context of the circulation of the Omicron SARS-CoV-2 Variant from the WHO Technical Advisory Group on COVID-19 Vaccine Composition (TAG-CO-VAC)*. [online] Available at: <<https://www.who.int/news/item/11-01-2022-interim-statement-on-covid-19-vaccines-in-the-context-of-the-circulation-of-the-omicron-sars-cov-2-variant-from-the-who-technical-advisory-group-on-covid-19-vaccine-composition>> [Accessed 13 January 2022].

³⁸ Commonwealth of Australia | Department of Health. 2022. *Testing for COVID-19*. [online] Available at: <<https://www.health.gov.au/health-alerts/covid-19/testing>> [Accessed 14 January 2022].

³⁹ COVID-19 (coronavirus) in Ontario. 2022. *Free rapid tests for organizations*. [online] Available at: <<https://covid-19.ontario.ca/get-free-rapid-tests>> [Accessed 13 January 2022].

⁴⁰ Who.int. 2022. *Interim Statement on COVID-19 vaccines in the context of the circulation of the Omicron SARS-CoV-2 Variant from the WHO Technical Advisory Group on COVID-19 Vaccine Composition (TAG-CO-VAC)*. [online] Available at: <<https://www.who.int/news/item/11-01-2022-interim-statement-on-covid-19-vaccines-in-the-context-of-the-circulation-of-the-omicron-sars-cov-2-variant-from-the-who-technical-advisory-group-on-covid-19-vaccine-composition>> [Accessed 13 January 2022].

3.2 Gene sequencing in Ports of Entry and Random Surveillance

Developing mutations and producing different strains with different characteristics is seen with any virus. Over time SARS-CoV-2 virus has also developed many strains. Genomic sequencing allows to identify the changes and to recognize the implications on disease spread and severity.⁴¹

Genomic sequencing of samples taken from case clusters helps in identifying the origin, transmission and controlling the spread of the same cluster. Simultaneously, random sampling and surveillance should be continued for early recognition of variants of concern so as to take measures in preventing the emergence of further clusters. There is evidence of successful surveillance through programmes such as the Network for Genomic Surveillance of South Africa (NGA-SA).⁴²

Further, genome sequencing at ports of entry to the country would be paramount in detecting virus variants of concern early and in preventing importation of such strains to the country.⁴³

3.3 Influenza-like Illness (ILI) surveillance in OPDs

Global influenza surveillance has been initiated in 1952 by WHO and since then, has been conducted through the Global Influenza Surveillance and Response System (GISRS) via National Influenza Centers.⁴⁴

Influenza-like Illness (ILI) is a syndrome that is defined to have an acute respiratory infection with measured fever of $\geq 38\text{ }^{\circ}\text{C}$, and cough; with onset within the last 10 days. The cause can be Influenza or another upper respiratory tract infection. If a patient with these symptoms requires hospitalization, the condition will be defined as Severe Acute Respiratory tract infection (SARI).⁴⁵

Sentinel site surveillance for influenza has been established at selected hospitals of Sri Lanka by 2015 through the Epidemiology Unit.⁴⁶

⁴¹ WHO (2021) *Genomic sequencing of SARS-CoV-2: A guide to implementation for maximum impact on public health*, pp. 1-3. Available at: <https://www.who.int/publications/i/item/9789240018440>.

⁴² Msomi, N., Govender, K. and Laguda-akingba, O. (2021) 'The implementation of SARS-CoV-2 genomic surveillance in South Africa', (May), [online] Available at: https://cdn.who.int/media/docs/default-source/bulletin/20-286011.pdf?sfvrsn=26e87e12_5#:~:text=Within%20the%20first%20year%20of,Natal%20and%20Eastern%20Cape%20provinces.&text=V2%20through%20this%20genomic%20surveillance%20platform.> [Accessed 13 January 2022].

⁴³ Tsuyoshi Sekizuka, PhD, Kentaro Itokawa, PhD, Koji Yatsu, BS, Rina Tanaka, BS, Masanori Hashino, MVD, PhD, Tetsuro Kawano-Sugaya, PhD, Makoto Ohnishi, MD, PhD, Takaji Wakita, MD, PhD, Makoto Kuroda, PhD, COVID-19 Genomic Surveillance Network in Japanese Airport Quarantine, COVID-19 genome surveillance at international airport quarantine stations in Japan, *Journal of Travel Medicine*, Volume 28, Issue 2, March 2021, taaa217, <https://doi.org/10.1093/jtm/taaa217>

⁴⁴ Who.int. 2022. *Global Influenza Surveillance and Response System (GISRS)*. [online] Available at: <https://www.who.int/initiatives/global-influenza-surveillance-and-response-system> [Accessed 14 January 2022].

⁴⁵ Web.archive.org. 2014. *WHO surveillance case definitions for ILI and SARI*. [online] Available at: https://web.archive.org/web/20141019233656/http://www.who.int/influenza/surveillance_monitoring/ili_sari_surveillance_case_definition/en/ [Accessed 14 January 2022].

⁴⁶ Epid.gov.lk. 2015. *Influenza update*. [online] Available at: http://www.epid.gov.lk/web/index.php?option=com_content&view=article&id=206%3Ainfluenzaupdate&catid=51%3Amessage-for-public&lang=en [Accessed 14 January 2022].

