

National Preparedness and Response Plan for Novel Coronavirus (2019-nCoV)

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1. Background

Coronavirus is a large family virus causing respiratory illness from common cold to more severe illness similar to novel MERS-CoV detected in 2012 in Saudi Arabia and SARS-CoV in China in 2002 respectively. The novel coronavirus called 2019 Novel Coronavirus (2019-nCoV) was the first detected from the outbreak of pneumonia cases of unknown etiology in Wuhan, Hubei Province in China and reported to the WHO China Country Office on 31st December 2019. Initially, many of the patients in the outbreak in Wuhan, China reportedly had some link to a large seafood and animal market, suggesting animal-to-person spread. However, a growing number of patients reportedly have not had exposure to animal markets, indicating person-to-person transmission.

As of 29th January 2020, 4593 confirmed cases have been reported globally and China alone reported 4537 confirmed cases. The total death toll reached 106 (all from China). The virus has now reported from 15 countries including the epicenter i.e. China (4537 cases); namely, Japan (6 cases), Republic of Korea (4 cases), Vietnam (2 cases), Singapore (7 cases), Australia (5 cases), Malaysia (4 cases), Cambodia (1 case), Thailand (14 cases), Nepal (1 case), Sri Lanka (1 case), United States of America (5 cases), Canada (2 cases), France (3 cases) and Germany (1 case).

To respond effectively and efficiently to the 2019- nCoV outbreak in the country, the National Preparedness and Response plan is prepared with the objective to enhance the health system capacity to prevent, detect, respond and recover from nCoV. This preparedness and response plan are linked and aligned to the Health Emergency and Disaster Contingency Plan 2016 and National Disaster Management Act 2013. In addition to this plan, Paro International Airport has a Public Health Emergency Plan 2018 which was simulated and tested in November 2019. All the district Hospitals also have Public Health contingency preparedness and Response plans which will be activated depending on the types of emergency.

2. Surveillance

- Enhance National Early Warning Surveillance and Response
- Enhance Influenza Like Illness and Severe Acute Respiratory Infection (SARI) in the national, regional referral hospitals including hospitals at point of entries.
- RCDC will update ILI and SARI cases from PoE's hospitals on a daily basis and ILI and SARI cases from NEWARS on weekly basis to IHR and MoH.

3. Surveillance Case definition for human with nCoV infection:

Case definition for human nCoV suspected case has been adopted from WHO interim guideline ([Annexure](#))

