



Ministry of National Health Services,
Regulation and Coordination,
Government of Pakistan

National Action Plan for Corona virus disease (COVID-19) Pakistan



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Acronym

AAR	After Action Review
AJK	Azad Jammu & Kashmir
CAA	Civil Aviation Authority
CDC	Centres for Disease Prevention & Control
CHE	Central Health Establishment
COVID-19	Coronavirus Disease 2019
DESTO	Defence Science and Technology Organization
DRAP	Drug Regulatory Authority of Pakistan
EOC	Emergency Operating Centre
FDSRU	Federal Disease surveillance & Response Unit
FELTP	Field Epidemiology Training Program
HDF	The health declaration form
IEC Materials	Information, Education and Communication Materials
IPC	Infection Prevention & Control
JSI	John Snow International
KPK	Khyber Pakhtunkhwa
LEAs	Law Enforcement Agencies
M/o NHR&C	Ministry of National Health Services, Regulation & Coordination
MERS-CoV	Middle East Respiratory Syndrome
MoC	Ministry of Commerce
MoH	Ministry of Health
Mol	Ministry of Interior
MoIB	Ministry of Information, Broadcasting,
MTAs	material transfer agreement
NDMA	National Disaster Management Authority
NIH	National Institute of Health
NIH	National Institute of Health
N-STOP	National Stop Transmission of Polio
PDMA	Provincial Disaster Management Authority



PDSRU	Disease surveillance & Response Unit
PHE	Public Health England
PHEIC	Public Health Emergency of International Concern
PoEs	Point of Entries
PPEs	Personal protective equipment
RCCE	risk communication and community engagement
RRT	Emergency Rapid Response Teams
RRTs	Refresher trainings of the Rapid Response Teams
SAPM	Special Assistant to Prime Minister
SARS-CoV	Severe Acute Respiratory Syndrome
SOPs	Standard Operating Procedures
TORs	Terms of References
WHO	World Health Organization
WHO	World Health Organization

National Action Plan for COVID-19 (Pakistan)

1- Overview

The world has experienced a new potent challenge in the shape of Corona virus disease 2019 (COVID-2019). While Coronavirus is not new to the medical sciences, the outbreak of this novel 5th type of Coronavirus called SARS – COV2 has its characteristics and evolving epidemiology under the microscope as of now. Coronaviruses (CoV) are a large family of viruses that cause illness ranging from the common cold to more severe diseases such as [Middle East Respiratory Syndrome \(MERS-CoV\)](#) in 2012 and [Severe Acute Respiratory Syndrome \(SARS-CoV\)](#) in 2003. The current strain (COVID-19) is a new one that has not been previously identified in humans.

Early on, many of the patients in the Wuhan outbreak reportedly had some link to a large seafood and animal market, suggesting animal-to-human spread. However, an increasing number of patients reported have not had exposure to animal markets, explaining person-to-person spread.

Both MERS and SARS have been known to cause severe illness in people. There is still a lot unknown regarding SARS-COV2 and the associated COVID-2019; while severe illness, even resulting in several deaths as (number in date and time) reported in China, Japan, South Korea and other countries, other patients have milder illness and recovered (let us put numbers or percentages again in reference to the time and space). There are ongoing investigations to learn more. Such outbreaks of novel viral infections among human are always of public health concern.

WHO is urging all countries to prepare for the potential arrival of COVID-19 by readying emergency response systems; increasing capacity to detect and care for patients; ensuring hospitals have the space, supplies and necessary personnel; and developing life-saving medical interventions.



Chronology of Events

On 31 December 2019, WHO was alerted of a cluster of pneumonia cases of unknown cause in Wuhan City, Hubei Province, China. On 7 January 2020, the Chinese authorities identified a new type of corona virus disease 2019 and on 12 January, China shared the genetic sequence of a corona virus disease 2019 later named as COVID-2019.

On the recommendation of the Emergency Committee, ***the Director General WHO declared the COVID-2019 as a Public Health Emergency of International Concern (PHEIC) on 30 January*** with no travel and trade restrictions were recommended. On February 19, Iran reported two deaths resulting from Coronavirus. The number of cases in Iran grew exponentially with increasing mortality with its arms expounding to Afghanistan and finally to Pakistan. First travel associated case was reported in Karachi who traveled from Iran.

The WHO risk assessment is 'very high' for China and is moderate to high for regional and global level, based on the probability of transmission and the impact of the disease.

Situational Update as of 7th March 2020

As of 7 March 2020, a global number of COVID-19 confirmed cases has surpassed 100 000 and 3,073 deaths have been reported for COVID-2019 globally. Of these, 80,813 cases are from China whereas 21,110 confirmed cases with 413 deaths are from outside China. The number of cases in Iran are 4747 with 121 deaths reported. So far, 7 cases have been reported in Pakistan with no mortality reported.

Rationale

Pakistan shares borders with China and Iran, one being the epicenter and other has seen exponential increase in number of cases during last 10 days, respectively. Pakistan has travel and trade with China and Iran. The increased influx of travelers through air, land and sea puts Pakistan at increased risk of further spread of the virus from Iran and China. This necessitates the need for a robust response plan to contain the current outbreak and prevent its escalation due to further transmission. The risk of



further importation of the virus to Pakistan is very high and as Pakistan has already imported the virus, the country requires stringent measures for early detection of potential cases to contain current outbreak and control measures to prevent further spread.

The land route with China (Khunjerab) is closed at present due to heavy snow fall. Pakistan has currently suspended travel and trade activities with Iran in the light of spread of virus from Iran while Taftan and Chaman borders (with Afghanistan) are being monitored closely (Chamman border being closed temporarily, whereas Taftan is having periodic exit). Furthermore, outward travel to Iran, Iraq and KSA is to be controlled. Weekly around 41 flights operating from three cities (Islamabad, Lahore and Karachi) in Pakistan and two destinations in China (Beijing and Urumqi). The risk of importation of the virus to Pakistan is very high and require strong preparations and stringent measures for early detection of potential cases and control measures to prevent further spread of the virus.

Currently Pakistan is in containment phase. The current capacity for responding to this outbreak needs to be augmented including surveillance system in general and at Point of Entries (PoEs). Effective community engagement and awareness raising is required. Currently, Influenza preparedness plan is available for the country and recently a Pandemic Preparedness Plan was also finalized. This necessitates an urgent need to address these gaps.

Defining Risk

It is important that the risk is looked upon in the backdrop of the country's history with outbreaks, its current resources and Health infrastructures. The spread of the virus in its initial phase in China and later to more than 70 Countries (as of 7th March 2020), clearly identifies that cultural, geographic and community response dictates the forecasting of risk. China's extreme measures of control and treatment, whereas Iran's rapid spread in relations to regional vulnerability are starting points for Pakistan. With 7 cases (as of 8th March 2020), and all hailing from travel associations with Iran pinpoint to a common source as of now. However, the global spread makes Pakistan as vulnerable as any other developing country. The risk for Pakistan's weak Health

system increments the fears. Therefore, preparedness in the initial phase, whereas strict containment in the second phase will define the fate of the virus.

2- National Action Plan- Policy

The National action plan will serve as a policy document for ensuring that all guiding principles for outbreak preparedness, containment and mitigation are followed.

3- Vision

- a) National effort for response to COVID-2019 Emergency in Pakistan while ensuring continual maximum preparedness and optimal and effective response capacity to the current and future outbreaks of respiratory pathogens with pandemic potential including COVID-2019.
- b) Minimal national Morbidity and Mortality, thereby decreasing the burden of disease on the economy of the country.

4- Aims

- a. Develop National Preparedness & Response Plan for COVID-2019 as a blueprint for Pandemic Preparedness for Pakistan under Global Health Security Agenda.
- b. Provide policy framework for federal, provincial and regional stakeholders for building capacity to prevent, detect and respond to any events due to COVID-2019 or other novel pathogens with pandemic potential in Pakistan.

5- Objectives

The main objectives are:

- a. Ensure that the current outbreak of COVID-2019 is contained and responded timely and efficiently and to prevent its further spread. To strengthen country and community emergency response to potential events due to COVID-2019 including local, regional and national outbreaks that can have a significant impact on the health of Pakistan's population.



- b. To advocate for prioritizing financial and other resources for country emergency preparedness and response and mobilizing increased domestic and international investment in this area.
- c. Provincial/Area Departments of Health can use this plan to prioritize and implement important emergency preparedness actions while strengthening inter-sectoral collaboration with other government sectors, private sector and civil society. This plan identifies the principles and elements of effective emergency preparedness and lays out the planning process by which provincial governments can determine their priorities and develop or strengthen their operational capacities for an efficient response. It also evaluates resource allocation, guiding decisions to ensure that financial investments support implementation.

Based upon the duration, these can be divided as follows:

Short term

- a. Effective preparedness and efficient response by ensuring all safeguards in place to prevent outbreak of COVID-2019.
- b. Identification and activation of available financial and other resources to ensure maximum preparedness and response.

Medium term

- a. Strengthening and reforms of the organizational, structural and coordination mechanisms to ensure maximum level of preparedness over time and to effectively respond to all hazards including COVID-2019 emergency.
- b. Sustainability of ongoing efforts; and continued strategy for long term.
- c. Develop robust surveillance and response structures throughout Pakistan ensuring compliance with International Health Regulations 2005 with effective Federal-Provincial working.
- d. Inculcating a learning culture in the organizational response to 2019-nCoV to further strengthen Pakistan's capacity to respond effectively to emerging threats

Long term

- a. Contribute in development of robust national health security agenda for all hazards and pandemic preparedness framework for Pakistan.
- b. Development of a mechanised and systematic structure ensuring timely preparedness and response.
- c. Capacity development and evolving organizational reforms including reorganization of health security establishment at national and provincial/ regional levels.

6- Strategic Determinants/ GOALS

- a. Rapidly establishing and strengthening coordination to deliver strategic, technical, and operational support through existing mechanisms and country partnerships.
- b. Inter departmental coordination and assigning specific roles and responsibilities to all arms of the government.
- c. Scaling up country response operations, including strengthening readiness capacity to rapidly identify, diagnose and treat cases including identification of contacts with tracing and follow up; and minimizing community spread of virus in Pakistan.
- d. Provision of supplies and ensuring commodity security.
- e. Infection prevention and control in healthcare settings.
- f. Implementation of health measures for travelers.
- g. Expanded scope of community ownership and understanding in the population through risk communication and engagement.

7- Operations

The national action plan in its operational capacity will work around the following:

- Preparedness & Response
- Containment
- Mitigation

Preparedness (What is Needed vs What we Have) & Response:

“Victory Loves Preparation”, It is of utmost importance that preparations for any untoward or in this case outbreak be made in coherence to the exact needs of maximum protection against the introduction and in later half the response. For preparedness contours to be outlined following is necessitated:

I. Governance

- National policies that integrate emergency preparedness.
- Mechanisms for emergency preparedness, response and recovery.
- Coordination mechanisms.

II. Capacities

- Assessments of risks and capacities to determine priorities for emergency preparedness.
- Enhancement of capacities at POE particularly effective screening protocols.
- Surveillance and early warning, information management.
- Access to diagnostic services during emergencies.
- Basic, safe health and emergency services.
- Risk communications.
- Research development and evaluations to inform and accelerate emergency preparedness.

III. Resources

- Financial resources for emergency preparedness and contingency funding for response.
- Logistics mechanisms and essential supplies for health.
- Dedicated, trained and equipped human resources for emergencies.

IV. Strengthening coordination mechanism at national and provincial level

- Emergency Core Group has been established at the Ministry of National Health Services, Research and Coordination (M/o NHR&C) under the leadership of

Special Advisor to Prime Minister (SAPM) with members from area of expertise as leads and provincial core groups have also been established. ([Annexure-A](#)).

- Incident Command and Control/Incident Management System has been established at the M/o NHR&C as National Emergency Cell under the leadership of SAPM. The same system is being replicated at Provincial level including AJK and Gilgit-Baltistan with clearly defined TORs and SOPs. Provinces are required to establish a response structure to COVID-19 that link districts through provincial teams and to Federal.
- National Committee of relevant ministries, provincial departments and partners to be made. Technical Working Groups may be also established under the emergency core committee.
- Advisory/alert was issued to all relevant stockholders for taking necessary steps/preparedness measures ([Annexure-B](#)).
- An organogram has been created outlining the structural and organizational mechanisms of the different committees.

V. Screening and surveillance at PoEs

screening has been initiated at all PoEs, international Airports and ground crossings the health declaration form (HDF) designed in the context of COVID-2019 has been prepared and distributed to all the relevant airlines, airports and ground crossings. Filling HDF is mandatory for all the passengers entering Pakistan ([Annexure-C](#)).

Currently, contact tracing and monitoring. has been initiated and all the close contacts of the confirmed cases have been listed. The teams in Emergency Operating Centres (EOC) are in regular follow up with all the incoming travellers through regular telephone calls.

VI. Capacity Assessment & Gaps

The current capacity of the country for responding to the outbreak needs to be augmented. Capacities like Case management, risk communication and Infection Prevention & Control (IPC) at healthcare facilities are among the challenges. Assessment must be initiated rapidly on following:

- Existing health infrastructure evaluation.

- Existing organizational infrastructure evaluation.
- Risk assessment and communication

Containment

Since the virus has been introduced in Pakistan, with 7 cases as of date (8th March 2020), therefore the aim is to contain the virus in the first phase and in future to interrupt its local transmission. From the time a case is identified till the time every contact is traced and isolated as per the quarantine SOPs ([Annexure-D](#)), is where the framework of containment is to be placed.

I. Establishing & strengthening Epidemiological systems and sentinel surveillance structures

- Comprehensive surveillance mechanism / system is mandatory. Sentinel surveillance system is used when high quality data are required about a particular disease. Selected reporting units, with a high probability of seeing cases of the disease in question, good laboratory facilities and experienced well-qualified staff, identify and notify on certain diseases. This surveillance system may engage all the stakeholders which can provide health related information.
- Disease outbreak information management system must be strengthened.
- Comprehensive hospital information management system must be ensured as basis for early detection of outbreaks.
- Disease surveillance & Response Units (PDSRU) must be extended to district level and strengthened and collaborated with EOC at provincial and federal level.
 - Ensure Rapid response teams- nominations/Training etc
 - Nominate Surveillance teams/ active case search
- Financial resources must be allocated for operation of EOC and DSRUs during emergencies with ample supply of PPEs for ensuring protection.
- Data management and data security mechanism may also be established.

II. Data:

An extremely important component as all other calculations are dependent over it and for future preparations. A good response must be supported by reliable technical data:

- i. Statistics and data availability.
- ii. Collation of data
- iii. Capacity to monitor and analyse data.

The reports on epidemiological investigation and analysis must be submitted to the health administrative departments and simultaneously to NIH on regular bases.

III. Laboratory Diagnostic Capacity

Hospitals and laboratories in the major cities have been designated to collect the samples from suspected cases with appropriate biosafety and biosecurity standards. The preparation includes availability of relevant supplies PPE and lab reagents for safe collection, storage, packing and transportation of samples from the designated hospitals to the provincial/National Reference Lab/ designated labs. The sample collection and transport policy are attached as ([Annexure-E](#)).

Testing Sites

- National Institute of Health (NIH) will be the main diagnostic national referral centre
- Extension of testing facilities are to be ensured at Karachi, Lahore, Peshawar, Quetta, Multan/Bahawalpur, and Gilgit.
- Mobile testing Laboratory will be deployed with required expertise to Taftan.
- Laboratories are also set up or are being prepared in multiple other locations, not limited to:
 - Punjab: Shaukat Khanum Memorial Hospital lab
 - Sindh: Aga Khan University Hospital

IV. Case management

For details see clinical case management guidelines ([Annexure-F1](#)). Specific Hospitals have been designated for admission and management of suspected ([Annexure F2](#)) and confirmed cases based upon availability of quality isolation wards at Federal, provincial and regional levels). A 300-bedded designated

quarantine facility has been established in Islamabad. Emergency Rapid Response Teams (RRT) have been identified, trained and equipped with ambulances. Ambulance services have been provided by relevant hospitals, 1122 and PRCS. Furthermore, in Taftan and Chaman, quarantine and isolation facilities have been established.

Case Definitions for suspected, probable and confirmed cases have been adopted from WHO standard case definition ([Annexure-F3](#)). A questionnaire has been designed for evaluation of suspected cases ([Annexure-F4](#)).

V. **Stockpiling & Logistics** ([Annexure-G](#))

Each institute and hospital are expected to conduct need and availability assessment of supplies (equipment, personal protective equipment, laboratory diagnostics) and including identification of sources to secure provision and availability of PPEs and other equipment.

Assessment should include availability of PPEs, ventilators, medicines/anti-viral, and complete supportive treatment along with backup and contingencies. Similarly, rational use of resources framework needs to be developed for every stockpiled.

VI. **Infection Prevention & Control (IPC)** ([Annexure-H1](#))

IPC measures need to be strictly implemented at all the healthcare facilities. Notify and train IPC team at the designated hospitals. A trained IPC focal person be nominated to ensure the IPC measures implanted and imbedded. The recently drafted National IPC guidelines/SOPs will be distributed and implemented.

- Standard Operating Procedures (SOPs) for Waste Management at Hospitals ([Annexure-H2](#)) and Airports ([Annexure-H3](#)) have been prepared and disseminated. Local SOPs should be developed and available in all HCFs with appropriate training of designated staff to undertake waste management.
- SOPs for disinfection and Environmental decontamination has been developed ([Annexure-H4](#)).

VII. Safe and dignified burial policy & guidelines

Guidelines have been prepared for burial of patient dying with COVID-2019 infection ([Annexure-I](#)). Deceased bodies theoretically may pose a risk when handled by untrained personnel. In the unlikely event of excess and multiple deaths systems should be identified for safe storage of deceased persons awaiting burial.

VIII. Risk Communication

The national risk communication and community engagement (RCCE) strategy for preparedness has been developed by the National Core Committee on COVID-2019 based on global and national technical advice ([Annexure-J](#)). The RCCE will serve as a single point of communication for all relevant technical and scientific information on COVID-2019. Relevant stakeholders like Ministry of Information and ISPR have been involved in developing RCCE and will be together with M/o NHR&C be in lead in implementing this strategy. The relevant healthcare workers, media and other staff will need to be trained on risk communication, social mobilization and community engagement. Please note. IEC materials guided by the national RCCE strategy is being developed and disseminated for public awareness through print, social and electronic media. Examples of such material developed at national level are attached ([Annexure-K](#)). A national situational report format has been developed for daily situation report ([Annexure-L](#)).

IX. Funding

All these elements are directly dependent on funding for sustainability. Authorities should ensure that an '**Emergency Fund**' is created in this regard.

- Federal level: M/o NHR&C has already done that with an initial tranche of PKR 85 Mn.
- Provinces/regions: Need to do the same. (KPK has also established).
- Ministry of Finance may allocate funding, disbursement methodology and backup support.

Exemptions under Emergency

Provisions for exemption for procurement exists under emergency for timely action (PPRA 2004; Rule 42C(v)).

Mitigation

Advisory on Mitigation Strategies for Covid-19 have formulated a document which can be accessed at ([Annexure-M](#)).

8- Broad Implementation Arrangements

The M/o NHR&C will be implementing this plan along with other line ministries, and provincial and regional relevant departments and health development partners. The response contours have to be assessed on combined basis along with defining national, provincial and regional efforts. There need to have complete understanding of the identification of stakeholders with agreed roles and responsibilities.

The actual success of the complete process depends upon:

- Economy of effort.
- Synergy.
- Coordination.
- Communication.

The **main stakeholders** include:

- Ministries:
 - Cabinet Division, Government of Pakistan, Islamabad
 - Aviation Division, Government of Pakistan, Islamabad
 - Ministry of Commerce & Textile Industry, 5th Floor, Block-A, Pak. Secretariat, Islamabad
 - Ministry of Communications, Pak Secretariat, BLOCK-D, R/308, G-5/1, Islamabad
 - Ministry of Defence, PASB Secretariat, Racecourse Road, Rawalpindi



- Ministry of Finance, Block-Q, Finance Division, Pak. Secretariat, Islamabad
- Ministry of Climate Change, Islamabad
- Ministry of Foreign Affairs, foreign Office Building, Constitution Avenue, Islamabad
- Ministry of Interior & Narcotics Control, 4th Floor R-Block, Pak Secretariat, Islamabad
- Ministry of Information and Broadcasting, Islamabad
- Ministry of Inter Provincial Coordination, Cabinet Block, G-5/2, Islamabad
- Ministry of National Food Security & Research, 3rd Floor, B-Block, Pak Secretariat, Islamabad
- Ministry of Planning Development & Reform, P Block Pakistan Secretariat, Islamabad.
- Ministry of Ports & Shipping, First Floor, Shaheed-e-Millat Secretariat, Blue Area, Islamabad.
- Ministry of Religious Affairs & Interfaith Harmony, 20 Civic Center, G-6 Markaz, Islamabad
- Ministry of National Health Services, Regulations & Coordination.
- Ministry of Maritime Affairs.
- Provincial and Regional (AJK & GB) stakeholders.
- Armed Forces of Pakistan.
- Authorities/Agencies:
 - National Disaster Management Authority.
 - Civil Aviation Authority.
 - Federal Investigation Agency
 - PEMRA.
- Institutes / Departments:
 - National Institute of Health
 - Central Health Establishment.
 - Federal & District Surveillance Units (including FELTP).
 - National Health Emergency Preparedness & Response Network.
 - Designated Hospitals.
- Civil Armed Forces
- Federal & Provincial District Administration.
- Partners:
 - World Health Organization (WHO) Country Office.

- Centres for Disease Prevention & Control (CDC) US.
- Public Health England (PHE).
- John Snow International (JSI)

9- Monitoring & Evaluation

M&E is mandatory component for continual improvement. As such a plan is being prepared for the first time for implementation all across country there is a huge room for improvement. This can only be done through parallel evaluation; clearly pointing out areas for improvement. Dedicated committees with trained personals must be deputed other than the working HR to continuously monitor and evaluate. This will in turn lead to a much more robust plan for any such emergency in future.

10- Conclusion

As understood, no one can prepare during an eventuality, one must be prepared beforehand. NAP has been for the first time; directed to COVID-2019. The hallmark is not only the preparation but simultaneous implementation. The success mainly depends upon very well coordinated approach at national, provincial and regional levels; true dedication; perfect readiness; stringent implementation and follow up; monitoring and evaluation and continual improvement.

National Action Plan Matrix- Summary

Key Actions	Priority Activities
Planning & Coordination	<ul style="list-style-type: none">• Establishment of counterpart setups at provincial level linked with National Emergency Operation Cell with defined TORs.• Constitution of a Technical Working Group (TWG) with defined TORs.• Regular/frequent meetings of national and provincial teams and TWG to monitor and update progress.• SAPM Health to head the apex committee with all Chief Secretaries to be part of it and will meet on alternate days using video conferencing.• NIH to implement and issue Sitrep/situation reports on COVID- 19 emergency to all concerned daily. Committee



	<p>nominated by SAPM Health to update and issue the COVID-19 NAP to all concerned.</p> <ul style="list-style-type: none">• Federal and all provincial Governments to devise oversight mechanism incorporating experts/ administrative machinery, nomination of focal points and share the oversight plan.• Briefing session of Parliamentarians be conducted during next session of the National Assembly by representative, detailed by M/o NHR&C. Same may also be followed at provincial levels I respective Provincial Assemblies. Interactive session with Media personals be SAPM of information and SAPM of Health.• All parliamentarians are requested to actively spearhead the awareness campaign in their respective constituencies through community engagement to help educate masses against COVID-19.
PoEs	<ul style="list-style-type: none">• Rapid assessment of the current capacity at the health desk at three airports.• Ensure health information card on arrival.• Support strengthening thermal screening at the PoEs (3 international airports for all flights from China - Islamabad, Lahore and Karachi. All persons who fulfill 'suspected' case definition to complete questionnaire and follow up.• Screening questionnaire must be utilized.• Training of CHE staff on screening, data collection and data management.• Develop / adapt contingency plans and operational SOPs for screening points.• Sharing daily PoE data with Epidemiological hub at NIH• SOPs for referral of suspected cases to designated hospitals and follow up.• Frequent training of the PoE staff for early detection and management of suspected COVID-2019.• Availability of ambulances and trained Rapid Response Teams (RRTs) for suspected cases from POE to designated hospitals.• Conduct simulation exercise at POE• Guidelines/SOPs developed for international flights inbound to Pakistan in wake of COVID-2019 (Annexure-N)



	<ul style="list-style-type: none">• Central Health Establishment (CHE) to ensure strict compliance with The Health Screening Mechanism at all points of entries and share the monitoring mechanism.• Government of Gilgit Baltistan to formulate a detailed response plan to effectively screen border crossing in collaboration with CHE, M/o NHSR&C. Chaman border will be temporarily closed for one week to ensure placement of adequate health screening mechanism at the border crossing, Government of Baluchistan to confirm placement of essential mechanism.• Government of Sindh and Baluchistan to ensure that all small jetties be ceased to function. Pakistan Navy, Pakistan Maritime Security Agency and Pakistan Coastal Guards to ensure screening of the coastline to check any undetected illegal move through sea.
Airports/Flight policy	<ul style="list-style-type: none">• Outward travel be controlled - Zaeerin – KSA, Iran, Iraq (MoRA, MoFA, MoI)• Stringent health screening mechanism at Airports (MoH, Provincial Governments)• Change in mechanism of screening – Temperature checking before docking / inside aircraft (MoH, CAA)• Enhancement of number in Health officials and medical equipment at Airports; additional requirement - 215 (MoH, Provincial Government)• Institution of oversight mechanism (LEAs)• Provincial Governments to assist in health screening
Laboratory Support	<ul style="list-style-type: none">• Immediate procurement of Synthesizer for production of primers• NIH to procure Synthesizer forthwith, for which required funds be immediately loaned by Pakistan Army. Later, the subject funds to be reimbursed upon formal approval and release of funds by Ministry of Finance. NIH to forward procurement plan.• Main testing facility at NIH• Testing facilities already established at Lahore, Karachi, Islamabad, Peshawar and Quetta. NIH to ensure establishment of testing facility at Muzaffarabad, Gilgit and Multan.• Mobile testing lab be made operative and forward placed at Taftan through fastest possible means including option of airlift by PAF. Extensions to be ensure at major urban areas.



