

Latest situation of ‘Severe Respiratory Disease associated with a Novel Infectious Agent’ and Prevention and Control Measures in Hong Kong

20 Jan 2020



Outline of presentation

- Background and latest situation of the outbreak in Mainland
- Local prevention and control
 - Emergency preparedness
 - Surveillance
 - Port health measures
 - Risk communication and health education

Identification of the outbreak

- According to official information from Mainland health authorities dated 31 Dec 2019, a number of cases of pneumonia of unknown etiology with a link to a wholesale market called “華南海鮮城” in Wuhan, Hubei, have been identified since Dec 2019
- Wuhan Municipal Health Commission started investigation with active case finding and retrospective investigations in medical facilities
- Up to 5 Jan 8am, 59 cases have been identified, with 7 (12%) in serious condition at that juncture
- Onset: 12 – 29 Dec
- Features compatible with viral pneumonia

The market “華南海鮮城”

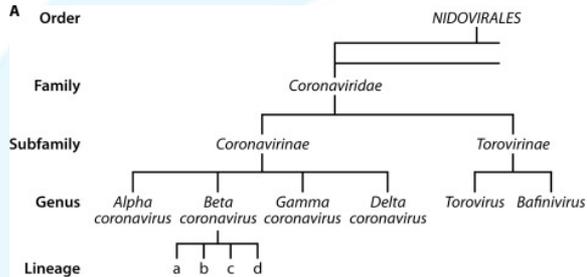
- Most cases worked at or had frequent visits to “Hua Nan Seafood Market”
- Closed since 1 Jan for cleaning and disinfection
- Media reports revealed that apart from seafood, live animals were sold



Causative pathogen

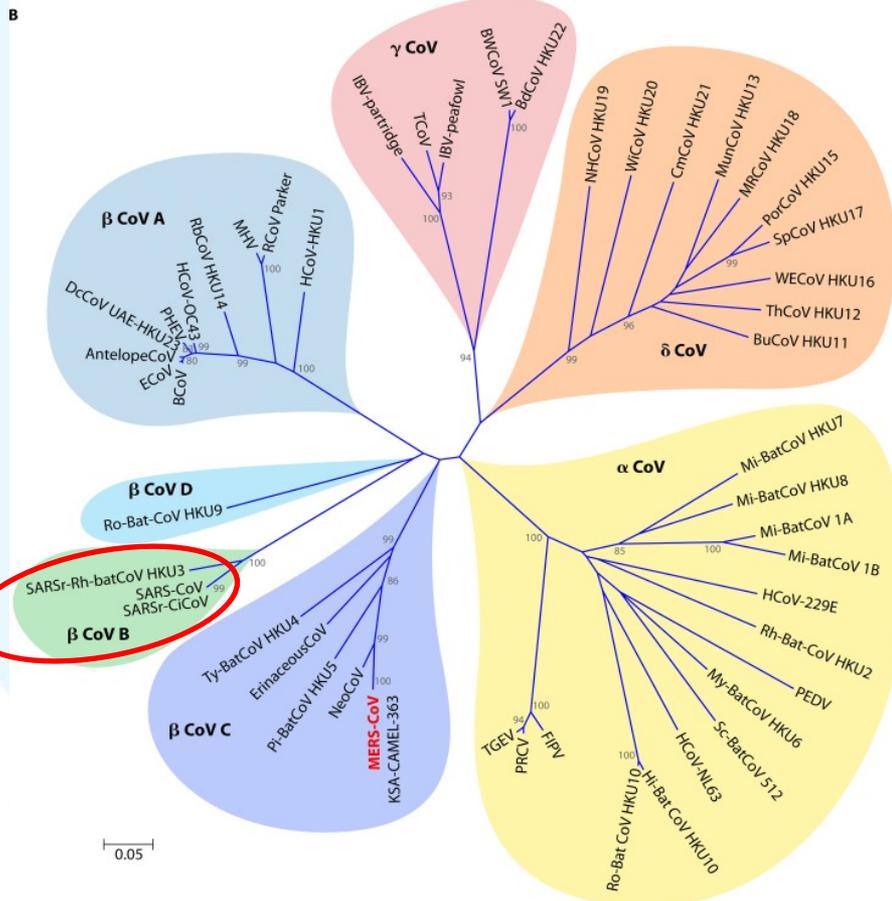
- Respiratory pathogens including influenza viruses, avian influenza viruses, adenovirus, SARS-CoV and MERS-CoV, have been ruled out
- A novel coronavirus (nCoV) was subsequent detected by a laboratory on 7 Jan:
 - A virus was isolated from sample of one case
 - Electron microscopy showed typical appearance of coronavirus
 - Full genetic sequence revealed a SARS-CoV like virus
 - Nucleic acid detected in 15 cases (as of 9 Jan)
- This novel coronavirus (2019-nCoV) is preliminarily determined to be the infectious agent for this cluster of viral pneumonia
- 5 gene sequences were uploaded to GISAID & Genbank
- Environmental samples from the market were tested +ve for 2019-nCoV

