



北京市疾病预防控制中心

Beijing Centers for Diseases Control and Prevention(CDC)&Centers for Preventive Medical Research

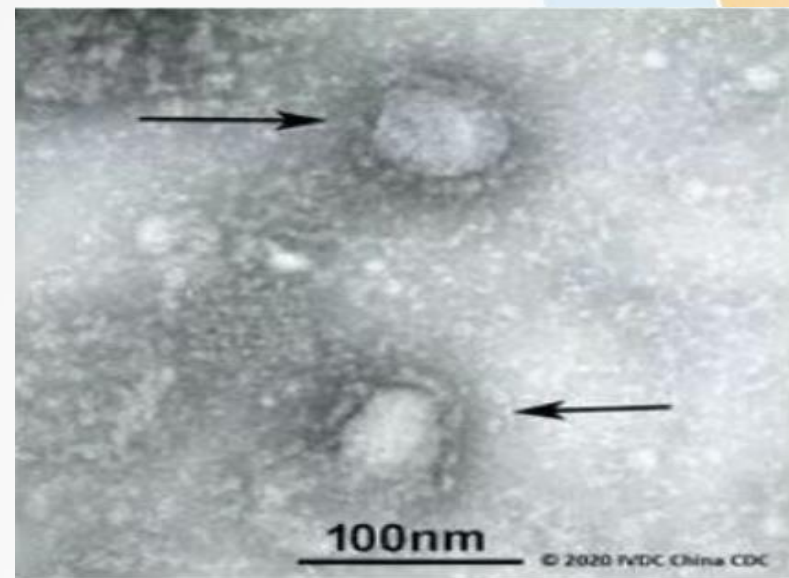


# Prevention and Control Measures of COVID-19 in Beijing, China

Beijing Center for Disease Prevention and Control  
April 21, 2020

# Background

- COVID-19 is an emerging infectious disease caused by a novel coronavirus - SARS-CoV-2.
- On 30 January, WHO declared the outbreak a Public Health Emergency of International Concern (PHEIC).
- On 11 March, WHO Director-General characterized COVID-19 as a pandemic.