	<ul style="list-style-type: none">• Rapid assessment of lab capacities at designated hospitals in three major cities, for sample collection and transportation to NIH.• Training of key personnel for sample collection, storage, packaging and transportation.• Ensure sample collection, packaging and transportation material to designated hospitals and Reference Laboratory.• Identify a courier service with service agreement for sample transportation to NIH and International reference labs.• Complete all documentary requirements: export permits, material transfer agreement (MTAs) with international reference labs.
Food security	<ul style="list-style-type: none">• Ministry of Food security and Research to present National Food Security Plan to Federal Government at the earliest. All provinces to prepare respective Provincial Food Security Plans ensuring availability of sufficient stockpiles of basic food provisions at provincial level.
Logistic/ Stockpiles	<ul style="list-style-type: none">• Conduct initial availability assessment of supplies (equipment, PPE, laboratory diagnostics) potential need and including identification of sources.• Ensure availability of PPEs and other equipment at PoEs and key designated hospitals.• Estimate quantity of the necessary medications and other material required and ensure chain of supply.• Aspects of Protection<ul style="list-style-type: none">▪ PPEs (Suits, Masks, gloves, Goggles, Head covers)▪ Sanitizers – Assured availability of Ethanol (MoC)▪ Decontamination material – regulation / management of related materials• Development of Indigenous Equipment – DESTO in the lead. Collaboration with local / private manufacturers – Tax exemptions be considered (MoC)• DESTO to build capacity of local manufacturers for preparation of surgical gloves, masks, Tyvek suits etc indigenously.• FBR to grant exemption on 17% GST and 4.5% income tax to such local manufacturers. Import of PPEs is exempted from import duty, in order to reduce the prices.• Complete ban on export of medical equipment (MoH, Customs)



	<ul style="list-style-type: none">• Price Control – Strict implementation of Government policies (All Provinces)• Laying down of scales for purchase by individuals (MoH, All Provinces)• Centralized Procurement (MoH, All Provinces)• Availability on controlled rates at Utility Stores / Fair Price shops (MoH, MoC)• Punitive measures against exploiters / hoarders (MoI, All Provinces)• Ensuring food security ((MNFS&R, All Provinces)• Coordination committee for procurement and the stock piling of PPEs at national level is constituted with the composition NDMA, M/o NHSRC, NIH, DRAP and DESTO.• NDMA to procure stock pile and keep digital inventory and manage a proper distribution to the federal and provincial government under the guidance of affordability coordination committee.• All provinces to forward rationalized demands keeping in view the limited availability of stocks.• Procurement committee to ensure that only high-quality PPEs is procured. The quality check of all such procurements be ensured through technical expertise of DESTO, before finalizing the purchase.• Ministry of Finance to approve the submitted summary of Rs. 760 million by NIH and release the amount. Meanwhile, NIH and other relevant stakeholders including CHE and Federal Government hospitals will immediately inform about the future requirements of medical gear.• Ministry of Commerce to ensure availability of 100,000 litres/per month of 99.9% pure Ethanol for the country requirements, by regulating export of Ethanol.• DESTO with assistance of local manufacturers will ensure mass production of Ethanol based hand sanitizers in required quantity.• For availability of sufficient quantity of Decontamination solution, M/o NHR&C to issue standard guidelines to this effect.• All provinces to devise respective decontamination plans under community hygiene regime and share the same with M/o NHR&C.• DESTO to provide technical support and necessary training to master trainers of all provinces, enabling all provinces to locally manufacture an effective decontamination solution, at low cost.
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	<ul style="list-style-type: none">• Contingency planning for different scenarios for evolution of disease and its population effects
Risk Communication	<ul style="list-style-type: none">• Proactive media engagement – no space for panic• Display of Government resolve / will• Projection of positive Response / actions• Neutralize negative news / hoax• Community Engagement / Awareness (through Local Government, Police, teachers, Religious teachers)• Development of Sense of Self Responsibility• Inculcation of Civic sense / sense of sacrifice and self-discipline (avoidance of un- necessary pub exposure)• Education / Awareness about utility / requirement of various types of protective gear as per need / situation• Awareness through bulk public service messaging (SMS) / voice messaging regarding<ul style="list-style-type: none">▪ Preventive and protective measures▪ Symptoms and disease virility and lethality▪ Cleanliness / waste disposal• Transformation of Cultural / Social Norms<ul style="list-style-type: none">▪ Shaking Hands▪ Hugging / Embracing etc• Media Awareness Campaign must cover all age groups and areas• Ministry of Information and Broadcasting to work out Budgetary requirements and subject approval of the same be sought from Cabinet by SAPM for information in next cabinet meeting.• Comprehensive media strategy be formulated and implemented through a body ensuring unified approach. Following committees be notified.• M/o NHR&C: Dr Zaeem ul Haq, Advisor Health communication.• Ministry of Information and Broadcasting: Mr Tahir, Director• ISPR: Col Muhammad Shafique, Deputy Director Public Relation Operations• Committee to present Media Strategy to Core Committee.• Develop or adapt risk communication plans with SOPs.• Train healthcare workers, media and others on COVID-2019 risk communication, social mobilization and community engagement.• Prepare or adapt communication guidelines for frontline health and community workers and field staff.



	<ul style="list-style-type: none">• Develop and disseminate IEC material for public awareness.• Measures will be taken to neutralize the rumours, misconceptions, and misinformation. <p>Important</p> <ul style="list-style-type: none">• Observing the protocols of external communication in which only SAPM or his spokesperson talk to media is also a pillar of this strategy that provinces/regions should also follow.
Case Management	<ul style="list-style-type: none">• Identify and designate hospitals including isolation facilities.• Identify, train and equip RRTs at hospitals and PoEs to transport suspected cases.• Disseminate necessary guidelines on case management and ensure availability of these guidelines in major referral hospitals.• Use of WHO validated patient questionnaire and, in the event of positive cases, using the WHO First Few Hundred template for more detailed epidemiological investigations• Sharing patient and relevant contact data daily with Epidemiological hub at NIH• Train staff on case management of patients with COVID-2019.• Ensure availability of sufficient quantities of PPEs and other disinfectant materials at POE.• Ensure that the healthcare workers are appropriately trained on the use of PPEs specially properly donning and doffing.• Ensure availability of essential medications and supplies for case management.• Dedicate ambulance with trained staff for the safe transportation of cases.
IPC at PoEs	<ul style="list-style-type: none">• Implement standard and droplet precautions at PoE Health desks with staff orientation.• train the staff on IPC guidelines, and ensure implementation.• Monitoring the application of IPC practices by PoEs staff.
IPC at Health Facilities	<ul style="list-style-type: none">• Training of healthcare workers on standard precaution, contact and droplet precautions.• Provision of IPC guideline and SOPs to health facilities.• Monitoring of implementation of IPC measures. Ensure sustained availability of IPC equipment and supplies.
Training	<ul style="list-style-type: none">• Training is mandatory as highlighted in relevant sections.



	<ul style="list-style-type: none">• Conduct simulation exercises / mock drills on emergency response.• IPC/PPE training is mandatory• Refresher trainings of the Rapid Response Teams (RRTs).
Human resource management	<ul style="list-style-type: none">• Induction/ Employment of Volunteers from Medical institutes, universities etc• Incentives be given – monetary/recognition• Integration of Polio Teams for screening / early detection / distribution of Information, Education and Communication material• Private Medical Facilities be incorporated in National Effort• Health/ security/ administration officials be employed with PPE cover (location/ contingency wise)• Recalling of Reservists, if required – Security / Civilian management• The requirement of additional manpower requirement will be sent immediately by M/o NHR&C to concerned Chief Secretary offices.• All Chief Secretaries to provide required additional staff at respective designated point of entries from existing provincial HR pool.•
Internal Management	<ul style="list-style-type: none">• Law & Order Management<ul style="list-style-type: none">▪ Police / LEAs – Enforcing discipline, rule of law, protection of life & property of public and quarantine / isolation hospital facilities▪ Political leadership & District administration – Should be seen and heard (in the Lead)▪ CAFs – Second Tier Responders, augment efforts by Police▪ Military – Monitoring, Need based Employment• Scenarios – (All stakeholders)<ul style="list-style-type: none">▪ Home quarantine▪ Area quarantine▪ City lock-down• Earmarking of Quarantine facilities and establishment of dedicated Corona Hospitals at District level (2 x hospitals for major cities) (All Provinces)• Important locations- Quarantine/Isolation<ul style="list-style-type: none">▪ Punjab<ul style="list-style-type: none">• Islamabad / Rawalpindi• Gujranwala / Sialkot• Lahore• Faisalabad



	<ul style="list-style-type: none">• Multan / Bahawalpur• Rahim Yar Khan▪ KPK<ul style="list-style-type: none">• Peshawar• Mardan• Bannu / Kohat• Sindh• Karachi• Hyderabad• Sukkur• Nawab Shah▪ Baluchistan<ul style="list-style-type: none">• Quetta• Khuzdar• Turbat• Sibi▪ AJ&K<ul style="list-style-type: none">• Muzaffarabad• Mir Pur▪ GB<ul style="list-style-type: none">• Gilgit• Skardu• Un-interrupted supply of basic provisions (Provincial / District Adm)• NIH and all provinces to raise and maintain dedicated Rapid Response Units, both at provincial and district levels. Subject plans of the same be shared.
<p>Quarantine (Annexure-D)</p>	<ul style="list-style-type: none">• All provinces to identify and prepare sufficient quarantine spaces (with an aim to house minimum of 1000 individuals) to meet any contingencies, in accordance with the guideline's issues by M/o NHR&C (available at NIH website). Available buildings of Educational institutes including hostel facilities (300-500 individuals) may also be considered for the purpose. List of such facilities to include location, capacity and pictures be shared by all provinces..• Government of Baluchistan has established special quarantine facilities both at Taftan and Chaman. Requirement of Marquees/ tents be worked out and be arranged. Armed Forces will fully support the logistic operations during preparation of all such facilities.• Provinces to send the teams for inspection of already prepared quarantine facility in Hajj Complex Islamabad for guideline purposes.



	<ul style="list-style-type: none">• M/o NHR&C to develop video giving virtual tour of established quarantine site in Islamabad for guidance purpose.• Dedicated quarantine places have to be ensured at federal, provincial and regional levels.• Properly trained support staff with duty shifts be listed and ensured.• Proper disposal of waste be ensured.• Medical support be mapped and listed.
Isolation Hospitals	<ul style="list-style-type: none">• Keeping in view the threat level, all provinces to establish dedicated isolation hospitals. At a province level, such facilities are so sited to cover whole geographic area efficiently. List of such facilities to include location, capacity and pictures be shared by all provinces.•
Contact tracing	<ul style="list-style-type: none">• People in contact with affected person are at high risk of being affected• Monitoring process<ul style="list-style-type: none">▪ Contact identification – people in close touch (family member, friends, colleagues, fellow travellers and health care providers)▪ Contact listing – screening and testing if required, importance of receiving an early care if developed symptoms▪ Contact follow-up – regular follow-up minimum for 2 x weeks• Reverse tracing• Complete chain must be traced and screened.
Surveillance	<ul style="list-style-type: none">• Federal and District Surveillance Units (DSRU) have been activated.• FDSRU has already initiated the process of contact with the Pakistani passengers returning from China.• Contact tracing and case-based surveillance (Annexure-O) <p>Important</p> <ol style="list-style-type: none">a. Reaching out to healthcare providers for repeated alerts about anyone with a 14-day history of china or contact with a suspect case.b. Strengthening and expansion of event-based surveillance system through FELTP DSRU. This needs to be expanded by linking it to NSTOP officers which will cover around 70 districts (additional duty to link with major hospitals for any pneumonia cases clusters)



	<p>c. Contact investigation refresher trainings of FELTP fellows and alumni irrespective of their current positions</p> <p>d. Armed Forces need to develop similar information in real time for proper contact investigations.</p> <p>e. Clusters of pneumonia in major hospitals needs to be notified by the respective hospitals</p> <ul style="list-style-type: none">• Screening at the PoEs for detection and active case finding.• Identify hospital sentinel sites in high priority (risk area) and selected cities.• Training of surveillance staff on COVID-2019 including case definitions and data management.• Develop / adapt data collection and reporting tools.• Support contact tracing and monitoring of close contacts of suspected cases detected or identified either at the PoE or confirmed case through the antinational disease surveillance system.• Sharing all relevant data daily with Epidemiological hub at NIH• Generating effective and timely Situation Reports for distribution• Managing all data streams and expert scientific advice from a single unified Epidemiological hub at NIH• Establish event-based surveillance for the COVID-2019.• Enhancement and addition to Influenza lab-based surveillance system.• Legal mandate for major laboratories to immediately and in real time share any positive results (once tests are available)• Supporting the monitoring of response systems to COVID-19• Required data regarding Iran returned passengers has been shared with all concerned. All the provinces to acknowledge receipt. Progress report on alternative days to be shared.• Establishment of Joint Emergency Reporting, Coordination & Response - Centers at National, Provincial and District levels – suggested compositions.• National Level - MoH, MoI, MoIB, NDMA, AFs• Provincial Level – MoH, Home Department (Police/ Administration), PDMA, CAF, AFs
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	<ul style="list-style-type: none">• District Level – District Administration, Health Department, Police• Enhancement of Capacity / Efficiency of National Health Helpline – 1166 (connectivity with respective districts – Central database for feedback and follow up at provincial and national level)• M/o NHR&C to reconfigure National Health Helpline 1166 to improve its efficiency. Necessary technical support will be provided by Pakistan Army, in establishing Health Helpline having connectivity with respective districts, while maintaining central database for feedback and follow-up at provincial and national level.• Development and deployment of Interactive Mobile App• Addition of requisite mechanism in Pakistan Citizen Portal
Minimizing community exposure	<ul style="list-style-type: none">• Risk Mitigation through controlled community exposure:-<ul style="list-style-type: none">▪ Parks▪ Education Institutes▪ Sports events▪ Festivals▪ Shrine/ places of worship/ religious congregations▪ Congested / crowded market spaces• Establishment of screening mechanisms / facilitation desks at public places (by owners, administrations and communities)• Need based decisions for control• Decision to close educational institutes – through due deliberation and locally applicable for affected areas only• Control on unnecessary visitors to public places – Airports, Railway Stations, Bus Stands, Hospitals
Monitoring & Evaluation	<ul style="list-style-type: none">• Develop monitoring indicators.• Define intervals for M&E.• After Action Review (AAR), using validated WHO tools within a month of declaration of the end of the outbreak (or earlier).



11. Annexures:

Annexure-A: Emergency Core Committee for nCoV

Name	Designation	Role
Dr. Zafar Mirza	MoS/SAPM	Chairman
Dr. Allah Baksh Malik	Secretary Health	Lead Resource Mobilization & Provincial Coordination
Dr. Nausheen Hamid	Parliamentary Secretary Health	Lead Parliamentary Affairs (Federal and Provincial)
Maj. Gen. Aamer Ikram, SI(M)	Executive Director, NIH	Lead Diagnostics
Dr. Safi Malik	Director General, Health	Lead Technical Coordination
Dr. Faisal Sultan	CEO & Consultant Physician, Shaukat Khanum Memorial Cancer Hospital and Research Centre, Lahore	Lead Infection Prevention and Control
Dr. Muhammad Salman	Chief PHLD - NIH, IHR Focal Point	Lead International Health Regulations
Dr. Irfan Tahir	Director, Central Health Establishment	Lead Port of Entries
Lt. Col. Rehan	Pakistan Army	Representative of Pakistan Armed Forces
Dr Rana Jawad Asghar	Chief Executive Officer at Global Health Strategists & Implementers (GHSI)	Adviser on Infectious Diseases
Dr. Zaeem ul Haq	Minister's Communication Adviser	Lead Information Education Communication
Dr Muhammad Wasif	Senior Scientific Officer, NIH	Lead Disease Surveillance
Dr. Faisal		Agha Khan University
MoS/SAPM's Team		
Dr. Usman Mushtaq	Adviser to MoS/SAPM	Team-lead
Dr. Israr ul Haq	Adviser to MoS/SAPM on Polio Eradication	Technical Support
Mr. Fahad Qaisrani	Staff Officer to MoS/SAPM	



Annexure-B: Advisory/alert



Ministry of National Health Services, Regulations & Coordination
National Institute of Health, Islamabad
Field Epidemiology & Disease Surveillance Division

Phone: (92-051) 9255237 Fax: (92-051) 051-9255575

National Focal Point for International Health
Regulations



No: F.1-22/Advisory/FEDSD/2020
28th January 2020

Islamabad,

**Subject: Travel Advisory for the Prevention and Control of Novel Corona Virus
(2019-nCoV)**

Keeping in view the emergence of novel coronavirus (2019-nCoV) in Wuhan City, China in which, more than 2,000 cases has been confirmed till 27th January 2020 by health authorities of the respective country. There is also documented spread of the same disease to Thailand, Nepal, Hong Kong, Singapore, Japan, South Korea, Australia, France, Germany, Canada and USA.

The objective of this advisory is to alert and sensitize the health-care authorities including points of entry to be vigilant in the detection of any suspected case who is travelling to/ from any area of China/ other areas where the cases have been reported and to strengthen and improve the level of preparedness for prevention, control and management of the novel coronavirus (2019-nCoV).

The information about the illness is summarized below:

Clinical Picture:

Limited information is available to characterize the spectrum of clinical illness associated with 2019-nCoV. The observed clinical signs and symptoms includes fever, cough and difficulty in breathing. Chest radiographs show invasive pneumonic infiltrates in both lungs.

The following should be suspected and investigated:

1. A person with severe acute respiratory infections (SARI) with history of fever and/or cough and/or difficulty in breathing and with history of travel to Wuhan or any other affected area of China within last 15 days prior to symptom onset
2. Individual with acute respiratory illness of any degree of severity with any of the following exposures:
 - a. Close physical contact with a suspected or confirmed case while the case was symptomatic, in affected areas



- b. Direct contact with infected animals, seafood, meat or any other animal products in the markets of Wuhan City China, within 14 days before onset of illness.

Prevention & Treatment:

No vaccine or specific treatment for 2019-nCoV infection is yet available. The patient care is mainly supportive. Ensure hand hygiene and cough antequate for prevention and personal protection.

Prevention Measures for incoming Travelers:

Travelers are encouraged to report, if they have signs/ symptoms of fever, cough or difficulty in breathing which appear within 14 days of travel from China. In this situation traveler should:

- Inform the designated tertiary care hospitals for management immediately
- Seek medical care immediately from designated focal hospitals and inform about complete travel history and signs/ symptoms.
- As per directions of the doctor, stay at hospital and avoid contacts with others.
- Cover mouth and nose with face mask.
- Cough or sneeze into a disposable tissue or the inner crook of your elbow in order to avoid contamination of your hands.
- Wash hands often with soap and water for at least 20 seconds. Use hand sanitizer if soap and water are not available.
- Follow recommendation by International Air Transport Association (IATA) with regard to managing suspected communicable disease on board an air craft.

Prevention Measures for outgoing Travelers:

- Be careful while travelling to the areas having cases of Novel Coronavirus.
- Follow instructions of local health authorities of the affected area and WHO travel advice.
- Wash hands often with soap and water for at least 20 seconds. Use hand sanitizer if soap and water are not available.
- Cover mouth and nose with face mask.
- Cough or sneeze into a disposable tissue or the inner crook of your elbow in order to avoid contamination of your hands.
- Avoid visiting crowded places and stay at home.
- Avoid close contact with anyone with cold or flu like symptoms.
- Avoid close contact with confirmed case of Novel Coronavirus, and avoid visiting Novel Coronavirus case in hospital or at his/ her home.
- Avoid visiting meat market, seafood market, wild life meat market, live bird/ wildlife/ livestock markets.
- Thoroughly wash and cook fruits, vegetables, meat and eggs.
- Avoid unprotected contact with live/ wild/ farm animals.
- In case of flu-like symptoms or fever/ cough/ difficulty in breathing, immediately contact health authorities and designated healthcare facilities of the area.



- All the travelers going to areas having Novel Corona virus cases and particularly region of China are advised to take all precautionary steps regarding health and hygiene. They may also consider delay the travel.

For any further assistance in this context, the Field Epidemiology & Disease Surveillance Division (FE&DSD) (051 – 9255237 and Fax No. 051-9255575) may be contacted

Official Spokesperson:

Dr. Muhammad Salman – 03335384248

For General information:

Dr. M. Mudassar - 03348252752

For Risk Communication:

Ms. Nazia Hassan Khan – 0333-3248833

For Laboratory Information:

Dr. Mussab Umair – 03455176169

This advisory may please be widely distributed among all concerned and NIH may please be kept informed of the measures undertaken in respective areas of jurisdiction.



Annexure-C: Health Declaration Form



GOVERNMENT OF PAKISTAN

حکومت پاکستان

(See Rule 9 (1) (a)

ضابطہ ۹(۱)(الف)

PERSONAL DECLARATION OF ORIGIN AND HEALTH

اقرارنامہ برائے صحت و شہریت

QUESTIONNAIRE FOR TRAVELERS

Demographic Information

Name	
Contact number in Pakistan	
Passport Number	
Nationality	Flight No.
Age	Sex : Male <input type="checkbox"/> Female <input type="checkbox"/>
Landing Airport	
Address in Pakistan	

Travel History:

Visited in last 14 days	CHINA <input type="checkbox"/>	IRAN <input type="checkbox"/>	S.KOREA <input type="checkbox"/>	ITALY <input type="checkbox"/>
Name countries you have visited in last 14 days other than above				
Visited Africa or South America in the last 5 days	Yes <input type="checkbox"/>		No <input type="checkbox"/>	

Health Status:

Do you have any of the following	
Fever	Yes <input type="checkbox"/> No <input type="checkbox"/>
Cough	Yes <input type="checkbox"/> No <input type="checkbox"/>
Difficulty in breathing	Yes <input type="checkbox"/> No <input type="checkbox"/>

Date _____

Signature _____



Annexure-D: Quarantines SOPs for COVID-19



National Institute of Health - Pakistan (Field Epidemiology & Disease Surveillance Division)

Phone: (92-051) 9255237 Fax: (92-051)9255099

National Focal Point for IHR



Guidelines

Quarantine Facilities in COVID-19 Outbreak

Background:

COVID-19 is a prevailing situation and day by day escalating number of suspected and confirmed cases calls for a robust quarantine facilities.

Sudden need to accommodate a large number of people has emerged who need health monitoring, food, water and proper toilet facilities as well as means to communicate with their families and friends. Many people can be quarantined in their own homes if basic hygiene and facilities are available like hand wash and environmental cleaning and disinfection, provided the condition of patient does not require a hospital admission. In certain situations, an alternative quarantine may be needed if there is a fear of spread of COVID-19 to other family members and/or community and where adherence to guidelines are frequently breached.

Contingencies planned at National Institute of Health-Pakistan are enlisted here to provide guidelines for community and home quarantine.

Quarantine facilities encompasses need for medical care of curative as well as preventive nature. Curative care being provided in terms of hospital care, medication and rehabilitation while prevention can be well maintained at home or community quarantine facilities.

Home Quarantine:

In home quarantine, a well separate room from rest of the house is needed. Basic knowledge and adherence to preventive activities is a must that may demand a short training of the caregivers.

1. Disinfectants:

Alcohol based disinfectants or 0.05% chlorine for body and 0.5% chlorine for surfaces can be used to keep the environment clean. Special focus should be made on door handle, railings. Surfaces should be kept dry and no spillage of sputum and/ or nasal secretions on the open surfaces.

2. Protective clothing:

Patient should wear mask and strictly observe coughing etiquettes. Hand shaking, hugging and kissing with family members should be avoided. Where necessary plastic sheets and gloves should be used.

