

Comprehensive Clinical Overview of COVID -19 Pandemic - An Indian Perspective

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How to cite this article:

Suman Choudhary, Prakash Mahala, Amali Mery / Comprehensive Clinical Overview of COVID-19 Pandemic - An Indian Perspective. J Nurse Midwifery Matern Health. 2020;6(3):85-90.

Abstract

Corona virus belong to a family virus that cause sickness extending from the common cold, fever to more severe disease. The novel coronavirus was reported due to pneumonia cases in Wuhan, in China. This virus was previously referred to as 2019-nCoV now known as COVID-19 which causes severe acute respiratory syndrome Coronavirus 2 (SARS-CoV-2). Government of India is taking all steps to make sure that world is ready as well as prepared to face the pandemic of COVID-19 the Corona Virus. To prevent the spread of this Virus the people has to be empowered with the right information regarding COVID-19 and practicing the precautions being issued by Ministry of Health & Family Welfare. So the purpose of this review suggests that comprehensive guideline and standard recommendations are helpful to prevent and control on infection.

Keywords: COVID-19; Comprehensive guidance; Prevention; Control; PPE.

Introduction

The present (COVID-19) novel coronavirus outbreak, which started in December 2019.^{1,2} Offering a substantial challenge for the whole world. coronavirus disease (COVID-19) it was first stated at Wuhan, China on 2019, 31 December.³ CDC is replying to an epidemic of respiratory disease instigated by a (new) novel coronavirus and it has now been reported in almost internationally

90 locations as well as in the United States. The virus has named "SARS-CoV-2" and the illness due to this has been named "coronavirus disease 2019" (abbreviated "COVID-19").⁴

Globally, the positive cases with Novel corona virus are increasing rapidly. According to World Health Organization, statistics till 01 February 2021, reported 102,083,344 confirmed cases of COVID-19, adding 2,209,195 deaths and 501,903 new cases.⁵ In

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India 1, 07, 57,610 active cases reported. Among these 1,04,34,983 people got cured and discharged and till 01 February 2021; 1,54,392 deaths were reported due to Corona Virus.⁶

The developed administrations and UK government as well as social and health care system have planned widely and offered significant protection to the public.² The strategies and guidance on infection prevention and control for use when a novel coronavirus (2019-nCoV) with infection is suspected. Recent studies show that most common symptoms of corona virus were fever, cough, Shortness of breath and myalgia and fatigue recognized.⁷

So It was modified by WHO to prevention and control of infection during health care for confirmed or probable cases of (MERS-nCoV) Middle East respiratory disorder coronavirus infection and depend on present knowledge of the condition in China, Italy and some others countries where cases were experience and identified with (SARS)- severe acute respiratory syndrome, nCoV.

Mode of transmission:

Earlier data shows person-to-person spread most usually happens during exposure to close interaction with oneinfected with COVID-19 and with aerosol contact, mostly via respiratory droplets formed when infected person sneezes or coughs. Droplets can land in the eyes, mouths, noses of individuals who are possibly be inhaled into the lungs of those within close immediacy. The small respirable particles contribution, sometimes called droplet or aerosols nuclei, transmission to close proximity is presently undefined.⁸

Strategic objectives:

According to WHO planned objectives for n COV:

- Recognize care for patients and isolate earlier, as well as provide improve care for infected personnel and identified reduce spread from source of animals.
- human-to-human transmission should be limited with reducing secondary infection between health care workers and close contacts, stopping transmission events of amplification and also prevent additional spread of international from china.
- Discourse critical beginners related to severity if clinical, amount of infection and

transmission, option of treatment and quick the diagnostic development, vaccines and therapeutics.

- Reduce economic and social influence by partnerships of multi sectoral.

