

IIDS Policy Advisory Group on Covid-19 Recommendations for Public Action

May 20, 2021

Summary

On May 17, 2021, Nepal recorded 214 deaths from Covid-19, a likely lagged outcome from two weeks ago when there were approximately 2,000 positive cases reported. More than 5,200 Nepalis have died so far from Covid-19 as of May 17, 2021. More than 460,000 people have been infected. In recent days, the number of positive cases has exceeded 8,000 (on average) which indicates a grim scenario of a high number of fatalities in the upcoming weeks (see Figure 1 in the Appendix). News reports from rural areas make it clear that these are under-estimates, and there is also a general belief that these numbers are heavily underreported. All this adds to the urgency of responsive actions both at the policy level and on the ground.

We now know more about Sars-CoV2 than we did a year ago. What we have learned so far in other settings should inform evidence-based public health policy in Nepal. This policy document was prepared taking account of this information by the IIDS Policy Advisory Working Group on Covid-19. It contains recommendations to governments¹ at the federal, provincial and local levels in five broad areas, which are listed and summarized here briefly.² They draw on successful experiences elsewhere, as well as the latest science. We suggest applying them to the distinct circumstances involving Nepal's demographic and migratory trends, nascent federal government structure, and reservoir of international solidarity. They are as follows:

- Medical delivery regulation. We recommend decentralizing policy implementation and information gathering to the district and ward levels, to the extent possible. We also recommend that the government facilitate coordination across hospitals and clinics to develop a common policy on patient allocation. We suggest that this be done by creating a panel of hospital administrators that represent different hospitals and clinics.
- Testing. We recommend (i) increasing antigen testing, (ii) using random testing, mass testing and pooled testing, when appropriate, (iii) offering free testing to all, if possible, but certainly to poorer populations, and (iv) providing guidance on self-isolation for those who test positive, as well as options to isolate in government designated facilities.
- Lockdown policies. We recommend that lockdown policy should balance the tradeoff between limiting the spread of the virus and the adverse effects that strict lockdowns

¹ Unless otherwise specified, "government" in this note refers to federal, provincial or local government with mandates to perform tasks recommended here that fall under their constitutional jurisdiction.

² A recent comment in *Lancet* on the Covid-19 crisis in neighboring India makes a set of recommendations that overlaps with ours (Kuppalli et al. 2021. "India's COVID-19 Crisis: A Call for International Action." *Lancet*. Published online, May 14, 2021.)

have on the livelihoods of economically vulnerable populations. We recommend allowing some activity, but maintaining limits on large gatherings.

- **Information/data collection.** We recommend that hospitals be required to collect certain data that are made available to researchers to support the government in updating its policy as the situation evolves. We also suggest that the government put in place contact tracing guidelines, and, as a medium-to-long-term goal, set up a surveillance system to monitor the possibility of a possible future wave of infections.
- **Vaccinations.** Ultimately, it is mass vaccination that will end the Covid-19 pandemic in Nepal. We recommend continuing the effort to vaccinate all eligible Nepalis and procuring more vaccines through diplomatic efforts.

Detailed Recommendations

Medical Delivery Regulation

1. We recommend that the federal government **decentralize policy implementation,** service delivery, and information gathering, and provide incentives to districts, local government offices and wards to carry out these policies.

Operating through local government offices is a swift way to collect information and roll-out new policies. Critical shortages of ICU beds, ventilators and oxygen being reported in the media has rightly focused the attention of policymakers, citizens and international stakeholders on hospital-centric care. However, not enough has been done on community-based control of the pandemic, where the long-term solution lies.

Locally elected ward officials should be incentivized and resourced adequately to undertake community-level mass testing, tracing and isolating. We recommend that they mobilize the well-established networks of the 50,000-plus Female Community Health Volunteers (FCHV), 250,000-plus community school teachers, and where applicable local youth clubs, “*aama samuhas*” and other similar groups.

Overall, it is important for the federal government to address inequities in healthcare access across regions. (See Figure 2 in the Appendix.) Decentralization can help address these inequities, but care should be taken to improve healthcare access in rural and remote areas.

2. We recommend that the federal government **require coordination across hospitals** and clinics through an integrated platform that builds on existing sites like covidnepal.org.