3. Disposal of waste:

Human waste should be disposed of carefully. Toilets and soiled cloths should be washed with water and disinfected frequently with chlorine 0.5%.



- 4. Medicine supplies:**
Essential medical supplies are provided with the caregivers and can be stocked at home. Special focus should be made on masks, hand sanitizers and other basic supplies.
- 5. Communication with outer environment:**
No communication with outer environment should be made or at least kept at minimum. Supplies should be provided at doorstep so quarantine people do not step out of their home and to keep such people from congregating in large crowd.
- 6. Care of Children:**
Small children should be limited to clean area. Children's belonging should be, cleaned, washed and disinfected as required. Cuddling with children and kissing should also be avoided.
- 7. Care of caregivers:**
All care givers should strictly follow disinfection rules. Use of mask, gloves, and protective clothing should be observed strictly.

Community Quarantine:

In some special situations, community quarantine can be a good option. Important supplies need to be taken into account are:

- 1. Disinfectants for environment:**
Frequent and regular disinfection with chlorine 0.05% for body and chlorine 0.5% for environment should be done. Area should be kept clean and dry with minimum interaction with outer environment. Toilets and washrooms should be clean washed and disinfected with chlorine 0.5% on regular basis.
- 2. Protective clothing:**
Use of mask is a must. Touching nose and mouth should be avoided. Plastic sheets and other barriers can be used within a quarantine facility to separate different sections.
- 3. Disposal of waste:**
Human waste should be disposed of properly, either buried or burned as required. Soiled sheets and utensils should be washed, cleaned and disinfected
- 4. Communication with outer world:**
No communication should be made with outer world or kept at minimum. All devices used by quarantine people should be disinfected and cleaned properly. Grocery and other supplies should be provided at facility.
- 5. Care of care givers:**
All caregivers should strictly observe PPE and use of gloves and masks are a must. Medical equipment and other utensils should be cleaned and disinfected frequently.



Pregnant and Lactating Mothers:

Risk of transmission from mother to child has not been established yet, neither mortality rate in pregnant women has been compared with general population. so pregnant women will be considered as having significantly increased risk. Vertical Transmission has not been established however new born could potentially be infected by droplets from mother herself.

If breast feeding mother needs to be quarantined, it could be very stressful for both mother and baby, hence strict measures should be observed if baby is decided to be with mother.



Annexure-E: The sample collection and transport policy



Ministry of National Health Services, Regulations & Coordination

National Institute of Health, Islamabad

Phone: (92-051) 9255117 Fax: (92-051) 9255099



Standard Operating Procedure (SOP) for Collection, Storage & Transportation of Specimens for Novel Coronavirus Diagnosis

Version: 01 Pages 03

1. Materials Needed

- 1.1.1 Dacron or polyester flocked swabs
- 1.1.2 Tongue depressor (for Oropharyngeal swab)
- 1.1.3 Vial with Viral Transport Medium (VTM)
- 1.1.4 Pen/marker
- 1.1.5 Disposable gloves
- 1.1.6 Disposable gown
- 1.1.7 N95 mask
- 1.1.8 Goggles or face shield
- 1.1.9 Specimen transport container with ice packs
- 1.1.10 Specimen label and form
- 1.1.11 Biohazard bags
- 1.1.12 Tissues
- 1.1.13 Soap and water
- 1.1.14 Hand sanitizer
- 1.1.15 Disinfectant

2. Roles/Responsibilities

- 2.1 A trained staff is responsible for collecting specimens and ensuring all vials are labeled appropriately.

3. Procedure

3.1 Safety requirements and PPE

- 3.1.1 Wear disposable gloves and change gloves after each patient.
- 3.1.2 Wash or sanitize hands before putting on and after removing gloves.
- 3.1.3 Wear a N95 mask to minimize exposure to infection during specimen collection.
- 3.1.4 Follow standard precautions and any additional precautions specific to the setting or patient.
- 3.1.5 Dispose of all contaminated waste (gloves, paper, swab handles, etc.) into biohazard waste bags for disposal.

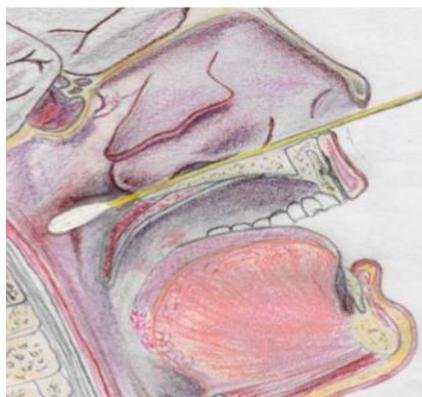
3.2 Timing

- 3.2.1 Nasopharyngeal (NP) and Oropharyngeal (OP) swabs should be collected as soon as possible after enrollment.
- 3.2.2 The NP swab for VTM should be collected first, followed by the OP swab. Both swabs will be placed in the same vial of VTM.

Note: Placing the NP & OP swabs in the same tube increases the viral load.

3.3 Nasopharyngeal swab

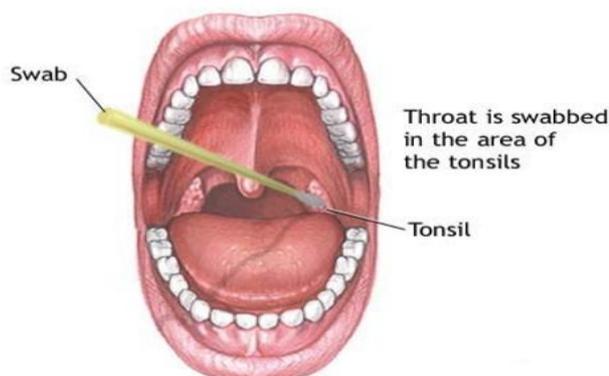
- 3.3.1 Explain the procedure to the patient. Emphasize the importance of remaining still during specimen collection to minimize discomfort.
- 3.3.2 Position the patient in a comfortable position.
- 3.3.3 Tilt the patient's head back at a 70-degree angle (see figure below).



- 3.3.4 Remove the flocked swab from its protective package.
- 3.3.5 Insert the swab into one nostril horizontally (not upwards) and continue along the floor of the nasal passage for several centimeters until reaching the nasopharynx (resistance will be met). The distance from the nose to the ear gives an estimate of the distance the swab should be inserted.
- 3.3.6 Do not force the swab. If obstruction is encountered before reaching the nasopharynx, remove the swab and try the other side.
- 3.3.7 Rotate the swab gently through 180 degrees to make sure adequate specimen is obtained. Leave the swab in place for 2-3 seconds to ensure absorbance of secretions.
- 3.3.8 Remove swab and immediately place into vial with VTM by inserting the swab at least ½ inch below the surface of the media. Cut the excess swab handle to fit the transport medium vial and reattach the cap securely.

3.4 Oropharyngeal swab

- 3.4.1 Ask the patient to open his/her mouth.
- 3.4.2 Press the outer two-thirds of the tongue down with a tongue depressor, making the tonsils and the posterior wall of the throat visible.
- 3.4.3 Insert swab, avoiding touching the teeth, tongue, or the depressor.
- 3.4.4 Rub the swab over both tonsillar pillars and posterior oropharynx. This will cause the patient to gag briefly.
- 3.4.5 Place the swab into the vial containing VTM (same vial as the first NP swab).
- 3.4.6 Cut the excess swab handle to fit the transport medium vial and reattach the cap securely.
- 3.4.7 Carefully label specimen with patient ID number, and date and time of specimen collection.
- 3.4.8 Complete specimen tracking log with patient ID number, date and time of specimen collection.
- 3.4.9 Place specimen in cool box on ice. Sample transport and storage condition are given in Table 1.



3.5 Sample transportation of suspected 2019 NCoV samples

- 3.5.1 **Important:** Transfer specimen with tracking log to the laboratory as soon as possible. Ensure that personnel who transport specimens are trained in safe handling practices and spill decontamination procedures.
- 3.5.2 Follow the requirements in the national or international regulations for the transport of dangerous goods (infectious substances) as applicable.
- 3.5.3 Deliver all specimens by hand whenever possible. Do not use pneumatic-tube systems to transport specimens.
- 3.5.4 Notify the National Reference laboratory (Department of Virology, PHLD, NIH Islamabad) as soon as possible that the specimen is being transported.

Table1. Specimen transport and storage

Specimen	Transport to laboratory	Storage till testing	Comments
Nasopharyngeal and Oropharyngeal swab	4 °C	≤48 hours: 4 °C >48 hours: -70 °C	The nasopharyngeal and oropharyngeal swabs should be placed in the same tube to increase the viral load.
Bronchoalveolar lavage	4 °C	≤48 hours: 4 °C >48 hours: -70 °C	
Sputum	4 °C	≤48 hours: 4 °C >48 hours: -70 °C	Ensure the material is from the lower respiratory tract
(Endo)tracheal aspirate, nasopharyngeal aspirate or nasal wash	4 °C	≤48 hours: 4 °C >48 hours: -70 °C	

4. References

- 4.1 Laboratory testing for 2019 novel coronavirus (2019-nCoV) in suspected human cases. WHO/2019-nCoV/laboratory/2020.3

Contact Information:

Dr. Muhammad Salman - 0333-5384248;
Dr. Massab Umair - 0345-5176169;
Mr. Umer Draz - 0300-5543551





Annexure-F1: nCov Clinical case management guidelines



2019-nCoVirus Clinical Care & Prevention GoP Guidelines, 5th Feb 2020



2019-nCoVirus Clinical Care & Prevention GoP Guidelines

5th February 2020

F. No 4-107/2020 DDP - 1.
Ministry of National Health Services, Regulation and Coordination
3rd Floor, Kohsar Block, Pak- Secretariat



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Abbreviations

2019-nCoV	2019 Novel corona virus
PHEIC	Public Health Emergency of International Concern
PPE	Personal protective equipment
SARI	Severe Acute Respiratory Infection
ARDS	Acute Respiratory Distress Syndrome
HFNO	High-flow nasal oxygen
NIV	Non-invasive ventilation
IPC	Infection prevention and control
HCWs	Health care workers
VTM	Viral transport medium



Background

An outbreak of a novel corona virus (2019-nCoV) was first reported from Wuhan, China, on 31 December 2019. With the rapidly evolving epidemiological situation, the WHO has now declared the outbreak to be a public health emergency of international concern (PHEIC). Early on, most patients most likely had animal-to-person spread, but now indications are that person-to-person spread is occurring. Most often, spread from person-to-person happens among close contacts (about 6 feet), mainly via respiratory droplets produced when an infected person coughs or sneezes. It's currently unclear if a person can get 2019-nCoV by touching a surface or object that has the virus on it and then touching their own mouth, nose, or possibly their eyes. Typically, with most respiratory viruses, people are thought to be most contagious when they are most symptomatic (the sickest). With 2019-nCoV, however, there have been reports of spread from an infected asymptomatic patient.

Interim guidelines have been published by several public health stakeholders to guide the public and health care sectors on surveillance and management of this infection. As further information becomes available, these guidelines will be updated.

Scope of this Document

This document aims to provide guidance for Healthcare facilities in Pakistan on the management of persons having infection with 2019-nCoV and their contacts.



Case Definitions

Suspected case:

Fever with Cough OR Shortness of Breath

AND either of the following

1. History of travel to or residence in the city of Wuhan, Hubei Province, China in the 14 days prior to symptom onset
2. Has had contact within close contact with a confirmed or suspected patient with 2019-nCoV within 14 days of symptom onset

Probable case

A suspect case (as defined above) for whom testing for 2019-nCoV is inconclusive or tests have not been sent

Confirmed case

A person with laboratory confirmation of 2019-nCoV infection, irrespective of clinical signs and symptoms.

Outpatient Management

Outpatient Infection Prevention Considerations

1. Facilities must identify points of entry where patients are likely to arrive.
 - 1.1. These typically include the emergency room, clinics (such as medicine, pulmonology, pediatrics)
2. Standard precautions should always be routinely applied in all areas of health care facilities.
3. Necessary PPE should be available at all times in the Outpatient department
 - 3.1. Standard precautions include hand hygiene; use of PPE to avoid direct contact with patients' blood, body fluids, secretions (including respiratory secretions) and non-intact skin.
 - 3.2. Standard precautions also include prevention of needle-stick or sharps injury; safe waste management; cleaning and disinfection of equipment; and cleaning of the environment
4. Early identification needs to be ensured when a patient with suspected infection arrives
 - 4.1. Sites of early identification include
 - 4.1.1. Triage area
 - 4.1.2. Unit receptionists



- 4.1.3. Physicians performing the first assessment
- 4.2. Health care workers at these sites must be instructed in the case definitions
 - 4.2.1. Limit number of persons working in the triage area
 - 4.2.2. A recording mechanism should be set up if possible. This may simply be a register with names, numbers and addresses of suspected patients
- 4.3. If a large number of patients are expected then a separate area should be set up away from other patients
5. Institute Droplet precautions as soon as a case is suspected
 - 5.1. Give the patient a surgical mask (worn with the blue side outwards) and direct patient to a separate area
 - 5.2. If a separate area is not possible, keep at least a one meter distance between suspected patients and other patients
 - 5.3. Instruct all patients to cover nose and mouth, during coughing or sneezing, with tissue or flexed elbow for others
 - 5.4. Perform hand hygiene after contact with respiratory secretions
 - 5.5. Healthcare workers should always also wear a surgical mask
6. Contact precautions for all patient contact
 - 6.1. Gowns must be worn during patient contact
7. If the patient is being held for observation, move to a separate room.
 - 7.1. If suctioning is not required, no special air handling in the room is needed (i.e there is no need for a negative pressure room)
 - 7.2. If suctioning will be required, place patient in negative pressure room (see section "Inpatient Infection Prevention Considerations")

Outpatient Management

1. Patients NOT meeting the case definition should be managed according to normal treatment protocols
2. Patients with suspected nCoV should have a viral nasopharyngeal swab sent
 - 2.1. If your institution does not have the facility for this test then send the sample to a designated laboratory
 - 2.2. See appendix one for details on how to take the samples
3. Initial investigations include
 - 3.1. CBC
 - 3.2. Blood cultures
 - 3.3. Chest X-ray, if symptomatic



- 3.4. Other investigations as indicated
4. If the patient is clinically stable, provide symptomatic care only
 - 4.1. Antibiotics are NOT indicated
 - 4.2. Suggest steam, antihistamines, plenty of fluids. Acetaminophen may be used to reduce fever
 - 4.3. Patients can go home with simple home instructions (appendix 2)
 - 4.4. Ask patient to return if they have shortness of breath or worsening symptoms
5. If the patient is unstable (e.g. has hypoxia, has shortness of breath, hypotensive) they should be admitted in the designated isolation rooms
 - 5.1. If isolation facility is not available, patients should be promptly shifted to a designated hospital
6. Decision to admit or discharge should be done as quickly as possible, once basic test results are back

Inpatient Management

Inpatient Infection Prevention Considerations

1. Areas should be designated where patients will be housed
2. For all areas
 - 2.1. Ensure either single-use and disposable or dedicated equipment (e.g., stethoscopes, blood pressure cuffs and thermometers) is present in each room
 - 2.2. If equipment needs to be shared, clean and disinfect it between use for each individual patient (e.g., by using ethyl alcohol 70%)
 - 2.3. Ensure adequate environmental cleaning consistently and correctly
 - 2.4. Manage laundry, food service utensils and medical waste in accordance with safe routine procedures
 - 2.5. Avoid moving and transporting patients out of their room or area unless medically necessary
 - 2.5.1. Use designated portable X-ray equipment and/or other designated diagnostic equipment, whenever possible.
 - 2.5.2. If transport is required, use predetermined transport routes to minimize exposure for staff, other patients and visitors. Patient should use a medical mask during transport
 - 2.5.3. Ensure that HCWs who are transporting patients perform hand hygiene and wear appropriate PPE



- 2.5.4. Notify the area receiving the patient of any necessary precautions as early as possible before the patient's arrival
3. Admitted patients WHO DO NOT REQUIRE SUCTIONING, should be placed under both Droplet and Contact precautions
 - 3.1. Single room is preferred
 - 3.1.1. If not available, patients can be housed together in a dedicated ward
 - 3.1.2. Maintain at least 1 meter distance between patients
 - 3.2. All health care workers must take the following precautions when entering the room/ward
 - 3.2.1. Wear surgical mask at all times during patient care
 - 3.2.2. Observe STRICT hand hygiene
 - 3.2.3. Avoid touching eyes or the mask
 - 3.2.4. Wear clean, long sleeve non-sterile gowns
 - 3.2.5. Remove PPE before leaving the room/ward and immediately perform hand hygiene
4. Admitted patients WHO REQUIRE SUCTIONING, should be placed under Airborne isolation with Contact precautions
 - 4.1. Single room isolation with negative pressure isolation
 - 4.1.1. If negative pressure isolation is not available then place in a room with ample ventilation. A fan facing away from the door, towards the outside of the building is encouraged if possible
 - 4.1.1.1. Do not place patient in a room in which air is recirculated (e.g. centrally air-conditioned area without special air handling)
 - 4.2. All health care workers must take the following precautions when entering the room
 - 4.2.1. Wear N-95 mask at all times
 - 4.2.2. Observe STRICT hand hygiene
 - 4.2.3. Avoid touching eyes or the mask
 - 4.2.4. Wear clean, long sleeve non-sterile gowns
 - 4.2.5. Remove PPE before leaving the room/ward and immediately perform hand hygiene
5. Patients can be moved out of isolation only when symptoms improve AND a repeat nasopharyngeal swab is negative

Inpatient Management

1. Give supplemental oxygen therapy immediately to patients with SARI and respiratory distress, hypoxaemia, or shock.



2. Use conservative fluid management in patients with SARI when there is no evidence of shock.
3. Give empiric antimicrobials to treat likely pathogens causing SARI. Give antimicrobials within one hour of initial patient assessment for patients with sepsis.
4. Do **not** routinely give systemic corticosteroids for treatment of viral pneumonia or ARDS outside of clinical trials, unless they are indicated for another reason
5. Closely monitor patients with SARI for signs of clinical deterioration, such as rapidly progressive respiratory failure and sepsis
 - 5.1. Apply supportive care interventions immediately
6. Understand the patient's co-morbid condition(s) to tailor the management of critical illness and appreciate the prognosis.
7. Manage hypoxemic respiratory failure and ARDS
 - 7.1. Recognize severe hypoxemic respiratory failure when a patient with respiratory distress is failing standard oxygen therapy.
 - 7.1.1. High-flow nasal oxygen (HFNO) or non-invasive ventilation (NIV) should only be used in selected patients with hypoxemic respiratory failure.
 - 7.1.2. The risk of treatment failure is high and patients treated with either HFNO or NIV should be closely monitored for clinical deterioration.
 - 7.2. Endotracheal intubation should be performed by a trained and experienced provider using airborne precautions.
 - 7.2.1. Implement mechanical ventilation using lower tidal volumes (4–8 ml/kg predicted body weight, PBW) and lower inspiratory pressures (plateau pressure <30 cmH₂O).
 - 7.2.2. In patients with severe ARDS, prone ventilation for >12 hours per day is recommended
 - 7.2.3. Use a conservative fluid management strategy for ARDS patients without tissue hypoperfusion
 - 7.2.4. In patients with moderate or severe ARDS, higher PEEP instead of lower PEEP is suggested
 - 7.2.5. In patients with moderate-severe ARDS (PaO₂/FiO₂ <150), neuromuscular blockade by continuous infusion should not be routinely used.
8. Management of septic shock



- 8.1. Recognize septic shock in adults
 - 8.1.1. Infection is suspected or confirmed AND vasopressors are needed to maintain mean arterial pressure (MAP) ≥ 65 mmHg AND lactate is ≥ 2 mmol/L, in absence of hypovolemia.
- 8.2. Recognize septic shock in children
 - 8.2.1. Hypotension (systolic blood pressure [SBP] < 5 th centile or > 2 SD below normal for age) or 2-3 of the following: altered mental state; tachycardia or bradycardia (HR < 90 bpm or > 160 bpm in infants and HR < 70 bpm or > 150 bpm in children); prolonged capillary refill (> 2 sec) or warm vasodilation with bounding pulses; tachypnea; mottled skin or petechial or purpuric rash; increased lactate; oliguria; hyperthermia or hypothermia.
- 8.3. In resuscitation from septic shock in adults
 - 8.3.1. Give at least 30 ml/kg of isotonic crystalloid in adults in the first 3 hours.
- 8.4. In resuscitation from septic shock in children
 - 8.4.1. Give 20 ml/kg as a rapid bolus and up to 40-60 ml/kg in the first 1 hr.
- 8.5. Do not use hypotonic crystalloids, starches, or gelatins for resuscitation
- 8.6. Administer vasopressors when shock persists during or after fluid resuscitation.
 - 8.6.1. The initial blood pressure target is MAP ≥ 65 mmHg in adults and age-appropriate targets in children.
 - 8.6.2. If central venous catheters are not available, vasopressors can be given through a peripheral IV, but use a large vein and closely monitor for signs of extravasation and local tissue necrosis. If extravasation occurs, stop infusion.
 - 8.6.3. Vasopressors can also be administered through intraosseous needles.
 - 8.6.4. If signs of poor perfusion and cardiac dysfunction persist despite achieving MAP target with fluids and vasopressors, consider an inotrope such as dobutamine.
9. Pregnant women with suspected or confirmed 2019-nCoV infection should be treated with supportive therapies as described above, taking into account the physiologic adaptations of pregnancy.



- 9.1. Emergency delivery and pregnancy termination decisions are challenging and based on many factors: gestational age, maternal condition, and fetal stability.
- 9.2. Consultations with obstetric, neonatal, and intensive care specialists (depending on the condition of the mother) are essential.

Management of Contacts

Case definition

Close contacts (high-risk exposure)

A close contact of a probable or confirmed 2019-nCoV case is defined as any of the following:

1. A person living in the same household as a 2019-nCoV case
2. A person having had face-to-face contact or having been in a closed environment with a 2019-nCoV case
3. A healthcare worker or other person providing direct care for a 2019-nCoV case, or laboratory workers handling 2019-nCoV specimens; if contact was without appropriate PPE
4. A contact in an aircraft sitting within two seats (in any direction) of the 2019-nCoV case, travel companions or persons providing care, and crew members serving in the section of the aircraft where the index case was seated

Casual contacts (low-risk exposure)

A casual contact of a probable or confirmed 2019-nCoV case is defined as any of the following:

1. An identifiable person having had casual contact with an ambulant 2019-nCoV case
2. A person having stayed in an area presumed to have ongoing, community transmission.

Managements of Contacts

Close contacts (high-risk exposure)

1. Inform the local health focal person to initiate active monitoring
 - 1.1. Daily monitoring for 2019-nCoV symptoms, including fever of any grade, cough or difficulty breathing; will be done by the health authorities for 14 days from last contact



2. Instruct the contact to:
 - 2.1. Avoid social contact
 - 2.2. Avoid travel
 - 2.3. Remain reachable for active monitoring

Casual contacts (low risk exposure)

1. Inform the local health focal person
2. Instruct the person:
 - 2.1. To self-monitor for 2019-nCoV symptoms, including fever of any grade, cough or difficulty breathing, for 14 days from last exposure
 - 2.2. Immediately self-isolate and contact health services in the event of any symptom appearing within 14 days.
 - 2.3. If no symptoms appear within 14 days of last exposure the contact person is no longer considered to be at risk of developing 2019-nCoV disease.

Facility Infection Prevention

General Considerations

1. Each facility to identify a dedicated and trained team or at least an IPC focal point supported by the national and facility senior management.
2. Each facility to ensure at minimum requirements for IPC as soon as possible
 - 2.1. If not done, facilities are encouraged to use the WHO IPC framework to assess their facility. This can be found at <https://www.who.int/infection-prevention/tools/core-components/IPCAF-facility.PDF>
 - 2.2. Hand hygiene should be performed using an alcohol-based disinfectant or with soap and water. If soap and water is used handwashing must be done for 20 seconds
3. The team in charge of the preparedness must ensure
 - 3.1. Education is provided to patients' caregivers
 - 3.2. Policies are developed for the early recognition of acute respiratory infection potentially caused by 2019-nCoV
 - 3.3. Access to prompt laboratory testing for identification of the etiologic agent
 - 3.4. Dedicated waiting areas for symptomatic patients are established
 - 3.5. Hospitalized patients are adequately isolated
 - 3.6. Adequate supplies of PPE
 - 3.7. Adherence of IPC policies and procedures



- 3.8. Provision of adequate training for HCWs
- 3.9. Adequate patient-to-staff ratio
- 3.10. HCWs and the public understand the importance of promptly seeking medical care
- 3.11. Compliance of HCW with standard precautions and providing mechanisms for improvement as needed

Management of Waste

- 1.1. All waste from the rooms of patients with suspected or confirmed nCoV should be considered infectious
- 1.2. In patient rooms, dustbins with lids should be used and must be lined with bags
- 1.3. Prior to discarding, the bag must be sealed/tied while in the bin, lifted and placed in a new bag designated as medical waste (double bagging) and tied shut.
 - 1.3.1. PPE must be worn during this process
- 1.4. The sealed bag should then be discarded as per the hospital protocols by incineration.

