



UPDATE ON COVID-19

COVID 19

1. Possibly behaves like SARS; causes mild illness in 82%, severe illness in 15%, critical illness in 3% and death in 2 % cases (15% of admitted serious cases, 71% with comorbidity); affects all ages but predominately males (56%) with median age 59 years (2-74 years, less in children below 15);with variable incubation period days (2-14;mean 3 based on 1,324 cases, 5.2 days based on 425 cases,6.4 days in travellers from Wuhan);mean time to symptoms 5 days,mean time to pneumonia 9 days, mean time to death 14 days,3-4 reproductive number R0(flu 1.2, SARS 2), epidemic doubling time 7.5 days (Korea 1 day probably due to super spreader), Tripling time in Korea 3 days, has origin possibly from bats, spreads like large droplets and predominately from people having lower respiratory infections and hence standard droplet precautions the answer for the public and close contacts and air born precautions for the healthcare workers dealing with the secretions.
2. Clinically all patients have fever, 75% have cough; 50% weakness; 50% breathlessness with low total white count and deranged liver enzymes. 20% need ICU care and 15% of them are fatal. Treatment is symptomatic though chloroquine, anti-viral and anti-HIV drugs have shown some efficacy.
3. Only 20% will have symptoms and will go for testing, rest may self-quarantine, 15% of serious will die.In Iran 16 died of 95 tested means they are only testing serious patients.
Present status as on 12th Feb: 125 countries, 1610 new cases and 99 deaths outside china, Expected total deaths 4095.

Close contacts of COVID 19 patients definition will change with community spread:

Close contacts are people providing direct care to patients, working with infected health care workers, visiting infected patients or staying in the same close environment, working together in close proximity or sharing the same classroom environment with an infected patient, traveling together with infected patient in any kind of conveyance, living in the same household as an infected patient. The epidemiological link may have occurred within a 14-day period before or after the onset of illness in the case under consideration. But once the community spread occurs the definition will no longer be correct. Final phase of community spread closing borders will not contain the virus. All cases with flu like illness will be presumed to be COVID 19 AND ONLY patients with breathlessness will be tested.

Preparedness for community spread:

Statistics on 12th March

Total cases: 1,27,809

Deaths: 4,712

Recovered: 68,335

Currently Infected Patients: 54,758

Mild cases:68,335 (94%)

Serious or Critical: 4716 (6%)

Travel Restrictions

Travel advisory

Level 1 in all countries (Exercise normal standard hygiene precautions)

Level 2 in all affected countries (Exercise a high degree of caution)

Level 3 in all countries with secondary cases (Reconsider your need to travel)

Level 4 in affected parts of China and Korea (Do not travel)

Number of flu deaths every year: 290,000 to 650,000 (795 to 1,781 deaths per day)

About the Virus

'Corona' means crown or the halo surrounding the sun. Heart is considered crown and hence coronary arteries. In electron microscope, it is round with spikes poking out from its periphery.

Single-strand, positive-sense RNA genome ranging from 26 to 32 kilobases in length, Betacoronavirus from Corona family.

One of the three deadly human respiratory coronaviruses. Others are Severe acute respiratory syndrome coronavirus [SARS-CoV] and Middle East respiratory syndrome coronavirus [MERS-CoV]. COVID 19 is 75 to 80% identical to the SARS-CoV

Virus is likely to be killed by sunlight, temperature, humidity. SARS stopped around May and June in 2003 due to more sunlight and more humidity.

Transmission

Zoonotic and linked to Huanan Seafood Wholesale Market

Bats are the primary reservoir for the virus.

It transmits predominantly with droplets like common flu.

Quarantine has Limitations

China imposed unprecedented quarantines across Hubei, locking in about 56 million people, in a bid to stop it spreading.

Villages in Vietnam with 10,000 people close to the nation's capital are placed under quarantine on 13th Feb after six cases of the deadly new coronavirus were discovered there.

1. 21% quarantined in Diamond Ship got infected.
2. The people on quarantine are kept under a 14-day quarantine. If they are placed together and if anyone is diagnosed during that period, the quarantine will add another 14 days.
3. The longer you have several thousand people cohoused you will continue to propagate waves of infection.
4. A better way to quarantine is to break up these people into smaller groups and quarantine them separately.
5. Why quarantine children < 15 years when the virus is not risky for them.
6. Why not separate elderly people with comorbid conditions at high risk of deaths and quarantine them separately in one to one or small groups.

Standard Respiratory Droplets Precautions

At triage: Surgical 3 layered mask to the patient; Isolation of at least three feet distance, Cough etiquette and Hand hygiene

Droplet precautions: Three-layer surgical mask by patients, their contacts and health care workers, in an adequately ventilated isolation room, health care workers while caring with thesecretions should use eye protection, face shields/goggles. One should limit patient movement, restrict attendants and observe hand hygiene.