These objectives achieved by grouping of public health care measure i.e. quick recognize od diagnosis and case management, contacts follow up and identification, control of infection and prevention in health care setting, health measures implementation for travellers and risk communication or awareness increasing in the population.⁴

Values of infection prevention control policies with allied health care for suspected N COVID infection:

To attain the maximum level of efficiency in the reply to a 2019-n CoV outbreak using the policies and skills suggested in this review. Some infection prevention control principles with a devoted and skilled team or at least an infection prevention control crucial ideas should be in place and maintained by the national wide and senior management facility.⁹ (Fig. 1)

1. Triage, early identification and source control

Triage contains a system for evaluating all patients at admission allowing early identification of possible 2019-nCoV infection and instant separation of patients with suspected nCoV infection in an area isolated from other patients. Be aware of:

- a. the existing 2019-nCoV epidemiologic circumstances in their country and globally,
- b. acknowledged risk factors for infections,
- c. clinical warning sign of 2019-nCoV cases,
- d. commended infection prevention and control measures,
- e. procedures for reporting and transferral of personnel under examination and of likely and confirmed cases.¹⁰

For early identification of patient with suspected nCoV case, health care team services should

- 1.1 Maintained triage station with a well-equipped at the arrival of health care facility, held by trained team.
- 1.2 Assure health care workers to have a great level of clinical suspicion
- 1.3 The advancement of respiratory hygiene

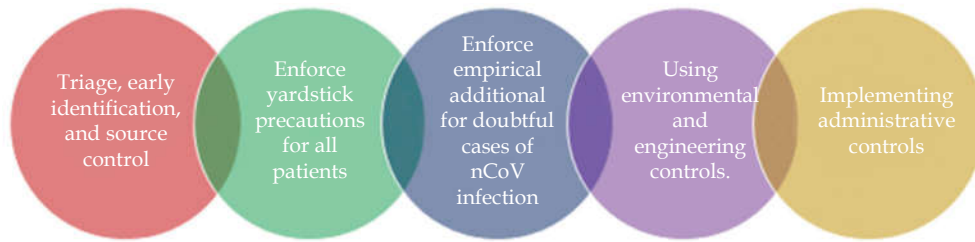


Figure 1: Values of infection prevention control policies with allied health care for suspected N COVID infection.

and hand hygiene and are main preventive measures.

2. Standard precautions applying for all patients

Standard precautions include use of appropriate personal protective equipment and hand hygiene, the according to risk assessment, safe waste management, injection safety practices, environmental cleaning, proper linens and sterilization of patient-care kit.

Table 1: Standard precautions applying for all patients.

S. No.	Type of patient	Guidance
1.	For unconfirmed, symptomatic, case definition in-patients meeting the COVID-19	Due risk of splashing into the eyes, PPE revised which is include a bit change from FFP3 respirator to fluid resistant surgical mask, eye protection, gloves and apron.
2.	For confirmed cases of COVID-19	Full PPE occupied, gloves continues to use FFP3 respirator, eye protection disposable, long sleeved single use gown.
3.	For likely and confirmed cases of COVID-19 needing an aerosol generating procedure	Full PPE as per previous outline for confirmed cases; FFP3 respirator, single use eye protection, if possible visor, long sleeved single use gown and gloves.

- Hand hygiene contains either cleansing of hands with a hand rub alcohol-based or with water and soap.
- alcohol-based hand rubs are preferred if hands are not soiled visibly, alcohol-based hand rubs are ideal.
- when hands are visibly soiled, wash hands with water and soap.¹¹(Fig. 2)

The rational accurate and reliable use of PPE also supports to reduce the pathogens spread. The PPE use efficacy powerfully based on suitable and continue supplies, satisfactory staff training, correct hand hygiene and precisely right behaviour of human. (Table. 2)

Sequence of donning and doffing PPE^{12,13}

Table 2: Sequence of donning and doffing PPE.

PPE	Donning	Doffing
Gown	Cover your torso fully from neck to knees and arms to wrist end then wrap it around the back side • Secure with back of neck as well as waist	Front part and sleeves of Gown are contaminated • During gown removal, if your body parts specially hand get tainted immediately wash your hands or you can use an alcohol-based sanitizer • Taking care during release gown ties, make sure sleeves don't contact your body while approaching for ties • Pull it away from shoulders & neck, touching inner side of gown only • Turn it inside out • Roll & fold into a bundle and discard it in a waste bin
Mask Or Respirator	Fix, ties or pliable bands at middle of head and neck • Fix pliable band to nose bridge • Fix comfortable to face and below chin	DONOT TOUCH- Front of mask/respirator because it is contaminated • During mask/respirator removal, if your hands get contaminated immediately wash your hands or you can use an alcohol-based sanitizer