Linen management

- 1. All Linen must be changed daily
- 2. Linen must be double-bagged and marked as infectious
 - 2.1. PPE must be worn at the time of changing the linen
- 3. Linen needs to be washed in hot water

Safe Burial

- 1. Prior to departure prepare of disinfectants and assemble all necessary equipment including PPE
 - 1.1. Hand hygiene facilities
 - 1.1.1. Alcohol-based handrub solution OR clean running water, soap and towels
 - 1.2. Personal Protective Equipment (PPE)
 - 1.2.1. One pair of disposable gloves (non-sterile, ambidextrous)
 - 1.2.2. One pair of heavy duty gloves
 - 1.2.3. Disposable gown
 - 1.2.4. Face protection: goggles and surgical mask
 - 1.2.5. Footwear: shoes with puncture-resistant soles and disposable overshoes
 - 1.3. Waste management materials



- 1.3.1. Disinfectant: 0.5% chlorine solution for disinfection of objects and surfaces
2. Burial management team (including family members involved in the bathing) should put on all PPE in the presence of the family in the following order
 - 2.1. Wear shoe covers
 - 2.2. Perform Hand Hygiene
 - 2.3. Put on gown
 - 2.4. Put on face mask and safety goggles
 - 2.5. Put on gloves
3. Bathing of the dead body
 - 3.1. The dead body should be washed/bathed ("Ghusl") with water.
 - 3.2. Bathing should be done as soon as possible after death, preferably within hours.
 - 3.3. The "washers" are commonly adult members of the immediate family who are of the same gender as the deceased.
 - 3.4. The steps of the washing should be done at least three times (or any more odd numbers) of times as necessary to cleanse.
 - 3.5. The body should be washed in the following order: upper right side, upper left side, lower right side and lower left side.
4. Enshrouding the dead body in a plain white cloth
 - 4.1. After washing, the dead body should be immediately wrapped in a simple white plain cotton or linen cloth ("Kafan") to respect the dignity of the deceased.
 - 4.2. The body should then be transported to the mosque or cemetery.
5. Sanitize family's environment
 - 5.1. Collect all and bag all soiled objects
 - 5.2. Collect any sharps that might have been used on the patient and dispose them in a leak-proof and puncture resistant container.
 - 5.3. Clean environmental surfaces all rooms and objects in the house that were in contact with the deceased
 - 5.3.1. Use clean water and detergent
 - 5.3.2. Disinfect with 0.5% chlorine solution.
 - 5.4. Linen should be washed wearing PPE
6. Remove PPE
 - 6.1. PPE should be removed in the following sequence:
 - 6.1.1. Shoe covers

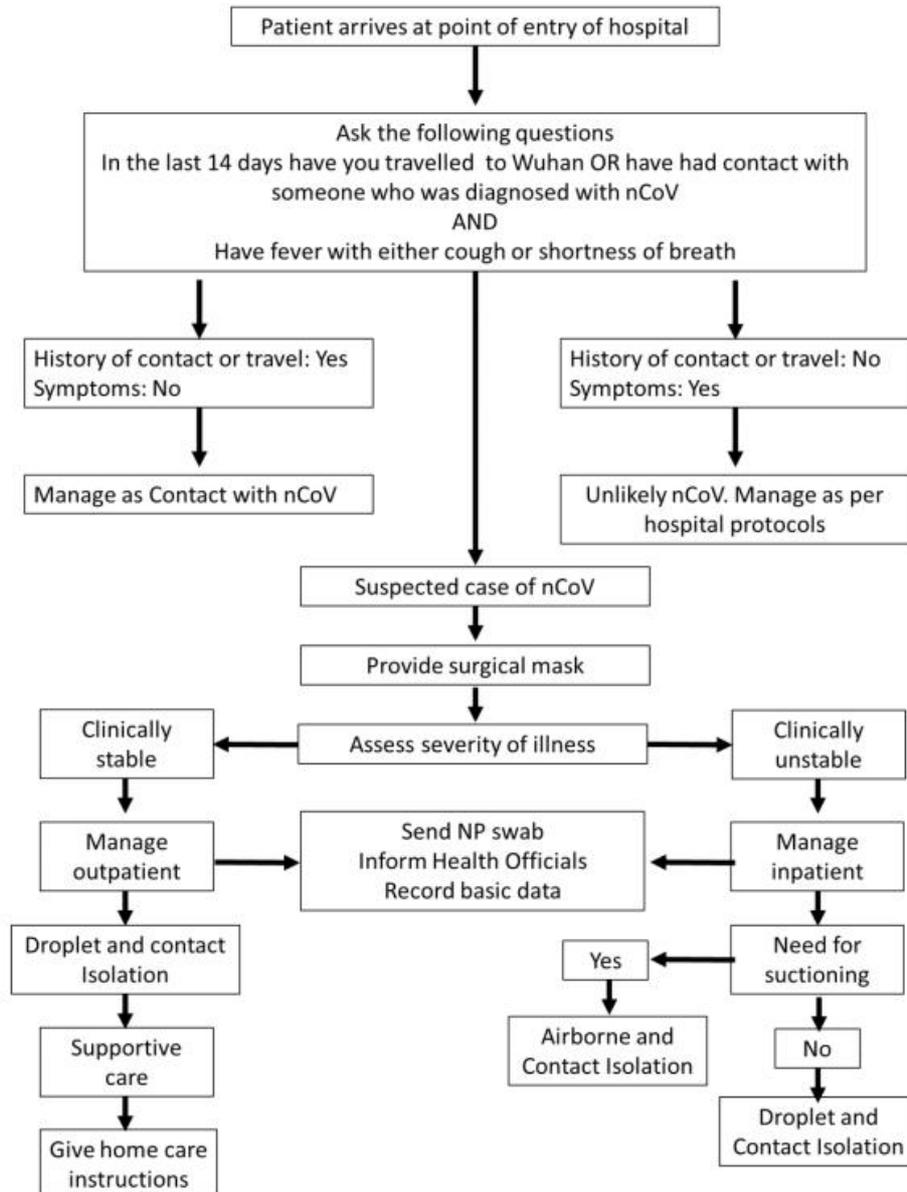


- 6.1.2. Gloves
- 6.1.3. Goggles/ face shield
- 6.1.4. Gown
- 6.1.5. Mask
- 6.2. After removing PPE, perform hand hygiene.
- 6.3. All PPE should be disposed off in an infectious waste bag for incineration
- 7. Transport the dead body to the cemetery for funeral prayer
- 8. Burial at the cemetery
- 9. Send infectious waste to the hospital
 - 9.1. Organize the incineration of the single-use (disposable) equipment at the hospital or in another designated place for burning this type of equipment
 - 9.2. The reusable equipment can be disinfected according to the hospital policy
 - 9.3. The car (especially the rear) used for the funerals needs to be cleaned and disinfected as described above



Appendices

Appendix 1: Algorithm for case management of patient arriving with suspected nCoV





Appendix 2: Summary of PPE according to risk in nCoV

		None	Surgical Mask	N95 Mask	Gloves	Gowns	Eye Shield
Non-HCW	General Population	✓					
	Caring for suspected or confirmed patient		✓				
Patient	Suspected		✓				
	Confirmed		✓				
	In single room isolation	✓					
HCW	At triage		✓				✓
	Taking care of suspected or confirmed patient	Does not require suctioning	✓		✓	✓	✓
		Requires suction			✓	✓	✓
	While collecting NP swab			✓	✓	✓	✓
	While removing linen/waste		✓		✓	✓	



Appendix 3: Standard Operating Procedure (SOP) for Collection, Storage & Transportation of Specimens for Novel Coronavirus Diagnosis

1. Materials Needed

- 1.1 Dacron or polyester flocked swabs
- 1.2 Tongue depressor (for Oropharyngeal swab)
- 1.3 Vial with Viral Transport Medium (VTM)
- 1.4 Pen/marker
- 1.1 Dacron or polyester flocked swabs
- 1.2 Tongue depressor (for Oropharyngeal swab)
- 1.3 Vial with Viral Transport Medium (VTM)
- 1.4 Pen/marker
- 1.5 Scissor
- 1.6 Disposable gloves
- 1.7 Lab coat
- 1.8 N95 mask
- 1.9 Goggles or face shield
- 1.10 Specimen transport container with ice packs
- 1.11 Specimen label and form
- 1.12 Biohazard bags
- 1.13 Tissues
- 1.14 Soap and water

2. Roles/Responsibilities

- 2.1 A trained staff is responsible for collecting specimens and ensuring all vials are labeled appropriately.



3. Procedure

3.1 Safety requirements and PPE

- 3.1.1 Wear disposable gloves and change gloves after each patient.
- 3.1.2 Wash or sanitize hands before putting on and after removing gloves.
- 3.1.3 Wear an N95 mask to minimize exposure to infection during specimen collection.
- 3.1.4 Follow standard precautions and any additional precautions specific to the setting or patient.
- 3.1.5 Dispose of all contaminated waste (gloves, paper, swab handles, etc.) into biohazard waste bags for disposal.

3.2 Timing

- 3.2.1 Nasopharyngeal (NP) and Oropharyngeal (OP) swabs should be collected as soon as possible after enrollment.
- 3.2.2 The NP swab for VTM should be collected first, followed by the OP swab. Both swabs will be placed in the same vial of VTM. **Note:** Placing the NP & OP swabs in the same tube increases the viral load.

3.3 Nasopharyngeal swab

- 3.3.1 Explain the procedure to the patient. Emphasize the importance of remaining still during specimen collection to minimize discomfort.
- 3.3.2 Position the patient in a comfortable position.
- 3.3.3 Tilt the patient's head back at a 70 degree angle (see figure below).



3.3.4 Remove the flocked swab from its protective package

3.3.5 Insert the swab into one nostril horizontally (not upwards) and continue along the floor of the nasal passage for several centimeters until reaching the nasopharynx (resistance will be met). The distance from the nose to the ear gives an estimate of the distance the swab should be inserted.

3.3.6 Do not force the swab. If obstruction is encountered before reaching the nasopharynx, remove the swab and try the other side.

3.3.7 Rotate the swab gently through 180 degrees to make sure adequate specimen is obtained. Leave the swab in place for 2-3 seconds to ensure absorbance of secretions.

3.3.8 Remove swab and immediately place into vial with VTM by inserting the swab at least $\frac{1}{2}$ inch below the surface of the media. Cut the excess swab handle to fit the transport medium vial and reattach the cap securely.

3.4 Oropharyngeal swab

3.4.1 Ask the patient to open his/her mouth.

3.4.2 Press the outer two-thirds of the tongue down with a tongue depressor, making the tonsils and the posterior wall of the throat visible.

3.4.3 Insert swab, avoiding touching the teeth, tongue, or the depressor.

3.4.4 Rub the swab over both tonsillar pillars and posterior oropharynx. This will cause the patient to gag briefly.



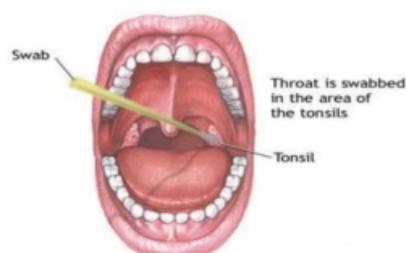
3.4.5 Place the swab into the vial containing VTM (same vial as the first NP swab).

3.4.6 Cut the excess swab handle to fit the transport medium vial and reattach the cap securely.

3.4.7 Carefully label specimen with patient ID number, and date and time of specimen collection.

3.4.8 Complete specimen tracking log with patient ID number, date and time of specimen collection.

3.4.9 Place specimen in cool box on ice. Sample transport and storage condition are given in Table 1.



3.5 Sample transportation of suspected 2019 NCoV samples

3.5.1 Important: Transfer specimen with tracking log to the laboratory as soon as possible. Ensure that personnel who transport specimens are trained in safe handling practices and spill decontamination procedures.

3.5.2 Follow the requirements in the national or international regulations for the transport of dangerous goods (infectious substances) as applicable.

3.5.3 Deliver all specimens by hand whenever possible. Do not use pneumatic-tube systems to transport specimens.

3.5.4 Notify the National Reference laboratory (Department of Virology, PHLD, NIH Islamabad) as soon as possible that the specimen is being transported.



Table1. Specimen transport and storage

Specimen	Transport to laboratory	Storage till testing	Comments
Nasopharyngeal and Oropharyngeal swab	4 °C	≤48 hours: 4 °C >48 hours: -70 °C	The nasopharyngeal and oropharyngeal swabs should be placed in the same tube to increase the viral load.
Bronchoalveolar lavage	4 °C	≤48 hours: 4 °C >48 hours: -70 °C	
Sputum	4 °C	≤48 hours: 4 °C >48 hours: -70 °C	Ensure the material is from the lower respiratory tract
(Endo)tracheal aspirate, nasopharyngeal aspirate or nasal wash	4 °C	≤48 hours: 4 °C >48 hours: -70 °C	

References: Laboratory testing for 2019 novel corona virus (2019-nCoV) in suspected human cases. WHO/2019-nCoV/laboratory/2020.3

Note: In hospitalized patients with confirmed 2019-nCoV infection, repeat upper and lower respiratory tract samples should be collected to demonstrate viral clearance. The frequency of specimen collection will depend on local circumstances but should be at least every 2 to 4 days until there are two consecutive negative results (both URT and LRT samples if both are collected) in a clinically recovered patient, at least 24 hours apart. If local infection control practice requires two negative results before removal of droplet precautions, specimens may be collected as often as daily.



Appendix 4: Home Care Recommendation for Patients with Suspected or Confirmed 2019 novel Coronavirus (2019-nCoV)

- What is Corona Virus?
 - ✓ The 2019 Novel Coronavirus (2019-nCoV) is a virus identified as the cause of an outbreak of respiratory illness
 - Given your recent travel or contact with someone who has travelled, there is chance you may have caught this virus
- What precautions do I need to take at home?
 - ✓ Stay in a well-ventilated single room
 - ✓ Limit the movement within the house
 - ✓ Avoid shared spaces
 - ✓ Use surgical mask at all times. If the mask gets wet or dirty with secretions, it must be changed immediately
 - ✓ Cover your mouth with a tissue when coughing or sneezing and immediately throw the tissue
 - ✓ Keep your hands clean by using soap and water or an alcohol disinfectant
- What precautions do people taking care of me take?
 - ✓ Only healthy people with no other health issues should take care of you
 - ✓ The caregiver should wear a surgical mask when in the same room with you
 - ✓ The masks should not be touched or handled during use
 - ✓ Throw the mask away after use.
 - ✓ Clean their hands using soap and water or an alcohol disinfectant after taking the mask off
- What precautions do the people I live with need to take?
 - ✓ Avoid visitors while you have symptoms
 - ✓ Household members should stay in a different room or if that is not possible, maintain a distance of at least 1 meter
 - ✓ Hand must be cleaned before and after preparing food, before eating, after using the toilet, and whenever hands look dirty.
- What should I do if any person I have met develops symptoms?
 - ✓ Have the persons contact your local doctor to be checked
- Do I need to make any special arrangements at home?
 - ✓ Dust bins should be lined with plastic bags and the bags tied before throwing
 - ✓ Use a diluted solution (1-part household bleach to 99 parts water) to clean bedside bathroom, toilet surfaces tables, bedframes, and other bedroom furniture once a day
 - ✓ Place used linen in a laundry bag. Do not shake soiled laundry and avoid direct contact of the skin and clothes with the contaminated material.
 - ✓ Wash clothes, bedclothes, bath and hand towels, etc. using regular laundry soap and water or machine wash at 60–90 °C with common household detergent, and dry thoroughly.



2019-nCoVirus Clinical Care & Prevention GoP Guidelines, 5th Feb 2020

Appendix 5: Focal Persons and designated public hospitals

Name Of Province	Focal Person	Contact No	Hospital
ICT, Islamabad	Dr Naseem Akhter Infectious Disease Dr Anjum Javed	0334-5476759 0300-9559552	PIMS
Punjab	Dr Haroon Jahangir, DG Health Dr Shahnaz Naseem, Dir Public Health	0321-5100044 0333-6477269	1. Benazir Hospital Rawalpindi 2. Holy Family Hospital Rawalpindi 3. Nishter Hospital Multan 4. Services Hospital Lahore 5. DHQ Sialkot 6. DHQ Faisalabad
Sindh	Dr. Syed Muhammad Asif FP PDSRU	0333-2863477	1. innah Hospital Karachi 2. Dow Medical University Hospital Karachi 3. Liaqat Hospital Hyderabad
KPK	Dr Ikram Ullah Director Public Health	0300-5986599	1.LRH MTI Peshawer 2.KTH MTI Peshawer 3.HMC MTI Peshawer 4.DHQ Lakki Marwat 5.DHQ Battagram 6.DHQ Mardan 7.DHQ Kohat 8. DHQ Noshehra 9. DHQ Hangu 10. SGTH Sawat Lower Dist THQ Chakdara THQ SavarBagh Shangla Kohat THQ Bisham Noshera MRHSM Pabbi Cat-D gaad Ismail Khan CH. Akora Khattak Karak Dis Thakat Nusrat Dis Upper Mansehra Type D Balakot Type D Ghari Habib Type D Baffa
Balochistan		0331-2959390	1.Fatima Jinnah chest and general hospital, Quetta



2019-nCoVirus Clinical Care & Prevention GoP Guidelines, 5th Feb 2020

	Dr Shaukat Baloch, Director Public Health		2. Sheikh Zayed Hospital Queta 3. Prince Fahad Hospital Dalbadin Chagi 4. Jam Mir Qadir Hospital Lasbela 5. DHQ Uthal Lasbela 6. DHQ Hospital 7. GDA Hospital Gawadar 8. Red Crescent Hospital Gawadar 9. DHQ / Turbat Teaching hospital, Turbat
GB	Dr Shah Jehan	0311-9814494	1. DHQ Gilgit Isolation Room 2. DHQ Karimabad 3. DHQ Chilas 4. DHQ Sikardu
AJK	Dr Syed Nadeem	-	1. CMH Muzaffarabad and Rawalakot 2. Abbas Institution of Medical Science Muzaffarabad 3. DHQ Mirpur and Kotli



Annexure-F2: Suspected & Confirmed Case registration

Integrated Disease Surveillance & Response
Search apps
AB

Registration and Data Entry

Reports

- Pakistan
 - Azad Jamu and Kashmir
 - Balochistan
 - FATA
 - Gilgit Baltistan
 - ICT
 - City Hospital (Private Health Facility)
 - Islamabad - CDA
 - Islamabad - ICT
 - Islamabad International Airport
 - Riaz Hospital (Private Health Facility)
 - Khyber Pakhtunkhwa
 - Occupied Jamu and Kashmir
 - Punjab
 - Sindh

Lists
Search
Register

Enrollment

Enrolling organisation unit	Islamabad International Airport
Enrollment date	06-02-2020
Incident date	06-02-2020

Profile

ID	PK00000005
Name	
Gender	Select or search from the list
Age	<input type="text" value="Date of birth"/> <input type="text" value="Years"/> <input type="text" value="Months"/> <input type="text" value="Days"/>
Nationality	
Passport No.	
CNIC	
Contact No.	
Flight No.	
Traveled From	

Integrated Disease Surveillance & Response
Search apps
AB

Registration and Data Entry

Reports

- Pakistan
 - Azad Jamu and Kashmir
 - Balochistan
 - FATA
 - Gilgit Baltistan
 - ICT
 - City Hospital (Private Health Facility)
 - Islamabad - CDA
 - Islamabad - ICT
 - Islamabad International Airport
 - Riaz Hospital (Private Health Facility)
 - Khyber Pakhtunkhwa
 - Occupied Jamu and Kashmir
 - Punjab
 - Sindh

Nationality	
Passport No.	
CNIC	
Contact No.	
Flight No.	
Traveled From	
Disease Symptoms	
History of Fever/Chills	Shortness of Breath
General Weakness	Diarrhoea
Cough	Nausea/Vomiting
Sore throat	Headache
Runny Nose	Irritability/Confusion
Pain (Check all that apply)	
Muscular	Chest
Abdominal	Joint
Travel History (China Last 14 Days)	Select or search from the list
Date of Onset of Symptoms	dd-MM-yyyy

Integrated Disease Surveillance & Response
Search apps
AB

Registration and Data Entry

Reports

- Pakistan
 - Azad Jamu and Kashmir
 - Balochistan
 - FATA
 - Gilgit Baltistan
 - ICT
 - City Hospital (Private Health Facility)
 - Islamabad - CDA
 - Islamabad - ICT
 - Islamabad International Airport
 - Riaz Hospital (Private Health Facility)
 - Khyber Pakhtunkhwa
 - Occupied Jamu and Kashmir
 - Punjab
 - Sindh

Sore throat	Headache
Runny Nose	Irritability/Confusion
Pain (Check all that apply)	
Muscular	Chest
Abdominal	Joint
Travel History (China Last 14 Days)	Select or search from the list
Date of Onset of Symptoms	dd-MM-yyyy
Address	House No.
	Street No.
	District
	City
	Tehsil/Town
Referred to Hospital	Select or search from the list

Save and continue
Save and add new
Print form
Cancel

70



Annexure-F3: WHO standard case definition



Ministry of National Health Services, Regulations & Coordination
National Institute of Health, Islamabad

Field Epidemiology & Disease Surveillance Division

Phone: (92-051) 9255237 Fax: (92-051) 051-9255575



National Focal Point for International Health Regulations

Subject: **Case definition for Screening of Passengers at International Airports of Pakistan**

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 2019-nCoV 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 2019-nCov infections have been reported.

Probable case:

Probable case: A suspect case for whom testing for 2019-nCoV is inconclusive or for whom testing was positive on a pan-coronavirus assay.

Confirmed case:

A person with laboratory confirmation of 2019-nCoV infection, irrespective of clinical signs and symptoms.

(Source: WHO- Global Surveillance for human infection with novel coronavirus (2019-nCoV), Interim guidance- 21 January 2019)



Annexure-F4: Questionnaire for evaluation of suspected cases



Questionnaire for Suspected Novel Coronavirus Cases



Note: *Persons who travelled back from China and have fever and cough, should be considered as suspected*

ID No.: _____ Interview Date (dd/mm/yyyy): _____ PoE: _____

Interviewer Name: _____ Designation: _____

Contact No. _____

Demographic Information:

Name				
Age (in Years)	Sex:	Male <input type="checkbox"/>	Female <input type="checkbox"/>	Others <input type="checkbox"/>
Occupation				
Address (in China)				
Nationality				
Tel No.	Mobile:			

Travel History:

Place Of Travel Origin			
Place of Transit stay			
If coming from China, whether visited affected areas	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Purpose of visit to Pakistan			
Duration of stay in Pakistan			
Address in Pakistan during stay			
H/o seasonal influenza Vaccine	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Do you know any person having cough & fever & travelling in same flight	Yes <input type="checkbox"/>	No <input type="checkbox"/>	

Date of onset of symptoms (dd/mm/yyyy): _____

Signs/Symptoms



Fever:	Yes <input type="checkbox"/> No <input type="checkbox"/>	Cough	Yes <input type="checkbox"/> No <input type="checkbox"/>
Difficulty in breathing:	Yes <input type="checkbox"/> No <input type="checkbox"/>	Any Other:	
Any Chronic Ailment:	Yes <input type="checkbox"/> No <input type="checkbox"/>	If yes, mention:	

Clinical Screening

Temperature: °F	B P: /..... mmhg	Pulse:/ min	
Chest Auscultation:			
Have person retained at PoE:	Yes <input type="checkbox"/> No <input type="checkbox"/>	No. of days retained:	
Or shifted to hospital for isolation:	Yes <input type="checkbox"/> No <input type="checkbox"/>	Days admitted in isolation:	
Have sample collected:	Yes <input type="checkbox"/> No <input type="checkbox"/>	Type of sample:	
Date of Sampling:		Date of Shipment to NIH:	

Instructions: In case of developing fever, cough or breathing difficulty within 14 days of arriving back from China immediately contact designated Hospital or National Institute of Health, Islamabad (Tel. No.: 051-9255237, 051-9255300).