Hospitals should be required to report their capacity including the total number of general and ICU beds available, the total number of admitted patients, how much oxygen they have, and what their supply source is for oxygen, on a daily basis to the health ministry, which then shares this information on a confidential basis with designated hospital administrators.

We recommend that the government create a panel of hospital administrators to meet virtually on a weekly basis to share information and set common priorities. Currently, some hospitals are treating only severely affected patients who require oxygen, while others are admitting even those with very mild symptoms. Without a common policy as to who should be admitted, patients with mild or moderate conditions may overcrowd hospital beds. Through this panel, hospitals should cooperate on allocating resources including, but not limited to, oxygen, beds and ventilators. Coordination will mitigate allocative inefficiencies.

3. **Non-Covid patient care** (chronic disease, mental health and emergency non-chronic diseases care) will be impacted during the pandemic. While it is imperative for the government to ensure hospitals have sufficient capacity to care for Covid patients, it should also support ways to provide care for non-Covid patients. For example, it should encourage doctors, nurses and community health workers to provide tele-health care consultation by mobile phone, smartphone apps and other authorized telehealth media.

Testing and Isolation Policies

4. We recommend that healthcare providers **use antigen testing more widely**. It is cheaper than PCR testing and has a quick (approximately 15 minute) turnaround time. Despite its lower accuracy, it is an effective tool to identify if someone is actively infected and contagious.³ Research has found that even asymptomatic individuals can be as contagious as individuals showing symptoms. Early identification and isolation of cases will help break the chain of transmission (see Figure 3 in the Appendix).

We recommend that the government try to procure antigen test kits in large numbers and make them available through ward offices, especially to people in remote areas with little to no access to tests (see point 1 above on decentralizing policy implementation and service delivery). Outdoor mobile testing booths/tents should be set up, weather permitting. In general, healthcare delivery should take place outdoors to the extent possible, to reduce the risk that healthcare facilities become superspreader sites.

5. We recommend that the government **conduct random testing and pooled testing** when appropriate. Until now the majority of tests have been initiated by patients. This provides only a highly selected sample of the population. For instance, individuals with

³ Despite this, symptomatic individuals who test negative on an antigen test are still recommended to isolate and their contacts are recommended to quarantine.

Covid symptoms, from urban areas, and who can afford testing are more likely to select into testing. This selected sample masks the actual infection rate in a community.

One strategy is to initiate testing on individuals who are more likely to spread infection (e.g., more mobile populations and those whose work brings them in contact with many other people) and people at high risk (e.g., essential workers including healthcare and social workers). Random testing, weighted more on subgroups that are at higher risk of spreading infections, can help lower testing costs while slowing the spread of infections.

All testing should be voluntary, but the government can offer mass testing to mitigate the selection problem. Mass-testing can aid in identifying asymptomatic cases and early cases, and also facilitate contact tracing. One approach to mass-testing is using the pooled testing strategy, where specimens within a cluster are pooled together before being tested.⁴ The main advantage of this strategy is that it saves resources including time, reagents, and cost. The efficiency of pooled testing depends on the infection rate in the population, so it is important to get locality based estimates of the infection rate before deciding on whether (and where) to conduct pooled testing.

If implemented properly, pooled testing can help curb the spread of the virus from cities to smaller towns and then to surrounding rural areas.

6. We recommend that the government **offer free testing** to the poorest populations that cannot afford frequent testing, and if possible offer free testing to the whole population.

We recognize the expense associated with offering free testing to all, and the difficulty in targeting only the poor with free testing. Given the large positive social externalities involved, heavy subsidies are justified. One rule of thumb is to make testing in all rural municipalities (*gaunpalika*) free or heavily subsidized, with private providers reimbursed. All government-run facilities in urban municipalities (*nagarpalika*) would also provide services at subsidized rates much lower than those charged by private clinics and hospitals, as is the current practice in the Kathmandu Valley. Locally elected mayors and chairpersons would retain the discretion to pay for testing services (from local government budgets) for low-income households residing in their jurisdictions.