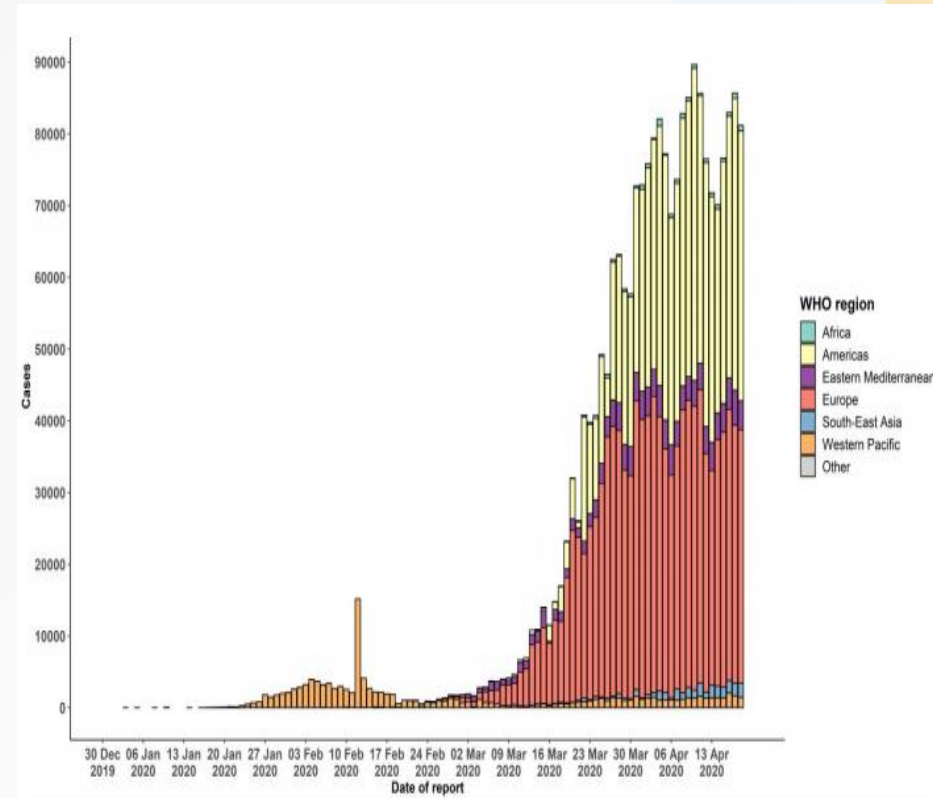
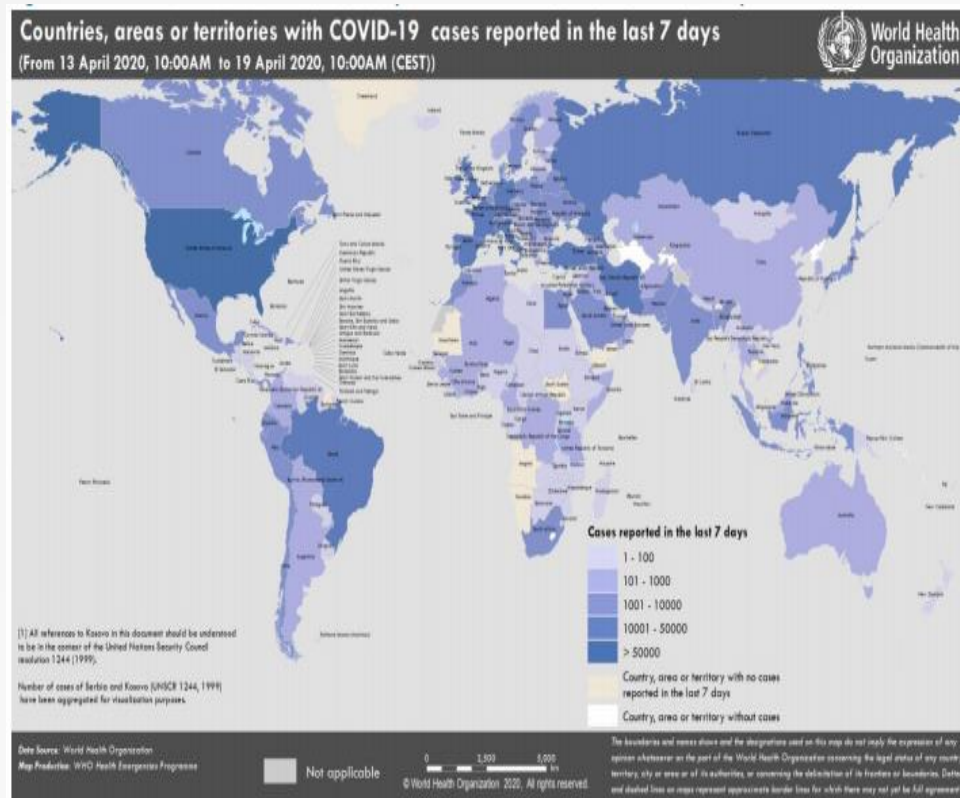
# Epidemiological features of COVID-19

- Infection source
  - Symptomatic cases at presymptomatic or symptomatic course
  - Asymptomatic cases
- Routes of Transmission
  - Respiratory droplets
  - Direct contact or indirect contact with contaminated objects & surfaces
    - The virus persisted on surfaces up to several days
      - up to 4 hours on copper
      - up to 24 hours on cardboard
      - up to 2–3 days on plastic & stainless steel
  - Aerosol of high concentration in relatively closed space
  - Contamination of faeces or urine
- No prior immunity
- Incubation period: 3-7 (range: 1-14) days
- $R_0$ : 2.2 (95%CI:1.4-3.9)
- Serial interval: 7.5 (95%CI:5.3-19) days