(Signature)



Annexure-G: Logistics & Stockpiling



PPE STOCKPILING CALCULATIONS

Personal Protective Equipment required for nCoV outbreak



FEBRUARY 9, 2020

PROF. DR. MAJ GEN. AAMER IKRAM – EXECUTIVE DIRECTOR
National Institute of Health-Islamabad

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Figure 3: https://www.halyardhealth.com/Pandemic	4
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Strategic National Stockpile

Introduction:

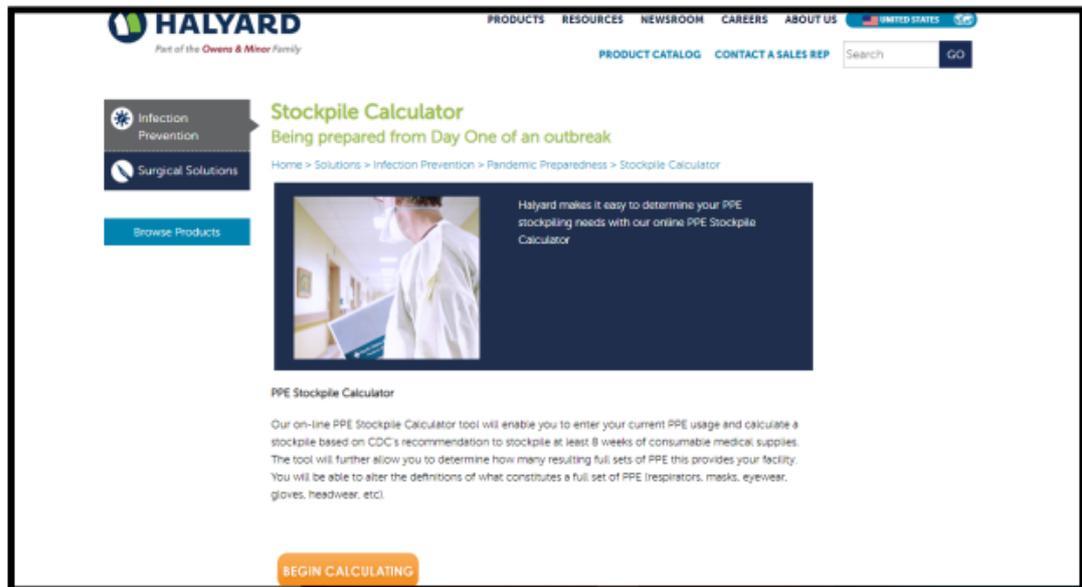
As recent outbreaks have demonstrated, disease cases can spread over large geographic areas in just a few days or weeks. With constant international travel and many portals of entry and exit across porous borders, the likelihood of an infectious disease spreading across multiple countries, and even continents, has increased. Ministries of health play a critical role in understanding the bigger picture of disease distribution, and these authorities can be very valuable in helping to identify disease threats that may be moving toward a facility or country. Open communication with public health authorities will help a facility remain vigilant for emerging pathogens.

Strategic National Stockpile is the nation's largest supply of potentially life-saving pharmaceuticals and medical supplies for use in a public health emergency severe enough to cause local supplies to run out.

When sentinel sites managing outbreaks request federal assistance to support their response efforts, the stockpile ensures that the right medicines and supplies get to those who need them most during an emergency. Organized for scalable response to a variety of public health threats, this repository contains enough supplies to respond to multiple large-scale emergencies simultaneously.

As part of the preparedness, a health care facility should make sure that there is enough PPE for an outbreak or emergency situation. It is challenging to determine how much PPE to stockpile, especially because the type of PPE varies depending on the pathogen.

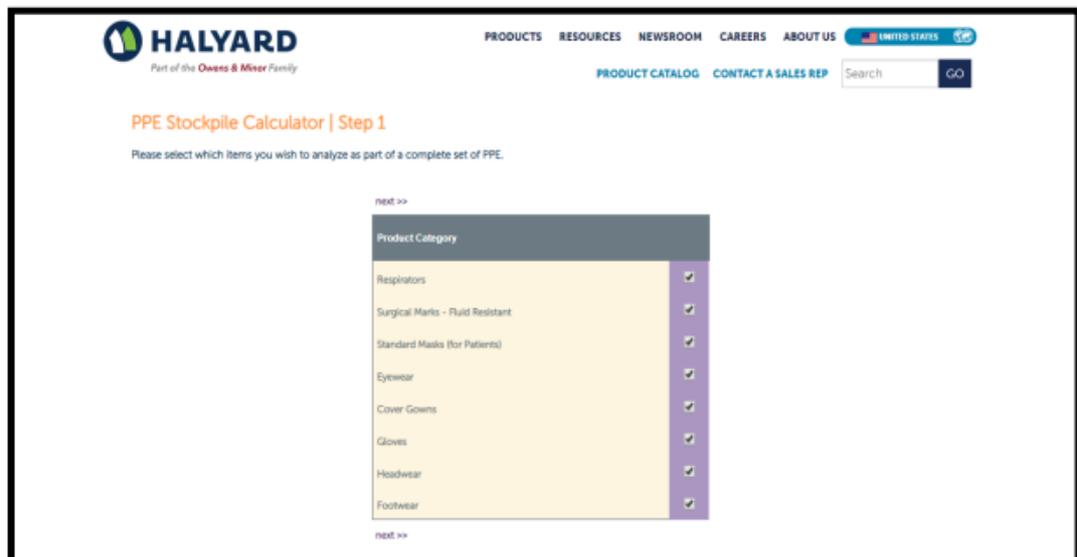
Stockpile Calculator - Being prepared from Day One of an outbreak



The screenshot shows the Halyard website's landing page for the Stockpile Calculator. The header includes the Halyard logo, navigation links for PRODUCTS, RESOURCES, NEWSROOM, CAREERS, and ABOUT US, and a search bar. The main content area features a sidebar with 'Infection Prevention' and 'Surgical Solutions' categories, and a 'Browse Products' button. The central heading is 'Stockpile Calculator: Being prepared from Day One of an outbreak'. Below this is a breadcrumb trail: 'Home > Solutions > Infection Prevention > Pandemic Preparedness > Stockpile Calculator'. A large image shows a healthcare worker in a white coat and mask. Text next to the image states: 'Halyard makes it easy to determine your PPE stockpiling needs with our online PPE Stockpile Calculator'. Below the image, the text reads: 'Our on-line PPE Stockpile Calculator tool will enable you to enter your current PPE usage and calculate a stockpile based on CDC's recommendation to stockpile at least 8 weeks of consumable medical supplies. The tool will further allow you to determine how many resulting full sets of PPE this provides your facility. You will be able to alter the definitions of what constitutes a full set of PPE (respirators, masks, eyewear, gloves, headwear, etc.)'. At the bottom of the page is an orange 'BEGIN CALCULATING' button.

Figure 1: <https://www.halyardhealth.com/solutions/infection-prevention/pandemic-preparedness/stockpile-calculator.aspx>

By clicking on "BEGIN CALCULATING" button shown in Figure 1 the following calculation page appears on which you have to select PPE required for stockpiling.



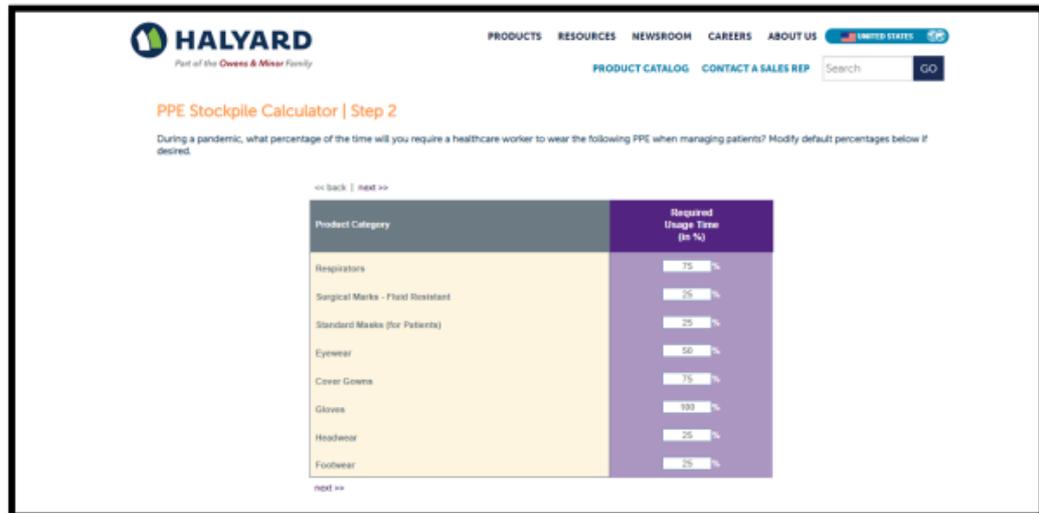
The screenshot shows the 'PPE Stockpile Calculator | Step 1' page. The header is identical to Figure 1. The main heading is 'PPE Stockpile Calculator | Step 1'. Below the heading, it says 'Please select which items you wish to analyze as part of a complete set of PPE.' There are 'next >>' buttons above and below a table. The table lists various PPE categories, each with a checked checkbox in the right column.

Product Category	
Respirators	<input checked="" type="checkbox"/>
Surgical Masks - Fluid Resistant	<input checked="" type="checkbox"/>
Standard Masks (for Patients)	<input checked="" type="checkbox"/>
Eyewear	<input checked="" type="checkbox"/>
Cover Gowns	<input checked="" type="checkbox"/>
Gloves	<input checked="" type="checkbox"/>
Headwear	<input checked="" type="checkbox"/>
Footwear	<input checked="" type="checkbox"/>

Figure 2: <https://www.halyardhealth.com/Pandemic>

After selecting the PPE required and clicking on “next” button following page appears.

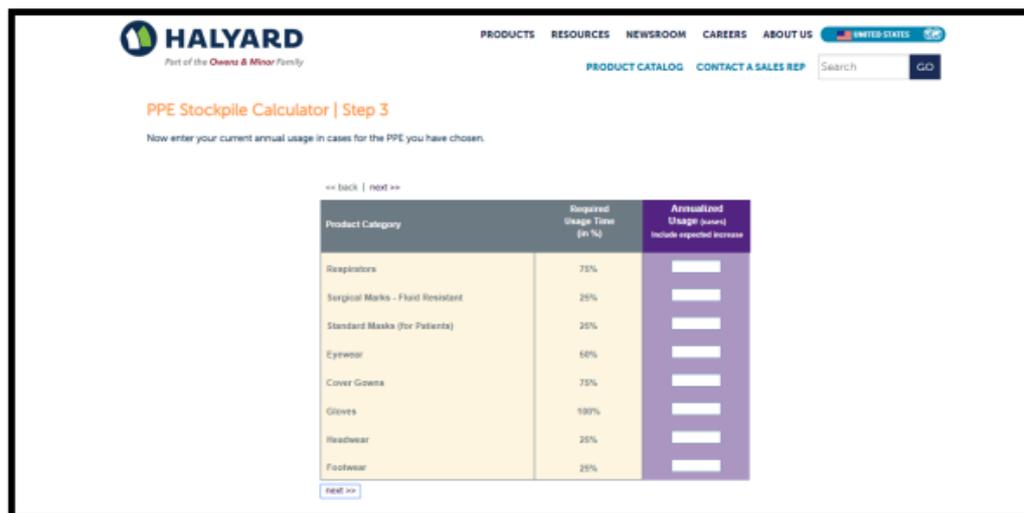
“During a pandemic, what percentage of the time will you require a healthcare worker to wear the following PPE when managing patients? Modify default percentages below if desired.”



Product Category	Required Usage Time (in %)
Respirators	75 %
Surgical Masks - Fluid Resistant	25 %
Standard Masks (for Patients)	25 %
Eyewear	50 %
Cover Gowns	75 %
Gloves	100 %
Headwear	25 %
Footwear	25 %

Figure 3:<https://www.halyardhealth.com/Pandemic>

Values of required usage time have been displayed already and can be adjusted according to requirement.



Product Category	Required Usage Time (in %)	Annualized Usage (cases) (include expected increase)
Respirators	75%	<input type="text"/>
Surgical Masks - Fluid Resistant	25%	<input type="text"/>
Standard Masks (for Patients)	25%	<input type="text"/>
Eyewear	50%	<input type="text"/>
Cover Gowns	75%	<input type="text"/>
Gloves	100%	<input type="text"/>
Headwear	25%	<input type="text"/>
Footwear	25%	<input type="text"/>

Figure 4:<https://www.halyardhealth.com/Pandemic>

The calculator is self-explanatory and further to this, values need to be added in the respective boxes in few more windows ahead, for each PPE calculation to get the desired results.

Annexure-H1: Infection prevention and control

Infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected

Interim guidance

25 January 2020

[WHO/2019-nCoV/IPC/v2020.2](#)



Introduction

This is the first edition of guidance on infection prevention and control (IPC) strategies for use when infection with a novel coronavirus (2019-nCoV) is suspected. It has been adapted from WHO's *Infection prevention and control during health care for probable or confirmed cases of Middle East respiratory syndrome coronavirus (MERS-CoV) infection*,¹ based on current knowledge of the situation in China and other countries where cases were identified and experiences with severe acute respiratory syndrome (SARS)-CoV and MERS-CoV.²

WHO will update these recommendations as new information becomes available.

This guidance is intended for healthcare workers (HCWs), healthcare managers and IPC teams at the facility level but it is also relevant for the national and district/provincial level. Full guidelines are available from WHO.³

Principles of IPC strategies associated with health care for suspected nCoV infection

To achieve the highest level of effectiveness in the response to an 2019-nCoV outbreak using the strategies and practices recommended in this document, an IPC programme with a dedicated and trained team or at least an IPC focal point should be in place and supported by the national and facility senior management.³ In countries where IPC is limited or in-existent, it is critical to start by ensuring that at least *minimum requirements* for IPC are in place as soon as possible, both at the national and facility level, and to gradually progress to the full achievement of all requirements of the IPC core components according to local priority plans.⁴

IPC strategies to prevent or limit transmission in healthcare settings include the following:

1. ensuring triage, early recognition, and source control (isolating patients with suspected nCoV infection);
2. applying standard precautions for all patients;
3. implementing empiric additional precautions (droplet and contact and, whenever applicable, airborne precautions) for suspected cases of nCoV infection;
4. implementing administrative controls;
5. using environmental and engineering controls.

1. Ensuring triage, early recognition, and source control

Clinical triage includes a system for assessing all patients at admission allowing early recognition of possible 2019-nCoV infection and immediate isolation of patients with suspected nCoV infection in an area separate from other patients (source control). To facilitate the early identification of cases of suspected nCoV infection, healthcare facilities should:

- encourage HCWs to have a high level of clinical suspicion;
- establish a well-equipped triage station at the entrance of health care facility, supported by trained staff;
- institute the use of screening questionnaires according to the updated case definition ([https://www.who.int/publications-detail/global-surveillance-for-human-infection-with-novel-coronavirus-\(2019-ncov\)](https://www.who.int/publications-detail/global-surveillance-for-human-infection-with-novel-coronavirus-(2019-ncov))) and
- post signs in public areas reminding symptomatic patients to alert HCWs.

The promotion of hand hygiene and respiratory hygiene are essential preventive measures.

2. Applying standard precautions for all patients

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

Ensure that the following respiratory hygiene measures are used:

- ensure that all patients cover their nose and mouth with a tissue or elbow when coughing or sneezing;
- offer a medical mask to patients with suspected 2019-nCoV infection while they are in waiting/public areas or in cohorting rooms;
- perform hand hygiene after contact with respiratory secretions.

HCWs should apply the WHO's My 5 Moments for Hand Hygiene approach before touching a patient, before any clean or aseptic procedure is performed, after exposure to body fluid, after touching a patient, and after touching a patient's surroundings.⁵

- hand hygiene includes either cleansing hands with an alcohol-based hand rub (ABHR) or with soap and water;

Infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected: interim guidance

- alcohol-based hand rubs are preferred if hands are not visibly soiled;
- wash hands with soap and water when they are visibly soiled.

The rational, correct, and consistent use of PPE also helps to reduce the spread of pathogens. The use of PPE effectiveness strongly depends on adequate and regular supplies, adequate staff training, appropriate hand hygiene and specifically appropriate human behaviour.^{2,5,6}

It is important to ensure that environmental cleaning and disinfection procedures are followed consistently and correctly. Thoroughly cleaning environmental surfaces with water and detergent and applying commonly used hospital-level disinfectants (such as sodium hypochlorite) are effective and sufficient procedures.⁷ Medical devices and equipment, laundry, food service utensils and medical waste should be managed in accordance with safe routine procedures.^{2,8}

3. Implementing empiric additional precautions

3.1 Contact and droplet precautions

- in addition to using standard precautions, all individuals, including family members, visitors and HCWs, should use contact and droplet precautions before entering the room where suspected or confirmed nCoV patients are admitted;
- patients should be placed in adequately ventilated single rooms. For general ward rooms with natural ventilation, adequate ventilation is considered to be 60 L/s per patient;⁹
- when single rooms are not available, patients suspected of being infected with nCoV should be grouped together;
- all patients' beds should be placed at least 1 m apart regardless of whether they are suspected to have nCoV infection;
- where possible, a team of HCWs should be designated to care exclusively for suspected or confirmed cases to reduce the risk of transmission;
- HCWs should use a medical mask^a (for specifications, please see references 2);
- HCWs should wear eye protection (goggles) or facial protection (face shield) to avoid contamination of mucous membranes;
- HCWs should wear a clean, non-sterile, long-sleeved gown;
- HCWs should also use gloves;
- the use of boots, coverall and apron is not required during routine care;
- after patient care, appropriate doffing and disposal of all PPE's and hand hygiene should be carried out.^{2,6} Also, a new set of PPE's is needed, when care is given to a different patient;
- equipment should be either single-use and disposable or dedicated equipment (e.g., stethoscopes, blood pressure cuffs and thermometers). If equipment needs to be shared

among patients, clean and disinfect it between use for each individual patient (e.g., by using ethyl alcohol 70%);⁸

- HCWs should refrain from touching eyes, nose or mouth with potentially contaminated gloved or bare hands;
- avoid moving and transporting patients out of their room or area unless medically necessary. Use designated portable X-ray equipment and/or other designated diagnostic equipment. If transport is required, use predetermined transport routes to minimize exposure for staff, other patients and visitors, and have the patient using a medical mask;
- ensure that HCWs who are transporting patients perform hand hygiene and wear appropriate PPE as described in this section;
- notify the area receiving the patient of any necessary precautions as early as possible before the patient's arrival;
- routinely clean and disinfect surfaces which the patient is in contact;
- limit the number of HCWs, family members and visitors who are in contact with a suspected and confirmed 2019-nCoV patient;
- maintain a record of all persons entering the patient's room, including all staff and visitors.

3.2 Airborne precautions for aerosol-generating procedures

Some aerosol-generating procedures have been associated with an increased risk of transmission of coronaviruses (SARS-CoV and MERS-CoV), such as tracheal intubation, non-invasive ventilation, tracheotomy, cardiopulmonary resuscitation, manual ventilation before intubation, and bronchoscopy.^{10,11}

Ensure that HCWs performing aerosol-generating procedures:

- perform procedures in an adequately ventilated room – that is, natural ventilation with air flow of at least 160 L/s per patient or in negative pressure rooms with at least 12 air changes per hour and controlled direction of air flow when using mechanical ventilation;⁹
- use a particulate respirator at least as protective as a US National Institute for Occupational Safety and Health (NIOSH)-certified N95, European Union (EU) standard FFP2, or equivalent.^{2,12} When HCWs put on a disposable particulate respirator, they must always perform the seal check.¹² Note that if the wearer has facial hair (i.e., a beard) it may prevent a proper respirator fit;¹²
- use eye protection (i.e., goggles or a face shield);
- wear a clean, non-sterile, long-sleeved gown and gloves. If gowns are not fluid resistant, HCWs should use a waterproof apron for

^a Medical masks are surgical or procedure masks that are flat or pleated (some are like cups); they are affixed to the head with straps²

Infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected: interim guidance

procedures expected to have high volumes of fluid that might penetrate the gown;²

- limit the number of persons present in the room to the absolute minimum required for the patient's care and support.

4. Implementing administrative controls

Administrative controls² and policies for the prevention and control of transmission of 2019-nCoV infections within the healthcare setting include, but may not be limited to: establishing sustainable IPC infrastructures and activities; educating patients' caregivers; developing policies on the early recognition of acute respiratory infection potentially caused by 2019-nCoV; ensuring access to prompt laboratory testing for identification of the etiologic agent; preventing overcrowding, especially in the emergency department; providing dedicated waiting areas for symptomatic patients; appropriately isolating hospitalized patients; ensuring adequate supplies of PPE; ensure the adherence of IPC policies and procedures for all facets of health care.

4.1. Administrative measures related to healthcare workers

- provision of adequate training for HCWs;
- ensuring an adequate patient-to-staff ratio;
- establishing a surveillance process for acute respiratory infections potentially caused by nCoV among HCWs;
- ensuring that HCWs and the public understand the importance of promptly seeking medical care;
- monitoring HCW compliance with standard precautions and providing mechanisms for improvement as needed.

5. Using environmental and engineering controls

These controls address the basic infrastructure of the health care facility.¹³ These controls aim to ensure there is adequate ventilation⁹ in all areas in the healthcare facility, as well as adequate environmental cleaning.

Additionally, spatial separation of at least 1 meter should be maintained between all patients. Both spatial separation and adequate ventilation can help reduce the spread of many pathogens in the healthcare setting.¹⁴

Ensure that cleaning and disinfection procedures are followed consistently and correctly.⁵ Cleaning environmental surfaces with water and detergent and applying commonly used hospital disinfectants (such as sodium hypochlorite) is an effective and sufficient procedure.⁷ Manage laundry, food service utensils and medical waste in accordance with safe routine procedures.

Duration of contact and droplet precautions for patients with nCoV infection

Standard precautions should be applied at all times. Additional contact and droplet precautions should continue until the patient is asymptomatic. More comprehensive information about the mode of 2019-nCoV infection

transmission is required to define the duration of additional precautions.

Collecting and handling laboratory specimens from patients with suspected 2019-nCoV infection

All specimens collected for laboratory investigations should be regarded as potentially infectious. HCWs who collect, handle or transport any clinical specimens should adhere rigorously to the following standard precaution measures and biosafety practices to minimize the possibility of exposure to pathogens.^{15,16,17}

- ensure that HCWs who collect specimens use appropriate PPE (i.e., eye protection, a medical mask, a long-sleeved gown, gloves). If the specimen is collected with an aerosol-generating procedure, personnel should wear a particulate respirator at least as protective as a NIOSH-certified N95, an EU standard FFP2, or the equivalent;
- ensure that all personnel who transport specimens are trained in safe handling practices and spill decontamination procedures;⁷
- place specimens for transport in leak-proof specimen bags (i.e., secondary containers) that have a separate sealable pocket for the specimen (i.e., a plastic biohazard specimen bag), with the patient's label on the specimen container (i.e., the primary container), and a clearly written laboratory request form;
- ensure that laboratories in health care facilities adhere to appropriate biosafety practices and transport requirements, according to the type of organism being handled;
- deliver all specimens by hand whenever possible. DO NOT use pneumatic-tube systems to transport specimens;
- document clearly each patient's full name, date of birth and suspected nCoV of potential concern on the laboratory request form. Notify the laboratory as soon as possible that the specimen is being transported.

Recommendation for outpatient care

The basic principles of IPC and standard precautions should be applied in all health care facilities, including outpatient care and primary care. For 2019-nCoV infection, the following measures should be adopted:

- triage and early recognition;
- emphasis on hand hygiene, respiratory hygiene and medical masks to be used by patients with respiratory symptoms;
- appropriate use of contact and droplet precautions for all suspected cases;
- prioritization of care of symptomatic patients;
- when symptomatic patients are required to wait, ensure they have a separate waiting area;
- educate patients and families about the early recognition of symptoms, basic precautions to be used and which health care facility they should refer to.

Acknowledgements

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- Barry Cookson, Division of Infection and Immunity, University College, London, United Kingdom
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- Kathleen Dunn, Manager, Healthcare Associated Infections and Infection Prevention and Control Section, Centre for Communicable Disease Prevention and Control, Public Health Agency of Canada
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WHO: Benedetta Allegranzi, April Baller, Ana Paula Coutinho, Janet Diaz, Christine Francis, Maria Clara Padoveze, Joao Paulo de Toledo, Maria Van Kerkhove

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WHO continues to monitor the situation closely for any changes that may affect this interim guidance. Should any factors change, WHO will issue a further update. Otherwise, this interim guidance document will expire 2 years after the date of publication.