With the emergence of SARS-CoV-2, the countries with well-established sentinel site surveillance for ILI and SARI were recommended to incorporate COVID-19 surveillance into the existing surveillance system due to similarities in clinical presentation.⁴⁷ So that, in addition to the laboratory tests for influenza, samples would be tested for SARS-CoV-2 and the countries were encouraged to maintain sentinel site surveillance for acute respiratory syndrome throughout the year.⁴⁸

Some practical measures to be considered when promoting testing facilities including self-testing;

- 1. Registration and validation of the private sector laboratories should be ensured.**
- 2. Gene sequencing of COVID-19 positive patients who have completed vaccination including the booster dose must be promoted.**

⁴⁷ Africa CDC (2020) 'Protocol for Enhanced Severe Acute Respiratory Illness and Influenza-Like Illness Surveillance for COVID-19 in Africa', Africa Centres for Disease Control and Prevention, (MARCH). Available at: <https://africacdc.org/download/protocol-for-enhanced-severe-acute-respiratory-illness-and-influenza-like-illness-surveillance-for-covid-19-in-africa/>.

⁴⁸ Organization, W., 2020. *Public health surveillance for COVID-19: interim guidance, 16 December 2020*. [online] Apps.who.int. Available at: <<https://apps.who.int/iris/handle/10665/337897>> [Accessed 13 January 2022].

4. Strengthening of Home-Based Care Management system

The Home-Based Care Management system was commenced as an adjunct to the hospital-based management of patients with COVID-19 infection by the time the country had been facing a 3rd wave of the disease. By introducing this system, the expectation was to overcome the challenges triggered by the exponential rise of daily cases, causing depletion of hospital resources in both government and private sector, overexposure and exhaustion of health care workers, overburdening of intermediate care centers with asymptomatic positives and administrative, management and financial difficulties of the country.⁴⁹

So far, this system has been functioning well in identifying and managing the patients with COVID-19, who are suitable for home-based care and in ensuring proper resource allocation enabling patients to receive appropriate care.

Some practical measures to be considered in strengthening of Home-Based Care Management system;

- 1. Integration of longitudinal data of the patients in the Home-Based Care Management System into the national COVID information system.**
- 2. Enhance public awareness on eligibility criteria for the Home-Based Care Management system.**
- 3. Increasing Human resources and logistical capacity of the Home-Based Care Management System.**

Frequent client feedback should be obtained from the patients in this system.

⁴⁹ GMOA COVID-19 EXIT STRATEGY SRI LANKA | REINFORCEMENT MAY 2021

5. Continuing Practice of DReAM Concept

Though vaccination is the pivotal component in controlling and preventing COVID-19, abiding by the public health measures should be continued.

For this continuation of the DReAM concept should be ensured.

- D – Distancing – Physical Distancing
- Re – Respiratory Etiquette – cough/sneeze using the inner side of your elbow directly in front of you
- A – Aseptic techniques – Hand washing/hand sanitizer
- M – Mask – the proper wearing of the face mask and its proper disposal

Some practical measures to be considered in continuing practice of DReAM concept;

- 1. Enhancing the publicity given to media statements issued from time to time by the Director-General of Health Services on public restrictions.**
- 2. Development and dissemination of more client-friendly information, education and communication (IEC) material on proper respiratory etiquette to the public.**
- 3. Recommended disinfectants for metal and non-metal surfaces must be made available at all work settings.**
- 4. An updated repository of all circulars and communications by the Ministry of Health must be made available under relevant headings on the Ministry of Health website.**

6. Promoting Research and Evaluation

With emergence of an epidemic an overwhelming amount of research and scientific data, that may not be always accurate will be publicized, invariably creating an ‘infodemic’.⁵⁰ In this regard, trustworthy and true information regarding the diseases that is relevant to the local context need to be established and disseminated to the relevant parties for further decision and policy making purposes.

One of the responsibilities of the Epidemiology Unit is research and evaluation. With emergence of the current COVID-19 pandemic many research are carried out in a haphazard manner causing misinformation and public confusion. Hence, an organized process should be established to gain contextual evidence in the local setting and to disseminate knowledge to the parties involved in disease control, disease management, decision making on public health measures and to the public.

Some practical measures to be considered in promoting scientific evidence generation;

- 1. Periodical publication of data on adverse events following immunization.***
- 2. Promoting research on COVID-19.***
- 3. Promoting dissemination of research findings on COVID-19 to relevant government establishments.***
- 4. Economic evaluation of different strategies in COVID management.***

⁵⁰ Apps.who.int. 2020. Managing the COVID-19 infodemic- An ad hoc WHO technical consultation. [online] Available at: <<https://apps.who.int/iris/rest/bitstreams/1302999/retrieve>> [Accessed 21 January 2022].

7. Conclusion

SARS COV-2 has currently exceeded 5 variants of concern and it is difficult to assess any further developments. Though projections have been made regarding the conclusion of the pandemic, it is closely associated with maintaining public health measures and with the success of the COVID-19 vaccination programme.

Therefore, we as the Government Medical Officers' Association (GMOA) see that there is an urgent need to ensure that the public complete vaccination and boosters; that testing and tracing are maintained and that rigorous public health measures are continued.

The public must be made aware that the current reduction in numbers may only be a brief reprieve and can only be sustained if the suitable measures are taken and continued by all.

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