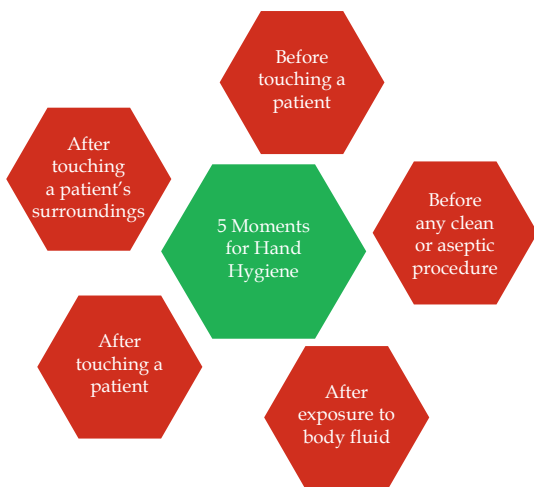


Figure 2: According to WHO health care workers should do 5 moments for hand hygiene approach for the patient given as below:

	• F i x - c h e c k respirator	• Clasplowest ties of the mask/respirator, then the another one at the upper, and remove it • Discard it in a waste bin
Goggles Or Face Shield	Wear over face and eyes and change to fix	DO NOT TOUCH - Front of Goggles or Face Shield as it is contaminated so not to touch if touch by chance immediately do wash your hands or you can use an alcohol-based sanitizer • Remove it from the back only by lifting ear pieces or head band • Place in selected container for reprocessing if the item is reusable or else discard in a waste bin
Gloves	Cover wrist of gown	Outer area of gloves is absolutely contaminated • So not to touch if touch by chance immediately do wash your hands or you can use an alcohol-based sanitizer • Peel off first glove by grasp the palm area of the other gloved hand • Hold doffing glove in gloved hand • Peel off second glove over first glove by slide fingers of un-gloved hand under remaining glove at wrist • Discard gloves in a waste bin

3. Implementing empiric additional precautions:

a) Droplet precautions and contact

- Health care workers, family members and visitors should use droplet and contact precaution before entering in the room where confirmed and suspected nCoV case are admitted.
- Patients should be placed separately in single room if single rooms are not available, patient is suspected should be grouped together with distance of 1m with adequate ventilation measured to be 60L per clients.
- Use of mask with facial protection as well as eye (face shield and goggles), use of gloves and non-sterile, clean and long sleeved fluid resistant gown. Single use of disposable equipment, if needs to share of equipment among patients it should be disinfected with

70% ethyl alcohol.

- With potentially contaminated hands, Refrain from touching nose, eyes or mouth.
- Avoid patients transport and movement out of cubicle in which isolated unless necessary. If transport is needed use transport of pre-determined to minimum exposure to health care team others visitors and patients and use of medical mask.
- It should be ensuring that health staff who are transporting of patient wear PPE appropriately and hand hygiene performed.
- Inform the area of receiving necessary protections as soon as likely patient arrival before.
- Limit health care workers and visitors with suspected case of nCoV infection.
- Document record of all individuals entering room of patients either visitors or staff.¹⁴

b) Precautions of Airborne for aerosol-generating procedures:

Few of aerosol creating procedures have been allied with raised transmission risk of coronaviruses (MERS-CoV and SARS-CoV) such as, non-invasive ventilation, tracheal intubation, and tracheotomy, manual ventilation before intubation, cardiopulmonary resuscitation and bronchoscopy. For this precautions few steps should be noted:

- Use of certified N95 and always seal check and perform when putting on a certified N95.
- If N 95 are not fit or available all health care should be avoided from aerosol-generating procedures.
- Use eye protection and non-sterile, clean and long sleeved gown and gloves. use a waterproof apron if gowns are not fluid resistant for procedures with expected high fluid volumes that could pierce the gown.
- Procedures performed in negative pressure room with mainly 12 air changes per hour and direction of control of flow of air when using of mechanical ventilation.
- Number of persons should be limit in the room of entire least essential for the care of patient and support.¹⁵

4. Using environmental and engineering controls:

- These address of controls the main health

care facility infrastructure and aim to ensure that in all areas of health care facility should be adequate ventilation as well as cleaning of environment.