Annexure-H2: SOPs for nCov Hospital Waste Management

SOP of Waste Management of nCoV at Hospitals

1. Purpose:

- 1.1. To provide a guideline for management of waste against novel Corona virus
- 1.2. To protect the health of employees, visitors and environment from hazards of waste produced at different levels in order to maintain a safe, healthy and productive work environment

2. Scope:

- 1.1. This procedure applies to all concerned hospitals, labs which are dealing with generation of waste against nCoV

3. Responsibilities:

- 3.1. The designated heads of relevant departments are responsible for the compliance of whole process
- 3.2. Arrangement of incineration and maintenance of logbook for incinerated waste is the responsibility of designated Incinerator/shredder operator

4. Procedure:

4.1 Material and Equipment:

- 4.1.1 Waste required to be disposed off
- 4.1.2 Autoclave
- 4.1.3 Incinerator
- 4.1.4 Color colored containers for waste collection
- 4.1.6 Personal protective equipment like gloves, Shoe covers, face masks, face shields, respirators, long Closed-toe foot wear for sanitary workers etc.
- 4.1.7 First Aid Box
- 4.1.8 Spill Kit
- 4.1.9 Waste Disposal bags (Red colored)
- 4.1.10 Sharp disposal box
- 4.1.11 Waste transportation trolleys

4.2. Handling and disposal procedures for contaminated materials and wastes

4.2.1 **Contaminated (infectious) “sharps”** – collect hypodermic needles, scalpels, knives and broken glass; always in puncture-proof containers fitted with covers and treat as infectious

- Do not recap, clip or hypodermic needles after use
- Place complete assembly in a sharps disposal container
- Place the disposable syringes, used alone or with needles, in sharps disposal containers and incinerate them
- Do not fill the sharps container to capacity. When they are three-quarters full, place them in “infectious waste” containers and incinerate
- Do not discard sharps disposal containers in landfills

4.2.2. **Contaminated (potentially infectious) materials for autoclaving and reuse:**

- Do not attempt any pre-cleaning of any contaminated (potentially infectious) materials to be autoclaved and reused
- Always perform any necessary cleaning or repair must after autoclaving or disinfection

4.2.3. **Contaminated (potentially infectious) materials for disposal:**

- Apart from sharps, autoclave all contaminated (potentially infectious) materials in leak-proof containers, e.g. autoclavable, color-coded plastic bags, before disposal
- After autoclaving, place the material in transfer containers for incineration
- If possible, do not discard materials deriving from healthcare activities in landfills even after decontamination

4.2.4. Contaminated material for direct incineration:

- Place the contaminated waste in designated containers (e.g. Red colored bag) and transport directly to the incinerator
- Reusable transfer containers should be leak-proof and have tight-fitting covers
- Disinfect and clean the transfer container before returning them to the laboratory for further use
- Place unbreakable (e.g. plastic) discard containers, pans or jars, at every work station for waste collection
- When disinfectants are used, waste materials should remain in intimate contact with the disinfectant (i.e. not protected by air bubbles) for the appropriate time, according to the disinfectant used

4.2.5 Concentration of Disinfectants:

4.2.5.1 Sodium hypochlorite solutions (bleach)

- Sodium hypochlorite solutions, as domestic bleach, contain 50 g/l available chlorine and should therefore be diluted 1:50 or 1:10 to obtain final concentrations of 1 g/l and 5 g/l, respectively. Industrial solutions of bleach have a sodium hypochlorite concentration of nearly 120 g/l and must be diluted accordingly to obtain the levels indicated above
- Granules or tablets of calcium hypochlorite $\{Ca (ClO)_2\}$ generally contain about 70% available chlorine. Solutions prepared with granules or tablets, containing 1.4 g/l and 7.0 g/l, will then contain 1.0 g/l and 5 g/l available chlorine, respectively.
- Chlorine gas is highly toxic. Therefore, do store and use bleach in well ventilated areas only. Also, do not mix bleach with acids to prevent the rapid release of chlorine gas.

4.2.5.2 Ethanol:

- Ethanol (ethyl alcohol, $C_2 H_5 OH$) and 2-propanol (isopropyl alcohol, $(CH_3)_2 CHOH$) have similar disinfectant properties. They are active against lipid-containing viruses but not against spores. Their action on non-lipid viruses is variable. For highest effectiveness they should be used at concentrations of approximately 70% (v/v) in water: higher or lower concentrations may not be as germicidal.
- A major advantage of aqueous solutions of alcohols is that they do not leave any residue on treated items.
- Mixtures with other agents are more effective than alcohol alone, e.g. 70% (v/v) alcohol with 100 g/l formaldehyde, and alcohol containing 2 g/l available chlorine.
- A 70% (v/v) aqueous solution of ethanol can be used on skin, work surfaces of laboratory benches and biosafety cabinets, and to soak small pieces of surgical instruments.
- Since ethanol can dry the skin, it is often mixed with emollients.

- Alcohol-based hand-rubs are recommended for the decontamination of lightly soiled hands in situations where proper hand-washing is inconvenient or not possible.

4.3 Local environmental decontamination:

- 4.3.1 Decontamination of the laboratory space, its furniture and its equipment requires a combination of liquid and gaseous disinfectants.
- 4.3.2 Decontaminate the surfaces using a solution of sodium hypochlorite (NaOCl); a solution containing 1 g/l available chlorine is suitable for, but stronger solutions (5 g/l) can also be used when dealing with high-risk situations.
- 4.3.3 For environmental decontamination, formulated solutions containing 3% hydrogen peroxide (H₂O₂) make suitable substitutes for bleach solutions.

4.4 Spill clean-up procedure:

- 4.4.1 In the event of a spill of infectious material, use following spill clean-up procedure.
 - Wear gloves and protective clothing, including overall, shoe covers, face and eye protection.
 - Cover the spill with cloth or paper towels to contain it.
 - Pour an appropriate disinfectant over the paper towels and the immediately surrounding area (generally, 5% bleach solutions are appropriate; but for spills on aircraft, quaternary ammonium disinfectants should be used).
 - Apply disinfectant concentrically beginning at the outer margin of the spill area, working toward the center.
 - After the appropriate amount of time (e.g. 30 min), clear away the materials.
 - If there is broken glass or other sharps involved, use a dustpan or a piece of stiff cardboard to collect the material and deposit it into a puncture-resistant container and send for incineration.
 - Clean and disinfect the area of the spillage (can repeat the above mentioned procedure)
 - After cleaning up document it with complete history and inform authorities regarding the decontamination of the area.

4.5 Decontamination of Isolation Ward:

- 4.5.1 Assign expert cleaners for cleaning and disinfection of isolation ward.
- 4.5.2 Provide training in advance regarding the decontamination procedure and monitor the procedure.
- 4.5.3 Following are the directions for room decontamination
 - Meticulously wipe impermeable surfaces such as ceiling and lights with disposable towels or cloths soaked with 0.05% (500 ppm) sodium hypochlorite or a comparable medical environmental disinfectant.
 - Discard permeable surfaces such as textured materials and replace or immerse in 0.05% (500 ppm) sodium hypochlorite solution for 30 min.
 - For environmental surface disinfection, use 3% H₂O₂ vapor or H₂O₂ dry mist on impermeable and permeable surfaces.
 - Upon completion of disinfection, ventilate the room sufficiently ventilated; after at least 2 hours of ventilation at 6 ACH (Air Changes per Hour), Wipe all surfaces with disposable towels soaked with water. After a final check, the room is ready to receive a new patient.

4.6 Handling of Contaminated laundry:

- 4.6.1 Employees treating laundry should wear appropriate PPE

- 4.6.2 Contaminated linen should be put into a laundry bag directly in the isolation room or area with minimal manipulation, to avoid contamination of air, surfaces and people.
- 4.6.3 Conduct regular monitoring of laundering procedures
- 4.6.4 Contaminated textiles and fabrics are placed into bags or other appropriate containment in this location; these bags are then securely tied or otherwise closed to prevent leakage.
- 4.6.5 Use covered cart for transportation of contaminated laundry
 - Maintain the receiving area for contaminated textiles at negative pressure compared to the clean areas of the laundry
 - Bags containing contaminated laundry must be clearly identified with labels, color-coding, or other methods so that health-care workers handle these items safely, regardless of whether the laundry is transported within the facility or destined for transport to an off-site laundry service.
 - Washing and drying linen and laundry should be performed according to routine standards and procedures of the health-care facility. High-temperature laundering should be performed at 70°C for at least 25 min using detergent or disinfectant. Low-temperature laundering (<70°C) should be performed using chemical agents at proper concentrations. If the process of proper collection, transportation, classification, and storage is not possible, laundry items should be discarded in compliance with medical waste treatment procedures.

4.7 Decontamination of ambulance:

4.7.1 Site Set Up:

- Select an appropriate site for ambulance decontamination that protects the vehicle and the decontamination team from weather elements, preferably a well-ventilated large enclosed structure.
- Establish a secure perimeter for safety of the public and decontamination personnel.
- Include considerations for waste management, security plan, public perception, and media visibility when selecting decontamination site.
- Depending on the location, the ability for climate control is beneficial.
- Define and mark hot, warm, and cold zones of contamination¹ around the ambulance that require PPE to enter.

4.7.2 Prior to cleaning:

- The patient care provider (while wearing “dirty PPE”) will remove all equipment, supplies, linen, waste PRIOR to leaving the vehicle and before Biocell/ Visquine liners are removed from inside the ambulance. Equipment will be placed in the hot zone (For ambulance decontamination, the warm zone can also be the place where waste barrels are pre-positioned so that the waste bags can be placed directly into the containers without entering the hot zone).
- All waste, including PPE, drapes, and wipes, should be considered infectious substance, and should be packaged appropriately for disposal.
- The driver or other personnel will be responsible for cleaning and disinfection of the transport unit. One to two people will clean and disinfect; a third in PPE will observe and be available to assist as necessary
- The cleaning teams will don CLEAN PPE per protocol.

- Any areas that are visibly contaminated with the patient's body fluids should be decontaminated first with an approved EPA-registered disinfectant for the appropriate contact time before soaking up the fluid with absorbent materials.
- Place biohazard bag in container close to exit for used cleaning cloths.

4.7.3 Cleaning and decontamination

- Cleaning will be done beginning at an entrance to the ambulance, and moving towards the dirty area. This way, the clean personnel will remain clean as they enter the vehicle and stay in a "clean" area until they exit at the opposite end of the ambulance.
- Mix EPA registered cleaning disinfectant per manufacturers' guidelines. All products will have instructions for cleaning and disinfection. Note the manufacturers' "dwell time" or the amount of time a surface must stay wet AFTER cleaning to achieve disinfection.
- Using disposable cloths begin cleaning all surfaces as the vehicle is entered.
- Remove visible soiling of all surfaces.
- Allow surface to stay wet during dwell time. Reapply cleaner if necessary.
- Change cloths frequently during cleaning process. Place cloths in biohazard bag.
- Manually wipe down the ambulance's exterior patient loading doors and handles, and any areas that may have been contaminated, with disinfectant. The exterior of the ambulance does not require a full disinfectant wipe down.

4.7.4 After ambulance is cleaned, clean re-usable medical equipment.

- Using the above process, clean then disinfect the outside of any prepositioned but unused medical equipment (still inside the protective bags they were placed in).
- If the equipment was removed from a protective bag in transit, assess the equipment to determine if it can be properly cleaned and disinfected, or disposed of.

4.7.5 Once cleaning and disinfection has been completed, collect and package all waste as Category infectious waste.

4.7.6 Dispose of all waste according to organization protocols as well as local and federal regulations for Category "A" infectious substances.

4.7.7 Remove PPE per checklist. A third person who has been in the cold zone (The cold zone is considered an area that has no contamination and no potential risk for exposure. The individuals in this area are not required to wear PPE, although the cold zone will often also serve as the PPE donning area) should supervise doffing, which should be performed according to organization doffing protocols.

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- 5.2. WHO laboratory biosafety manual 3rd Edition. 2004.
- 5.3. Section D2: Biological waste handling, Environmental Health and Safety Guide, Princeton University. USA, 2009
- 5.4. WHO Guidelines on core components of infection prevention and control programmes at the national and acute health care facility level. 2016.
- 5.5. Garner JS. Guideline for isolation precautions in hospitals. The Hospital Infection Control Practices Advisory Committee. Infect Control Hosp Epidemiol. 1996;17:53–80. [[PubMed](#)] [[Google Scholar](#)]
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Annexure-H3: SOPs for Waste Management at Airports

Field Epidemiology & Disease Surveillance Division

(Standard Operating Procedure-SOP)



Document Information

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Document Revision History

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SOP: Waste Management of 2019 nCoV at Airports

- 1. Purpose:**
 - 1.1. To provide a guideline for management of waste of (2019-nCoV) at the airports
- 2. Scope:**
 - 2.1 This procedure applies to all airports which are dealing with generation of waste against potential nCoV
- 3 Responsibilities:**
 - 3.1. The designated managers at airport are responsible for the compliance of whole process
 - 3.2. Arrangement of incineration and maintenance of log book for incinerated waste is the responsibility of designated Incinerator operator
- 4. Procedure:**
 - 4.1 Material and Equipment:**
 - 4.1.1 Waste required to be disposed off
 - 4.1.2 Color (red) colored containers for infectious waste collection
 - 4.1.4 Waste Disposal bags (Red colored)
 - 4.1.6 Sharp disposal box
 - 4.1.7 Personal protective equipment like gloves, Shoe covers, face masks, face shields, long closed-toe foot wear for sanitary workers etc
 - 4.1.8 Spill Kit
 - 4.1.9 First Aid Box
 - 4.1.10 Covered waste transportation trolleys
 - 4.1.11 Incinerator
 - 4.2 Standard & Transmission-Based Precautions**
 - 4.2.1** Employers involved in dealing with suspected traveler, cleaning of airport and waste management practices should follow good infection control practices (including standard precautions) to prevent or minimize transmission of infectious agents (i.e., nCoV). Everything that comes in contact with suspected traveler should be dealt as infectious waste
 - 4.2.2 Standard precautions include**
 - Hand hygiene
 - Use of personal protective equipment (e.g., gloves, masks, eyewear)
 - Respiratory hygiene/cough etiquette
 - Sharps safety (engineering and work practice controls)
 - Safe injection practices (i.e., aseptic technique for parenteral medications)
 - Sterile instruments and devices
 - Clean and disinfected environmental surfaces
 - 4.2.3 Perform hand hygiene before and after any contact with suspected or confirmed nCoV, after any contact with potentially infectious material, and before putting on and upon removal of PPE, including gloves
 - 4.4 Handling and disposal procedures for contaminated materials and wastes**
 - 4.2.1 Contaminated (infectious) “sharps”** – collect hypodermic needles, scalpels and broken glass; always in puncture-proof containers fitted with covers and treat as infectious
 - Do not fill the sharps container to capacity. When they are three-quarters full, place them in “infectious waste” containers and send for incineration
 - Do not discard sharps disposal containers in landfills
 - 4.2.2 Contaminated material for direct incineration:**
 - Place the contaminated waste in designated containers (e.g. Red colored bag) and transport directly to the incinerator in covered trolleys
 - Reusable transfer containers should be leakproof and have tight-fitting covers

- Disinfect and clean the transfer container before returning them to the laboratory for further use
- Contaminated waste includes anything that comes in contact with suspected traveler

4.2.5 Concentration of Disinfectants:

4.2.5.1 Sodium hypochlorite solutions (bleach)

- Sodium hypochlorite solutions, as domestic bleach, contain 50 g/l available chlorine and should therefore be diluted 1:50 or 1:10 to obtain final concentrations of 1 g/l and 5 g/l, respectively.
- A bleach and water solution should be mixed daily to preserve its strength.
- **High level disinfection (approximately 5000 ppm) for use on semi-critical medical and personal service instruments**
Preparing a 1: 10 Household Bleach Solution: • 62 ml (1/4 cup) household bleach + 562 ml (2 1/4 cups) water **OR** • 250 ml (1 cup) household bleach + 2250 ml (9 cups) water
- **Intermediate - High level disinfection (approximately 1000 ppm) for use in washrooms, change tables in childcare, during outbreaks of respiratory diseases or vomiting and diarrhea**
Preparing a 1: 50 Household Bleach Solution: • 20 ml (4 teaspoons) household bleach + 1000 ml (4 cups) water **OR** • 100ml (7 tablespoons) household bleach + 5000 ml (20 cups) water
- **Intermediate level disinfection (approximately 500 ppm) for use on non-critical medical or personal service instruments**
Preparing a 1: 100 Household Bleach Solution: • 5 ml (1 teaspoon) household bleach + 500 ml (2 cups) water • 62 ml (1/4 cup) household bleach + 6138 ml (24 3/4 cups) water

4.2.5.2 Ethanol/Isopropyl Alcohol:

- Ethanol (ethyl alcohol, C₂H₅OH) and 2-propanol (isopropyl alcohol, (CH₃)₂CHOH) have similar disinfectant properties. They are active against lipid-containing viruses but not against spores. For highest effectiveness they should be used at concentrations of approximately 70% (v/v) in water.

4.4 Mopping:

- 4.4.1 1 cup of bleach to every 5 gallons of water, or 1/2 cup to every 2-1/2 gallons of water. Pour the bleach into a large bucket and add the desired amount of water afterward. Apply the bleach and water mixture to the floor with a cloth or mop.

4.5 Decontamination of goggles & face shields:

- 4.5.1 Spray with 70% ethanol or isopropyl alcohol and leave for 5-15 minutes

- 4.5.2 when in contact with suspected patient dip in 0.5% bleach for 5 minutes

4.6 Spill clean-up procedure:

- 4.6.1 In the event of a spill of infectious material, use following spill clean-up procedure.

- Wear gloves and protective clothing, including overall, shoe covers, face and eye protection.
- Cover the spill with cloth or paper towels to contain it.
- Pour an appropriate disinfectant over the paper towels and the immediately surrounding area (generally, 5% bleach solutions are appropriate; but for spills on aircraft, quaternary ammonium disinfectants should be used).
- Apply disinfectant concentrically beginning at the outer margin of the spill area, working toward the centre.



- After the appropriate amount of time (e.g. 30 min), clear away the materials.
- If there is broken glass or other sharps involved, use a dustpan or a piece of stiff cardboard to collect the material and deposit it into a puncture-resistant container and send for incineration.
- Clean and disinfect the area of the spillage (can repeat the above mentioned procedure)
- After cleaning up document it with complete history and inform authorities regarding the decontamination of the area.

5. Reference:

- 5.1. WHO laboratory biosafety manual 3rd Edition. 2004.
- 5.2. Appendix A for the Guideline for Isolation **Precautions**: Preventing Transmission of Infectious Agents in Healthcare Settings (2007)
- 5.3. Waste Management at Airports ECO AIRPORT TOOLKIT - ICAO
- 5.4. WHO Guide to hygiene and sanitation in aviation. Module 2 Cleaning and disinfection of facilities.2009



Bleach Solution Concentrations

For Surfaces (Semi-critical):

62 ml (1/4 cup) household bleach + 562 ml (2 1/4 cups) water

For Surfaces (non-critical):

05 ml (1 teaspoon) household bleach + 500 ml (2 cups) water

For Mopping Floors:

1 cup (250 ml) of bleach to every 5 gallons of water

For Washrooms & Spills (Vomiting, Diarrhea etc)

20 ml (4 teaspoons) household bleach + 1000 ml (4 cups) water

For decontamination of goggles or face shields

1 ml (1/4 teaspoon) household bleach to 500ml (2 cups) water

Annexure-H4: SOPs for disinfection and environmental decontamination

Field Epidemiology & Disease Surveillance Division

(Standard Operational Procedure-SOP)



Document Information

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Document Revision History

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- 1. Purpose:**
 - 1.1. To provide guidelines for environmental cleaning and disinfection against COVID-19
 - 1.2. To protect the health of employees, patients and visitors in order to maintain a safe, clean and hygienic environment
- 2. Scope:**
 - 1.1. This procedure applies to all concerned healthcare facilities that are dealing with suspected or confirmed cases of COVID-19
- 3. Responsibilities:**
 - 3.1. In charge personnel are responsible for the compliance of whole process
 - 3.2. Administration of concerned healthcare facilities is responsible for procurement of appropriate supplies
- 4. Procedure:**
 - 4.1 Material and Equipment:**
 - 4.1.1 Two/three bucket system
 - 4.1.2 Mops (heads should be made of cotton or microfiber)
 - 4.1.3 Cleaning cloths (cotton or microfiber)
 - 4.1.4 Disinfecting agent i.e. sodium hypochlorite
 - 4.1.5 Personal protective equipment like gloves, gown, face masks and protective foot wear
 - 4.1.6 Spill Kit
 - 4.1.7 Regular household soap or detergent
 - 4.1.8 Hand Hygiene stations
 - 4.1.9 Alcohol based hand rub
 - 4.1.10 Squeeze bottles
 - 4.1.11 Cleaning cart/trolley
 - 4.1.12 Disinfectant: quaternary ammonium compounds, alcohol(ethyl or isopropyl) or chlorine releasing agents for eg. Bleach, improved hydrogen peroxide
 - 4.1.13 Neutral detergent

 - 4.2 Concentration of Disinfectants:**
 - 4.2.1 Sodium hypochlorite solutions (Bleach)
 - Sodium hypochlorite solutions, as domestic bleach, contain 50 g/l (5%) available chlorine and should therefore be diluted 1:50 or 1:10 to obtain final concentrations of 1 g/l and 5 g/l, respectively. Industrial solutions of bleach have a sodium hypochlorite concentration of nearly 120 g/l and must be diluted accordingly to obtain the levels indicated above
 - Frequently touched surfaces should be cleaned with regular household disinfectant containing household disinfectant containing a diluted bleach solution (1 part bleach to 9 parts water)
 - Granules or tablets of calcium hypochlorite {Ca (ClO)₂} generally contain about 70% available chlorine. Solutions prepared with granules or tablets, containing 1.4 g/l and 7.0 g/l, will then contain 1.0 g/l and 5 g/l available chlorine, respectively.
 - Chlorine gas is highly toxic. Therefore, do store and use bleach in well ventilated areas only. Also, do not mix bleach with acids to prevent the rapid release of chlorine gas.
 - 4.2.2 Ethanol:
 - Ethanol (ethyl alcohol, C₂ H₅ OH) and 2-propanol (isopropyl alcohol, (CH₃)₂ CHOH) have similar disinfectant properties. They are active against lipid-containing viruses but not against spores. Their action on non-lipid viruses is variable. For highest effectiveness they should be used at concentrations of approximately 70% (v/v) in water: higher or lower concentrations may not be as germicidal.
 - A major advantage of aqueous solutions of alcohols is that they do not leave any residue on treated items.

- Mixtures with other agents are more effective than alcohol alone, e.g. 70% (v/v) alcohol with 100 g/l formaldehyde, and alcohol containing 2 g/l available chlorine.
- A 70% (v/v) aqueous solution of ethanol can be used on skin, work surfaces of laboratory benches and biosafety cabinets, and to soak small pieces of surgical instruments.
- Since ethanol can dry the skin, it is often mixed with emollients.
- Alcohol-based hand-rubs are recommended for the decontamination of lightly soiled hands in situations where proper hand-washing is inconvenient or not possible.

4.3 Local environmental decontamination:

4.3.1 How to clean the floor:

- Two-bucket system (routine cleaning): one bucket contains a detergent or cleaning solution and the other contains rinse water
- Three-bucket system (for disinfection): one bucket contains the detergent or cleaning solution, one contains rinse water and one the disinfectant or disinfectant solution
- Heavily contaminated surfaces and items require more frequent and thorough environmental cleaning than moderately contaminated surfaces
- High touch surfaces also require frequent cleaning
- Conduct visual preliminary site assessment to see if supplies are adequate, any issues need to be addressed or if something needs to be replaced
- Proceed from clean to dirty: Clean low touch surfaces before cleaning high touch surface to ensure appropriate disinfection
- Proceed from high to low: Clean environmental surfaces before cleaning floors
- Proceed in a methodical/ Systemic manner
- Attend immediately to body spills

4.3.2 Decontamination of Surfaces and Equipment:

- Clean and disinfect daily surfaces that are frequently touched where the patient is being cared.
- Regular household soap or detergent should be used first for cleaning, and then, after rinsing, regular household disinfectant containing 0.5% sodium hypochlorite (i.e., equivalent to 5000 ppm or 1 part bleach to 9 parts water) should be applied.
- Assign expert cleaners for cleaning and disinfection.
- Provide training in advance regarding the decontamination procedure and monitor the procedure.
- PPE must be worn prior to cleaning in appropriate manner
- Clean surfaces that are to be disinfected with detergent and water
- Use squeeze bottles to pour disinfectant on surfaces that are to be disinfected
- Allow appropriate contact time
- Meticulously wipe impermeable surfaces with disposable towels or cloths soaked with
- Clean the patient's clothes, bed linen, and bath and hand towels using regular laundry soap and water or machine wash at 60–90 °C with common household detergent, and dry thoroughly. Place contaminated linen into a laundry bag. Do not shake soiled laundry and avoid contaminated materials coming into contact with skin and clothes.
- Discard permeable surfaces such as textured materials and replace or immerse in 0.05% (500 ppm) sodium hypochlorite solution for 30 min.
- Allow area to get ventilated and wipe all surfaces again with towels soaked in water
- After use, utility gloves should be cleaned with soap and water and decontaminated with 0.5% sodium hypochlorite solution. Single-use gloves (e.g., nitrile or latex) should be discarded after each use. Perform hand hygiene before and after removing gloves.

4.4 Spill clean-up procedure:

4.4.1 In the event of a spill of infectious material, use following spill clean-up procedure.

- Leave area and demarcate it
- Wear gloves and protective clothing, including overall, shoe covers, face and eye protection.
- Cover the spill with cloth or paper towels to contain it.

