**Hospital Preparedness for Novel Wuhan Coronavirus**

**Department of General Practice and Emergency Medicine**

**Patan Academy of Health Sciences, Lagankhel, Nepal**

CDC Alert Level 2: Practice Enhanced Precautions

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# **Introduction**

There is ongoing outbreak or Novel Coronavirus identified in Wuhan, China. Since China is neighboring country is connected to Nepal with various trades and students. Therefore, it is necessary to activate the preparedness for the possible case in emergency of Patan Academy of Health Sciences.

Person to person spread is occurring, although it is unclear how easily the virus spreads between people. Preliminary information suggests that older adults and people with underlying health conditions may be at increased risk for severe disease.

# **Cases for screening triage**

Patient with high grade fever, cough, shortness of breath should be screened at Triage.

# **Screening Questions**

Have to you travelled to China recently?

Has anyone from your family returned from China recently?

Have you come across anyone who have recently returned from China?

Are you a health care worker?

तपाइँ हालै चीन यात्रा गर्नुभयो?

के तपाईंको परिवारबाट कोही हालसालै चीनबाट फर्केका छन्?

के तपाई हालै चीनबाट फर्केका कसैलाई भेट्नु भयो?

के तपाई स्वास्थ्य सेवाकर्मी हुनुहुन्छ?

# **Case definition for surveillance**

A person with SARI, with history of fever and cough requiring admission to hospital, with no other etiology that fully explains the clinical presentation (clinicians should also be alert to the possibility of atypical presentations in patients who are immunocompromised);

AND any of the following:

1. A history of travel to Wuhan, Hubei Province China in the 14 days prior to symptom onset.
2. The disease occurs in a health care worker who has been working in an environment where patients with severe acute respiratory infections are being cared for, without regard to place of residence or history of travel
3. The person develops an unusual or unexpected clinical course, especially sudden deterioration despite appropriate treatment, without regard to place of residence or history of travel, even if another etiology has been identified that fully explains the clinical presentation.

Individuals with acute respiratory illness of any degree of severity who, within 14 days before onset of illness, had any of the following exposures:

1. Close physical contact with a confirmed case of nCoV infection, while that patient was symptomatic
2. A healthcare facility in a country where hospital- associated nCoV infections have been reported;
3. Direct contact with animals (if animal source is identified) in countries where the nCoV is known to be circulating in animal populations or where human infections have occurred as a result of presumed zoonotic transmission.

# **Isolation (GPU) preparation**

## **Human resource**

The doctor who is in observation will be responsible for handling the patient transferred to GPU for isolation. A nursing officer who is assigned for GPU will be responsible for this patient.

## **Bed arrangement**

For Red Patient Bed number 21 will be used for critically ill patient. A monitor from bed no C in emergency will be transferred to the GPU. Yellow and green patient will be kept in other beds. Patients will be placed one meter apart. Donning will be done in the emergency and doffing will be done near present bed not 25 of GPU.

|  |  |  |
| --- | --- | --- |
| NURSING STATION | Hand Wash | Door |
|  | Bed 25- Doffing and Disposal |
| Bed 24 – Empty | Bed 26 |
| Bed 23 – Yellow/Green | Bed 27- Yellow Green |
| Bed 22- Empty | Bed 28 |
| Bed 21 - Red | Bed 29- Yellow green |

Screen will be used to make donning and doffing area.

## **Equipment**

1. Ten N95 mask
2. Ten eye shields
3. Four full sleeve gowns
4. Gloves 1 box
5. Screen – 2
6. Stethoscope -2
7. BP cuff -2
8. Thermometer -1
9. Crash cart with airway devices
10. Swab stick for throat swab collection
11. Vessel for sputum collection
12. Blood collection tubes
13. Zip lock bag – small
14. Zip lock bag – large for x ray plates

# **Roles and Responsibilities**

|  |  |
| --- | --- |
| Role | Responsibilities |
| Triage Officer | Triage officer will triage the patient and direct the patient to GPU and will inform observation doctor and GPU nurse |
| Observation doctor | The doctor will take history assess the patient, start primary management, document the findings and will inform on duty faculty(supervisor). |
| Emergency on duty faculty | Emergency on duty faculty will assess and help managing patient; communicate with IPC, Medical/Surgical on call record section and medical director. |
| GPU nurse | Will help in primary management of the patient. The assigned nurse will also inform supervisor. |
| Official spokesperson | The condition of the patient will be briefed by medical director. |

# **Safety precaution**

## **Standard precaution for all patients**

1. Medical mask for health care workers (and for patients is suspected nCoV and if can tolerate)
2. Gloves
3. Handwashing
4. Safe waste management
5. Environment cleaning

## **Contact precaution will be practices if the suspected patient comes to triage**

1. Use a medical mask
2. Use eye/facial protection (i.e. goggles or a face shield)
3. Use gloves, Use a clean, non-sterile, long-sleeved fluid resistant gown and transfer the patient to GPU
4. Dispose gown in the disposal area and return to triage
5. Clean and disinfect BP cuff, Thermometer and Stethoscope between each patient use (e.g. ethyl alcohol 70%);
6. Limit the number of HCWs, family members and visitors in contact with a patient with suspected nCoV infection;
7. Maintain a record of all persons entering the patient’s room including all staff and visitors.