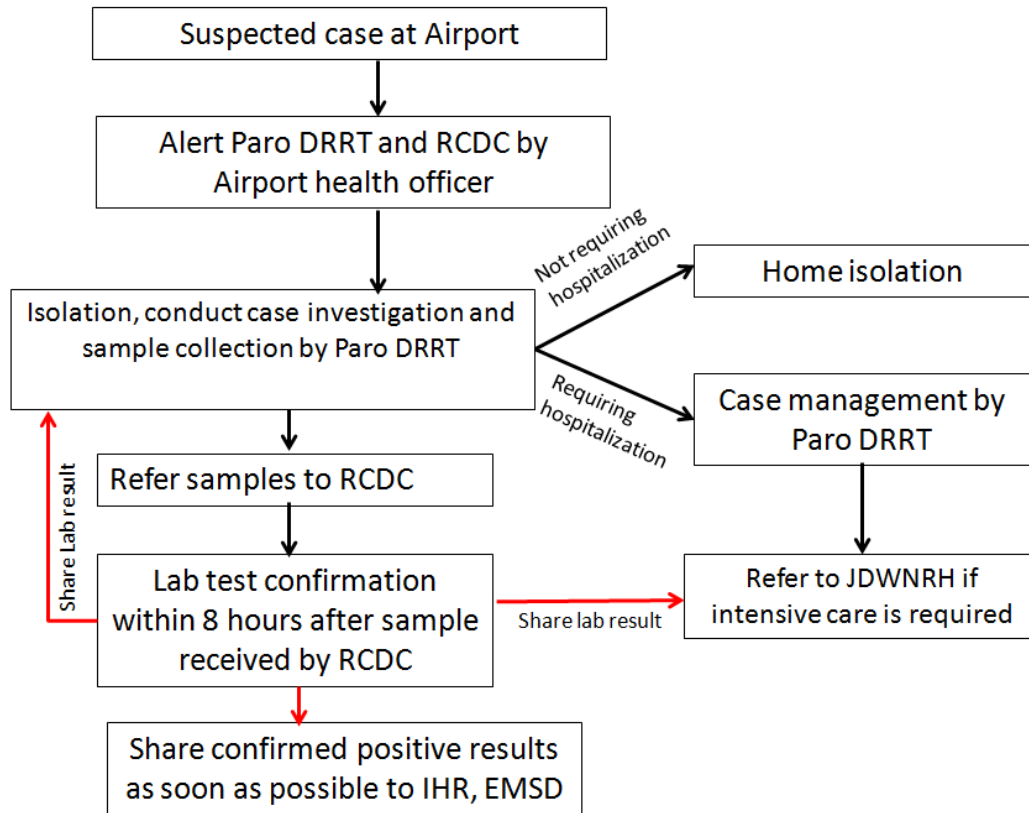


Figure 1: Flowchart for nCoV surveillance at Airport, Paro

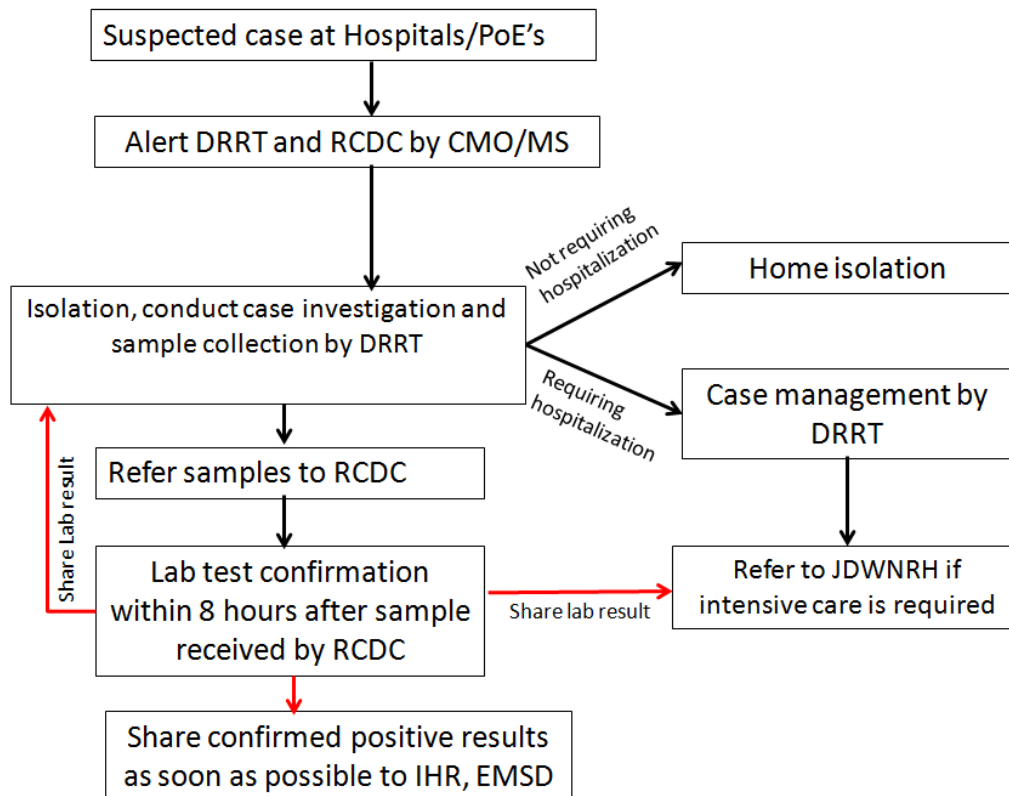


Figure 2: Flowchart for nCoV surveillance at PoE

4. Case management

In view of the currently limited knowledge of the disease caused by 2019-nCoV infection and its transmission patterns, WHO recommends that suspected cases of 2019nCoV infection be isolated and monitored in a hospital setting. This would ensure both safety and quality of health care (in case patients' symptoms worsen) and public health security. However, for several possible reasons, including situations when inpatient care is unavailable or unsafe (i.e. limited capacity and resources unable to meet demand for health), or in a case of informed refusal of hospitalization, alternative settings for health care provision may need to be considered.

a. Hospital

- The confirmed cases will be managed as per the clinical management guideline
- Paro Hospital, Phuentsholing Hospital, Jigme Dorji Wangchuck National Referral Hospital, Samtse Hospital, and Central Regional Referral Hospitals are identified for nCoV cases.
- Identified hospitals have identified rapid response and case management teams (Annexure)

b. Home isolation

If suspected cases are not serious and do not require hospitalization, the case will be allowed to go to his/her house with the following key health education till the lab results are confirmed;

- self-isolation
- use of cough etiquette
- frequent hand washing
- avoid public gathering and public places

5. Sample collection and transportation (RCDC)

The trained healthcare professionals (lab personnel and Nurses) will wear proper PPE to collect suitable samples and transport to RCDC as per the interim guideline (Annexure ..2).

6. Laboratory Testing

Specimens will be processed at an appropriate biosafety level in RCDC as per the prescribed testing algorithm in the interim guideline (Annexure).

The team has been identified to perform the test until the nCoV infection is no longer a public health concern.

Note

- If a home isolated suspected case is lab confirmed, the case will be contacted and admitted for isolation in the hospital for a period of 14 days monitoring from the date of onset of illness.
- If a hospitalized suspected case is lab confirmed, the case will be isolated and continue management for a period of 14 days monitoring from the date of onset of illness.

7. **Contact tracing**

Contact tracing will be done for all close contacts of the confirmed case (Annexure..) and samples will be collected and tested.

a. Confirmed case identified in OPD

- identify and list contacts
- monitor the case for 14 days
 - symptomatic: isolate, test and treat for nCoV
 - asymptomatic: stop monitoring

b. confirmed case in Hospitalized patients

- identify and list contacts
- monitor the case for 14 days
 - test all healthcare workers and patient contacts regardless of the symptoms
 - symptomatic: isolate, test and treat for nCoV

10. **Active case finding**

Active case finding will be conducted in the community from where the confirmed cases detected for search of new cases for the period of 14 days.

Plans and Procedures for Screening of arriving passengers at Paro International Airport

A total of five health workers have been deployed at the airport to screen the body temperature and respiratory illness. The Passengers pass through an infrared fever scanner at arrival where they will be assessed for fever through facial detection. The passenger presenting fever will be manifesting redness at facial and chins in the infrared fever scanner system. If the temperature is found to be $\geq 38^{\circ}\text{c}$, medical examination using health declaration forms will be used to obtain detailed information from the passengers. During assessment, if the passenger is found to be suspected, they will be sent to the Paro hospital for further assessment and confirmation. However, if the passengers do not present any clinical manifestation such as fever and other signs and symptoms, they will be permitted for entry. If the passenger has ticked 'Yes' in the health questionnaire, immigration staff will direct passengers to the health counter for further assessment. If the passenger has ticked 'No' they will be sent to the customs counter for clearance. Following procedures will be used for screening and evacuation of the patients to the hospital. In case of Coronavirus suspected patient on board, the Public Health Emergency Preparedness Plan for Paro International Airport shall be activated and all the due process will be followed as per the plan such as patient evacuation, screening of the arrival patients, appropriate infection control, deployment of RRT and medical triage inside the aircraft. For further information on flight passenger screening and evaluation, health workers are advised to read the guideline on **Public Health Emergency Preparedness Plan for Paro International Airport (Page No. 9-10)**

8. Infection control measures at Health care (IPC+MSQU)

Hand Hygiene:

Hands washing with soap and water or alcohol rub should be performed before and after contacting the patient; body fluid exposure; Before and after performing any procedure; Before wearing gloves and after removal of gloves; After coming in contact with patient surroundings.

For detailed steps of hand washing refer to National Infection Control and Medical Waste management guideline 2018, page no. 05, figure 1.2 and 1.3.

Personal protective equipment:

Basic PPE like face mask, hand gloves and apron should be used during screening the patients. Advanced PPE like TEAVET, shoe cover, Goggles, Gum boot, plastic apron must be used for all the confirmed cases. For donning and doffing of the PPE refer

For detail donning and doffing refer to the Infection Control and Medical Waste Management Guideline, 2018-page No. 10, 11 & 12.

