Prevention and Control Measure of COVID-19 in China

Chinese Center for Disease Control and Prevention

March 12\textsuperscript{nd}, 2020
Epidemic curve of COVID-19 in China

( as of March 10, 2020)

Confirmed Cases (80,778)

- date of onset
- date of report
Preliminary understanding of disease features

• **Transmission capacity**
  - COVID-19 is mainly transmitted through contact with respiratory droplets
  - Majority of onwards transmission is occurring around the time of illness onset in an infected person, and likely pre-symptomatic transmission was also identified.
  - \( R_0 \): 2-3, serial interval: 6 days.
  - Incubation periods: 1-14 days
  - Secondary incidence rate: 5% (symptomatic transmission), 0.6% (asymptomatic transmission)

• **Disease severity**
  - About 80% are mild/moderate, 15% severe, 5% critical
  - Case fatality risk: about 6% in Wuhan city, 0.8% other areas
Containment Strategy in China

Non-pharmaceutical intervention measures

- Social distancing measures
- Travel-related measures
- Case and contact management
- Personal protection
- Environmental measures

Interrupt transmission
Tailored control measures at varied risk levels

- **Low-risk areas:** strictly prevent importation.
- **Medium-risk areas:** to prevent importation and stop local transmission.
- **High-risk areas:** to stop local transmission, prevent exportation, and implement strict prevention and control measures.
- **Timely risk levels adjustment mechanism.**
National prevention and control guidelines for COVID-19

statutory infectious disease management

Version I
Jan 15th
Nationwide training

Version II
Jan 20
Nationwide training

Version III
Jan 28
Nationwide training

Version IV
Feb 6
Nationwide training

Version V
Feb 21
Nationwide training

Version VI
Mar 7
Nationwide training

Components:
- Case detection and management
- Case and cluster investigation
- Contact tracing and management
- Laboratory testing
- PPE and disinfection

Four E key measures:
- Early detection
- Early reporting
- Early isolation
- Early treatment

Rapid detection & response
Case & contact detection and management workflow

- Suspected Cases
  - Case treatment and management
  - Confirmed cases
    - Lab test
    - Asymptomatic infection
      - Lab test
      - Close contact tracing and medical observation
    - Lab test
  - Isolation
    - Discharge or decease
  - Lab test
Surveillance case definitions

01 Suspected Cases

02 Confirmed Cases

03 Asymptomatic Infected Persons

04 Cluster of Cases

05 Close Contacts

The latest English version of guidelines will be published soon in China CDC Weekly journal.
Early and active detection of cases

1. Healthcare facilities at all levels
2. Existing surveillance networks for PUE, ILI and SARI
3. Health status monitoring of close contacts
4. Port health quarantine for the imported cases detection
5. Primary level organizations or employers
## Case reporting requirement

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<th>Case reporting</th>
<th>Updating reports</th>
<th>Reporting of public health events</th>
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<td>• Suspected cases, confirmed cases, or asymptomatic infected individuals were required to report&lt;br&gt;• Web-based reporting system within 2h after diagnosis&lt;br&gt;• Information checking by CDCs within 2h after receiving the report</td>
<td>• When suspected cases confirmed or excluded&lt;br&gt;• When clinical severity changed with the progression of illness&lt;br&gt;• When status of asymptomatic infected individuals changed&lt;br&gt;• when died of COVID-19, date of death need to be updated</td>
<td>• The first COVID-19 confirmed case or cluster in a county/district&lt;br&gt;• Web-based emergency events reporting system within 2h&lt;br&gt;• The emergency level should be updated based on investigation findings and assessments</td>
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Chinese Web-based Reporting System

The Platform for Cases and Emergency Events Reporting

Notifiable Individual Case Information System

Close Contacts Tracing and Management System

Epidemiological Investigation information System
Case management

• Isolation and treatment at designated hospitals
  • Suspected cases should be isolated in a single room.
  • Confirmed cases and asymptomatic infection could be isolated in a same room.
Case discharge criteria

• **Suspected cases** could be discharged only after their nucleic acid testing are negative for respiratory pathogen twice consecutively (sampling interval being at least one day), and both IgM and IgG antibody test are negative 7 days since illness onset.

• **Asymptomatic cases** could be discharged only after their nucleic acid testing are negative for respiratory pathogen twice consecutively (sampling interval being at least one day).

• **Confirmed cases** could be discharged when meeting with the following criteria:
  • body temperature is back to normal for more than three days;
  • respiratory symptoms improve obviously;
  • pulmonary imaging shows obvious absorption of inflammation;
  • and nucleic acid tests negative for respiratory tract pathogen twice consecutively (sampling interval being at least one day).
Contact tracing and management

• Close contact tracing
  • Close contact: Any person who had contacted (within 1 meter) with a confirmed or suspected case since the date of illness and two days before illness onset, including:
    • Any social or health care worker, who provided direct personal or health care of a symptomatic confirmed case of 2019-nCoV or within the same closed setting
    • Any person who has resided in the same household (or other closed setting) as the cases
  • Asymptomatic infection’s contact: Any person who had contact (within 1 meter) with an asymptomatic infection within 2 days before sampling.
Contact tracing and management

• **Close contact management**
  - Perform medical observation at home or at designated places (i.e. hotel).
  - Duration: 14 days from the last contact with the cases or asymptomatic infection.
  - Body temperature and health status examination are performed twice a day by community health care workers.
  - The unnecessary outdoor activities are not permitted, and living accommodation is supplied by local community.
Specimen collection and lab testing

- Healthcare facilities receiving COVID-19 cases should collect relevant clinical specimens timely.
  - upper respiratory tract specimens
  - lower respiratory tract specimens
  - stool specimens/anal swab
  - blood and serum specimens, etc.

- Feedback the test result within 12 hours

- Specimen collection, transportation, storage and testing should be conducted strictly in accordance with the requirements set out in the lab testing protocol issued by China CDC.

- Verification and confirmation
  - All the original specimens of clusters with five or more COVID-19 cases in each region
  - Oversea imported cases
China CDC has developed a total of 38 interim guidelines for the public population.

### General population
- Hand hygiene
- Respiratory etiquette
- Face masks
- Disinfection
- …

### Special group
- The elder
- Patients with chronic diseases
- Maternal prevention
- Students returning to school after winter vacation
- …

### Specific places
- Family
- Kindergarten (or school)
- Nursing homes
- Private cars
- Subway and bus
- Airline
- …

### Personal protection
- The selection and use of masks
- How to deal with these masks
- How to wash your hands correctly?
- Home disinfection
- …

### Travel-related
- Travel health advice
- What should a person with a history of living or traveling in an endemic area do?
- …
Simulation scenario of epidemic with different response strategies

- With no active intervention
- Containment strategy
- Oversea importation control strategy
- Mitigation strategy

Graph showing the number of cases over time with different strategies.
Thank You