# Global situation

As of April 19, according to the WHO:

- Countries/regions/territories affected: Over 200
- Globally confirmed cases: 2 241 359



# Epidemic curve of COVID-19 in China

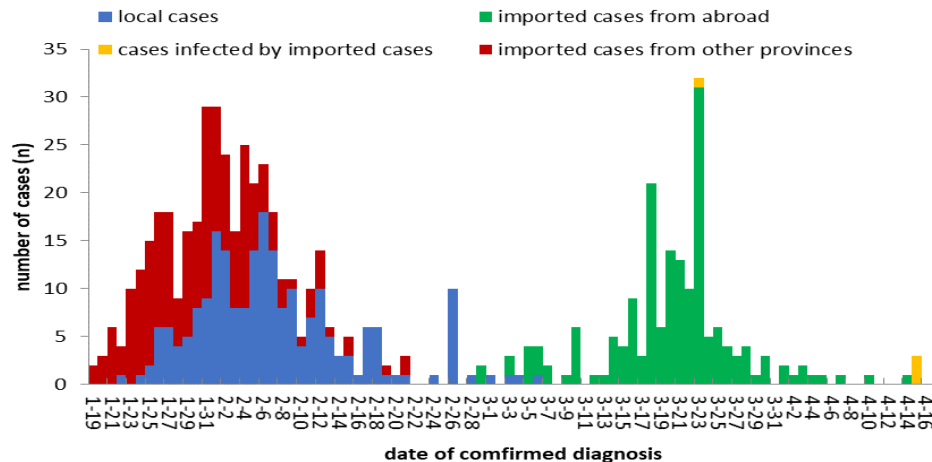
As of April 18, according to the National Health Commission:

- Confirmed cases: 82735
- Deaths: 4632



# Epidemic curve of COVID-19 in Beijing (As of April 19)

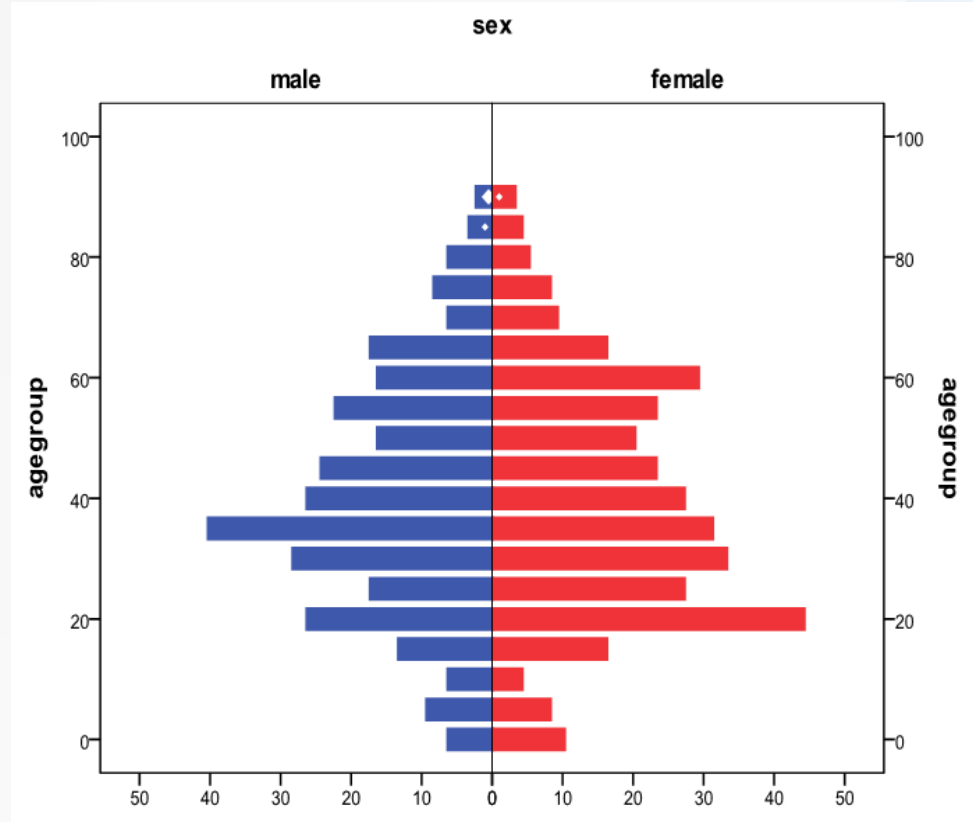
- 593 confirmed cases
- Crude CFR: 1.35% (8 deaths)
- The epidemic situation can be roughly divided into two stages.
  - 1<sup>st</sup> stage (January 19-February 28)
    - Mainly imported cases and local infected cases.
  - 2<sup>nd</sup> stage (March 7 to now)
    - Imported cases, and sporadic cases infected by imported cases.
  - Transitional period (February 29 to March 6)
    - Sporadic imported cases and local infected cases