- Clean using neutral detergent and water
- Pour an appropriate disinfectant over the paper towels and the immediately surrounding area (generally, 5% bleach solutions are appropriate; but for spills on aircraft, quaternary ammonium disinfectants should be used).
- Apply disinfectant concentrically beginning at the outer margin of the spill area, working toward the center.
- After the appropriate amount of time (e.g. 30 min), clear away the materials.
- If there is broken glass or other sharps involved, use a dustpan or a piece of stiff cardboard to collect the material and deposit it into a puncture-resistant container and send for incineration.
- Clean and disinfect the area of the spillage (can repeat the above mentioned procedure)
- After cleaning up document it with complete history and inform authorities regarding the decontamination of the area.

4.5 Decontamination of ambulance:

4.5.1 Site Set Up:

- Select an appropriate site for ambulance decontamination that protects the vehicle and the decontamination team from weather elements, preferably a well-ventilated large enclosed structure.
- Establish a secure perimeter for safety of the public and decontamination personnel.
- Include considerations for waste management, security plan, public perception, and media visibility when selecting decontamination site.
- Depending on the location, the ability for climate control is beneficial.
- Define and mark hot, warm, and cold zones of contamination¹ around the ambulance that require PPE to enter.

4.5.2 Prior to cleaning:

- The patient care provider (while wearing “dirty PPE”) will remove all equipment, supplies, linen, waste PRIOR to leaving the vehicle and before Biocell/ Visquine liners are removed from inside the ambulance. Equipment will be placed in the hot zone (For ambulance decontamination, the warm zone can also be the place where waste barrels are pre-positioned so that the waste bags can be placed directly into the containers without entering the hot zone).
- All waste, including PPE, drapes, and wipes, should be considered infectious substance, and should be packaged appropriately for disposal.
- The driver or other personnel will be responsible for cleaning and disinfection of the transport unit. One to two people will clean and disinfect; a third in PPE will observe and be available to assist as necessary
- The cleaning teams will don CLEAN PPE per protocol.
- Any areas that are visibly contaminated with the patient’s body fluids should be decontaminated first with an approved EPA-registered disinfectant for the appropriate contact time before soaking up the fluid with absorbent materials.
- Place biohazard bag in container close to exit for used cleaning cloths.

4.5.3 Cleaning and decontamination

- Cleaning will be done beginning at an entrance to the ambulance, and moving towards the dirty area. This way, the clean personnel will remain clean as they enter the vehicle and stay in a “clean” area until they exit at the opposite end of the ambulance.
- Mix EPA registered cleaning disinfectant per manufacturers’ guidelines. All products will have instructions for cleaning and disinfection. Note the manufacturers’ “dwell time” or the amount of time a surface must stay wet AFTER cleaning to achieve disinfection.
- Using disposable cloths begin cleaning all surfaces as the vehicle is entered.
- Remove visible soiling of all surfaces.
- Allow surface to stay wet during dwell time. Reapply cleaner if necessary.
- Change cloths frequently during cleaning process. Place cloths in biohazard bag.

- Manually wipe down the ambulance's exterior patient loading doors and handles, and any areas that may have been contaminated, with disinfectant. The exterior of the ambulance does not require a full disinfectant wipe down.
- Clean the patient's clothes, bed linen, and bath and hand towels using regular laundry soap and water or machine wash at 60–90 °C with common household detergent, and dry thoroughly. Place contaminated linen into a laundry bag. Do not shake soiled laundry and avoid contaminated materials coming into contact with skin and clothes.

4.5.4 After ambulance is cleaned, clean re-usable medical equipment.

- Using the above process, clean then disinfect the outside of any prepositioned but unused medical equipment (still inside the protective bags they were placed in).
- If the equipment was removed from a protective bag in transit, assess the equipment to determine if it can be properly cleaned and disinfected, or disposed of.

4.5.5 Once cleaning and disinfection has been completed, collect and package all waste as Category infectious waste.

4.5.6 Dispose of all waste according to organization protocols as well as local and federal regulations for Category "A" infectious substances.

4.5.7 Remove PPE per checklist. A third person who has been in the cold zone (The cold zone is considered an area that has no contamination and no potential risk for exposure. The individuals in this area are not required to wear PPE, although the cold zone will often also serve as the PPE donning area) should supervise doffing, which should be performed according to organization doffing protocols.

5. Reference:

- 5.1. Medical waste management: ICRC, 2011.
- 5.2. WHO laboratory biosafety manual 3rd Edition. 2004.
- 5.3. Section D2: Biological waste handling, Environmental Health and Safety Guide, Princeton University. USA, 2009
- 5.4. WHO Guidelines on core components of infection prevention and control programmes at the national and acute health care facility level. 2016.
- 5.5. Garner JS. Guideline for isolation precautions in hospitals. The Hospital Infection Control Practices Advisory Committee. *Infect Control Hosp Epidemiol.* 1996;17:53–80. [[PubMed](#)] [[Google Scholar](#)]
- 5.6. Siegel JD, Rhinehart E, Jackson M, Chiarello L. 2007 guideline for isolation precautions: preventing transmission of infectious agents in health care settings. *Am J Infect Control.* 2007;35(10 Suppl 2):S65–S164. [[PubMed](#)] [[Google Scholar](#)]
- 5.7. Isakov, A., Jamison, A., Miles, W., & Ribner, B. Safe management of patients with serious communicable diseases: recent experience with Ebola virus. *Annals of internal medicine.* 161(11): 829-830.
- 5.8. WHO Home care for patients with suspected novel coronavirus (COVID-19) infection presenting with mild symptoms, and management of their contacts. Interim Guidance. 4th February 2020
- 5.9. CDC Best Practices for environmental cleaning in health care facilities in Resource Limited Settings November 2019

6. Records:

- 6.1. Data Sheet for Environmental Cleaning



Ward/Sec/Unit: _____ Date: _____

	Mon	Tues	Wed	Thu	Fri	Sat	Sun
Name of cleaner							
Cleaning agent used							
Frequency of cleaning							

Data Verified By: _____ O/I: _____

Annexure-I: Burial Guidelines for COVID-19

Field Epidemiology & Disease Surveillance Division
(Standard Operational Procedure-SOP)



Document Information

Category	Information
Document Title	SOP for Safe and Dignified Burial of COVID-19 Victim
Version	00
Document ID No	NIH- FE&DSD-SOP-26
Author(s)	Dr. Ambreen
Reviewer(s)	Dr. Mumtaz Ali Khan, Dr. Tayyab Razi, Majid Ali Tahir
Approver(s)	Dr. Jamil Ansari (Chief FE&DSD)
Authorized by	
Creation Date	11-03-2020
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Distribution: Issuance / Withdrawal	1. HOD 2. QMR (soft copy)
Disclaimer	This document contains confidential information. Do not distribute this document without prior approval from competent authorities of NIH

Document Revision History

Author(s)	Date	Version	Description

These guidelines have been issued by National Institute of Health-Pakistan to provide comprehensive information on the safe management of burial of the COVID-19 victims.

Intended users of these guide lines are; medical personnel and paramedics involved in handling the deceased (post mortem etc.) and anyone involved in the management of confirmed cases of COVID-19.

Prior to procedure:

Only trained personnel should handle the remains of confirmed case and handling should be kept minimum. Cultural, religious and family concerns should be taken into account before starting procedure. An informed written consent/agreement should be made between health personnel and family. Due respect should be shown to relatives of the deceased in terms of their religious and personal rights.

Steps-1: Team Composition and preparation:

PPE (as per requirement of team member's role): Every member of team should be clear of his/her duties (Sprayer, technical supervisor, communicator and religious representative and a family member if situation demands). Disinfectant solution (0.05% chlorine for hand hygiene and 0.5% chlorine solution for disinfection of objects and surfaces)

Step-2: Assembling necessary equipment:

- Body bag, should be able to hold up to 125 KG, with handles to allow safe hand carry. For hand hygiene, arrange 60% minimum alcohol-based hand rub solution, clean running water with soap and paper towel, if not available chlorine (0.05%) can be considered (use of bleach is also recommended).
- PPE includes, well fitted pair of disposable gloves, disposable overall, plastic apron, and facemask.
- Waste management tools include, one hand sprayer with 0.05% chlorine. And two leak proof waste bags (one for disposable material meant for destruction and one for reusable material meant for disinfection)

Note: Burial Team to refer to separate guideline for the dignified burial of specific religious practices

Step-3: Arrival, preparation for burial with family and risk evaluation:

- Team leader or technical supervisor shall brief the team and everyone must be clear of their role and responsibility. Team communicator should reach out for formal agreement of family. Dignified burial should be observed in any case and family members should be allowed to witness and make pictures of the proceedings. Identify the family member who will be participating in touching, bathing and burial. White shroud (cloth) can be used. Female members should be involved in female deceased burial.
- For risk evaluation, identify room in the house where deceased patient is. Evaluate the size and weight of the deceased. Identify the area of house used by the patient and family members/ people exposed to him/her. Ensure family members wearing gloves and PPE while handling body.
- Place body in bag and coffin and at the end of this step coffin is decontaminated and ready to be transported. Remains of patients should be put in a separate bag and buried as well.

Step-4: Sanitize Family Environment:

- Collect soiled objects, disinfect if needed or burn if objects are visibly soiled with urine, stool, vomit, nasal secretion etc.
- Clean the area with clean water than disinfect the environment i.e. rooms and house with suitable disinfectant (chlorine 0.5% solution)
- Collect soiled objects and pack in bag for burial or disinfection
- All places in the home are checked for disinfection before removing PPE

Step-5: Remove PPE, manage waste and perform Hand Hygiene:

- Remove boots after disinfecting them. Remove apron and gloves from inside out. Remove mask and goggles from behind. Remove inner gloves and wash hands using water and soap.
- Recover the PPE in an appropriate waste bag. Bag will be closed, disinfected and brought back hospital for burning.
- Recover all reusable objects and instruments, disinfect and kept in an appropriate bag to bring back to hospital.
- Perform hand hygiene.

Step-6: Wear glove sand transport coffin to cemetery:

- For transportation of coffin, wear household gloves and make sure it is not soiled.
- Family members will also wear gloves who are involved in burial procedure and their frequent hand washing should be ensured.
- Decontaminate handle the coffin delicately.
- Respect time for prayers and grieving

Step-7: Burial and prayers at cemetery:

- Depending the customs in place, respect rituals and allow notified family member to place body/coffin in grave
- Family member should be allowed to close the grave and offer prayers as it dissipates tension.
- Place gloves in an appropriate bag for disinfection
- All the team members and designated family members to wash hands with appropriate disinfectant
- Burial team to offer condolence and thank the family before leaving.

Step-8: Return to Hospital/ team office:

- All reusable objects are again disinfected and dried
- All disposable objects must be sent for incineration
- Vehicle used should be cleaned and disinfected
- At the end of the day, all members should wash hands
- Any samples meant to test should be sent to laboratory

DO's of Safe Burial:

- Keep family informed and engaged
- Always greet the family after reaching and offer condolence before starting procedure
- Keep religious representative along to avoid conflict



Note: *Thank the family member for their consent and cooperation/contribution*

-
- Avoid too much manipulation of the body
- Remains should be sprayed, washed or embalmed

Don'ts of Safe Burial:

- Do not arrive at deceased patient house with PPE on
- Do not enter deceased patient areas without PPE on
- Do not start procedure without family consent

Checklist:

It may be worthwhile to use a checklist, to ensure all steps are follow during the entire process from arrival at house until the end of funeral. Any problem detected during the process should be reported immediately

Reference: WHO interim guidelines, Oct. 2017



Annexure-J: Risk Communication & Community Engagement (RCCE)

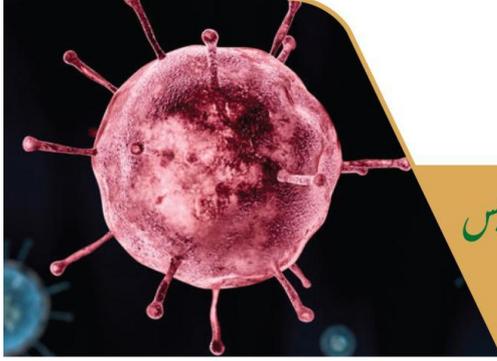
COVID-19: Risk Communication & Community Engagement

Audience	Objective	Current activities	Proposed activities	Timeline	Responsibility/Support	Requirement
Public	<ul style="list-style-type: none"> To educate on COVID-19 and its prevention To address misconceptions To build trust in GoP's preparedness & response to COVID-19 	<ul style="list-style-type: none"> 3 PSMs on TV/Radio/SM 3 flyers printed/distributed SM posts SMI video Helpline 1166 	<ul style="list-style-type: none"> 2 more PSM in pipeline Radio PSM Facebook Print Ads? 2 more SMI videos Resp model: 1166 c/w DSRU 	March, 2020	NHSRC/R&B/I&B/Unicef	Airing: PKR 600 m \$ 4.0 m
Influential						
Parliamentarians	To sensitize public representatives on COVID-19 for onward public education in their constituency	Organic discussions in both houses	4 Seminars/roundtables with Senators/MNAs (all parties)	March	NHSRC/WHO	4/75 participants PKR 1.5 m \$ 10,000.0
Contemporary media	To sensitize media owners and anchors on COVID-19 reporting	<ul style="list-style-type: none"> SAPM/spokespersons participate in talk shows Media briefings Daily Handouts 	<ul style="list-style-type: none"> 2 seminars/roundtables with anchors and columnists Monitor talk shows and columns for content analysis 	March-April	NHSRC/MOIB/WHO/Unicef	2/25 PKR 0.5 m Media monitoring:
Religious leaders	To sensitize on COVID-19 for onward promotion of preventive personal hygiene	High level engagement with M/o RA	<ul style="list-style-type: none"> Seminar/ IIC 4 seminars RSPs Religious leaders talk in Friday sermons 	March-April	NHSRC/EOC	4/75 participants PKR 1.5 m \$ 10,000.0
Audience	Objective	Current activities	Proposed activities	Timeline	Responsibility/Support	Requirement*
Health sector						

Professional orgs e.g., PMA, PPA	Inform them about preparedness and what they can do at their respective level	Indirect through mass media	<ul style="list-style-type: none"> Seminars (4) with PMA, PPA, PIMA, and association of family physicians Participants display COVID-19 info at their clinics, respond to FAQs, and serve as COVID champions 	March-April	NHSRC/NIH/Indus Hospital/WHO/Unicef	4/75 participants PKR 1.5 m \$ 10,000.0 IEC: PKR 1.0 m
Health facilities/ Professionals	Educate about COVID-19 preparedness and Risk Communication	<ul style="list-style-type: none"> Risk Communication training @ designated hospitals? 	<ul style="list-style-type: none"> RC trainings Participants follow RC principles while dealing with patients & family 	March-April	NHSRC/WHO	??
LHWs	To enable FLWs on conducting face-to-face RCCE in their community	Indirect through mass media	<ul style="list-style-type: none"> LHW trained through cascade model/Tech-based model? Carry out HH visits for COVID-19 risk communication 	March-onwards	NHSRC/PHD/Unicef	??
Education sector						
Schools	Educate children/families about basic hygiene	Indirect through media	<ul style="list-style-type: none"> NHSRC's letter issued by schools Focal person at each school IEC distribution 	March-onwards	NHSRC/Dep of Edu/Unicef	PKR 1.5 m \$ 10,000.0
Universities	Educate students/families about COVID and preventive measures	Indirect through media	<ul style="list-style-type: none"> Focal person at each institution IEC distribution 	March-onwards	NHSRC/HEC/HSA	PKR 1.5 m \$ 10,000.0

*4 STTA and 1 media production agency

Annexure-K: IEC Materials



Government of Pakistan
Ministry of National Health Services,
Regulations & Coordination

بیرون ملک باخصوص چین اور ایران سے واپس آنے والے مسافروں کے لئے ہدایات

آپ کو صحت کا جو فارم (ہیلتھ فارم) دیا جائے، اسے لازمی پر کریں اور داخلی راستے پر تعینات صحت کے عملے کے حوالے کریں۔ اس ہدایت کی خلاف ورزی پر آپ کو ملک میں داخلے سے روکا جاسکتا ہے۔
چین اور ایران میں سفر کے چودہ دن کے اندر بخار، کھانسی، سانس میں تکلیف یا جسم میں شدید درد کی شکایات ظاہر ہوں تو:

ہیلپ لائن 1166 پر رہنمائی کے لئے رابطہ کریں	
کرونا وائرس کے علاج کے لئے مخصوص کئے گئے بڑے ہسپتال میں کرونا سیکشن سے رجوع کریں۔	
ڈاکٹر کو اپنے چین اور ایران کے سفر اور بیماری کی علامات کے بارے میں ضرور بتائیں۔	
ہدایات کے مطابق ہسپتال میں ہی رہیں اور دوسرے لوگوں سے میل جول بند رکھیں۔	
اپنے منہ اور ناک کو ماسک سے ڈھانپ کر رکھیں۔	
کھانسنے اور چھینکنے ہوئے منہ کو ٹشو یا آستین سے ڈھانپیں (ہاتھوں سے نہیں)۔	
ہاتھوں کو صابن سے اکثر بیس سیکنڈ تک دھوئیں۔ صابن یا پانی نہ ہونے کی صورت میں ہینڈ سینٹائیزر کا استعمال کریں۔	

مزید معلومات کے لئے:



World Health
Organization



1166 پر رابطہ کریں

corona.info@nhsr.gov.pk

www.nhsr.gov.pk



ہیلپ لائن



ای میل



ویب سائٹ

صحت مند پاکستان

Government of Pakistan
Ministry of National Health Services,
Regulations & Coordination

نوول کورونا وائرس
(COVID-2019)

ماسک
کا استعمال

ماسک صرف مندرجہ ذیل لوگوں کو پہننا چاہئے

جو کرونا وائرس انفیکشن کا شکار ہوں	
جو کرونا وائرس میں مبتلا مریضوں کی دیکھ بھال کرتے ہیں (مثلاً ہسپتال ورکرز)	
جو عام نوعیت کے نزلہ زکام اور فلو کا شکار ہوں	

ایک سپیشل ماسک ہے اور صرف ان لوگوں کو استعمال کرنا چاہیے
جو کرونا وائرس کے مریضوں کی دیکھ بھال کرتے ہیں۔

N95
ماسک



مزید معلومات کے لئے:



1166 پر رابطہ کریں

ہیلپ لائن

corona.info@nhsr.gov.pk

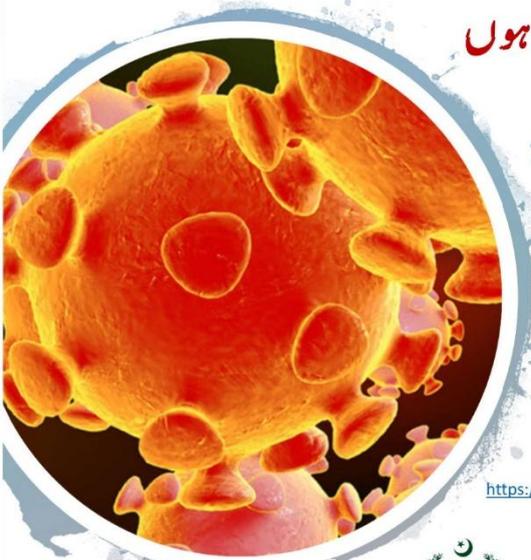
ای میل

www.nhsr.gov.pk

ویب

صحت مند پاکستان

نوول کورونا وائرس سے متعلق افواہوں سے پریشان نہ ہوں



پاکستان میں تاحال (30 جنوری 2020) کو کوئی کنفرم مریض نہیں آیا۔ لہذا
نور ونا وائرس سے متعلق پھیلی افواہوں پر یقین نہ کریں۔

اگر آپ پچھلے 14 دن کے اندر چین کے شہر ووبان سے واپس آئے ہیں اور آپ کو کھانسی، بخار
اور سانس لینے میں شدید دشواری ہے، تو ہی ڈاکٹر سے رابطہ کریں۔

اور اگر آپ پچھلے 14 دن سے پاکستان میں ہیں تو فی الحال آپ کو کو رو نا وائرس سے کوئی خطرہ
نہیں ہے۔

مزید معلومات کے لئے ہماری ویب سائٹ وزٹ کریں <https://www.nih.org.pk/novel-coronavirus-2019-ncov/>



فیئلڈ ایسیڈیٹا لوجی اینڈ ڈیزیز سرویلینس ڈویژن
قومی ادارہ صحت، حکومت پاکستان





Annexure-L: Daily situation report



Ministry of National Health Services, Regulations and Coordination
Field Epidemiology and Disease Surveillance Division (FEDSD), National Institute of Health (NIH), Islamabad
(Phone: 051- 9255237, Fax: 051-9255099 Email: fedsd@nih.org.pk)



Daily Situation Report –NIH, Pakistan											
COVID-19											
March 08, 2020											
Data of Suspected and Confirmed Cases										Travelers Screened at PoE in last 24 hours	
Province/ Region	Suspected cases at hospitals		Lab Samples Received*				Hospital Update			Cumulative travelers Screened till date	
	New	Cumulative	Previous total	Tests performed in last 24 hours	Cumulative tests performed	Cumulative Test positive	Still admitted	Discharged	Expired	Suspected at PoE till date	
ICT											
Punjab											
Sindh											
KP											
KPTD											
Balochistan											
AJK											
GB											
Total											
*Data updated from NIH Live Dashboard (link at the bottom)										Call Records (n)	China /Other
**Two cases admitted at PIMS, Islamabad, travel history from Iran and belong to GB.										First-time calls in past 24 hrs	
										Cumulative no of first-time calls	
										Follow-up calls in past 24 hrs	
										Cumulative follow-up calls	
										Advised Self-Quarantine	
Updates: Global						Pakistan:					
<ul style="list-style-type: none"> Total cases: Total Deaths: Total affected countries: 89 including 1 new: Cameroon Most affected countries remained: Mainland China, Iran, Italy and South Korea 						<ul style="list-style-type: none"> Total number of confirmed cases is Total number of messages sent to passengers who travelled from Iran within last 14 days: *** Follow-up calls to contacts of cases: follow-up calls to passengers arriving within past 14 days: 					
NEOC Helpline 1166 Summary											
New Calls (received and completed)											
Cumulative Calls till date (received and completed)											
Provinces Preparedness and response:											
<ul style="list-style-type: none"> 411 travellers arrived from Iran at Taftan border and 312 quarantined in last 24 hours. District RRTs have screened 82 pilgrims returning from Iran and 111 students returning from China in AJK. 18 hospitals have been notified with 130 isolation rooms in GB for management of suspected cases of COVID-19. 											
NIH Preparedness and Response:											
<ul style="list-style-type: none"> Airport Simulation team has completed training activity at Sialkot airport. NIH teams are conducting a round of trainings and simulation exercises at all border crossings and international airports of Baluchistan. 											
Risk Assessment:											
Current impact of the disease in Pakistan is: MODERATE.											
<i>This is based on information available and remains under review as more data emerges.</i>											
Risk Communication:											
<ol style="list-style-type: none"> Clean your hands regularly with an alcohol-based hand rub, or wash them with soap Clean surfaces regularly with recommended disinfectants (70% Ethyl Alcohol) Avoid touching your eyes, nose and mouth with contaminated hands Practice respiratory hygiene by coughing or sneezing into a bent elbow or tissue and then immediately dispose off Wear a medical/surgical mask if you have respiratory symptoms and perform hand hygiene after disposing off of the mask Maintain a minimum of 1m distance from individuals with respiratory symptoms. Additional precautions are required by healthcare workers: selecting & using proper PPE appropriately; Administrative controls include ensuring the availability of resources for infection prevention and control measures, such as appropriate infrastructure, the development of clear infection prevention and control policies, facilitated access to laboratory testing, appropriate triage and placement of patients, adequate staff-to-patient ratios and training of staff. Environmental and engineering controls aim at reducing the spread of pathogens and reducing the contamination of surfaces and inanimate objects; include providing adequate space to allow social distance of at least 1 m to be maintained between patients and between patients and healthcare workers and ensuring the availability of well-ventilated isolation rooms for patients. 											

All relevant guidelines, SOPs and dashboard information are available at NIH website: <https://www.nih.org.pk>
For emergency Contact/information: 1166



Annexure-M: Advisory on Mitigation Strategies Covid-19



Advisory on Mitigation Strategies Covid-19

GOVERNMENT OF PAKISTAN

11 March 2020

F. No 4-107/2020 DDP - 1.
Ministry of National Health Services, Regulation and Coordination
3rd Floor, Kohsar Block, Pak- Secretariat



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Executive Summary

As the number of covid-19 cases triple during the last 48 hours¹, the need for mitigation in consequence to containment occupies the center stage. The risk of secondary transmission multiples and the exposure of indigenous populations shall become the main cause of concern in the battle against covid-19 for Pakistan. Meanwhile as the disease has limited itself to importations and geographical zone, time has come to assess the needs for mitigation and its implementation mechanism. Uniform strategic implementations across Pakistan is warranted via national and international guidelines for mitigation.

The early phase of case detection followed by more than 70% tracking and tracing of contacts will give good confidence of not missing any circulation and henceforth early detection of what was supposed to be a major outbreak. Similarly community being the major stake holder in the outbreak would require efficient risk communication targeting both the health and social perspective of the disease. The stigma of being a carrier of a notorious outbreak to self-quarantine and social distancing will play a pivotal role for denying the virus of successive hosts. The places for decontamination will not be limited to health sectors yet the identification of places for decontamination will depend on the understanding the retrospect of suspected and confirmed cases.