Cleaning and decontamination

Bleaching/chlorine solution should be used to disinfect and decontaminate hospital linen, beddings, equipment, spill management and cleaning of environment. 0.1% and 0.5% solution

are prepared and used. **For detail refer to:** Infection Control and Medical Waste Management Guideline, 2018-page No. 35 & 35&36.

Transmission based Additional Precaution

These are additional standard precautions in patients suspected to be infected with highly transmissible pathogens. They are used when the routes of transmission are not completely interrupted by using the standard precautions alone.

Additional precaution includes:

- Precaution for airborne infection
- Precaution for droplets infection
- Precaution for contact transmitted infection (direct and indirect)

Precaution for airborne infection

Infection is transmitted through small droplets less than 5 micron in size, which are disseminated in the air. Diseases spread through this mode include active Pulmonary Tuberculosis (TB), Measles, Chicken Pox, Hemorrhagic Fever, Pneumonia etc.

The following precautions need to be practiced:

1. Follow and implement standard precaution
2. Isolate patient in a single, well ventilated isolated room or negative pressure isolation
3. Staff, attendants and patient should wear high filtration mask (N95 mask)
4. Minimize unnecessary transfer and movement of patients
5. Mask the patient with surgical mask during transportation

Precaution for droplet infections

Infection is transmitted through droplets more than 5 microns in size. The infection is transmitted when there is close proximity (within one meter) between the infected source and the recipient while coughing, sneezing or talking. Infections like diphtheria, Haemophilus influenzae pneumonia, Neisseria meningitidis meningitis and septicemia, mumps and pertussis are transmitted by this route.

The following precautions need to be practiced:

1. Follow and implement standard precautions.
2. Put patients in a single room (if available) or with another patient with the same infection (cohort).
3. If a patient is kept in the common ward with others, place him/her in the corner and maintain a distance of at least one meter from the next patient.
4. Staff should wear a surgical mask if working within one meter of the infected patient.
5. Mask the patient with a surgical mask during transportation.

2.3. Precautions for contact transmission

These are required for diseases transmitted either by direct or indirect contact with the infected patient. E.g. Multi-drug resistant organisms (such as MRSA, ESBL), Shingles (Herpes Zoster), Impetigo. The following precautions need to be practiced:

1. Follow and implement standard precautions

2. Put the patient in a single room if available or with another patient with the same infection (Cohort).
3. Staff should wear gloves and gown which should be removed before leaving the room.
4. Each patient must have dedicated equipment such as thermometer, BP apparatus and stethoscope, urinal, bedpan, sputum cup and bed linen.
5. The equipment should be decontaminated and disinfected appropriately after every use.
6. Maintain minimal/unnecessary contact with the patient.

HOUSEKEEPING

1. Use appropriate PPE (gloves, apron and gumboots) during cleaning.
2. No dry dusting and sweeping only wet cleaning and damp dusting should be practiced.
3. Walls must be washed from top to bottom, so that debris fall on the floor/ground.
4. The floor must be last to be cleaned.
5. For detail refer to Infection Control and Medical Waste Management Guideline :2018, page 35 and 36.

HANDLING OF DEAD BODY IN HEALTHCARE FACILITY

All dead bodies are potentially infectious and “STANDARD PRECAUTION” should be implemented for every case. Although most organisms in the dead bodies are unlikely to infect healthy people, some infectious agents can be transmitted when persons are in contact with blood, body fluid or tissues of the dead body of a person with infectious disease.

To minimize the risk of transmission of known and also unsuspected infectious disease, dead bodies should be handled in such a way that worker’s exposure to blood, body fluid and tissues is reduced.

For detail refer to Infection Control and Medical Waste Management Guideline :2018, page 41 and 42.

Waste Disposal:

All waste generated in the isolation room/area should be removed from the room/area in suitable containers or bags that do not allow for spillage or leakage of contents. One layer of packing is adequate providing the used equipment and soiled linen and waste can be placed in the bag without contaminating the outside of the bag. Double bagging is unnecessary. When transporting waste outside the isolation room/area, use gloves followed by hand hygiene. Liquid waste such as urine or faeces can be flushed. Close toilet cover when flushing faeces.

PPE (Detailed PPE requirement annexed)

PPE for screening

- Gloves
- Face Mask
- Plastic Apron
- Biohazard bag
- Hand Sanitizer
- Colour coded bins

PPE for support Staff:

- Utility Gloves
- Plastic Apron
- Gumboot
- Biohazard bag
- Googles
- Hand Sanitizer
- Disinfectant (Bleaching powder)
- Colour coding bins

Waste management

Any Waste generated from this event will be treated as hazardous waste. This waste needs to be segregated at source, using colour coding bins, with biohazard bag lining and when the bag is $\frac{3}{4}$ full, has to be sealed properly, transport to the disposal site and burn. (Incineration preferred).

Communication flow

a. External Coordination and Communication Mechanism: Linking Health Emergency Operations (HEOC) to National Emergency Operations (NEOC).

