How effective is quarantine alone or in combination with other public health measures to control coronavirus (COVID-19)?

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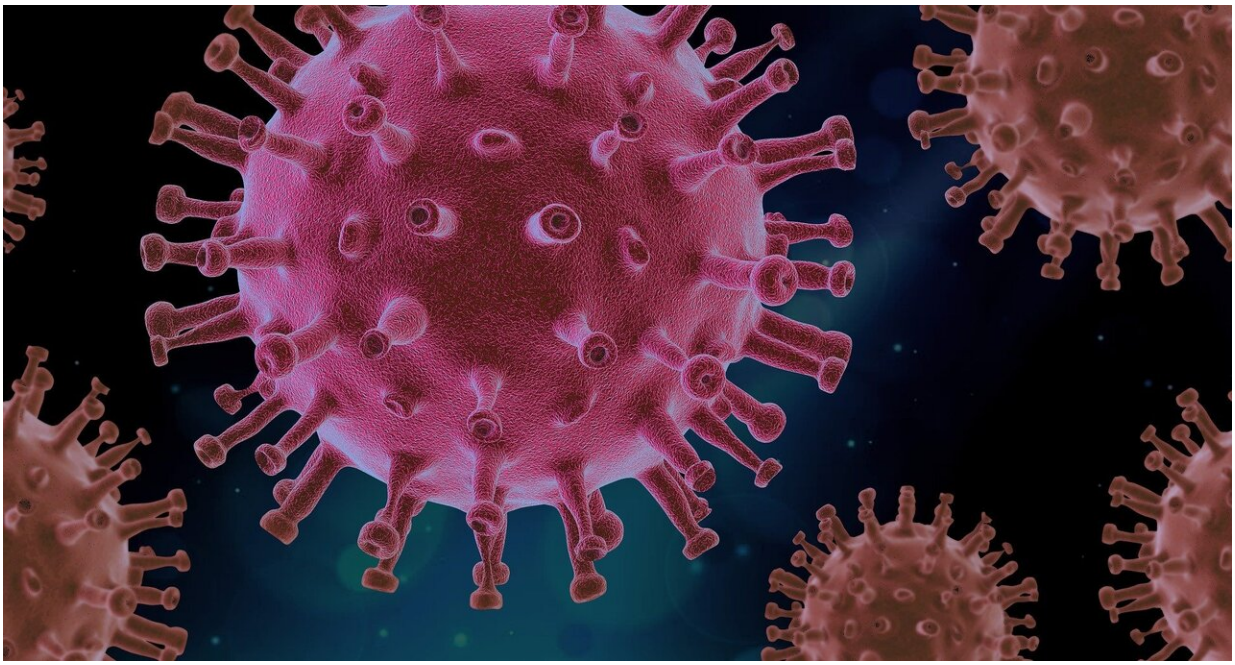

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Today, Cochrane publishes a new Rapid Review looking at quarantine during the COVID-19 pandemic.

The review summarizes evidence available from modelling studies that show how quarantining affects the spread of COVID-19. The studies included in the review consistently conclude that quarantine can play a role in controlling the spread of coronavirus SARS-CoV-2. While early implementation of quarantine and its combination with other public health measures may reduce spread of the disease, key uncertainties remain as to how these measures can best be adopted and when they can be relaxed.

Currently, there are no effective medicines or vaccines available to treat or prevent COVID-19. For this reason, restrictive public health measures such as isolation, physical distancing, and quarantine have been used in a number of countries to reduce transmission of the virus. Isolation refers to the separation of people with symptoms from others, whereas quarantine is the restriction of people who have no symptoms, but who have had contact with people with confirmed or suspected infection. Quarantine can be implemented on a voluntary basis or can be legally enforced by authorities, and it may be applied at an individual, group, or community level.

This Rapid Review was done in a short space of time as part of Cochrane's organizational effort to meet the need for up-to-date summaries of evidence to support decision-making in combating the effects and impact of COVID-19.

Cochrane researchers used abbreviated systematic review methods to address the following questions as quickly as possible:

- Is quarantine of asymptomatic individuals who were in contact with a confirmed or suspected case of COVID-19 effective to control the COVID-19 outbreak?
- Are there differences in the effectiveness of quarantine in different settings?

- How effective is quarantine when combined with other interventions, such as case isolation, school closures, or antiviral drugs, in reducing transmission, incidence of diseases, and death?
- Is quarantine of individuals coming from a country with a declared COVID-19 outbreak effective in controlling the COVID-19 outbreak?

The authors identified 29 relevant studies. Of these, 10 focused on COVID-19, 15 focused on related evidence on SARS (severe acute respiratory syndrome), two focused on SARS and other viruses, and two focused on MERS (Middle East respiratory syndrome). The 10 studies addressing COVID-19 were all modelling studies simulating outbreak scenarios in China, the UK, and South Korea, and on a cruise ship.

The COVID-19 modelling studies included in the review consistently report a benefit of quarantine measures and show similar findings from studies on SARS and MERS.

The authors of this Cochrane Review concluded that:

- Quarantine of people exposed to confirmed cases may avert high proportions of infections and deaths compared to no measures.
- The effect of quarantine of travelers from a country with a declared outbreak to avert transmission and deaths was small.
- In general, the combination of quarantine with other prevention and control measures, such as school closures, travel restrictions, and physical distancing, had a greater effect on the reduction of transmissions, cases which required critical care beds, and deaths compared with quarantine alone.
- More comprehensive and early implementation of prevention and control measures may be more effective in containing the COVID-19 outbreak.

The researchers rate their confidence in the results to be low or very low because of the way that the models used in the studies were developed. They are based on assumptions about the true prevalence of infection, which could be updated when we know more about this aspect of the COVID-19 pandemic.

However, the authors also stress the importance of using information about the local context in deciding on how measures such as quarantining should be adopted and when they can be lifted. Lead author Barbara Nußbaumer-Streit said "This Cochrane Review shows that while quarantine may help in containing the COVID-19 outbreak, decision-makers will need to constantly monitor the outbreak situation locally in order to maintain the best possible balance of measures in place, and that there is an acceptable trade-off between benefits and harms."

Cochrane Editor in Chief, Karla Soares-Weiser, added, "The spread of coronavirus presents a major challenge for governments all over the world. Cochrane has a duty to provide the best available evidence to support policy-making, balancing rigour with speed. We have fast-tracked this review because it addresses one of the highest priority questions we have identified. This review is particularly helpful for decision makers looking for evidence to inform their decisions around the implementation of quarantine measures."

More information: Barbara Nussbaumer-Streit et al, Quarantine alone or in combination with other public health measures to control COVID-19: a rapid review, *Cochrane Database of Systematic Reviews* (2020). DOI: 10.1002/14651858.CD013574

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