7. We recommend that the existence **guidance on isolation and quarantine** be made more public (through public service announcements on radio and television, and awareness campaigns) for those who have tested positive, and the government

⁴ Under pooled testing, samples from a certain number of individuals are pooled and tested together. If the pooled test comes out negative, this is evidence that nobody in the pool is positive. If the test comes out positive, then this is evidence that at least one person is positive. In this case, the members of the pool can then be individually tested to find individual positive cases. If the vast majority of individuals are unlikely to be positive, pooled testing saves expense in testing because the many pools that tested negative do not have to subsequently be individually tested. (If the cost of a test is Rs. 700, then testing a pool of 5 people, say, results in a cost of only Rs 140 per person if the group does not have to subsequently be individually tested.)

designate certain places to be isolation facilities. Isolating at home is not ideal for many people who share living and sleeping space with other family members. The government should designate isolation facilities targeted to the poorest populations who cannot isolate at home. These facilities should provide meals, water and decent sanitation.

We recommend launching awareness campaigns and public service announcements on the importance of isolation through television and radio. For example, a common practice of sending children to stay with their grandparents if the parents have tested positive should be discouraged, as children can transmit the virus to these elderly members of their family, who are highly vulnerable.

There are many hotels in Nepal that have gone empty and are losing money. The government should negotiate with these entities to offer rooms to those seeking to isolate at negotiated affordable rates.

Lockdown Policies

8. We recommend that the government **target lockdown policies** based on the tradeoff between overall well-being and risk of transmission.

Eventually, lockdowns will have to be eased to bring economic activity back once the infection rate declines. Severe lockdowns are not always necessary to slow the spread of the virus, and may have adverse consequences on society, including through negative effects on the livelihoods of economically vulnerable populations.

We know Sars-CoV2 is airborne. Infection spreads in poorly ventilated spaces--- in peoples' homes and workplaces. Research has shown that transmission from indoor interactions is far more likely than transmission from outdoor interactions in well ventilated spaces, which are known to be relatively safer if individuals take the recommended precautions of wearing masks and staying physically apart (ideally at least six feet apart).⁵

Based on the evidence from other settings and countries, we recommend that the government allow:

- grocery and other essential needs stores to open for more than two or three hours a day, which is the current policy. Restricting the number of hours that a store can be open can result in overcrowding during those hours, which in turn results in the virus spreading. Rather than restricting the number of hours that

⁵ In fact, a meta-analysis from UCSF found outdoor interactions to be more than 20 times safer than indoor interactions. In a recent analysis of over 232,000 infections in Ireland, only one case of COVID-19 in every thousand was traced to outdoor transmission. A study in Wuhan China with careful contact tracing shows only 1 of 7324 infections to be connected with outside transmission (and no outbreaks).

stores can be open, the government should require stores to avoid crowding by restricting the number of people inside at a given time to not exceed a certain number of people per square foot (such as no more than one individual per 100 square feet). All patrons and store employees should wear masks.

- individuals whose work is mainly outdoors or in well-ventilated settings (able to open windows and doors) such as construction workers, farmers, outdoor fruit/vegetable vendors, etc. to engage in work, provided they wear masks, and follow social distancing guidelines. This also includes shopkeepers whose stores are partially outdoor open-shutter stores, as well as food, gas, kerosene and other essential goods delivery workers.
- restaurants and cafes to open for takeout, and outdoor dining, provided that patrons sit six feet apart and are required to wear masks when interacting with waiters and staff. Since transmission in the workplace happens while eating together or while socializing before/after work, such meetings should be restricted. Restaurant staff should be recommended to test frequently (2-3x/weekly). Any member of the staff that tests positive should promptly isolate and their contacts should quarantine.
- individuals who have received a positive PCR/antigen test and recovered from Covid symptoms to travel and walk outdoors and carry out their business, as needed, two weeks from receiving the test result for a period of up to 3 months from the test. Research has shown that these individuals are unlikely to get reinfected during this timeframe (and possibly longer) and unlikely to be infectious. These individuals should be required to carry proof of their test result that includes the date of the test, and should be required to show this proof prior to entering public spaces. These cards should be certified by a medical officer licensed by the Nepal Medical Association and/or the elected ward deputy/chairperson. Certifying official(s) should be liable for prosecution in cases of proven professional misconduct. This policy should be put in place only if the government can effectively deter fraud.

9. We recommend that government policy continue to **limit large gatherings**, and organizers of any such gatherings that receive exemption from this policy should be required to collect contact information of the participants in case of an outbreak. A designee for such events should be identified prior. This individual would act as a point person to communicate with public health authorities when COVID-19 outbreak investigation is warranted.