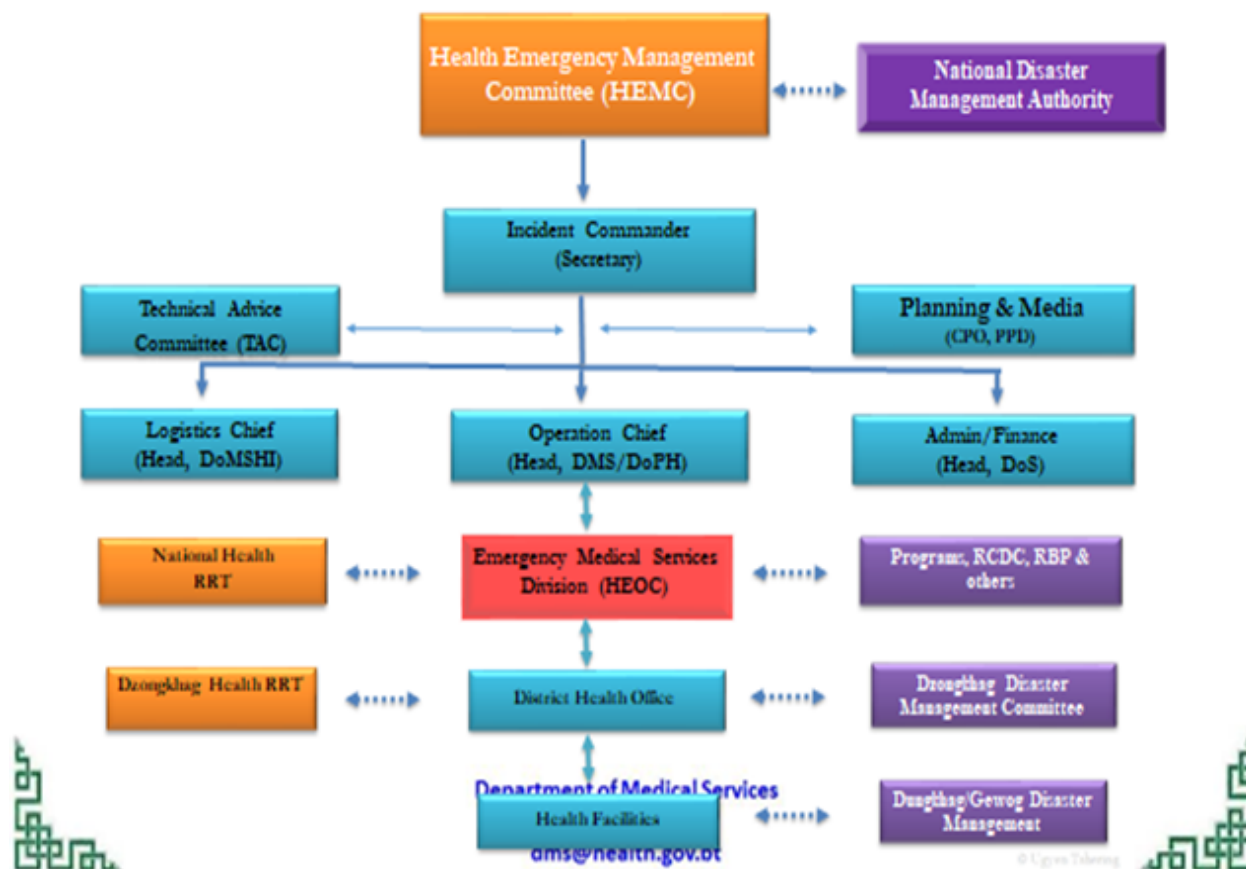
As per the Health Emergency and Disaster Contingency Plan 2016, the response and Coordination for operation for disasters type II and III shall be directed by the National Disaster Management Authority (NDMA). HEMC (Health Emergency Management Committee) shall be the highest decision making body for the Health Sector. The Honorable Secretary being the Chairperson of the HEMC shall advise and provide updates to the NDMA on the emergency situation. The HEMC shall function from HEOC during the times of health emergencies and disasters.

In relation to disease outbreaks and epidemics, the Ministry of Health shall institute public risk assessment and early warning mechanism through HEOC. HEOC is expected to work in close collaboration with NEOC. HEOC shall be activated in times of disaster type II & III and health emergencies of national concern.

The Coordination and channel of communication between the agencies and among the health sector and relevant partners are given below:



Health Emergency Operating Center (HEOC) Coordination & Communication Mechanism

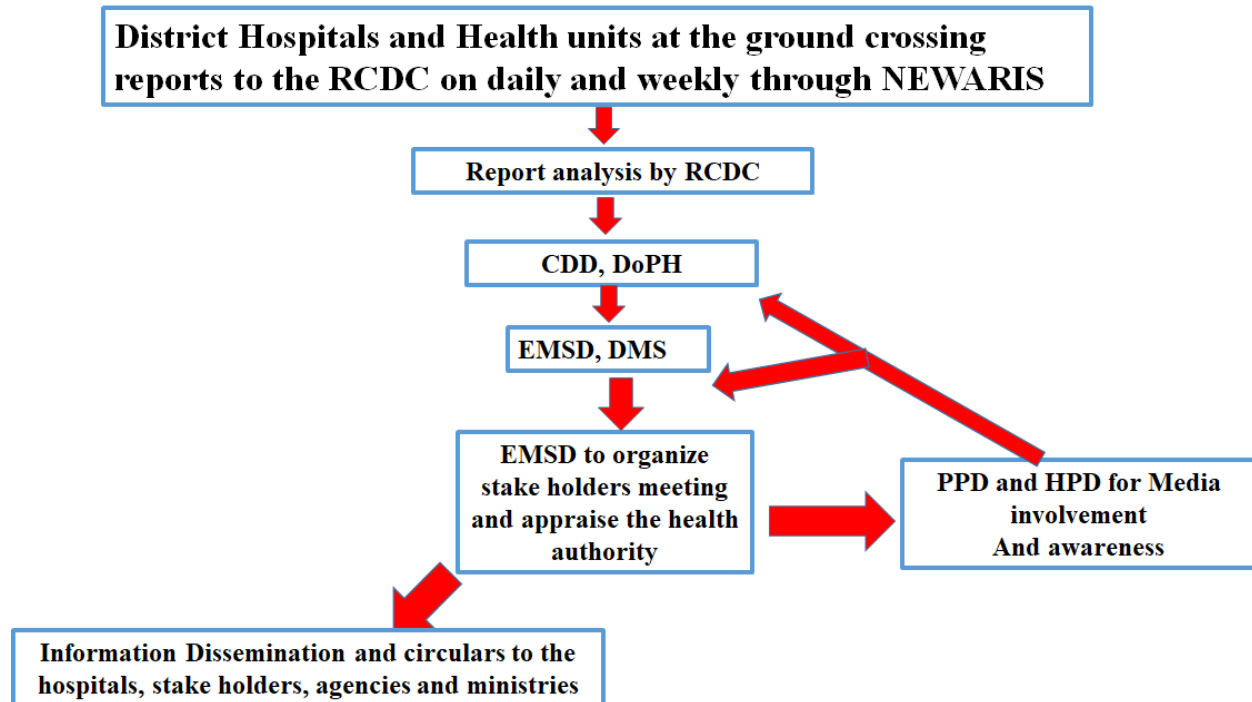


b. Internal Communication Mechanism:

The internal stakeholders comprise of IHR program under Emergency Medical Services Division, Zoonosis Program under Communicable Disease Division, Royal Centre for Disease Control, Policy and Planning Division, Health Promotion Division, district hospitals and Basic Health Units. The stakeholders shall have frequent Coordination meetings before and during the times of emergency to take stock of the preparedness level and to address communication issues.

