# Supplement D: Community Containment Measures, Including Non-Hospital Isolation and Quarantine

## IV. Management of Contacts of SARS Cases

**Objective 1:** Monitor and evaluate contacts of SARS patients (probable and confirmed cases of SARS-CoV disease; SARS RUIs) to ensure early identification of illness and rapid institution of infection control precautions to prevent further spread (See MMWR 52(49):1202-1206 [www.cdc.gov/mmwr/preview/mmwrhtml/mm5249a2.htm]).

### Basic Activities: Passive or Active Monitoring

- In a limited SARS outbreak, contacts of SARS patients may be managed by using passive or active monitoring. Monitoring consists of direct contact – by phone or in person – with the health department or a designee at least once a day to assess the affected person for symptoms and address any needs. Frequent monitoring (e.g., twice a day) can reduce the interval between the onset of symptoms and the institution of precautions. *Passive monitoring* relies on the affected person to contact health authorities if symptoms develop. *Active monitoring* involves direct assessment of each contact at least once a day by a designee of the health department.

  Persons with high-risk exposures (e.g., healthcare workers involved in aerosol-generating procedures on a SARS patient) may require activity restrictions in addition to monitoring (see *Enhanced Activities* below).

- Regardless of the type of monitoring recommended, all contacts of SARS cases should be advised to:

  - Be vigilant for fever (i.e., measure temperature twice a day), respiratory symptoms, and other symptoms of early SARS-CoV illness for 10 days after exposure (See MMWR 52(49):1202-1206 [www.cdc.gov/mmwr/preview/mmwrhtml/mm5249a2.htm]).
  - If symptoms develop, contact a designated health department staff member so that clinical evaluation can be performed without delay.
  - Before visiting a healthcare facility for evaluation, inform the healthcare provider in advance about the possible exposure to SARS-CoV.

### Enhanced Activities: Quarantine of Contacts

During a large outbreak or in situations of high-risk exposures (e.g., if transmission from a particular case has been demonstrated by emergence of secondary cases among one or more contacts), consideration should be given to managing contacts with activity restrictions in addition to active monitoring. This combined approach is referred to as *quarantine*. The purpose of quarantine is to reduce transmission by 1) separating contacts of SARS patients from others, 2) monitoring contacts for symptoms, and 3) instituting appropriate infection control precautions as soon as symptoms are detected.

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Implementation of quarantine for contacts can be complicated and resource intensive, and the activity restrictions can be difficult for affected persons to endure. In deciding when to use quarantine and which persons should be included in a quarantine order, public health officials must strike a balance based on the epidemiologic situation and available resources. Limiting quarantine to only high-risk contacts may be more labor intensive at the outset but will be easier to maintain since fewer resources will be needed for provision of services and enforcement of restrictions. Applying quarantine too narrowly in the midst of an extensive outbreak can, however, blunt the efficacy of the policy if missed cases result in additional generations of transmission. If the resources required for investigation and risk stratification of contacts are not available, broader application of quarantine may be more practical. Whenever quarantine is implemented, close clinical monitoring and provision of essential services and needs must be ensured.

- Based on the situation, select among the three main options for quarantine of contacts: home quarantine, quarantine in designated facilities, and working quarantine.

  **Home quarantine --** Home quarantine is most suitable for contacts with a home environment that can meet their basic needs and in which unexposed household members can be protected from exposure.

  - Persons in home quarantine must be able to monitor their own symptoms (or have them monitored by a caregiver).

  - As is the case for isolation, a home should be evaluated for suitability before being used for quarantine. Because the infection control requirements for healthy contacts in quarantine are less stringent than those for ill persons in isolation, this evaluation may be performed by use of a questionnaire administered to the quarantined person or the caregiver. Additional guidance on use of a residence for quarantine is provided in Appendix D3 and Supplement I.

  - Household members require no specific precautions as long as the quarantined person remains asymptomatic. However, because the onset of symptoms can be insidious, it may be prudent for the quarantined contact to minimize interactions with other household members to prevent exposure during the interval between the development and the recognition of symptoms. Precautions might include 1) sleeping and eating in a separate room, 2) using a separate bathroom, and 3) wearing a surgical mask when in a room with others.

