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Responding to changing case definition of COVID-19: experience from Patan Academy of Health Sciences, Nepal

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Abstract

It is important to track the changing case definition to plan for the clinical response. Transmission pattern of disease have been changing in COVID-19. Countries with no reported cases have moved on to sporadic, cluster of cases and then to community transmission. The response depends on how rapidly the transmission is changing in the country.

Keyword: case definition, COVID-19, transmission

During the outbreak of disease, appropriate case definitions are important for clinical, logistic and public health surveillance purpose. As infectious disease emerge, disease characteristics unfold and transmission pattern changes with time, place and person. It becomes important to keep pace with updated case definition. It helps in uniformity within the medical community but also help with rational use of resources.

Keeping pace with COVID-19- Patan Hospital, Patan Academy of Health Sciences is one of

the coronavirus diseases 2019 (COVID-19) management centre in Nepal. Case identification at emergency is crucial for the treatment of the patient. We follow case definition provided by World Health Organization (WHO)¹ to define contact, suspected, probable and confirmed case. However, as transmission patterns are different in different countries, the case definition needs to be adjusted according to local scenario. Following four transmission classification is given by WHO for COVID-19, Table 1.²

Table 1. Transmission classification of infectious disease as per WHO for COVID-19²

No cases	Countries/territories/areas with no confirmed cases
Sporadic cases	Countries/territories/areas with one or more cases, imported or locally detected
Cluster of cases	Countries/territories/areas experiencing cases, clustered in time, geographic location and/or by common exposures
Community transmission	Countries/area/territories experiencing larger outbreaks of local transmission defined through an assessment of factors including, but not limited to: - Large numbers of cases not linkable to transmission chains - Large numbers of cases from sentinel lab surveillance - Multiple unrelated clusters in several areas of the country/territory/area

At present Nepal is in the stage of "Cluster of cases".² However, there are countries that have gone to the level of "community transmission," so at this point of time if we perform as that of the community transmission stage all influenza or pneumonia might be taken as COVID-19, this will drain our resources. Medical science depends on 95% confidence interval, 2-standard deviation and first and third interquartile range. This means even with the best-case definition, we have chances of missing out cases. Targeting this 5% with case definition drains resource heavily. So, this grey area is left for clinicians to decide.

At PAHS we released the version-1 of case definition that included patient travelling from Wuhan, China which was in alignment with the case definitions released by WHO, this document was further revised to include country with community transmission.¹ As there was surge of cases in neighboring country, we revised our case definition to and included patient coming from India (India was not in the country with community transmission at that time) and released

version-2 of the case definition. In past few weeks, we had rapid increase in cases at few regions of the country, and considering this, we updated our case definition to address patients coming from within the country from areas of Dhangadi, Baglung and Udayapur, and version-3 of the case definition was released.

It is important for us to track the case numbers over time and establish the speed of spread and the effectiveness of interventions. A study done in China on effect of changing case definition for COVID-19 showed that the changes in case definitions led to stepwise increases in the proportion of all infections identified as cases, by 7.1 times from version-1 to 2, 2.8 times from version-2 to 4, and 4.2 times from version-4 to 5.³

Finally, change in case definition has a significant effect on the proportion of case identification as time progresses and transmission pattern changes. So, for in a resource limited country like ours, it is essential to plan the clinical response

according to the case definition at the given point of time.

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Conflict of Interest

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