All the relevant internal stakeholders shall follow the NRRT Communication Channel detailed below to guide effective response against public health emergencies.

NRRT Communication Channel



Risk Communication

1. Awareness

- Health Promotion Division under the Department of Public Health will be responsible for all awareness programs related to 2019-nCoV
- Periodic awareness shall be through talk show, announcement, brochures, posters, standees and social media.

2. Media

- The media focal person from Planning and Policy Division, MoH will be focal for coordinating with mainstream media
- Press releases and information regarding nCoV will be shared by media focal

Risk Assessment

The risk assessment for 2019-nCoV will be conducted as and when required.

Isolation at the Hospitals

In a hospital setting, a suspected patient may be brought directly from the point of entry (land/air), seen at the outpatient department (OPD) or the Respiratory Disease Clinic (RDC) in JDWNRH, the Emergency Department (ED) or referred from other health centres. Thus, isolation is described as follows with different scenarios;

Screening at the ground crossing

Suspected passengers entering through the points of entry (Paro, Phuntsholing, Gelephu, Samdrup Jongkhar, Panbang, Nganglam) shall be isolated and quarantined in designated hospitals for 14 days (may change as per WHO recommendations as more evidences gather). During this process, appropriate infection control and prevention measures should be instituted immediately. The health centers will liaise with the RCDC to collect and ship appropriate samples for testing. Due to the lack of any definite treatment and the need to manage patients only symptomatically, movement and referral of patients to higher centers is discouraged to prevent the risk of spread. Only patients requiring respiratory support (ventilator support) should be referred to higher centers.

Screening at the Hospital OPDs and Respiratory Disease Clinic

Hospital OPDs and RDC (JDWNRH) routinely attend to patients with respiratory infections on an outpatient basis. During the current outbreak period, all doctors in hospital OPDs and RDC should be more vigilant to screen out respiratory tract infection (RTIs) patients with risks of being exposed to the 2019-nCoV, through history of travel, exposure or contact with cases and those with severe symptoms.

Upon suspicion, the patient should be put under observation/isolation/quarantine in the designated isolation units in the hospitals under appropriate PPEs. For example, in the JDWNRH the old MCH building has been identified for isolation. Sputum and blood samples should be taken for testing locally and shipment to the reference laboratory. The clinical management team should be informed.

Screening at Emergency Room

The ER departments or emergency services in hospitals may come across suspected patients that present to them at odd hours. These patients will usually come with severe diseases and need to be assessed promptly for rapid application of proper infection control and prevention measures. As soon as a suspect is seen in the ER, he/she should be provided with a standard medical mask immediately before any medical interventions are carried out.

If the patient is hemodynamically stable and does not require ventilatory support, he/she should be shifted to the designated isolation room in the hospitals. The clinical management team should be informed accordingly.

If the patient requires ventilator support, he/she should be immediately shifted to the nearest hospital with ICU facilities. In the JDWNRH, the isolation ICU near the Adult ICU (previously designated for renal transplant patients) for subsequent management. During this process, the patient and the health workers should be put under appropriate PPE for infection prevention and control.

1.4 From other health centers

During such events, transfer of patients between health centers is not recommended and restricted to those who need higher level care such as ventilator support and ICU management.

Annexure: Contact details of team for case management at Paro Hospital

1. Paro Hospital

Patient Management Team					
Sl. #	Nurses	Doctors	Laboratory	Driver	Infection Control
1	Dechen Wangmo, Chief Nurse (Team Leader)	Dr. Ugyen Wangdi (CMO)	Tshering Dorji (Technologist)	Galley	Tandin Wangdi (IC FP)
2	Ngawang Dorji (SN)	Dr. Yowaan Thapa (MO)	Sherub Tenzin (Technician)	Pema Dorji	Phurpa Lhamo (QASD FP)
3	Tandin Wangdi (SN)				
4	Pema Yangzom (SN)				
5	Pema Wangda (SN)				

6	Sanjay Kr. Pradhan(SN)				
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Rapid Response Team

Sl. #	RRT-1	RRT-2
1	Dr. Sandeep Sanyasi, GDMO, Team leader	Dr. Tendri Wangchuk, GDMO, (TL)
2	Phurpa Lhamo, AN	Rinchen Wangmo, SN
3	Choden Dukpa, AN	Leki Choden, SN
4	Padam Ghalley, SN	Dechen "B", AN
5	Leki Dorji (OT)	

List of Doctors and Nurses identified for the (nCoV) Isolation ward

S.No	Department	Name Doctors	Contact No	Remark
1	Emergency department	Dr. Sona Pradhan Dr. Ugyen Tshering and DGMOs in rotation	17890633 17545463	Patient who required emergency services will be taken care in the emergency by these doctors on rotation
3	Critical care	Dr. Kezang Namgyal Dr. Gary Kuniyoshi	17970141 17257201	Patient with (nCoV)who required critical care will be taken care by this two doctor on rotation

3	Medical	Dr. Sonam Yangchen Dr. Minjur Dr. Sunanda	17828385 17880100 17290900	These doctors will take care of the patient in the isolation ward with (nCoV) on rotation
	Wards	Name of Nurses	Contact No	
4	Medical ward	Chandra Bhadur Limbu, SSN	17956877	Theses Nurses will be placed in isolation ward for (nCoV) and they will be replaced by other group
	Medical ward	Sonam Pemo, SN	17888929	
	Cabin	Passang Lhamo, SN	17663190	
	Orthoepadic	Leki Chomba S/N	17695806	
	Pediatric	Dawa Pemo, S/N	17761872	
	AICU	Tshering Dolkar, C/N	77445566	
	NICU	Ugyen Dorji, , S/N	17497704	
	Dialysis	Sonam peldon S/N	17921984	