Research has found that superspreading events are among the main ways in which SARS-CoV-2 has gained a foothold in communities around the world. These events occur when a highly contagious person infects an unusually high number of others, with large crowded gatherings, wedding parties, movie theaters, and religious festivals being some examples. The number of attendees in these events should be limited, protocols for social distancing and masking should be followed, and organizers should collect

contact information for all attendees to help with contact tracing in the event of an outbreak (see point 10 below for more on contact tracing).

Information/Data Collection and Monitoring

10. We recommend that the government **put contact tracing protocols in place**. Even though we are focused on treating the most severely ill patients now as the virus spreads, controlling its spread has to be done at the community level. Contact tracing protocols are highly effective at curbing the spread of the virus. We recommend mobilizing existing networks of community health workers (such as those mentioned in point 1 above) to act as tracers, as well as other public health/ social networks. We recommend the following protocol:

For everyone who tests positive, the provincial and district health offices, municipality health centers, or local health department officials should be notified of the result along with the case's demographic profile (age, gender), locality information (ward number, place of residence) and contact information (mobile number). Then, the ward or local health department assigns the case to a contact tracer. Then, the tracer calls the affected individual to ask who they have been in contact with, and asks for their contact information, if available. Finally, the tracer notifies the exposed individuals of their exposure, and recommends quarantine.

A less administratively burdensome alternative would be for the government to require those who have tested positive to identify and notify them of their contacts promptly, and require individuals to be their own tracers. Such policies should be enforced by ward officials. These officials should put in place mechanisms for community monitoring and surveillance, a common practice adopted across several rural and urban municipalities during the first wave in 2020.

Contact tracers should be trained to work with empathy. The interviews that elicit valuable exposure information should be free of judgement or blame.

11. We recommend that the government **collect and report data** from hospitals and clinics around the country and should consider making this data available for researchers who sign a data confidentiality agreement with the government, with the understanding that the findings of research will be made available to the government first. The government should reserve the right to embargo the dissemination of findings to the public in the extremely rare cases where the public disclosure of data is counter-productive. The government should follow data safety and security protocols, including removal of patient identifying information, to ensure that the confidentiality of patient and hospital information is maintained. These policies can be implemented through the Nepal Health Research Council which already oversees and regulates health research in Nepal.

Useful data include, but are not limited to:

- i) Testing data: This includes individual level data of a person who has been tested (with results: positive vs. negative), including locality information (district and place of residence, testing facility), demographic characteristics such as age, gender, caste, weight and height, and information on medical history, and vaccination type and status (one dose, both doses and no doses). This information is critical in devising policies to mitigate further spread.
- ii) Hospital level data: The government should have daily records pertaining to hospital infrastructure (as discussed in point 2).
- iii) Patient level data: This includes records of patient data from hospitals and isolation centers comprising details such as: a) name of the hospital/isolation center, b) date of admission, c) clinical presentation and symptoms at admission, d) treatment/medication administered if any e) date of discharge, and f) date when the patient passed away in case of death.
- iv) Non-Covid related admissions: As a consequence of the surge in patients admitted to hospitals, non-Covid related care has been affected. It is important that patient level data discussed in iii) also include non-Covid patients.

12. We recommend that the government **develop a surveillance/monitoring system** to prepare for a possible future wave.

This is a long term goal, but should not slip off the radar. A severity index developed early may be effective against future waves of the pandemic. Constant feed/analysis of data collected from hospitals, clinics, from community/public and even reports from neighboring countries could be used to develop this index (see point 11 above for what data should be collected).

We emphasize that even after the current surge in cases subsides, surveillance testing should remain a priority to screen the level of infection in the community.

Vaccinations

13. Over the medium run, it is **mass vaccination** that will help end the Covid-19 pandemic. We know that fully vaccinated people are unlikely to face serious illness from the disease and are highly unlikely to be infectious.

Despite an encouraging start to the vaccination drive in Nepal, there have since been serious setbacks, many of them self-inflicted through poor governance. We urge the government to approach all countries that have vaccine-producing or storing capacity to provide any amounts of WHO-approved vaccines to Nepal. For this, the government should mobilize all diplomatic missions, leverage goodwill and solidarity through international organizations and development partners, and support efforts by non-state actors including citizens' alliances and the Nepali diaspora.

