



health

Department:  
Health  
REPUBLIC OF SOUTH AFRICA



Date:	16 December 2021		
To:	<b>Dr MJ Phaahla, MP</b> <b>Honourable Minister of Health</b>	From:	<b>Ministerial Advisory Committee (MAC) on COVID-19</b>

**QUARANTINING AND CONTACT TRACING**

**Problem Statement and Task to Committee**

Are quarantining and contact tracing useful measures for COVID-19 containment currently?

**Background**

Quarantine refers to the separation or restriction of activities of persons who are believed to have been exposed to a communicable disease to see if they become ill.<sup>1</sup> Quarantine is only likely to be effective and/or practical in certain circumstances, and is an extreme, though sometimes necessary, control measure for a disease outbreak. It is one potential control measure among many options, including isolation, and widespread testing campaigns. It does not generally have a role for endemic diseases, where control is not possible.<sup>2-4</sup>

In early 2020, South Africa implemented a 14-day quarantine period for “high risk” contacts of patients with SARS-CoV-2. High risk individuals were defined as those who “had face-to-face contact ( $\leq 1$  metre) or [were] in a closed space with a COVID-19 case for at least 15 minutes”, including healthcare workers unless they were wearing appropriate personal protective equipment.<sup>5</sup>

This was later amended to reduce the isolation time to 10 days, and also to allow for healthcare workers to undergo testing for SARS-CoV-2 on day 5 or 7 of their quarantine, and to return to work if this test was negative.

Since then, several changes to the COVID-19 situation have occurred. The proportion of people with immunity to COVID-19 (from infection and/or vaccination) has risen substantially, exceeding 60-80% in several serosurveys.<sup>6</sup> We have learned more about the manner in which COVID-19 is spread, and also now have to contend with variants of concern whose epidemiology differs from that of the ancestral strains of SARS-CoV-2. Crucially, it appears that efforts to eliminate and/or contain the virus are not likely to be successful. Therefore, it is critical that the role of containment efforts like quarantine and contact tracing is re-evaluated.

A technical working group was constituted, consisting of experts from the MAC on COVID-19, the National Institute of Communicable Diseases, the National Institute of Occupational Health, and the fields of public health and infectious diseases.

## Evidence review

Quarantine is currently not an effective measure for containing SARS-CoV-2's spread for the following reasons:

1. **We only identify a very small proportion of contacts, since we only identify a very small proportion of COVID-19 cases.**
  - Testing is heavily skewed towards detecting symptomatic cases. However, a very high proportion of cases are asymptomatic (a local study estimated the symptomatic proportion as being just 16% of all infections) and the vast majority of these go undetected.<sup>7</sup>
  - In addition, among the small proportion of symptomatic cases, testing is far from universal, since patients may not seek testing when their symptoms are mild and when testing would be burdensome and expensive.
  - Furthermore, the SARS-CoV-2 test sensitivity is suboptimal, sometimes leading to false negative results.<sup>8-10</sup>
  - The inability of the current testing strategy to identify the bulk of cases is illustrated by the high SARS-CoV-2 seropositivity rates seen across multiple provinces in serosurveys, implying that only a fraction of cases (perhaps one in ten, or even less) are ever diagnosed.<sup>6</sup>
  - It stands to reason that if the vast majority of cases are not diagnosed, then the vast majority of case contacts are also not diagnosed. *This means that quarantining and contact tracing are of negligible public health benefit in the South African setting.*
2. **The definition of a “high risk contact” is based on an outdated understanding of the transmission dynamics of SARS-CoV-2.**
  - The definition concentrates on droplet spread while ignoring aerosol spread, which can occur over distances greater than 1-1.5 metres, and also does not require as close a temporal association with the index case as droplet spread does.
  - In addition, it ignores the increased intrinsic transmissibility of subsequent variants of concern compared to the ancestral strain, as well as the fact that pre-existing immunity (from vaccination and/or natural infection) further changes the transmission dynamics.

In addition, quarantining is not feasible in many social settings, and has a **substantial economic and social burden** in the current climate, including:

1. significantly depleting staffing levels at healthcare facilities and in other front line or critical workers (e.g., frail care institutions, police force), which can threaten the integrity of these institutions;
2. significantly reducing economic and governmental activities due to high levels of staff absenteeism.