	EENT	Kumar Khanal, C/N	77865020	
	Maternity	Yangchen Lhamo, S/N	17497419	
	Birthing	Sangay Zangmo, S/N	17162213	
	Dialysis	Pema Choden, SN,	17341745	
5		Name of support staff		They will work on rotation basis in isolation ward
	Support Staff	Rinchen Tshechu	17346080	
		Aita Moti Limbu	17821374	
		Sabitra Dahal	1730545	
		Tashi Choki	17452118	
		Tshering Zam	17761690	

Annexure : Contact details of team for case management at Phuentsholing Hospital

Isolation room team

SL.No.	Name	Designation	Contact Number
1	Sangay Tenzin	Clinical Nurse	17250940
2	Lekey Wangmo	Staff nurse	17685657
3	Kencho Zangmo	Staff nurse	17671401/17347954
4	Sherab zangmo	Staff nurse	17795710
5	Karma kelzang Dechen	Staff nurse	17786379
6	Chimi wangmo	Staff nurse	17628804
7	Kinzang Choden	Staff nurse	17619538

Rapid Response Team:

RRT 1

SI No.	Name	Designation	Contact number
1	Dr. Sangay Phuntsho	MO	17565440

2	Dema	EMT	17729618
3	Yonten Jamtsho	Staff Nurse	17753696
4	Tawpo	OT Tech	17452808
5	Raj Kumar	Driver	17662810/77662810
6.	Tshering Dorji, NA	OT	17387053/ 17373024

RRT 2

Sl no	Name	Designation	Contact number
1	Gokarna Monger	NA	77641411/ 17639420
2	Youngba	Staff Nurse	17262990
3	Tshering Dhendup	Driver	17832050 / 77832050
4	Chandra Bdr Ghalley	Staff Nurse	17769716
5	Sangay Tenzin	Clinical Nurse	17250940

Annexure: **Contact details of team for case management at Samdrup Jongkhar Hospital**

Isolation room:

SL.No.	Name	Designation	Contact Number
1	Ngawang Chopel	Staff Nurse	17820835
2	Thinley Jamtsho	Staff nurse	
3	Tshering Dorji	Staff nurse	
4	Deki	Staff nurse	17616694
5	Tshering Choki	Staff nurse	16904475
6	Lobzang	Staff nurse	17446605
7	Nari Maya	Sweeper	17559772

Rapid Response Team

RRT 1

Sl No.	Name	Designation	Contact number
1	Dr. Kezang Wangdi	MO	17951848
2	Sonam Tashi	Clinical Nurse	17884232
3	Tshewang Penjor	EMT	17548969
4	Sita Maya	Staff Nurse	
5	Karma Choden	Lab Technician	
6.	Dorji Tshering	Driver	

RRT 2

Sl no	Name	Designation	Contact number
1	Sherab	Clinical Officer	17689422
2	Chojey Zangmo	Staff Nurse	17357659
3	Sangay Wangchuk	Lab. Technician	17405306
4	Deo Kr. Gurung	EMT	17932803
5	Nima Cheda	Driver	17872218

Annexure: Contact details of team for case management at Central Regional Referral Hospital

Case Management Team

sl no	Name	Designation	Contact Number
1	Dr. Sonam Zangmo	Medical Specialist	17954567
2	Dr. Thai Wangmo	GDMO	17451618
3	Amber Gurung	NS	17807684
4	Meejur lhamo	Lab technologist	17235599
5	Tshering Choden	Pharmacist	17642244
6	Phub Tshering	AdmO	17421160
7	Gyem Tshering	Security Incharge	17561998
8	Dr. Dorji Tshering	MS	17517821

Rapid Response Team

sl no	Name	Designation	Contact Number
1	Dr. Tashi Penjor	GDMO	17701849
2	Sangay Dorji	EMRO	77104055
3	Chenga Dorji	Lab technologist	177884034

4	Jamyang	Sr. Adm	17644383
5	Dorji Wangdi	Pharmacist	77653215
6	Yeshi Wangdi	Driver	17629295

Annexure: Contact details of team for case management at Samtse Hospital

Isolation Room

Sl.No	Name	Designation	Contact No.
1	Sha Bdr. Gurung	SN	17397079
2	Ugyen Lhamo	CN	17709283
3	Deki Om	CN	77208151
4	Tshering Yangchen	SN	17937813
5	Thukten Tshering	AN	17278425
6	Sangrup Tshering Lepcha	Ward Boy	17773480
7	Eden	Sweeper	17914441

Rapid Response Team

RRT 1

Sl.No	name	Designation	Contact No.
1	Dr. Karma Lhendup	MOI	17760212
2	Dr. Sonam Tobgay	GDMO	17564722
3	Lopzang Dorji	Ortho. Tech	17655787

4	Sha Bdr. Gurung	Staff Nurse	17397079
5	Buddha Kr. Rai	EMT	17655564
6	N.B. Gurung	Driver	17715938

RRT 2

Sl.No	name	Designation	Contact No.
1	Dr. Yeshey Zam	GDMO	77380612
2	Tshering Doya	Sr. HA	77780863
3	Tashi Dendup	SN	77403784
4	Dil Maya Rai	Sr. Lab. Tech	17697307
5	Wangdi	EMT	77105827
6	Jai Bdr. Chhetri	Driver	77284455

Annexure 1

Interim guidance on sample collection, storage, packaging and shipment of nCoV suspected patients

Royal Centre for Disease Control, Department of Public Health

Serbithang, Thimphu

Background

On 31 Dec 2019, the World Health Organization (WHO) China Country Office was informed of cases of pneumonia of unknown etiology in Wuhan City, Hubei province, China. A novel coronavirus (2019-nCoV) related to the Middle Eastern respiratory syndrome virus and the severe acute respiratory syndrome virus has since been implicated.

As of [16 Jan 2020], 41 cases (including 2 deaths) have been confirmed in Wuhan City with 3 confirmed cases in travelers detected in Thailand (2 cases) and Japan (1 case). Most cases have been epidemiologically linked to exposure at a seafood market in Wuhan, which has been closed since [1 Jan 2020] in efforts to contain the outbreak. Although both travelers have a history of travel to Wuhan City, they did not visit the seafood market implicated in the other cases.