Some people may have concerns about the variants that are circulating globally and whether currently available vaccines are able to neutralize them or if some variants can evade the immunity developed from vaccination. So far, evidence shows that the available vaccines seem to work well against variants. We have yet to identify a variant that is not covered by existing vaccines.⁶

One variant of particular concern in Nepal is B.1.617 commonly referred to as “Indian Variant.” This variant was classified as a “variant of concern” (VOC) by the WHO. Their preliminary analysis suggests that it is more transmissible than other variants. However, a recently published lab study (not yet peer-reviewed) found that although the variant is more likely to have reduced neutralization of antibodies (6-8 fold reduction), adequate protection against the variant was found in blood samples from vaccinated individuals and hence the variant can likely be blocked by the vaccine.⁷ News from the UK is consistent with this finding, and reports by Indian researchers studying the effectiveness of the Covishield vaccine against the Indian variant also suggest that it is highly effective.⁸ (See also Figure 4 in the Appendix.)

Regardless of the variants’ characteristics (such as increased transmissibility or slightly reduced neutralization of antibodies) this is still a respiratory virus and we still have non-pharmaceutical prevention tools at our disposal: masks, distancing, hand hygiene, and ventilation (opening doors and windows as much as possible in indoor settings).

⁶ Recently published data from Qatar found that the effectiveness of the Pfizer-BioNTech vaccine in protecting severe, critical, or fatal disease due to infection with any SARS-CoV-2 variants was 97.4%. The predominant variants circulating in Qatar during the time were B.1.1.7 (UK) and B.1.351 (South Africa), which the WHO classified as variants of concern (VOC) in part because they were found to be approximately 50% more transmissible. See “Effectiveness of the BNT162b2 Covid-19 Vaccine against the B.1.1.7 and B.1.351 Variants” Correspondence in the *New England Journal of Medicine*, May 5, 2021.

⁷ See Venkata-Viswanadh et al. (2021). “Infection and vaccine-induced neutralizing antibody responses to the SARS-CoV-2 B.1.617.1 variant” posted on bioRxiv, May 10, 2021.

⁸ See “[Will COVID-19 Vaccines Still Work Against The Variant From India?](#)” National Public Radio.

About the IIDS Covid-19 Policy Advisory Group

The group is chaired by Dr. Swarnim Waglé, chair of IIDS, and all inquiries should be directed to him. The following are the participants, listed alphabetically.

- *Avidit Acharya, PhD, Associate Professor of Political Science, Stanford University, and IIDS Adjunct Distinguished Fellow*
- *Samrachana Adhikari, PhD, Assistant Professor of Biostatistics, New York University*
- *Biswash Gauchan, PhD, Executive Director, IIDS*
- *Shiva Gautam, PhD, Professor of Biostatistics, University of Florida*
- *Arnico Panday, PhD, CEO of Ullens Education Foundation, and IIDS Senior Research Fellow*
- *Lhamo Yangchen Sherpa, MD/PhD, Executive Director, Himalayan Health and Environmental Services*
- *Vinish Shrestha, PhD, Assistant Professor of Economics, Towson University*
- *Anup Subedee, MD, Senior Medical Consultant, HAMS Hospital, Kathmandu*
- *Sundar Thapaliya, MPH, Deputy Director, Santa Clara County Public Health Dept. Covid-19 Special Investigations Branch*
- *Swarnim Waglé, PhD, Former Vice-Chair of the National Planning Commission, and IIDS Chair*

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Disclaimer: The views and recommendations expressed in this policy document do not necessarily reflect the views of the institutions with which we are affiliated.