Classification of coronaviruses



- 4 main sub-groups - α , β γ and δ
- 6 CoVs are known to infect **humans:**

- 2 α coronaviruses - 229E & NL63
- 4 β coronaviruses - OC43, HKUI, SARS-CoV & MERS-CoV
- Causing illnesses ranging from common cold to Severe Acute Respiratory Syndrome (SARS)



Latest situation

- Arranged the samples of existing patients to be tested for nucleic acid of 2019-nCoV
- Expert groups have made overall assessments on the hospitalised patients, taking into consideration: clinical picture, epidemiological information and laboratory results, etc.
- As at 17 Jan, 62 patients have been diagnosed to have nCoV infection
- Earliest and latest cases had onset of illness on 8 Dec 2019 and 13 Jan 2020 respectively

Clinical features

- Symptoms include fever, malaise, dry cough and SOB
- Vital signs were stable in most of the cases
- CXR showed bilateral pneumonic infiltrates
- Among the 62 cases, 19 discharged, 8 in serious condition and two died, while the remaining patients in stable condition (as at 17 Jan)
- The fatal cases:
 - a 61-year-old man with abdominal tumour and chronic liver disease
 - a 69-year-old man with severe myocarditis at admission and history tuberculosis

Epidemiological information

- Most cases had exposure to the market, *some denied exposure*
- 763 close contacts (including 419 healthcare workers) were traced (as at 17 Jan)
 - 681 had completed medical surveillance
 - 82 still under medical surveillance
- **At least** 1 family cluster: index is a man working in the market, his wife who denied visit to the market had onset later
- No healthcare workers affected so far
- No clear evidence of human-to-human transmission, but possibility of limited H-to-H transmission could not be ruled out, while the risk of sustained H-to-H transmission is low

Exported case to Thailand

- Border thermal screening at 4 international airports with direct flights with Wuhan since early Jan
- Two imported cases from Wuhan
 - 14 Jan 2020:
 - 61-year-old female
 - Onset 5 Jan (fever, chills, sore throat, headache)
 - Travelled to Bangkok on 8 Jan
 - Detected to have fever upon arrival and taken to hospital for isolation and testing
 - Later tested positive for the nCoV
 - 17 Jan 2020:
 - 74-year-old female
 - Travelled to Bangkok on 13 Jan
 - Detected to have fever upon arrival and taken to hospital for isolation and testing
 - Later tested positive for the nCoV

Exported case to Japan

- A man in his 30s
- Travelled to Wuhan and had onset of fever on 3 Jan while in Wuhan
- Contact with a pneumonia case in Wuhan
- **Did not** visit Hua nan seafood Market
- Returned Japan (Kanagawa) on 6 Jan
- Admitted to hospital on 10 Jan
- Tested positive for nCoV
- Recovered and discharged on the same day

WHO risk assessment

- Limited information to determine the overall risk
- The reported link to a wholesale fish and live animal market could indicate an exposure link to animals
- Additional investigations are needed to determine incubation period, spectrum of disease, clinical course, exposures that result in infection, risk factors, secondary attack rates, and modes of transmission, etc.
- Not recommend any specific measures for travellers
- Advise against application of any travel or trade restrictions on China based on current information available

| | SARS | MERS |
|------------------------------------|--|---|
| Clinical presentations | Fever, chills/rigor, myalgia, malaise, dry cough, headache and dyspnoea | <ul style="list-style-type: none"> • Fever, cough, SOB • GI symptoms, e.g. diarrhoea, in some cases • No or mild symptoms in 20% |
| Incubation period | Up to about 10 days | 2 – 14 days |
| No. of cases | 8098 (2003) | 2494 (since 2012, as of Nov 2019) |
| No. of deaths (case fatality rate) | 774 (9.6%) | 858 (34.4%) |
| Geographical distributions | First in Mainland, then to HK and subsequently to other countries/areas, e.g. HK, Taiwan, Singapore, Canada, USA | Middle East (esp. Saudi Arabia), occasional exportations to other countries with outbreaks (e.g. Korea) |
| Mode of transmission | Droplets | Zoonotic virus with dromedary camels as main animal reservoir |
| Human-to-human transmission | Efficient | Limited, non-sustained |
| Nosocomial transmission | Yes | Yes (18% affected HCWs) |
| Super spreading events | Yes | Yes |