Case definition (adopted from WHO)

1. 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.
4. Individuals with acute respiratory illness of any degree of severity who, within 14 days before onset of illness, had any of the following exposures:
5. Close physical contact with a confirmed case of nCoV infection, while that patient was symptomatic;
6. A healthcare facility in a country where hospital associated nCoV infections have been reported;
7. 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.

Sample requirement

Total of three samples are preferred from a suspected case

Upper respiratory tract

- Throat swab (bacteriological and virological testing)
- Nasal swab (virological testing)

(Note: throat swabs for bacterial culture MUST BE transported with small amounts of sterile normal saline)

Lower respiratory tract

- Sputum (bacteriological testing)
- Bronchial lavage/wash/aspirate (bacteriological and molecular testing)
- Endotracheal aspirate (bacteriological and virological testing)

Clotted blood in red cap blood collection tube (serological and molecular testing)

Collection Procedure

1. Sample **MUST BE** collected in the designated/identified isolation room/well ventilated room and sample collection sets (VTM, syringe, sterile throat swab, vacutainer, sterile uricol and disinfectants) dedicated to each of the suspected case **MUST BE** used.
2. Before entering the designated/identified isolation room, ensure a whole set of PPE (N95 mask, double surgical gloves and lab coat) is worn (it can either be worn in laboratory if donning room is not identified or designated donning room) and all the sample collection kits, bio-hazard bags/bins, appropriate disinfectants and sharp waste containers are available and accessible. (Avoid repeated entry into the designated/identified isolation room just for sample collection).
3. There should be another laboratory assistant/technician with bear minimum PPE at the door ready to receive the sample in the secondary container of the triple packaging box.
4. Before collection, ensure specimen collection containers/tubes are labelled (Refer ILI & SARI guidelines for detailed procedures)
5. After sample collection, remove the first gloves and clean the outer surface of the tube with 0.5% sodium hypochlorite and individually wrap the tube with tissue paper then put into a zip-lock plastic bag if available.
6. Disinfect the inner gloves with 70% alcohol.
7. Carefully drop the sample into the secondary container (Note: Must avoid touching the secondary container).
8. Safely doff the PPE set in the designated/identified doffing room and securely autoclave the PPE later.
9. Transport the sample through the secured passage/route to the laboratory without delay.
10. Packaging, storage and shipment to RCDC:
11. Ensure the triple packaging box is kept in the designated area in the laboratory for sample packaging.
12. Upon arrival at the laboratory, immediately proceed to the designated area of packaging and disinfect the outer surface of the secondary container.
13. Place it into the outer box of the triple package.
14. Insert cold/ice packs into the space between the secondary and outer container
15. Place the itemized list/sample details on the top of the lid before closing the box
16. Close the outer container and spray disinfectant all over the container.
17. Call RCDC (17562422/17760958) and inform about the shipping time and date.

Note:

Sample should reach RCDC within 48 hours or as soon as possible after collection of sample and for further information, please call RCDC.

Please visit: https://www.who.int/docs/default-source/coronaviruse/20200114-interim-laboratory-guidance-version.pdf?sfvrsn=6967c39b_4&download=true for detailed information on sample collection for nCoV.

TESTING ALGORITHM for nCoV by using real-time RT-PCR at RCDC

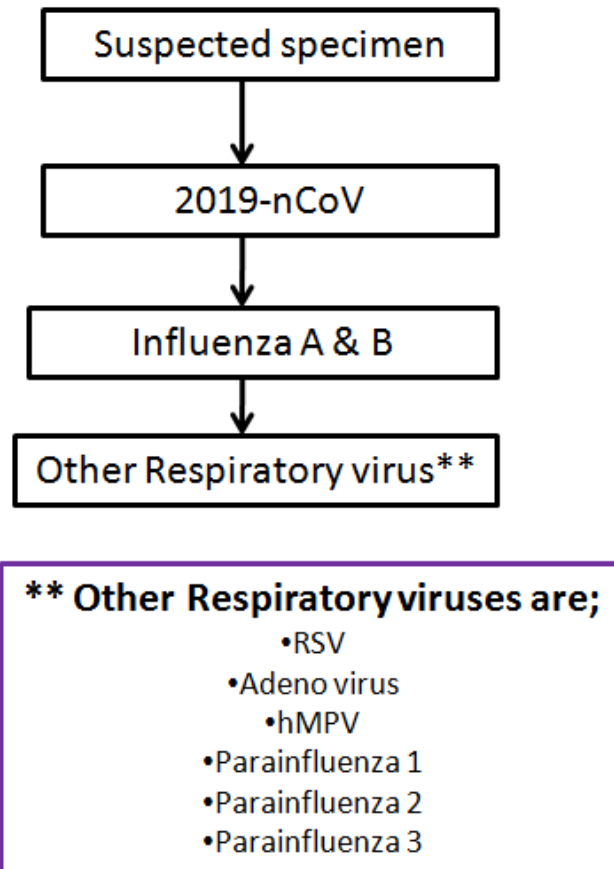


Figure: Testing algorithm for 2019-nCoV

Annexure:

Contact tracing and active case finding

Interim guideline for contact tracing and Active case finding after a case of an novel coronavirus (2019-nCoV) has been confirmed

annexure 3: Team for Risk Assessment

There are considerable uncertainties currently in risk assessment of the outbreak event due to lack of detailed epidemiological analysis. However, the expert team from MoH will monitor the outbreak on a daily basis as per the WHO updated information and conduct risk assessment in the context of Bhutan. On the basis of available information, risk assessment will consider:

1. The likelihood of further spread to neighbouring countries and to Bhutan
2. The likelihood of importation of case to Bhutan
3. The potential impact of 2019 nCoV outbreaks
4. Infection control capacity and adherence at HFs and secondary cases likelihood in Bhutan health facilities
5. The impact of late detection and impact of community transmission and spread

Responsible officials	Designation	Mobile No.
Dr. Sonam Wangchuk	Chief, RCDC	17760958
Mr. Rixin Jamtsho	CPO, CDD	17606984
Dr. Tshokey	Microbiologist	17589485
Mr Jit Bahadur Darnal	Sr CO	17965195
Mr. Binay Thapa	CLO	17652422
Dr. Tandin Zangmo	OSA	17828860
Yeshey Pelden	PO, ZDCP, CDD	77357366
Jamyang choden	PO, EMSD	17535907

