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forward together · saam vorentoe · masiye phambili

Coronavirus disease 2019 (COVID – 19)

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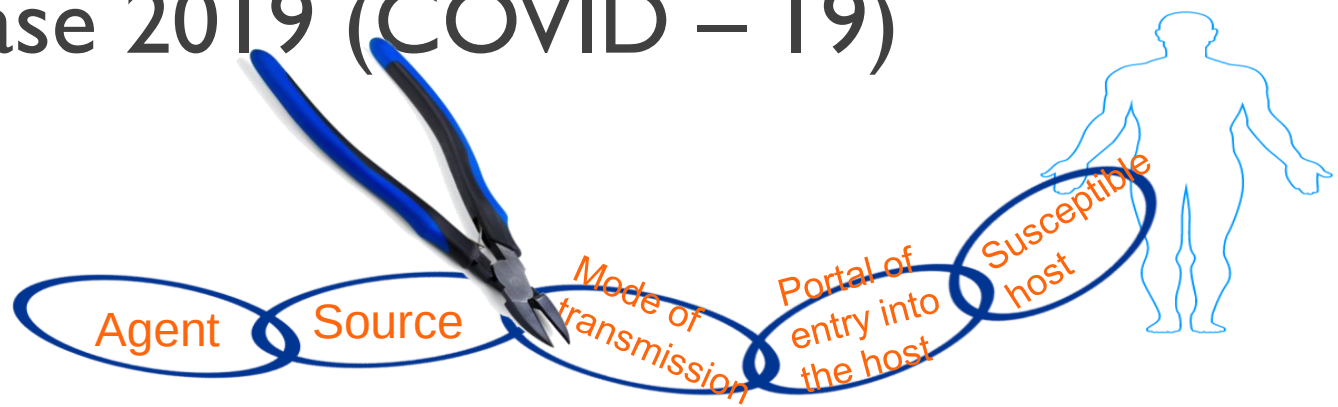


Clinical picture

- Main symptoms
  - FEVER
  - COUGH
  - DIFFICULTY BREATHING
  - FATIGUE AND MYALGIA

Low grade fever & fatigue

Back pain & general weakness

Additional noteworthy findings (n=99)	
Blood results	Low lymphocyte count
Exposure to Huanong food market	49%
Males	68%
Mean age	55yrs
Chronic medical conditions	51%
Mortality	11%

(1st 99 cases from Wuhan city)	Patients (n=99)
Signs and symptoms at admission	
Fever	82 (83%)
Cough	81 (82%)
Shortness of breath	31 (31%)
Muscle ache	11 (11%)
Confusion	9 (9%)
Headache	8 (8%)
Sore throat	5 (5%)
Rhinorrhoea	4 (4%)
Chest pain	2 (2%)
Diarrhoea	2 (2%)
Nausea and vomiting	1 (1%)
More than one sign or symptom	89 (90%)
Fever, cough, and shortness of breath	15 (15%)
Chest x-ray and CT findings	
Unilateral pneumonia	25 (25%)
Bilateral pneumonia	74 (75%)
Multiple mottling and ground-glass opacity	14 (14%)

Chaolin Huang et. al. **Clinical features of patients infected with 2019 nCoV in Wuhan, China** The Lancet Infectious Diseases. January 24, 2020
Lan T. Phan et. al. **Importation and Human-to-Human Transmission of nCoV in Vietnam**. NEJM January 28, 2020
Nanshan Chen et. al. **Epidemiological and clinical characteristics of 99 cases of 2019 nCoV pneumonia in Wuhan, China: a descriptive study.** The Lancet. January 29, 2020

Experience from around the world

- IP -2-9 days → median of 5 days
- Most common presentation:
  - 1 week prodrome myalgia, malaise, cough, low grade fever
  - Gradually worsening to difficult brearthimh in 2nd week
- Average of 8 days to dyspnoea
- Average of 9 days to pneumonia/pneumonitis
- Fever often not a prominent feature
- Most consistent lab finding is lymphopaenia (WCC↑/↓)
- Most consistent radiographic finding – bilateral ground glass infiltrates
- CRP/PCT not consistent

- Co-infection rate with other viruses ≤2%
  - i.e. co-infection very uncommon
- Secondary bacterial infection less common
- Intubation considered source control equal to patient wearing a mask
- BIPAP is aerosol generating
- Health care worker exposure categorised as low-moderate and high
  - Only high risk exposure takes 14 days off
  - Other shorter off or wear mask for 14 days
- Viral shedding for 1 – 4 weeks after symptom resolution
  - ? relation to transmission risk
  - clear from isolation after 2 consecutive test 24hrs apart
- Airborne infection Isolation Room (AIIR) is the least important of all measures to reduce exposure
  - Contact and droplet exposure in a single room just as good
  - General hand hygiene and environmental cleaning most important

Clinical management of suspected cases

1. Triage:
   - Case definition → Immediate IPC measures
2. Supportive therapy – O_2, paracetamol etc.
3. Collect specimens for diagnosis
4. Consider differential diagnosis
5. Critical care *(where applicable):*
   - Manage respiratory failure, ARDS, septic shock
   - Prevent VAP, CLABSI, VTE, GIT complications
6. Anti-CoV treatment?