Local prevention and control measures

Emergency preparedness

- ‘**Preparedness and Response Plan for Novel Infectious Disease of Public Health Significance**’ has been launched on 4 Jan 2020
- A 3-tier response level is adopted: Alert, Serious and Emergency
- Based on risk assessment of the situation in Wuhan, **Serious Response Level** was activated on the same day
- Meetings of the Steering Committee chaired by SFH to discuss prevention and control measures with various relevant policy bureaux and government departments



Enhanced surveillance

- Implemented since evening on 31 Dec 2019
- Latest reporting criteria:
 - ***Clinical***: Patients presented with fever and acute respiratory illness, or with pneumonia; **AND**
 - ***Epidemiological***: either one of the following conditions within 14 days before onset of symptom:
 - a) With travel history to Wuhan (irrespective of any exposure to wet market or seafood market); OR
 - b) Visited a medical hospital in Mainland China; OR
 - c) Had close contact with a confirmed case of the novel coronavirus while that patient was symptomatic.

Severe Respiratory Disease associated with a Novel Infectious Agent

- Refers to the cluster of viral pneumonia cases in Wuhan associated with nCoV
- Listed as a notifiable infectious disease under Schedule 1 of Prevention and Control of Disease Ordinance (Cap. 599) since 8 Jan
- Empowers DH to effectively handle suspected cases if the patients are not co-operative, e.g. refuse to receive medical examination and be isolated
- Once a specific virus is confirmed for this disease, the name in Schedule 1 will be revised and the infectious agent will be added to Schedule 2 to Cap. 599

Management of reported cases

- All patients will be admitted to public hospitals for isolation in a negative pressure room for treatment.
 - Airborne, droplet and contact precautions
- Private doctors need to call DH's Medical Control Officer (MCO) when reporting a case. MCO will make arrangement for the patient to be admitted to a public hospital directly
- Respiratory specimens (preferably lower specimens) taken for testing in PHLSB
 - RT-PCR for SARS related CoV (able to detect nCoV according to the gene sequence)
 - CoV PCR using conventional PCR
 - Virus isolation

Characteristics of reported cases (31 Dec – 19 Jan noon)

- Since 31 Dec 2019, CHP has received reports of a total of **99** suspected cases fulfilling the reporting criteria (as of 19 Jan, noon).
- M:F ratio 1: 1.3
- Age range: 11 months to 87 years (median 24)
- Most were reported by HA (74; 75%), some reported by private doctors (21; 21%) and Port Health Division (4; 0.04%)
- Most (84%) lived or travelled to Wuhan, others had history of visiting healthcare facilities in Mainland
- All were in stable condition without ICU cases
- 80 cases have been discharged

Laboratory results

- Among the 99 suspected cases, 69 cases (70%) have positive laboratory results so far

| Positive detections | N=69 |
|------------------------------|------|
| Influenza A(H1), A(H3), B | 54% |
| Human rhinovirus/enterovirus | 33% |
| Adenovirus | 22% |
| Parainfluenza virus | 12% |
| Coronavirus 229E | 7% |
| Respiratory syncytial virus | 7% |
| Human metapneumovirus | 3% |
| Coronavirus HKU1 | 3% |
| Coronavirus OC43 | 1% |

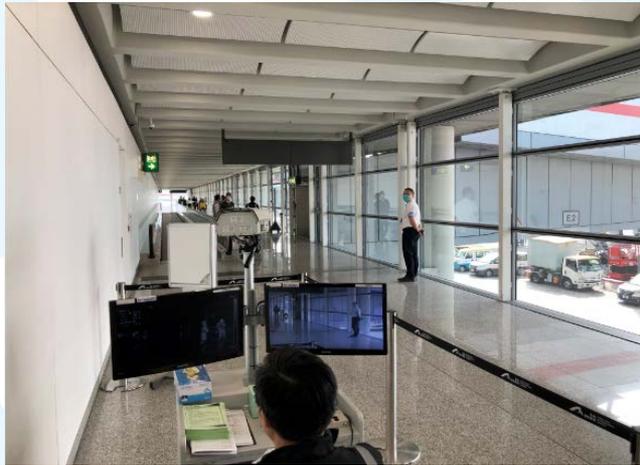
Note: some cases had > 1 positive tests.