Annexure 4: Composition of NHRRT :

1. Mr Jit Bahadur Darnal, RCDC
2. Dr Tandin Zangpo, DoPH
3. Mr Binay Thapa, Dorji Wangchuk, Kunzang Dorji, RCDC)
4. Medical Specialist/Clinicians (To be identify by MoH)
5. Mr Ugyen Tshering (EMSD) or Kinley Dorji, CPO, EMSD)
6. Ms Pema Zam (Infection Control Programme)
7. Mr Rixin Jamtsho, CPO, CDD)

Forms required: **Minimum Data Set (MDS) Report Form (Annex TZ)**

**Interim case reporting form for 2019 Novel Coronavirus (2019-nCoV)
of confirmed and probable cases**

WHO Minimum Data Set Report Form

Date of reporting to national health authority:

[_D_] [_D_] / [_M_] [_M_] / [_Y_] [_Y_] [_Y_] [_Y_]]

Reporting institution: _____

Reporting country: _____

Case classification: Confirmed
Probable

Detected at point of entry No Yes Unknown If yes, date

[_D_] [_D_] / [_M_] [_M_] / [_Y_] [_Y_] [_Y_] [_Y_]

Section 1: Patient information

Unique Case Identifier (used in country): _____

Date of Birth: [_D_] [_D_] / [_M_] [_M_] / [_Y_] [_Y_] [_Y_] [_Y_] or estimated age:

[__] [__] in years

if < 1 year old, [__] [__] in months or if < 1 month, [__] [__] in days

Sex at birth: Male Female

Place where the case was diagnosed: Country: _____

Admin Level 1 (province): _____ Admin Level 2 (district):

Patient usual place of residency: Country: _____

Admin Level 1 (province): _____ Admin Level 2 (district):

Section 2: Clinical information

Patient clinical course

Date of onset of symptoms: [_D_] [_D_] / [_M_] [_M_] / [_Y_] [_Y_] [_Y_] [_Y_]

Asymptomatic Unknown

Admission to hospital: No Yes Unknown

First date of admission to hospital: [_D_] [_D_] / [_M_] [_M_] / [_Y_] [_Y_] [_Y_] [_Y_]

Name of hospital: _____

Date of isolation: [_D_] [_D_] / [_M_] [_M_] / [_Y_] [_Y_] [_Y_] [_Y_]

Was the patient ventilated: No Yes Unknown

Health status (circle) at time of reporting: recovered / not recovered / death / unknown

Date of death, if applicable: [_D_] [_D_] / [_M_] [_M_] / [_Y_] [_Y_] [_Y_] [_Y_]

Patient symptoms (check all reported symptoms):

- | | | |
|---|--|---|
| <input type="checkbox"/> History of fever / chills | <input type="checkbox"/> Shortness of breath | <input type="checkbox"/> Pain (check all that apply) |
| <input type="checkbox"/> General weakness | <input type="checkbox"/> Diarrhoea | () <i>Muscular</i> () <i>Chest</i> |
| <input type="checkbox"/> Cough | <input type="checkbox"/> Nausea/vomiting | () <i>Abdominal</i> () <i>Joint</i> |
| <input type="checkbox"/> Sore throat | <input type="checkbox"/> Headache | |
| <input type="checkbox"/> Runny nose | <input type="checkbox"/> Irritability/Confusion | |
| <input type="checkbox"/> Other, specify | | |
-
-

Patient signs :

Temperature: [__][__][__] °C / ° F

Check all observed signs:

- | | | |
|--|--|--|
| <input type="checkbox"/> Pharyngea exudate | <input type="checkbox"/> Coma | <input type="checkbox"/> Abnormal lung X-Ray findings |
| <input type="checkbox"/> Conjunctival injection | <input type="checkbox"/> Dyspnea / tachypnea | |
| <input type="checkbox"/> Seizure | <input type="checkbox"/> Abnormal lung auscultation | |
| <input type="checkbox"/> Other, specify: | | |
-
-

Underlying conditions and comorbidity (check all that apply):

- Pregnancy (trimester: _____) Post-partum (< 6 weeks)
- Cardiovascular disease, including hypertension Immunodeficiency, including HIV
- Diabetes Renal disease
- Liver disease Chronic lung disease
- Chronic neurological or neuromuscular disease Malignancy
- Other, specify:

Section 3: Exposure and travel information in the 14 days prior to symptom onset (prior to reporting asymptomatic)

Occupation: (tick any that apply)

- Student Health care worker Other, specify:

- Working with animals Health laboratory worker

Has the patient travelled in the 14 days prior to symptom onset? No Yes Unknown

If yes, please specify the places the patient travelled:

Country	City
---------	------

1. _____

2. _____

3. _____

Has the patient visited any health care facility(ies) in the 14 days prior to symptom onset?

No Yes Unknown

Has the patient had close contact^[1] with a person with acute respiratory infection in the 14 days prior to symptom onset?

No Yes Unknown

If yes, contact setting (check all that apply):

- Health care setting Family setting Work place Unknown Other,

specify: _____

Has the patient had contact with a probable or confirmed case in the 14 days prior to symptom onset? :

No Yes Unknown

If yes, please list unique case identifiers of all probable or confirmed cases:

Case 1 identifier. _____ Case 2 identifier. _____ Case 3 identifier. _____

If yes, contact setting (check all that apply):

Health care setting Family setting Work place Unknown Other, specify: _____

If yes, location/city/country for exposure: _____

Have you visited any live animal markets in the 14 days prior to symptom onset?

No Yes Unknown

If yes, location/city/country for exposure: _____

Section 4: Laboratory Information

Name of confirming laboratory: _____

Please specify which assay was used: _____ Sequencing done?: Yes No Unknown

Date of laboratory confirmation: [_D_][_D_]/[_M_][_M_]/[_Y_][_Y_][[_Y_][_Y_]

[1] Close contact' is defined as: 1. Health care associated exposure, including providing direct care for nCoV patients, working with health care workers infected with novel coronavirus, visiting patients or staying in the same close environment of a nCoV patient. 2. Working together in close proximity or sharing the same classroom environment with a with nCoV patient. 3. Traveling together with nCoV patient in any kind of conveyance. 4. Living in the same household as a nCoV patient