Can the recommended quarantine period be shortened without doing a test to release people from quarantine?

Data set includes: contacts who develop symptoms of COVID-19 and test positive[1]

Variables needed:

- Date of last exposure of contact to primary case
- Date of onset of symptoms in contact
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- Data analysis:
- Calculation of the frequency distribution over time for the incubation period with calculation of the mean, median and the interquartile range.
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Frequency distribution of symptom onset (incubation period) in secondary cases								
Day 1	Day 2	…..	….	…	…	Day 14	Day >14	
% of secondary cases who developed symptoms this day, relative to last exposure to primary case	% of secondary cases who developed symptoms this day, relative to last exposure to primary case	% of secondary cases who developed symptoms this day, relative to last exposure to primary case	% of secondary cases who developed symptoms this day, relative to last exposure to primary case	% of secondary cases who developed symptoms this day, relative to last exposure to primary case	% of secondary cases who developed symptoms this day, relative to last exposure to primary case	% of secondary cases who developed symptoms this day, relative to last exposure to primary case	% of secondary cases who developed symptoms this day, relative to last exposure to primary case	Total number of secondary cases

If data are available, this analysis could be restricted to certain subgroups to determine:

a. household contacts only.
b. contacts with a single exposure to the case.
c. contacts with multiple exposures to the case.
    i. Incubation period based on date of last contact with case and date onset symptoms in contact (*contacts who had continuous exposure*)
    ii. Incubation period based on first exposure to the case since start of infectious period (i.e. two days before the date symptoms started in the case).

If data are available on contacts who are asymptomatic and who get tested during their quarantine period, analysis could be undertaken to determine the proportion of asymptomatic contacts who test positive by day since last exposure to the case. This could provide further information to assess whether the quarantine period could be shortened.

What settings, situations, or specific groups have a particularly high risk of transmission?

Data set includes all contacts for specific groups and settings for whom contact tracing was done

iii. Variables needed:

- Setting for the event (workplace, wedding, prison, school, migrants' settlement, sport, travel, long term care facility, hospital, etc.)
- Cases identified in specific setting attached to an event
- Contacts identified in specific setting attached to an event
    - Contacts who are diagnosed with COVID-19
        - High-exposure contacts
        - Low-exposure contacts
        - Definition of high-risk exposure/ close contact used

[1] Assuming that all contacts are followed up for symptoms for full period of quarantine so there is limited loss to follow up

- Data analysis:

Calculation of secondary attack rates for specific setting disaggregated if possible by high/low-exposure, age, ethnicity, and occupation.

When is transmission risk highest relative to symptom onset?

Data set includes all contacts who only had a single exposure episode to a symptomatic case

- Variables needed:

- Date of contact with case
- Date of onset of symptoms in the case
- Contacts who are diagnosed with COVID-19

Data analysis:
Calculation of attack rates among contacts by when the exposure occurred relative to symptom onset in the case.

What is the length of duration of exposure that provides the highest risk of transmission?

Data set includes all contacts who have had multiple exposures to a case

- Variables needed:
- Total duration of exposure to the case during the infectious period (starting 2 days before symptom onset in the case)
- Date of onset of symptoms in the case
- Contacts who are diagnosed with COVID-19

Data analysis:
Calculation of attack rates among contacts by duration of exposure.