- Secondary 1-meter separation should be maintained between all the patients because it helps to reduce the spread of many pathogens in the health care setting.
- Make ensure disinfection and cleaning procedures are followed regularly and accurately. Environmental surface cleaning with detergent and water and apply mainly used hospital disinfectants is an effective.
- Manage laundry, medical waste and food service utensils in accordance with safe routine procedures.

5. Implementing administrative controls:

Implementing administrative controls policies for the control of transmission and prevention of Ncov infection within the health care setting but it should not be limited to:

- Establishing activities and sustainable infection prevention control.
- Educating care givers and patients.
- Develop policies on early identification of acute respiratory infection caused by n COV.
- Overcrowding prevention mainly in emergency department.
- Make ensure of adequate supply of PPE.
- Properly separating hospitalized patients and ensure the observance of infection prevention control procedures and policies for all health care.

Stigma and Resilience:

Outbreak of coronavirus (COVID) 2019, public health crisis is traumatic time for communities and public. Anxiety, fear and distress about corona virus may lead to social stigma. Discrimination and stigma may occur when the person associate a such a corona virus disease, with nationality or population even everyone in that population or from region is exactly at risk for disease. a person has been released from COVID-19 isolation Stigma can also occureven though they are not measured a risk for dispersal the virus to others. Some group of individuals who may be facing stigma due to corona include:

- Persons who have travelled.
- People of Asian descent
- Health care personnel or emergency responders.

Stigma affects the mental health or emotion of stigmatized groups and the society they live in. preventing stigma is essential to making communities and community members resilient.¹⁶

Advice and recommendations:

During earlier outbreaks due to the various other coronavirus (Middle-East Respiratory Syndrome and Severe Acute Respiratory Syndrome), human-to-human transmission occurred through fomites and contact droplets, signifying that the mode of transmission the 2019-nCoV can be alike. The basic ideologies to decrease the risk of transmission include the following:

- person suffering from acute respiratory infections, avoid close contact.
- Direct contact with ill people or environment, do frequent hand-washing.
- Avoiding wild animals or unprotected contact with farm.
- Persons with suffering of acute respiratory infection should practice cough etiquette (maintain distance, cover coughs and sneezes with clothing or disposable tissues, and wash hands).
- Within healthcare services, improve standard infection prevention and control practices in hospitals, mainly in department of emergency.

In case of sign and symptoms indicate of respiratory illness either during or after travel, travellers are encouraged to pursue medical attention and share their history of travelling with their healthcare provider.¹⁷

Conclusion

The primary means of SARS-CoV-2 transmission is direct-person to person transmission mainly via respiratory droplets. Another source of infection can be virus found on contaminated surfaces i.e., infected individual's household and hospital settings or articles and if susceptible individuals touch these surfaces infectious virus can be transferred to mucous membranes in the mouth,

eyes, or nose. People infected with SARS-CoV-2 infection are likely to be infectious in the earlier stages of infection that is prior to the development of symptoms. The duration, a person remains infectious is uncertain, but research data showed that prolonged viral RNA shedding after all symptoms are disappeared is not clearly associated with prolonged infectiousness. It is reported that this Infection induce protective antibodies. But, it is not yet proven whether all infected patients with COVID-19 will be able to gradually increase in level of having a protective immune response and how long any protective effect will last. So, to reduce the risk of transmission in the communities, Social distancing is recommended in all areas to prevent community transmission. All individuals are advised to practice hand washing in a persistent manner. Also individuals are advised to practice respiratory hygiene (e.g., cover their nose and mouth while cough), and avoid crowded places and close contact with ill and infected individuals. Hence by practicing all these preventive measures, all individual can put their efforts and join together to fight against the novel COVID-19 Virus.

Financial support and Sponsorship

Nil

Conflicts of interest

There are no conflicts of interest

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