## **Airborne precaution for health care worker in GPU**

1. Use a particulate respirator at least as protective as a NIOSH-certified N95, or equivalent; when putting on a disposable particulate respirator, always perform the seal-check. Note that if the wearer has facial hear (beard) this can prevent a proper respirator fit.
2. Eye protection (i.e. goggles or a face shield);
3. Clean, non-sterile, long-sleeved gown and gloves;
4. If gowns are not fluid resistant, use a waterproof  apron for procedures with expected
5. high fluid volumes that might penetrate the gown
6. Limit the number of persons present in the room to the absolute minimum required for the patient’s care and support.

# **Communication**

For effectiveness of this process, this document needs to be circulated to Hospital Director, Nursing Director, Medical Director, Administrative In charge and Chair Department of Medicine/Pediatrics.

# **Investigations**

## **Laboratory**

The required specimen will be collected by nursing GPU on duty. The specimen will be collected in standard tubes or containers which will be disinfected (e.g. ethyl alcohol 70%) and placed in Zip Lock bag and transferred to laboratory. The specimen that needs to be sent to National Laboratory will be kept in refrigerator at -4 degree centigrade.

The specimen received at lab will be processed by trained staff applying standard and contact precaution. The tube or container will be removed from zip lock bag and will be disinfected (e.g. ethyl alcohol 70%) and processed.

Investigations that needs to be sent

1. Complete Blood Count
2. Blood culture
3. Liver function test
4. Na, K, Creatinine
5. Arterial blood gas
6. Urine routine examination
7. Throat or nasopharyngeal swab
8. Sputum
9. Blood for antigen detection

## **Radiology**

Patient cannot be transferred to radiology unit so a portable X ray will be brought to the GPU. The x-ray technologist needs to take airborne precaution. The X ray cassette will be placed in zip lock bag and brought to the GPU. After X ray is done the zip lock bag will be disposed and x ray cassette will be taken to the x-ray department for processing.

# **Management in GPU**

|  |  |  |  |
| --- | --- | --- | --- |
| **Assessment** | **Management** | **Benchmark** | **Equipment required** |
| Shortness of breath, respiratory distress, cyanosed, altered mentation | Oxygen via nasal prong @ 5lts per minute, if not maintaining improving🡪 upgrade to face mask 10 lts per minute, if not maintaining improving 🡪 upgrade to non-rebreathing bag at more than 10 lts per minute, if not maintaining improving 🡪 upgrade to BiPAP (if conscious) if not maintaining improving intubation and ventilation | 1. Respiratory rate less than 22per minute 2. Work of breathing decreased 3. No cyanosis 4. Normal mental status | 1. Nasal prong 2. Face mask 3. Non-rebreathing bag with mask 4. Ambu-bag different size mask 5. Laryngoscope with different size blades 6. Endotracheal tube with stylete 7. Jelly 8. Tie 9. Ketamine 10. Succinyl choline/Rocuronium 11. Laryngeal mask airway 12. Geudel airway 13. Sodium bicarbonate 14. BiPAP (use old machine) with mask 15. Oxygen tube 16. 10 ml syringe 17. 5 ml syringe |
| If wheeze | Salbutamol MDI 2 puff every 5-10 minutes via spacer or salbutamol+ ipratropium+ normal saline nebulization  Inj Hydrocortisone 200 mg iv stat  Inj Magnesium sulphate 2 gm iv | Decrease wheeze | 1. Salbutamol MDI 2. Spacer 3. Salbutamol solution 4. Ipratropium solution 5. Hydrocortisone 200 mg 6. Inj Magnesium sulphate 2 gm 7. Normal saline 100 ml 8. Syringe 10 ml |
| Shock | Normal saline 20 ml/kg over 30 minutes and total of 60 ml/kg in two hour 🡪 if improvement maintain at 2 ml/kg/hour🡪 if not maintaining consider fluid at 5-10 ml/kg/hour and consider noradrenaline | SBP > 90 mmHg | 1. Normal saline 2. 16 G iv canula 3. Leukoplast 4. Cotton swab 5. IV line 6. Noradrenaline 2 ampule (2mg/4ml – per ampule) + 500 ml NS start at 6-8 drops per minute |
| Antibiotics | Pipracilline+ Tazobatcum 4.5 gm iv stat |  | 1. Pipracilline Tazobactum 2. 100 ml Normal saline 3. IV drip set |
| If fever | Paracetamol 1 gm orally or IV | Decease fever | 1. Tablet Paracetamol 500 mg 2. Inj Paracetamol 1 gm |
| If bilateral diffuse crepitation | Inj Furosemide 40 mg iv – if not in shock | Decrease crepitation – increase urine output | 1. Inj Furosemide 2. Syringe 5 ml 3. Foley catheter 4. Urobag 5. Xylocain jelly |

## **Patient monitoring**

Please fill up sick patient monitoring chart, every 30 minutes for RED triage patient.

# **Disposition**

Will coordinated with IPC for the availability of the facility to manage the contagious patient. There needs to be clarity on who, when and where the patient be managed after emergency stabilization.

The structure of emergency and current resources limits the emergency to hold the patient for prolong period because of the safety concerns of other patient and staffs.

# **Patient transferal route (if admitted)**

Patient will take exit from gate 2 of emergency, take a route in front of pharmacy and through the corridor of pharmacy will take a old lift to respective floor.

# **Health care worker training**

1. Information sharing in common viber group
2. Mandatory online CME for all doctors and nurses
3. Safety precaution and roles orientation for all staffs