Appendix

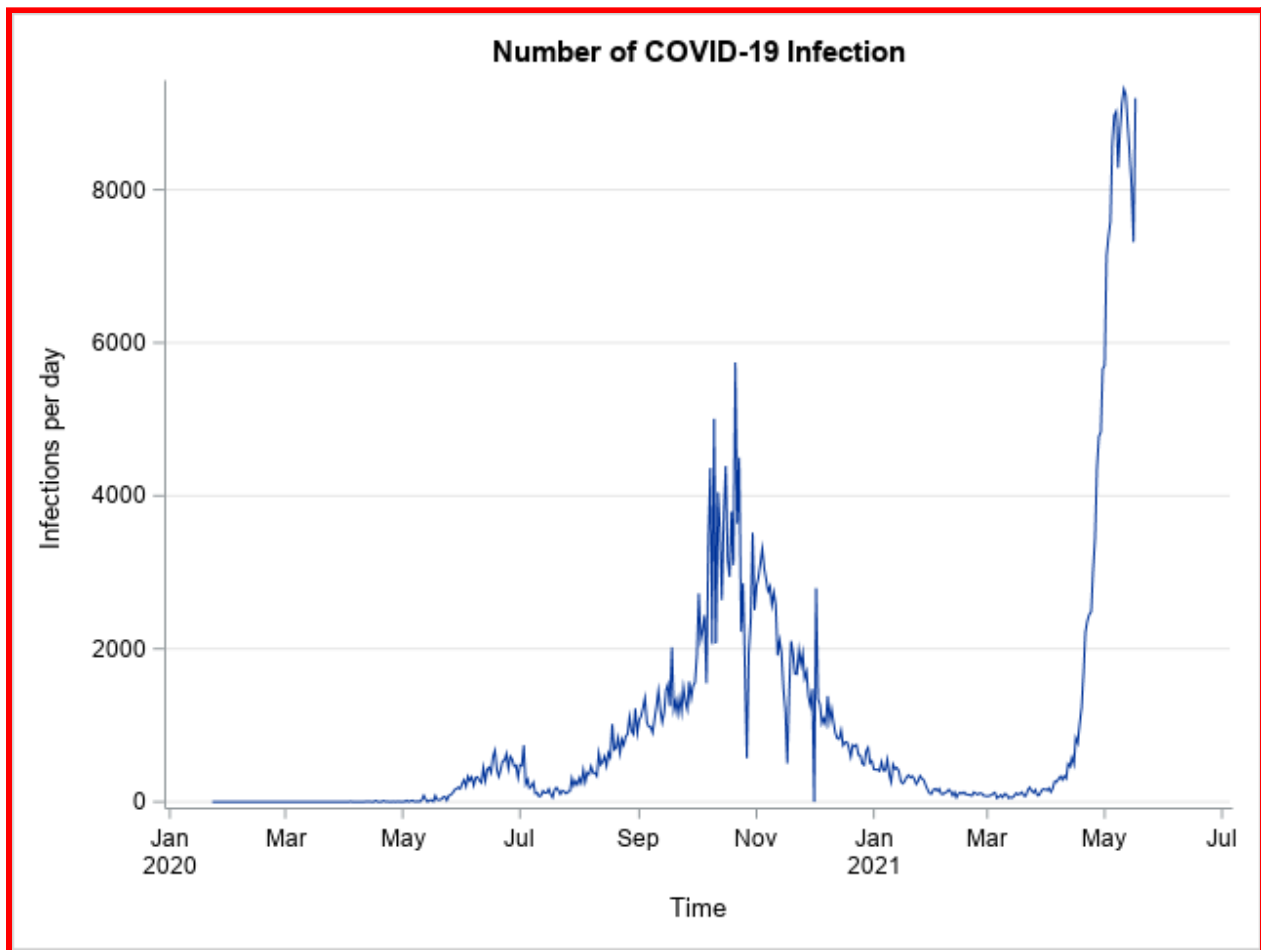


Figure 1: The figure shows daily infection numbers (as of May 17, 2021). The spread of infection seems quite faster and the expected peak is higher in the current wave compared to the previous wave of 2021. These trends are comparable to Indian case trends once we normalize by population.