On an individual level, the consequences of prolonged quarantining include loss of income, loss of employment, and loss of schooling time.

## Recommendations

**We propose that quarantining be discontinued with immediate effect** for contacts of cases of COVID-19.

- This applies equally to vaccinated and non-vaccinated contacts.
- No testing for COVID-19 is required irrespective of the exposure risk, **unless the contact becomes symptomatic.**

**We further propose that contact tracing be stopped.**

### **Rationale for recommendations**

As current testing only identifies a small minority of all COVID-19 cases, quarantining contacts of these cases serves no demonstrable general public health purpose. Furthermore, quarantining is not feasible in many social settings, and is associated with both significant strain on staffing levels and costs to the individual and to the broader society.

Since quarantining contacts of cases no longer serves a public health role, identifying contacts of COVID-19 cases (i.e. contact tracing) equally serves very little role. In addition, contact tracing is impractical once the COVID-19 caseload rises (due to the large number of contacts that have to be identified for each case), and is extremely burdensome in its use of human and financial resources.

Thank you for consideration of this advisory.

Kind regards,



**PROF KOLEKA MLISANA**

**PROF MARIAN JACOBS**

**CO-CHAIRPERSONS: MINISTERIAL ADVISORY COMMITTEE ON COVID-19**

**DATE: 16 December 2021**

**CC:**

- » **Dr SSS Buthelezi (Director-General: Health)**
- » **Dr N Crisp (Deputy Director-General: National Health Insurance)**
- » **Incident Management Team**

## References

1. CDC. Public Health Guidance for Community-Level Preparedness and Response to Severe Acute Respiratory Syndrome (SARS) [Available from: <https://www.cdc.gov/sars/guidance/d-quarantine/rationale.html>].
2. National Academies of Sciences E, and Medicine; Health and Medicine Division; Board on Population Health and Public Health Practice; Board on Health Sciences Policy; Committee on Evidence-Based Practices for Public Health Emergency Preparedness and Response;. Implementing Quarantine to Reduce or Stop the Spread of a Contagious Disease. Downey A BL, Calonge N, editors., editor. Washington (DC): National Academies Press (US); 2020.
3. Peak CM, Childs LM, Grad YH, Buckee CO. Comparing nonpharmaceutical interventions for containing emerging epidemics. *Proc Natl Acad Sci U S A*. 2017;114(15):4023-8.
4. Fraser C, Riley S, Anderson RM, Ferguson NM. Factors that make an infectious disease outbreak controllable. *Proc Natl Acad Sci U S A*. 2004;101(16):6146-51.
5. National Department of Health. Guidelines for Quarantine and Isolation in Relation to COVID-19 Exposure and Infection 2020 [Available from: <https://www.nicd.ac.za/wp-content/uploads/2020/05/Guidelines-for-Quarantine-and-Isolation-in-relation-to-COVID-19.pdf>].
6. South African COVID-19 Modelling Consortium. COVID-19 modelling update: Considerations for a potential fourth wave 2021 [Available from: <https://www.sacmcepidemicexplorer.co.za>].
7. Cohen C, Kleynhans J, von Gottberg A, McMorro ML, Wolter N, Bhiman JN, et al. SARS-CoV-2 incidence, transmission and reinfection in a rural and an urban setting: results of the PHIRST-C cohort study, South Africa, 2020-2021. medRxiv. 2021:2021.07.20.21260855.
8. Mistry DA, Wang JY, Moeser ME, Starkey T, Lee LYW. A systematic review of the sensitivity and specificity of lateral flow devices in the detection of SARS-CoV-2. *BMC Infect Dis*. 2021;21(1):828.
9. Brummer LE, Katzenschlager S, Gaeddert M, Erdmann C, Schmitz S, Bota M, et al. Accuracy of novel antigen rapid diagnostics for SARS-CoV-2: A living systematic review and meta-analysis. *PLoS Med*. 2021;18(8):e1003735.
10. Woloshin S, Patel N, Kesselheim AS. False Negative Tests for SARS-CoV-2 Infection - Challenges and Implications. *N Engl J Med*. 2020;383(6):e38.