  - Persons in quarantine may be assessed for symptoms by either active or passive monitoring. Delayed recognition of symptoms and a resulting delay in the institution of isolation contributed to extensive chains of transmission in several areas during the 2003 SARS outbreaks, even when the areas were under heightened surveillance. Active monitoring of contacts in quarantine might overcome any delays resulting from the insidious onset of symptoms or denial among those in quarantine.

  - Persons who develop symptoms should immediately notify the designated health department to arrange for medical evaluation. The health department should provide explicit instructions for isolation and other infection control precautions to be observed in the home while the ill person is awaiting evaluation. At minimum, persons with symptoms should be separated from others in the household.

  - Household members may go to school, work, etc., without restrictions unless the quarantined person develops symptoms. If the quarantined person develops symptoms,

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household members should remain at home in a room separate from the symptomatic person and await additional instructions from health authorities.

- Household members can provide valuable support to quarantined persons by helping them feel less isolated and ensuring that essential needs are met.

**Quarantine in designated facilities** -- Contacts who do not have an appropriate home environment for quarantine or who choose not to be quarantined at home may be quarantined in facilities designated for this purpose. Facilities designated for quarantine of persons who cannot or choose not to be quarantined at home should meet the same criteria listed for home quarantine. Evaluation of potential sites for facility-based quarantine is an important part of preparedness planning. Additional guidance on use of a residence for quarantine is provided in Appendix D3 and Supplement I.

**Working quarantine** -- This restriction applies to healthcare workers or other essential personnel who have been exposed to SARS patients and may need to continue working (with appropriate infection control precautions) but who are quarantined either at home or in a designated facility during off-duty hours (See Supplement C). When off duty, contacts on working quarantine should be managed in the same way as persons in quarantine at home or in a designated facility. Local officials will also need to develop:

- Systems for monitoring persons in working quarantine for symptoms during work shifts
- Mechanisms for immediate medical evaluation of anyone who develops symptoms
- Provisions for transportation to and from work, if needed

- The recommended duration of quarantine for SARS is generally 10 days from the time of exposure. During that period, contacts should be monitored at least daily for fever and respiratory symptoms. In addition, health officials should provide the necessary support to enable contacts to comply with quarantine appropriately. Recommendations for monitoring of contacts include the following:

  - Monitor daily, or more frequently if feasible, for fever, respiratory symptoms, and other symptoms of early SARS-CoV disease.
  - Monitor compliance with quarantine through daily visits or telephone calls.
  - Provide a hotline number for quarantined persons to call if they develop symptoms or have other immediate needs.
  - If a quarantined person develops symptoms suggestive of SARS, arrangements should be in place for immediate medical evaluation of the patient. The health department should provide explicit instructions on the isolation and infection control precautions to be observed while the ill person is awaiting evaluation. At a minimum, symptomatic persons should be isolated from others in a separate room.
  - Provide persons in quarantine with all needed support services, including 1) psychological support, 2) food, 3) household and medical supplies, and 4) care for family members. Financial issues, such as medical leave, may also need to be considered.

- At the end of the designated quarantine period, contacts should have a final assessment for fever and respiratory symptoms. Persons without fever or respiratory symptoms may return to normal activities.

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**Objective 2**: Compile and analyze the information on contacts needed to evaluate and monitor the effectiveness of contact management strategies and containment interventions.

Contact tracing and monitoring require substantial data management resources. The information technology needs for timely surveillance, monitoring, and management of contacts of SARS cases are currently under discussion among CDC and partners in state and local health departments, and development of a contact tracing and monitoring database is under way.

### Basic Activities

- Public health officials responsible for contact tracing and management should compile and analyze information collected from contacts during the investigation and in the course of monitoring to evaluate the effectiveness of control measures. These data will inform decision making about the need for more stringent measures such as quarantine. Information should be collected for contacts of all SARS cases to determine the following:

    - Number of contacts identified per case
    - Number of days between onset of symptoms and reporting to health officials and between reporting and isolation
    - Number of cases occurring with unknown exposure

### Enhanced Activities

If quarantine is implemented, information gathered during the investigation and monitoring of contacts should be analyzed on an ongoing basis to evaluate the effectiveness of the intervention. This information will be critical in determining the need for broader application of quarantine and the timing of withdrawal of containment measures. In addition to the parameters listed above, which should be determined for contacts of all SARS cases, the proportion of contacts in quarantine (by risk group) who develop SARS-CoV disease should be determined.