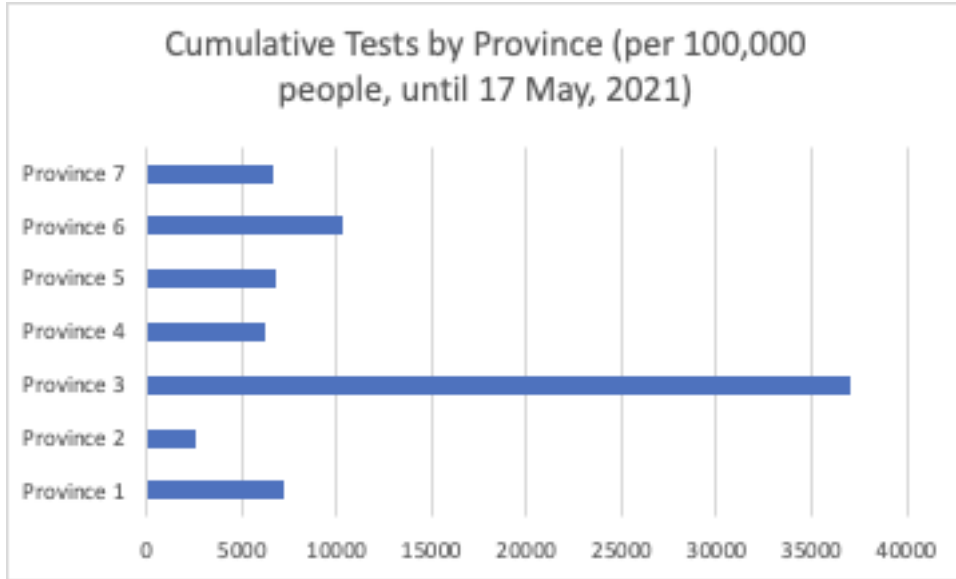
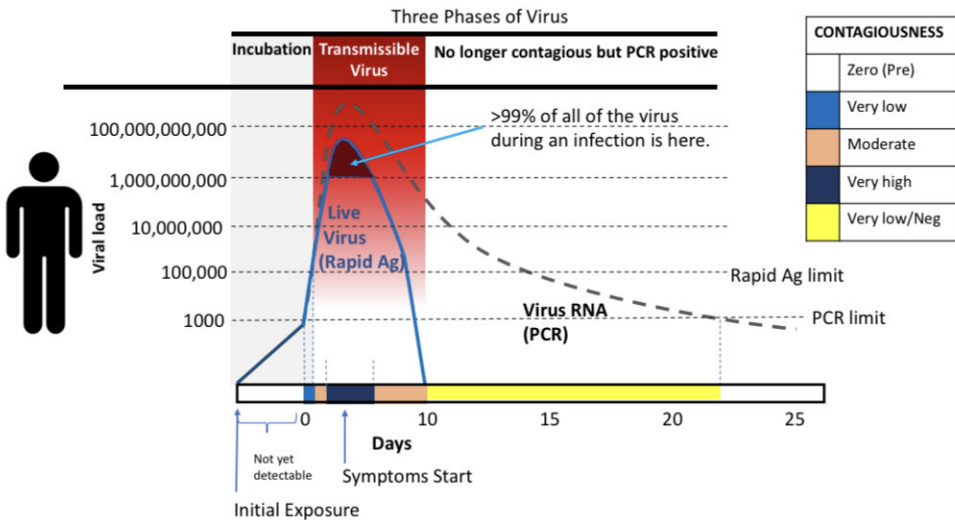


Figure 2: The figure shows the disparities in Covid testing to date, across the seven provinces of Nepal.

Rapid tests have unique ability to detect contagious virus



Michael Mina, MD, PhD, Harvard T.H. Chan School of Public Health/Medical School

Figure 3: This figure shows how rapid tests are able to break the chain of transmission. This figure is reproduced from work by Michale Mina, MD/PhD, Harvard Chan School of Public Health/ Harvard Medical School

Variant	1 st Identified	Vaccines	Lab Studies	Randomized Clinical Trials	Real World Evidence
B.1.1.7	UK	mRNA, AZ, Novavax	✓	✓	Israel, UK Qatar
B.1.351	South Africa	J&J, Novavax mRNA	✓	✓	Qatar
P.1	Brazil	Sinovac, AZ BBIBP-CorV* mRNA*	✓	✓	Chile Brazil
B.1.526	New York	mRNA	✓	—	New York (CDC)
B.1.429	California	mRNA	✓	—	California Colorado
B.1.617/ B.1.617.2	India	Bharat (Covaxin) mRNA, AZ	✓	—	Israel UK

* Lab studies only, mRNA=Pfizer/BioNtech and Moderna

Figure 4: The Scripps Research Translational Institute's founder Dr. Eric Topol updates the list of variants and vaccine's efficacy/effectiveness (above) based on available studies.