Contact precautions: When entering room - gown, mask, goggles, gloves – remove before leaving the room; Dedicated equipment/ disinfection after every use; Care for environment-door knobs, handles, articles, laundry; Avoid patient transport and Hand hygiene

Public

Strict self-quarantine if sick with flu like illness: 2 weeks

Wash your hands often and for at least 20 seconds with soap and water or use an alcohol-based hand sanitizer.

Avoid touching: Eyes, nose, and mouth with unwashed hands.

Avoid close contact: (3-6 feet) with people who are sick with cough or breathlessness

Cover your cough or sneeze with a tissue, then throw the tissue in the trash.

Clean and disinfect frequently touched objects and surfaces.

Masks

Surgical 3 layered Masks: For patients and close contacts

N 95 Masks: For health care providers when handling respiratory secretions.

Lab tests

1. There are two ways to detect a virus: through the genetic material DNA or RNA or to detect the protein of the virus. The rapid tests look at the protein. It takes 8-12 weeks to make commercial antibodies. So right now, for the diagnostics tests they are using PCR which give you a turnaround in 1-2 hours.
2. Lab precautions: BSL 2 (3 for viral culture labs)

Treatment

1. No proven antiviral treatment.
2. With SARS, in 6 months the virus was gone, and it never came back. Pharmaceutical companies may not spend millions and millions to develop a vaccine for something which may never come back.
3. Chloroquine had potent antiviral activity against the SARS-CoV, has been shown to have similar activity against HCoV-229E in cultured cells and against HCoV-OC43 both in cultured cells and in a mouse model.
4. PVP-I mouthwashes and gargles significantly reduce viral load in the oral cavity and the oropharynx.
5. The Drug Controller General of India has approved the "restricted use" of a combination of drugs (Lopinavir and ritonavir) used widely for controlling HIV infection in public health emergency for treating those affected by novel coronavirus.

Common Facts

1. People receiving packages from China are not at risk of contracting the COVID 19 as the virus does not survive long on objects, such as letters or packages.
2. There is no evidence that companion animals/pets such as dogs or cats can be infected with COVID 19.

3. Pneumococcal vaccine and Hib vaccine do not provide protection against COVID 19.
4. Regularly rinsing the nose with saline does not protect people from infection with COVID 19 or respiratory infections although it can help people recover more quickly from the common cold.
5. There is no evidence that using mouthwash will protect you from infection with COVID 19 although some brands or mouthwash can eliminate certain microbes for a few minutes in the saliva in your mouth.
6. There is no evidence that eating garlic protects people from COVID 19.
7. Sesame oil does not kill the new coronavirus. Chemical disinfectants that can kill the COVID 19 on surfaces are bleach/chlorine-based disinfectants, either solvents, 75% ethanol, peracetic acid and chloroform.
8. People of all ages can be infected by COVID 19. Older people, and people with pre-existing medical conditions (such as asthma, diabetes, heart disease) appear to be more vulnerable to becoming severely ill with the virus.
9. Antibiotics do not work against viruses.
10. To date, there is no specific medicine recommended to prevent or treat it.

Case Definitions

Suspect case

A. Patients with severe acute respiratory infection (fever, cough, and requiring admission to hospital), AND with no other etiology that fully explains the clinical presentation AND at least one of the following:
a history of travel to or residence in the city of Wuhan, Hubei Province, China in the 14 days prior to symptom onset, or

patient is a health care worker who has been working in an environment where severe acute respiratory infections of unknown etiology are being cared for.

B. Patients with any acute respiratory illness AND at least one of the following:

close contact with a confirmed or probable case of COVID 19 in the 14 days prior to illness onset, or visiting or working in a live animal market in Wuhan, Hubei Province, China in the 14 days prior to symptom onset, or

worked or attended a health care facility in the 14 days prior to onset of symptoms where patients with hospital associated COVID 19 infections have been reported.

Probable case

A suspect case for whom testing for COVID 19 is inconclusive or for whom testing was positive on a pan-coronavirus assay.

Confirmed case

A person with laboratory confirmation of COVID 19 infection, irrespective of clinical signs and symptoms.

Severe acute respiratory infection (SARI)

An ARI with history of fever or measured temperature $\geq 38^{\circ}\text{C}$ and cough; onset within the last ~10 days; and requiring hospitalization. Absence of fever does NOT exclude viral infection

Uncomplicated illness

Patients with uncomplicated upper respiratory tract viral infection, may have non-specific symptoms such as fever, cough, sore throat, nasal congestion, malaise, headache, muscle pain or malaise. The elderly and immunosuppressed may present with atypical symptoms. These patients do not have any signs of dehydration, sepsis or shortness of breath

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