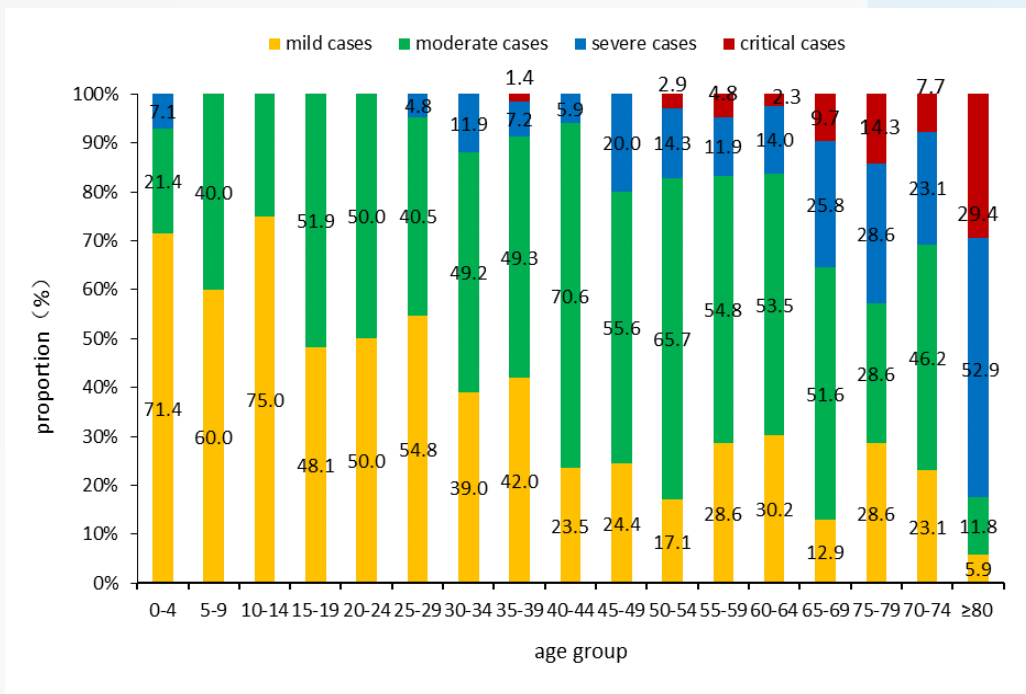
# Demographic distribution of COVID-19 in Beijing

- Sex
  - Male: 272 (45.9%),
  - Female: 321 (54.1%);
  - male-to-female ratio: 0.85:1
- Age
  - Range: 6 months to 94 years old,
    - 0-2 years: 10 (1.7%)
    - 3-5 years: 16 (2.7%)
    - 6-17 years: 31 (5.2%)
    - 18-59 years: 431 (72.7%)
    - 60 and older: 115 (19.4%)
    - 80 and older :17 (2.9%)



# Severity of COVID-19 in Beijing

- Mild cases: 213 (35.9%)
- Moderate cases (mild pneumonia): 297 (50.1%)
- Severe cases: 67 (11.3%)
- Critical cases: 16 (2.7%)
- Percentage of severe and critical cases increased with age.