1. Viral pneumonia – Influenza
2. Bacterial pneumonia
   - Atypical organisms
   - Typical organisms
3. Pneumocystis pneumonia – HIV

1. Ventilate if required (?HFNO / NIV)
2. ARDS
   - Lung protective ventilation
   - Proning
3. Restrictive fluid management

WHO Clinical management of severe acute respiratory infection when nCoV infection is suspected: Interim Guidance

TRIAGE OF PERSONS AT RISK OF EXPOSURE TO SARS-CoV-2
(causing COVID-19)

Western Cape Government
Health

Patient presenting with acute onset respiratory infection (1 or more of cough, sore throat or shortness of breath) ± fever

AND within the past 14 days **has either**:

- Travel history to affected area with active community transmission*
- Exposure to a suspected or confirmed case of SARS-CoV-2
- Severe Acute Respiratory Illness of unknown cause**

YES

Put SURGICAL mask on patient and isolate

(Do not do Temp, finger glucose, Hb or other tests at this point)

Wash hands

NO

This patient is **not** considered a risk

They should be triaged and seen by a doctor as per normal protocol

Western Cape Government
Health

Walking patient
Appears stable

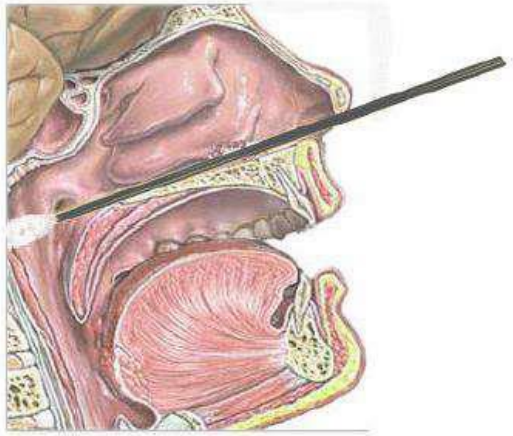
- Isolate patient in single room
- Inform senior doctor
- All staff providing clinical care to patient to wear mask, apron & gloves & protective eyewear
- If in EU department - Call EU consultant who will call ID consultant to discuss
- If outside of EU, call ID consultant directly

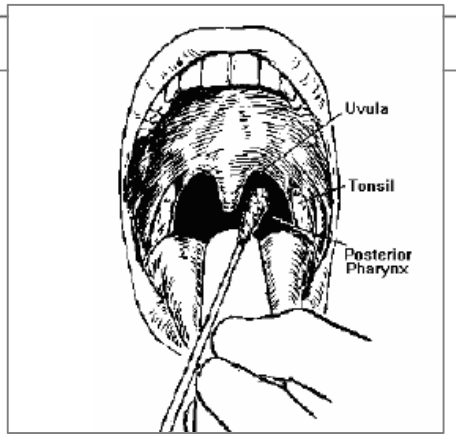
Clinically Sick
Unstable patient

- Take patient to the Resuscitation room
- Inform senior doctor
- Call EU consultant
- Staff providing clinical care to patient to wear mask, apron, gloves & protective eyewear
- Keep waste contained in designated area
- Don’t share equipment between patients
- EU Consultant will assess based on current case definitions and call ID Consultant

Laboratory diagnosis

NICD hotline – 082 883 9920





- Primary method if diagnosis
  - rRT-PCR on **respiratory samples**
  - Turn around time ~24hrs
- Combined nasopharyngeal & oropharyngeal swab
  - Use universal/viral transport medium
- Sputum or tracheal aspirate / BAL
  - Sterile container
- Serum for serological testing
  - acute and convalescent samples

http://www.nicd.ac.za/diseases-a-z-index/novel-coronavirus-infection/

Infection prevention & control

Respiratory transmission

In-hospital risk of aerosol generation

Droplet spread

- Bacteria
  - Meningococcal meningitis
  - Diphtheria
- Viruses
  - Influenza
  - Mumps
  - Rubella
  - SARS, MERS, COVID-19