Port health measures

- Traffic between Wuhan and HK:
 - 11 direct flights every week (Dragon Air)
 - 2 pairs of High Speed Trains with stop at Wuhan daily (i.e. 2 outbound & 2 inbound)
- Port Health Division (PHD) has been conducting health surveillance measures at all boundary control points (BCPs)
- Thermal imaging systems are in place for temperature screening of inbound travellers

Enhanced port health measures (1)

- Since 1 Jan, immediate referral of inbound travellers with relevant symptoms and travel history to public hospitals
- Additional thermal imaging system set at the airport for dedicated temperature screening of travellers arriving from Wuhan since 3 Jan



Enhanced port health measures (2)

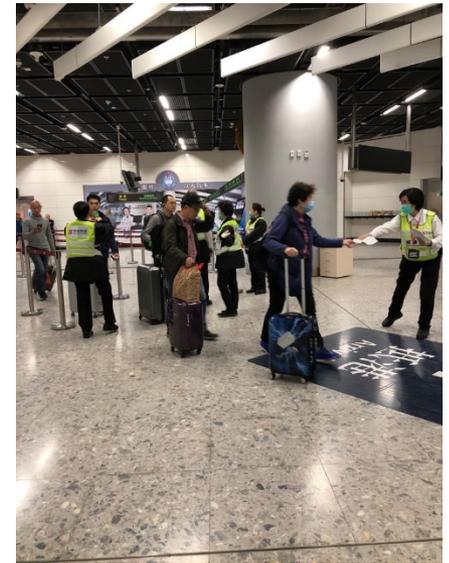
For West Kowloon Station:

- Deployed additional manpower to enhance temperature screening for inbound travellers since 3 Jan, and set up a health post at arrival hall
- Since 6 Jan, started to conduct additional temperature checks using handheld infra-red thermometers for all inbound travellers during the periods when the 2 high speed trains with stop at Wuhan arrive HK, to ensure that all passengers from these 2 trains have body temperature checked



Enhanced port health measures (3)

- Advised MTR Corporation, Airport Authority and relevant airlines to enhance cleaning and disinfection of high speed trains and aircrafts arriving HK from Wuhan, and step up cleaning and disinfection at HKWKS and airport terminal buildings
- Stepped up promotion of health messages to inbound and outbound travellers through broadcasts and distribution of pamphlets, etc. at the HKIA and HKWKS



Risk communication and health education

Designated webpage

衛生防護中心 - 嚴重新型傳染性病原體呼吸系統病

香港特別行政區政府
衛生署 衛生防護中心

熱門搜尋: 疫苗, 流行性感冒, 肺炎, 催淚煙, 失眠

關於我們 健康資訊 指引 資源 健康統計數字 傳媒天地 其他

嚴重新型傳染性病原體呼吸系統病

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2020年1月15日

嚴重新型傳染性病原體呼吸系統病的最新情況

「嚴重新型傳染性病原體呼吸系統病」是指2019年12月起在湖北省武漢市出現的病毒性肺炎病例群组個案。根據內地衛生部門提供的資料，個案病徵主要為發燒，少數患者呼吸困難，其中部分患者病情嚴重。

根據世界衛生組織的風險評估，是次肺炎病例群组與一海鮮及活動物批發市場的關連顯示感染可能與接觸動物有關。內地的調查目前未發現明確的人傳人證據，亦未發現醫護人員感染。然而，不能排除有限度人傳人的可能性，但持續人傳人的風險較低。

現時沒有預防這傳染病的疫苗，要預防肺炎及呼吸道傳染病，市民必須時時注意個人衛生，保持雙手清潔，外遊時，不要接觸動物；不要吃野味；及避免到濕貨市場、活家禽市場或農場。如果回港後發燒或者有其他病徵，應戴上外科口罩，並馬上求醫，告訴醫生最近曾到訪的地方。

有關的詳細資料，請瀏覽嚴重新型傳染性病原體呼吸系統病健康資訊。

預防肺炎及呼吸道傳染病

Prevention of Pneumonia and Respiratory Tract Infection

- 經常保持雙手清潔
Perform hand hygiene frequently
- 時刻保持良好的個人及環境衛生
Maintain good personal and environmental hygiene at all times
- 打噴嚏或咳嗽時
Cover your mouth and nose with tissue paper when sneezing or coughing, then wash hands thoroughly
- 當出現發燒或呼吸困難等病徵時，應戴上外科口罩及盡早求醫診治
When having a fever or respiratory symptoms, wear a surgical mask and seek medical advice promptly