# Epidemiological Parameters of COVID-19 in Beijing

- $R_0$  was estimated at 2.5 by MCMC model.
- The secondary attack rate of close contacts: 5.54% (233/4204) .
  - Household contacts: 19.79%
  - Contacts of other relationships: 2.43%
- The average incubation period: 6.31 days (95% CI: 6.03-6.58)
- Family cluster analysis
  - One case was able to transmit virus to two family members (95% CI: 1.63-2.39).
  - The average serial interval: 7.64 days (95% CI: 6.43-8.93)
- Risk factors for household transmission
  - Primary case's lack of knowledge of their own infectiousness when developing illness,
  - Less frequent disinfection in households
  - Daily close contact with primary case at home (within 1 meter)
  - None of the family members wearing a mask at home before primary case developing illness

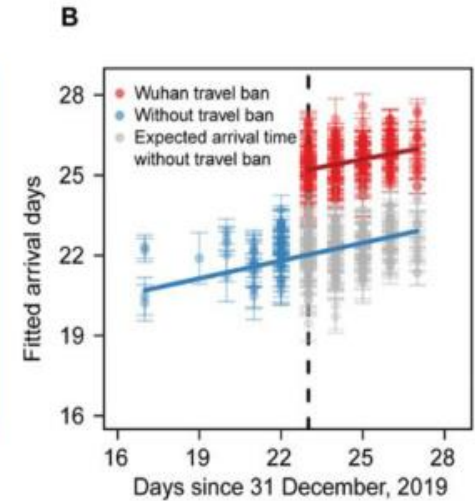
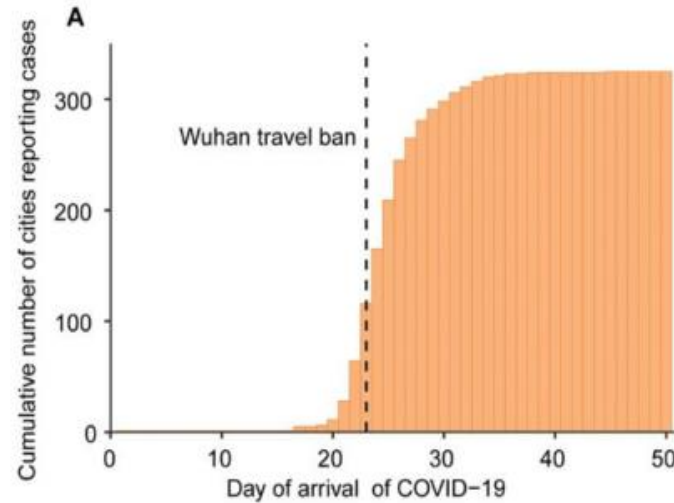
# Measures in China

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

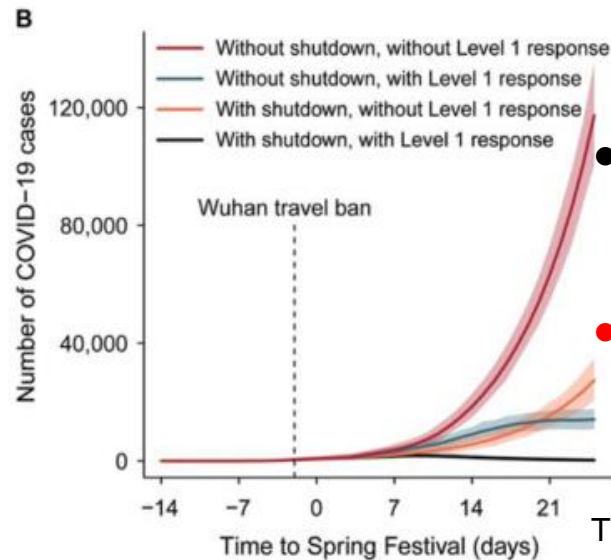
- Wuhan city travel ban
- Level 1 national emergency response