Airborne spread

- Bacteria
  - Tuberculosis
- Viruses
  - Measles
  - Chickenpox

Infection prevention and control

When caring for someone with suspected COVID-19

CONTACT AND DROPLET PRECAUTIONS

- Put in a well ventilated isolation room
- Provide patient with a
- Limit number of staff e
- <u>Contact and droplet</u>
  - Gloves
  - Disposable apron
  - Surgical mask
  - Eye protection

- <u>Not appropriate for droplet precautions</u>
  - Negative pressure respiratory isolation room

CONTACT AND AIRBORNE PRECAUTIONS

- <u>Only when performing aerosol generating procedures</u>
  - Nasopharyngeal swab
  - Sputum sample
  - Intubation
  - Tracheal aspirate
  - NIV / HFNA

- <u>Contact and airborne precautions include:</u>
  - Gloves
  - Waterproof gown
  - N95 respirator
  - Eye protection

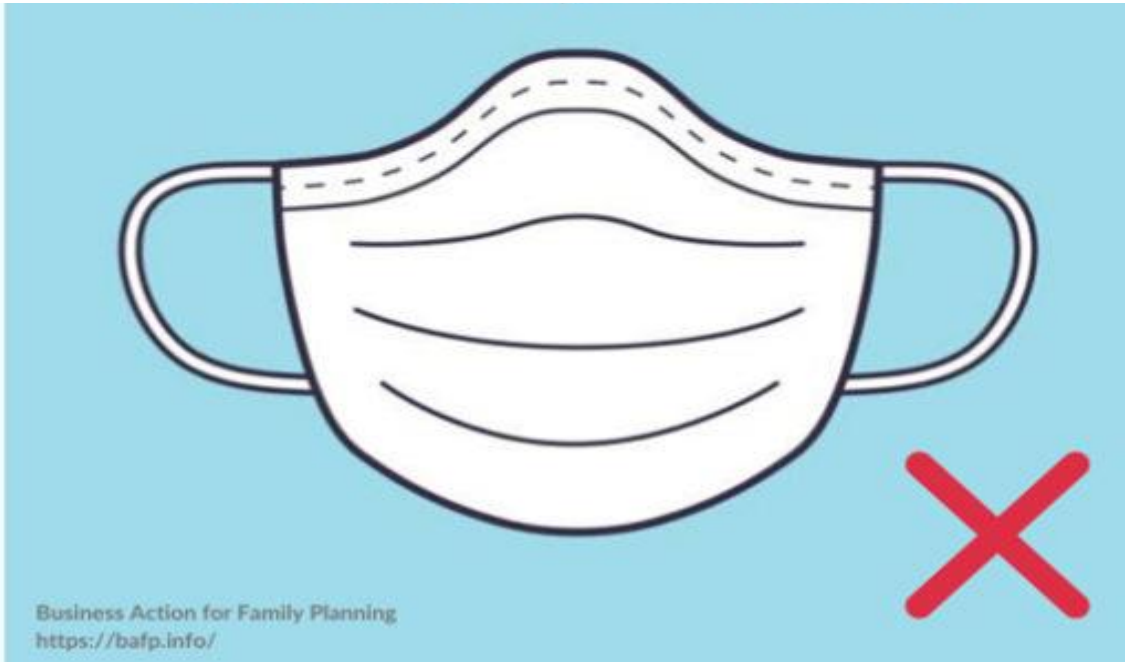
IPC measures in the community

DON'T SPREAD IT

- Cough etiquette → hand hygiene
- Avoid close contact (stay at home)
- Seek early medical advice

DON'T GET IT

- Continuous hand hygiene
- Avoid touching face & nose without clean hands
- Avoid close contact with sick people



Specific anti-CoV treatment

- Currently no effective treatment proven
- If available drug –likely to be beneficial in early stages of disease
- Aim of an effective drug:
  - Decreased time of viral shedding
  - Decreased time of symptoms
  - Decreased progression to severe disease

Specific anti-CoV treatment

RESPIRATORY INFECTION

Role of lopinavir/ritonavir in the treatment of SARS: initial virological and clinical findings

C M Chu, V C C Cheng, I F N Hung, M M L Wong, K H Chan, K S Chan, R Y T Kao, L L M Poon, C L P Wong, Y Guan, J S M Peiris, K Y Yuen, on behalf of the HKU/UCH SARS Study Group*

Thorax 2004;**59**:252–256. doi: 10.1136/thorax.2003.012658

- 41 patients treated with LOP/r plus ribavirin (Death/ARDS vs. 111 historical controls)
  - 2,4 vs 28,8%; p=0,001
- Recent results: Limited value

Nucleotide analogue – Remdesivir (Gilead)

- Potent activity in animal models with SARS & MERS
- Clinical trials ongoing

BrightGene 博瑞生物

Thank you

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