衛生署
Department of Health

衛生防護中心乃衛生署
轄下執行防疫職務

11:16 PM
15/1/2020

衛生署
Department of Health

Risk communication

- Issued letters to doctors, private hospitals and Chinese medicine practitioners to alert them to refer suspected cases to public hospitals for management
- Issued letters to schools and institutions urging them to strengthen personal and environmental hygiene
- Press releases to update the latest situation
- Press conferences (31.12.2019, 7.1.2020, 9.1.2020, 11.1.2020, 15.1.2020)
- Posted relevant health messages/advice on the Security Bureau's website on Outbound Travel Alert



Enhanced health education

- Various health promotion materials, e.g.
 - Leaflets / Factsheets
 - Infographics, Facebook posts
 - TV APIs
- Covering:
 - Hand hygiene
 - Personal hygiene
 - Wearing face masks



預防 肺炎及呼吸道傳染病

Prevention of **Pneumonia** and **Respiratory Tract Infection**

洗手時應以視液和清水清潔雙手，搓手最少20秒
Wash hands with liquid soap and water, and rub for at least 20 seconds

經常保持雙手清潔
Perform hand hygiene frequently

20 Seconds

時刻保持良好的個人及環境衛生
Maintain good personal and environmental hygiene at all times

打噴嚏或咳嗽時應用紙巾掩蓋口鼻，然後徹底清潔雙手
Cover your mouth and nose with tissue paper when sneezing or coughing, then wash hands thoroughly

當出現發燒或呼吸道感染病徵，應戴上外科口罩及盡早向醫生求診
When having a fever or respiratory symptoms, wear a surgical mask and seek medical advice promptly

 衛生防護中心
Centre for Health Protection
www.chp.gov.hk

 衛生防護中心Facebook專頁
Centre for Health Protection Facebook Page
[fb.com/CentreforHealthProtection](https://www.facebook.com/CentreforHealthProtection)

衛生防護教育專線 2833 0111
Health Education Hotline of the Department of Health

 衛生署
Department of Health

Health advice – personal hygiene

- Perform hand hygiene frequently, especially before touching the mouth, nose or eyes; after touching public installations such as handrails or door knobs; or when hands are contaminated by respiratory secretion after coughing or sneezing;
- Wash hands with liquid soap and water, and rub for at least 20 seconds. Then rinse with water and dry with a disposable paper towel. If hand washing facilities are not available, or when hands are not visibly soiled, performing hand hygiene with 70 to 80 per cent alcohol-based handrub is an effective alternative;
- Cover mouth and nose with tissue paper when sneezing or coughing. Dispose of soiled tissues into a lidded rubbish bin, then wash hands thoroughly;
- **Maintain drainage pipes properly and add water to the U-traps to ensure environmental hygiene;**
- When having respiratory symptoms, wear a surgical mask, refrain from work or attending class at school, avoid going to crowded places and seek medical advice promptly.

Health advice during travel

- Avoid visiting hospitals. If it is necessary to visit a hospital, put on a surgical mask and observe strict personal and hand hygiene;
- Avoid making close contact with patients, especially those with symptoms of acute respiratory infections;
- Avoid touching animals (including game), poultry / birds or their droppings;
- Avoid visiting wet markets, live poultry markets or farms;
- Do not consume game meat and do not patronise food premises where game meat is served;
- Adhere to food safety and hygiene rules such as avoiding consuming raw or undercooked animal products, including milk, eggs and meat, or foods which may be contaminated by animal secretions, excretions (such as urine) or contaminated products, unless they have been properly cooked, washed or peeled;
- If feeling unwell when outside Hong Kong, especially if having a fever or cough, wear a surgical mask, inform the hotel staff or tour escort and seek medical advice at once; and
- After returning to HK, consult a doctor promptly if having a fever or other symptoms, take the initiative to inform the doctor of recent travel history and any exposure to animals, and wear a surgical mask to help prevent spread of the disease.

End

Koch's Postulates

- 4 criteria established by Robert Koch to identify causative agent of an infectious disease:
 1. must be present in all cases of the disease
 2. can be isolated from the diseased host and grown in pure culture
 3. the pathogen from culture must cause the disease when inoculated into a healthy, susceptible laboratory animal
 4. must be re-isolated from the new host and shown to be the same as the originally inoculated pathogen
- Further tests carried out by mainland health authorities are ongoing