◆ Guarding against imported cases

◆ Preventing a resurgence of local outbreak



movement and public health interventions. The Wuhan shutdown was associated with the delayed arrival of COVID-19 in other cities by 2.91 days (95%CI: 2.54-3.29). Cities that implemented control measures pre-



- Without Wuhan travel ban or the national emergency response:  
744,000 cases;
- 96% of these cases were averted by both measures.

# Strategies in Beijing

- Guarding against imported cases and preventing a resurgence of local outbreak.
- Strictly implement the "Four-party Responsibilities" .



# Measures in Beijing

- **Strictly prevent import of cases, and take measures beforehand**

- All personnel entering Beijing from abroad or other provinces underwent medical observation at home or at designated places (i.e. hotels)
- Strengthen port health quarantine through health declaration by entry personnel, boarding quarantine, as well as body temperature inspection.
- All personnel entering Beijing from abroad underwent medical observation for 14 days and nucleic acid detection.



- **Social distancing**

- Extend the Spring Festival holiday in 2020
- Avoid mass gatherings
  - Cancel or suspend sports events, concerts, etc.
  - Closure of entertainment venue
  - Limit flow rate into parks or resorts
- Postpone the opening of universities, middle schools, primary schools and kindergartens
- Limit passenger load of public transportation.
- .....



# Measures in Beijing

- Strengthen community management
  - Access cards were issued to the residents by community administration companies
  - Check temperature for people entering the community, and strengthen the verification and management of guests
- Strengthen the detection, management and treatment of cases
  - Over 70 fever clinics have been set up to screen and test fever patients
  - Isolation and treatment of cases at designated hospitals
    - Suspected cases should be isolated in a single room
    - Confirmed cases and asymptomatic infection could be isolated in the same room



# Measures in Beijing

- Strengthen the detection, management and treatment of cases
  - 50 testing institutions were recruited with a capacity of testing 13000 specimens everyday
  - 20 designated hospitals with a capacity of over 3000 beds,
    - **3 at the municipal level**
    - **17 at the district level**
  - A clinical expert group was organized at the urban level.
  - The combination of Chinese traditional and Western medicine was used to strengthen the treatment.



# Measures in Beijing

- Close contact tracing and management
  - Any person who had come in contact (within 1 meter) with a confirmed or suspected case since 4 days before illness onset, or with an asymptomatic infection since 4 days before sampling.
  - Underwent medical observation at designated places for 14 days since the last exposure.
  - Body temperature and health status examination were conducted twice everyday by community health care workers.
  - Unnecessary outdoor activities were prohibited.
  - Living accommodation was supplied by local community.





# Measures in Beijing

- Preparation and stockpile of adequate resources
  - A material support working group has been set up to coordinate the procurement, use and storage of PPE, medicines and equipments.
  - Xiaotangshan Hospital has been constructed and opened in an emergency, with 1000 beds, to admit cases found from entry personnel.
- Science-driven measures, and guidance for the public
  - Release epidemic information openly and transparently
  - Publicize prevention and control knowledge to the public through various channels,
  - Formulate 36 guidelines for resumption of work in various settings: buildings, restaurants, barbershops, elevators, shopping malls, subways, buses, etc.
- The "Health Treasure" app was developed to verify personnel information
- Encourage telecommuting and online learning
- Establish a psychological hotline to provide psychological assistance to medical staff and the public.



# Nine-point tips for personal protection



Thank you