Knowing the weaknesses in the health system of the country, it is of utmost importance to imply science in operational modalities. Till this day² the mild cases covers 80% of the total disease burden, giving enough confidence for management customization of cases with covid-19. The document does describe in depth the difference between quarantine and isolation with further explanation on both in effects to the occurrence, intensity, contact and exposure of the individuals. Decontamination as a common base to all the facilities shall ensure a challenge to the spread of the disease. The inclination of avoiding hospitalization for mild cases to the capacity building (Both in logistics and HR) for severe cases remains the forte of mitigation strategy. However the home quarantine/isolation with proper decontamination techniques and self-protection would remain issues of concern for the public perception and social understandings.

Finally cases with critical needs and hospitalization would require prioritization as per SOPs due availability of resources in bigger outbreaks. The management routine for all the patients under hospitalization should follow the same routine and handling of such needs to be done by trained human resource with decontamination protocols in place.

¹ 10th and 11th March 2020

² 11th March 2020

COVID-19 Mitigation strategies - Advisory

The Government of Pakistan has been actively taking measures for the prevention and the containment of the COVID-19, since the start of the outbreak. Pakistan isolated its first Corona case on 26th February, and we have reached a total of 19 cases as of now³ (4 in Gilgit Baltistan and 15 in Karachi- Sindh). All of the cases have a travel history suggesting transmission elsewhere being imported in the country.

However, in the last 48 hours, 12 new cases have been reported. There is no evidence of secondary transmission as of now, but with an increment in imported cases, the exposure to indigenous population and the track of contacts expands. Therefore, the risk of secondary infections cannot be ruled out in the coming days.

Keeping in view the current scenario, it is crucial to not only continue *containment* but also to actively prepare for *mitigation* and immediately share advisory on mitigation measures to all the concerned audience.

Mitigation measures:

1. Early case detection and Tracing and tracking of contacts:

- For all mild and otherwise cases, contact tracing is critical.
- All the available methods should be used to trace contacts.
- For mild and moderate symptoms in contacts, guide people to go for home quarantine. (Refer to the Home quarantine for the details). Regular follow up of these cases is critical. The decision is also to be made after review of the house and possibility of home isolation in the room.
- Suspect (and positive cases) not requiring clear medical reasons for admission should not be admitted in Hospitalization avoid unnecessary spread of infection to other people and hospital staff. This will prevent increased number of acquired hospital infections and unnecessary deaths from other causes and pressure on hospital capacity. This will also protect our health care staff from overcrowding and increase risk of them being infected as happened in Wuhan and Italy.
- In case, any of these contacts becomes positive, the same pattern is to be followed; i-e contact tracing and follow up.

2. Risk communication:

It is of prime importance to ensure that all the critical information (e.g. basics of the disease and what to do in case of a suspicion) is cascaded to all the cadres and people belonging to all walks of life. Not every flu/fever needs hospitalization. Ideally, self-quarantine is the best strategy while staying in telephonic or electronic contact with the healthcare provider, or via family members. An effective risk communication strategy is critical in ensuring the awareness at the grass root level around these matters.

³ 11th March 2020

- **Dissemination of basic practices to the masses to avoid transmission:**
 - Panic should be avoided by informing that 80% have mild symptoms and low mortality rate.
 - Clarity on use of face masks from top medical professionals; should only be used in very limited circumstances. This includes use by persons who are coughing and sneezing – to prevent spread to others.
 - Hand hygiene with soap and water and use of hand sanitizers should be practiced
 - Covering the face while coughing and sneezing.
 - Maintain suitable distance from the people, to avoid unexpected transmission.
 - If sick stay at home.
- **For organizations and employees:**
 - Proper COVID-19 awareness materials should be provided in all the offices/institutions.
 - In case of any concern of mild symptoms of employees, relief from work/work from home should be suggested to avoid any contact.
 - Organizations should avoid face to face meetings in case of any such concern.
 - Information on disinfecting surfaces of offices (Floor, Tables, lift, stair railings etc)
 - All the offices should have work modalities policies in place, in advance.
- **The COVID-19 Risk Communication Package for Healthcare Facilities²:**

This package provides healthcare facility management and healthcare workers with an overview of the key actions required to keep safe and healthy in the workplace.

 - Visual alerts (signs, posters) at entrances and in strategic places providing instruction on hand hygiene, respiratory hygiene, and cough etiquette
 - Post information, like posters and flyers, that remind patients and visitors to practice good respiratory and hand hygiene.
 - Strict (Limit) visitor access to hospitals.
- **Avoid stigma:**
 - Train the health care providers on counselling of the patients around COVID—19.
 - It is critical to convey to the community that this is another respiratory infection, like many others, and the patients should not be stigmatized by it.
 - Engage social influencers for such as religious leaders or respected celebrities on prompting reflection about people who are stigmatized and how to support them.
 - Identify community influencers (e.g., community leaders, religious leaders, health workers, traditional healers, alternative medicine providers) and networks (e.g., women’s groups, community health volunteers, youth associations, religious groups, unions, and social mobilizers for polio, malaria, HIV) that can help with community engagement.

- Health care providers and community influencers must be trained on counselling regarding how home quarantine can reduce the risk of the disease and improve situation.
 - Engage through social media: proactively inform audiences and collect and answer all questions.
3. **Social Distancing:**
- Avoid big gatherings and crowded places, especially when in closed spaces.
 - Super-spreading events are inevitable, and could overwhelm the contact tracing system, leading to the need for broader-scale social distancing interventions.
 - CFR increases sharply with age and is higher in people with COVID-19 and underlying comorbidities. Targeted social distancing for these groups could be the most effective way to reduce morbidity and concomitant mortality.
 - Pro-active or reactive school day closures can be exercised.
4. **Quarantine/Isolation:**
- **Quarantine**
Separation and restriction of movement of persons who are exposed to a patient with COVID-19 disease to see whether they develop the infection. Quarantine may be at home or in a facility
 - **Isolation**
Separation of patients infected with proven or suspected COVID-19 to prevent the spread of the infection. Isolation may be at home or in the hospital

Case Definitions

1. A patient with at least one of the following symptoms: Fever, Cough or Shortness of breath
AND
A history of travel to or residence in a country/area or territory reporting local transmission of COVID-19 disease during the 14 days prior to symptom onset. A list of the countries can be found in the latest WHO situational report at <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports>
2. A patient with at least one of the following symptoms: Fever, Cough or Shortness of breath
AND
Contact with a confirmed or probable COVID19 case in the last 14 days prior to the onset of symptoms;
3. A patient with at least one of the following symptoms: Fever, Cough or Shortness of breath
AND
Requiring hospitalization with no other etiology that fully explains the clinical presentation.

Quarantine

Facility level

- **Infrastructure**
 - No universal guidance regarding the infrastructure for a quarantine facility
 - Space should be respected not to further enhance potential transmission
 - Living placement should be recorded for potential follow up in case of illness.
- **Accommodation and supplies**
 - Travelers should be provided with adequate food and water, appropriate accommodation including sleeping arrangements and clothing, protection for baggage and other possessions, appropriate medical treatment, means of necessary communication if possible, in a language that they can understand and other appropriate assistance.
 - A medical mask is not required for those who are quarantined
- **Communication**
 - Establish appropriate communication channels to avoid panic and to provide appropriate health messaging so those quarantined can seek timely appropriate care when developing symptoms.
- **Respect and Dignity**
 - Travelers should be treated with respect for their dignity, human rights and fundamental freedom and minimize any discomfort or distress associated with such measures

Duration

- Up to 14 days

Home Quarantine

- **Recommendations for persons under quarantine**
 - Stay in a well-ventilated single room
 - Avoid gatherings and crowded spaces.
 - Must stay at home
 - Perform hand hygiene frequently
 - Alcohol-based hand rubs should be used if hands are not visibly soiled or with soap and water when hands are visibly soiled
 - Cover nose and mouth while sneezing and coughing with flexed elbow or paper tissue, dispose the tissue immediately after use and perform hand hygiene.
 - Avoid touching the face
 - Dustbin should be lined with a bag and the bag tied tightly before throwing
 - No need for the person under quarantine or household members to wear a mask
 - Watch for Signs and Symptoms.

- If fever, cough or shortness of breath develop then inform contact number provided
- Dedicated Linen and utensils are not required
- Routine cleaning of the house is recommended

Monitoring of Quarantined Persons

- **Self-monitoring**
 - People should monitor themselves for fever by taking their temperatures twice a day and remain alert for a cough or difficulty breathing.
 - If they feel feverish or develop measured fever, cough, or difficulty breathing they should self-isolate, limit contact with others, and contact the helpdesk at 1166
 - Persons should practice hand hygiene regularly and cough etiquette.
- **Active monitoring**
 - Provincial health department and NIH assumes responsibility for establishing regular communication with potentially exposed people to assess for the presence of fever, cough, or difficulty breathing.
 - Calls should be sent every 48 hours to assess for the period of the quarantine

Isolation

Guidelines for hospital isolation

- Areas should be identified where patients will be housed
- For all areas
 - Ensure either single-use and disposable or dedicated equipment (e.g., stethoscopes, blood pressure cuffs, and thermometers) is present in each room
 - If equipment needs to be shared, clean and disinfect it between use for each patient (e.g., by using ethyl alcohol 70%)
 - Ensure adequate environmental cleaning consistently and correctly
 - Manage laundry, food service utensils and medical waste in accordance with safe routine procedures
 - Avoid moving and transporting patients out of their room or area unless medically necessary
 - Use designated portable X-ray equipment and/or other designated diagnostic equipment, whenever possible.
 - If transport is required, use predetermined transport routes to minimize exposure for staff, other patients and visitors.
 - The patient should use a medical mask during transport
 - Ensure that HCWs who are transporting patients perform hand hygiene and wear appropriate PPE
 - Notify the area receiving the patient of any necessary precautions as early as possible before the patient's arrival
- Admitted patients WHO DO NOT REQUIRE SUCTIONING, should be placed under both Droplet and Contact precautions

- Single room is preferred
- If not available, patients can be housed together in a dedicated ward
- Maintain at least 1-meter distance between patients
- All health care workers must take the following precautions when entering the room/ward
 - Wear a surgical mask at all times during patient care
 - Observe STRICT hand hygiene
 - Avoid touching eyes or the mask
 - Wear clean, long sleeve non-sterile gowns
 - Remove PPE before leaving the room/ward and immediately perform hand hygiene
- Admitted patients WHO REQUIRE SUCTIONING, should be placed under Airborne isolation with Contact precautions
- Single room isolation with negative pressure isolation
 - If negative pressure isolation is not available then place in a room with ample ventilation. A fan facing away from the door, towards the outside of the building is encouraged if possible
 - Do not place patient in a room in which air is recirculated (e.g. centrally air-conditioned area without special air handling)
- All health care workers must take the following precautions when entering the room
 - Wear N-95 mask at all times
 - Observe STRICT hand hygiene
 - Avoid touching eyes or the mask
 - Wear clean, long sleeve non-sterile gowns
 - Remove PPE before leaving the room/ward and immediately perform hand hygiene
- Patients can be moved out of isolation only when symptoms improve AND two consecutive swabs (sent one day apart) are negative
- If the patient has no symptoms but the swab is positive, the patient may be moved to home isolation

Guidelines for Home Isolation

- **Indications**

- Home Isolation may be considered in the following patients
 - Those with a separate room to stay in
 - Those with mild or asymptomatic disease
 - Those consenting for isolation

- **Guidelines**

- Place the patient in a well-ventilated single room (i.e., with open windows and an open door).
- Limit the movement of the patient in the house and minimize shared space.
 - Ensure that shared spaces (e.g., kitchen, bathroom) are well ventilated (e.g., keep windows open).



- Household members should stay in a different room
- Limit the number of caregivers.
 - Ideally, assign one person who is in good health with no underlying chronic or immunocompromising conditions.
- Visitors should not be allowed until the patient has completely recovered and has no signs and symptoms.
- Perform hand hygiene after any type of contact with patients or their immediate environment.
 - Hand hygiene should also be performed before and after preparing food, before eating, after using the toilet and whenever hands look dirty.
 - If hands are not visibly dirty, an alcohol-based hand rub can be used.
 - For visibly dirty hands, use soap and water.
 - When washing hands with soap and water, it is preferable to use disposable paper towels to dry hands.
 - If these are not available, use clean cloth towels and replace them when they become wet.
 - The patient must use their own towel
- A medical mask should be provided to the patient and worn as much as possible.
- Mouth and nose should be covered with a disposable paper tissue when coughing or sneezing and discarded after use
- Caregivers should wear a surgical mask that covers their mouth and nose when in the same room as the patient.
 - Masks should not be touched or handled during use.
 - If the mask gets wet or dirty from secretions, it must be replaced immediately with a new clean, dry mask.
 - Remove the mask using the appropriate technique – that is, do not touch the front, but instead untie it. Discard the mask immediately after use and perform hand hygiene.
- Avoid direct contact with body fluids, particularly oral or respiratory secretions, and stool.
 - Use disposable gloves and a mask when providing oral or respiratory care and when handling stool, urine and other waste.
 - Perform hand hygiene before and after removing gloves and the mask.
- Do not reuse masks or gloves.
- Use dedicated linen and eating utensils for the patient
 - Items should be cleaned with soap and water after use and may be re-used instead of being discarded.
- In the room where the patient is being cared for, clean and disinfect daily surfaces that are frequently touched, such as bedside tables, bedframes and another bedroom furniture.
 - Regular household soap or detergent should be used first for cleaning, and then, after rinsing, regular household disinfectant containing 0.5% sodium hypochlorite (i.e., equivalent to 5000 ppm or 1-part bleach to 9 parts water) should be applied.
- Clean and disinfect bathroom and toilet surfaces at least once daily.



- Regular household soap or detergent should be used first for cleaning, and then, after rinsing, regular household disinfectant containing 0.5% sodium hypochlorite should be applied.
- Clean the patient's clothes, bed linen, and bath and hand towels using regular laundry soap and water or machine wash at 60–90 °C with common household detergent, and dry thoroughly.
 - Place contaminated linen into a laundry bag.
 - Do not shake soiled laundry and avoid contaminated materials coming into contact with skin and clothes.
- Gloves and protective clothing (e.g., plastic aprons) should be used when cleaning surfaces or handling clothing or linen soiled with body fluids.
 - Perform hand hygiene before and after removing gloves.
- Gloves, masks and other waste generated during at-home patient care should be placed into a waste bin with a lid in the patient's room before being disposed of as infectious waste.
- Avoid other types of exposure to contaminated items from the patient's immediate environment (e.g., do not share toothbrushes, cigarettes, eating utensils, dishes, drinks, towels, washcloths or bed linen).

Proper case management:

- Clinical management of severe acute respiratory infection when novel coronavirus (2019-nCoV) infection is suspected:
 1. Triage: recognize and sort patients with SARI
 2. Immediate implementation of appropriate infection prevention and control (IPC) measures
 3. Early supportive therapy and monitoring
 4. Collection of specimens for laboratory diagnosis
 5. Management of hypoxemic respiratory failure and acute respiratory distress syndrome (ARDS)
 6. Management of septic shock
 7. Prevention of complications
 8. Specific anti-nCoV treatments
 9. Special considerations for pregnant patients

ⁱ Communication/COVID-19-022020.pdf



Annexure-N: nCovirus Airport sops Government OF PAKISTAN



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Guidelines/SOPs for International Flights inbound to Pakistan

Background

In view of the current outbreak for novel-corona virus, it is important to understand that human to human transmission has been established across various countries. It is therefore important that measures to limit the spread of the virus are taken ensuring control in earlier phase of the possible outbreak. This document shall serve as guidelines/SOPs for both the authorities and health officials in understanding the steps that need to be undertaken in due time.

Preparations-Administrative and Logistics- “Victory Loves preparation”

It is of utmost importance that preparations are made well before the execution is expected;

- ❖ Average number of International flights in the past couple of years for understanding the load.
- ❖ Segregating flights with bigger risk and ensuring maximum workforce in the instances of arrivals of those flights.
- ❖ Weekly schedule of all the flights to be available with details such as;
 - Origin and route
 - Time of Departure and arrival
 - Type of aircraft to assess the number of passengers.
- ❖ Demarcation of stations, Rooms, and sitting areas.
- ❖ Equipment types and numbers such as thermal scanners
- ❖ Identification of competent staff from the the current stock, or urgent hiring for ensuring continuity.
 - Personnel at health counters
 - Doctors
 - Nurses
 - Paramedics
 - Data operators
- ❖ Detailed trainings with refreshers of all the staff and clear guidelines for their roles and responsibilities.
- ❖ Establishing coordination between
 - FIA
 - ASF
 - CAA
 - CHE
 - ED/Directors of the Hospitals
 - LEAs
 - Ministry/Departments of Health



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Operations

Once administrative and logistic requirements are met, operational modalities would need exact specifications with responsible following is what is recommended;

Flights Type

The flights will be broadly categorized in to

1. Flights bringing direct passengers from China and or Connected flights from China.
2. International flights originating/ en route other than China.

STEP-1: Inside the Plane- Before landing

- The flight crew shall make an announcement (Sample announcement annexed) for filling in the Declaration form which will be mandatory to the entry inside Pakistan.
- Declaration form (Annexed) will need to be duly filled by all passengers, in the instances where the flight is coming directly from China and or the crew is of Chinese origin will also be mandated to fill in the forms.
 - CAA shall ensure a uniform declaration form to be used by all airlines landing in any airport of Pakistan internationally.

STEP-2 First contact after Disembarking- “Thermo Scanners/Thermal Guns”

- All passengers should be in cue and will be undergoing Thermo scanning.
- At the reception the scanning, CHE shall place its quarantine assistant/s for evaluating the results (Health Counters).
 - Passenger with detection of fever shall bypass the next step and reach the on duty medical officer with the help of either CAA or the Quarantine assistant.
 - Passengers with no fever shall proceed to Health counters.

STEP-3 Health counters “Segregation”

- Health counters shall serve as a point of first contact for the passengers with their filled in declaration forms after undergoing thermal scanning either through the scanners or Thermal Guns.
- Each Health post will be managed by a Quarantine assistant and or Paramedic. The health posts number shall depend on the type of Plane in arrival and the number of passengers on board.
- Filled Declaration forms shall be collected at the counters and analyzed as per the questions helping segregation and preliminary decisions
- The content of the form shall segregate the passengers as;
 - Symptoms.
 - The relationship between origin, embarking and nationality in the backdrop of not more than the last 14 days of the concerned passenger in China.
 - Pakistani and other international Passengers with no history of travel and are asymptomatic.



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- Passengers of Chinese origin and are state employees- 14 days positive history of travel/stay in China
- Passengers of Chinese origin and are here on terms of business, travel etc-14 days positive history of travel/stay in China
- Pakistani and other international. - 14 days positive history of travel/stay in China

STEP-4 Assessment of passengers as per their segregation

Asymptomatic- Having No Symptoms

- **Passengers of all nationalities with no symptoms and have no history of travel to China within 14 days**
 - All Such passengers will submit their cards at health counters and will travel directly to the normal immigration counters
 - This process of directing these individuals to immigration counters will be done by CAA.
- **Passengers of Chinese Origin and are state Employees, History of Travel/Stay in China -14 days**
 - As per the agreement with Chinese government, such passengers will have already undergone exit scanning and 14 days quarantine before embarking.
 - After reaching Pakistan it has been agreed that they shall be under observations for the first 14 days ensuring strict surveillance.
 - Their declaration cards and relevant information will be used for tracking and tracing.
 - A call from the surveillance team every 48 hours for updates till 14 days.
 - They will proceed to Immigration counters and will be escorted by CAA staff to a specific counter established in coordination with FIA.
- **Passengers of Chinese Origin and are travelers, students Businessmen etc., History of Travel/Stay in China -14 days**
 - Other Chinese who have traveled, directly and or indirectly (14 days) from China would need to be briefed at health counters on
 - Ensuring that valid addresses and their active contact numbers of Pakistan are acquired at Health counters.
 - Ample amount of briefing be provided for understanding the risk and at the same time importance of early detection via IEC staff deputed at Health counter.
 - Their parent institution, business venture and institution addresses be duly noted at Health Counters.
 - A call every 48 hours be placed for ensuring updates.
 - They will proceed to Immigration counters and will be escorted by CAA staff to a specific counter established in coordination with FIA.
- **Passengers of Pakistani or any other Origin- History of Travel/Stay in China -14 days**
 - Pakistani and other internationals who have had a relevant history of travel/stay in China for the past 14 days will undertake the following at Health counters



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- Ensuring that valid addresses and their active contact numbers of Pakistan are acquired.
- Ample amount of briefing be provided for understanding the risk and at the same time importance of early detection.
- A call every 48 hours be placed for ensuring updates.
- They will proceed to Immigration counters and will be escorted by CAA staff to a specific counter established in coordination with FIA.

Symptomatic- Having the Symptoms

As per the current available guidelines of WHO (Disease spread, signs are not completely known therefore the definitions may evolve), either of the following should initiate the protocols of suspicion of corona virus;

- a. *Fever*
- b. *Cough*
- c. *Difficulty in breathing*

If either of these symptoms are coupled with a recent (14 days) history of travel to China, then the diagnosis excluding corona virus must be ensured. Following shall be the sequence of events;

- i. The suspected patient if identified by Thermo scanner, must report directly to the trained medical officer for brief history.
- ii. If the Thermo scan fails to identify but the health check-post assistants and the declaration form helps in identification, then a Quarantine assistant/paramedic must escort the passenger to the Medical officer for further review and action.

The medical officer shall tally his/her findings with the history of the passenger and in case of suspicion initiate the following;

- i. Immediate provision of mask to the passenger.
- ii. Reporting to the CAA and FIA officials on spot along with the Psychologist.
- iii. History of the passengers encompassing the investigation of close relatives/ family on board
 - a. If yes than examine them immediately with provision of masks to them.
 - b. Conduct awareness session and brief on the situation in case they are asymptomatic and the mechanism of trace and track will be initiated, however this time it will be every 24 hours, keeping in view the direct exposure pre-diagnosis/isolation.
- iv. Assist the Psychologist for counseling session on the disease modality and current protocols for such patients thereby instilling confidence and facilitating evacuation.
- v. Coordinate with CAA to locate the relatives of the passenger for ensuring the management of the luggage and updates on the condition of the passenger.
- vi. CAA shall also inform ASF for securing the place where the passenger is seated.
- vii. The Supervisory tier of medical professionals shall than coordinate with:
 - a. Rapid Response Team (Details annexed of the team and its SOPs)
 - b. Designated hospital Focal point for arrangements for Isolation at least 30 minutes before arrival.



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- viii. The ASF shall than escort the passenger/suspect to the ambulance (Already deputed as per plan).
- ix. Ambulance shall have protective equipment and at the same time a qualified paramedic.
- x. A police escort shall be waiting outside the airport for evacuating the passenger to the designated health facility.
- xi. In case of more than one passenger with suspicion of the corona virus, multiple ambulances might be required therefore an assessment based on the need be done to ensure smooth running.
- xii. Finally, all staff coming in contact with a suspected case shall ensure full protection and ideally PPE needs to be used by Doctors/psychologist/ CAA and ASF officials.

Asymptomatic from Hubei Province in general and Wuhan in specifics¹

Passengers (Students/Travelers - Pakistani or other internationals excluding Chinese*) from Wuhan/ Hubei province will be placed under observation for 24-48 hours (Depending on the advisories by teams on ground and infectious disease specialists) at facilities designated for observation.

- Detailed counseling of the families/relatives for ensuring understanding of the issue at hand.
- All measure pertaining to detailed examination and diagnosis will be followed, which shall include sampling from all concerned.
- Post 24-48 hours and diagnostics their isolation or observations will be decided as in the aforementioned document under the heading of asymptomatic and symptomatic passengers.
- The only difference will be the tracing and tracking/ communication on once every 24 hours basis via surveillance units with the concerned passengers.

Overall precautions pertaining to the spread shall be observed by all the staff concerned in these guidelines. It is also important that if any of the staff member during this cycle of SOPs has symptoms of the disease post exposure has to be reported at the earliest and isolated as per protocols. IEC material has to be explained to the staff at the airport during detailed briefs and at the same time measures ensured for the aircraft crew. Roles and responsibilities will be added as per the SOPs.

STEP-5 DATA Collation

- Data punching operators would be required for ensuring that all information's on the declaration cards are entered within 1-2 hours of the flight operations.
- In case of a positive case of Corona virus, the exposure to passengers on flight are maximum, therefore coordination needs to be established with PTA, so that information of the case must be transmitted to the mobiles of all on board (from the specific flight) via an SMS, enabling passive surveillance, better isolation/quarantine of the fellow passengers and good community messaging as well as early case detection.

¹ On the recommendations of the Infectious disease control, Hospital care and Prevention.

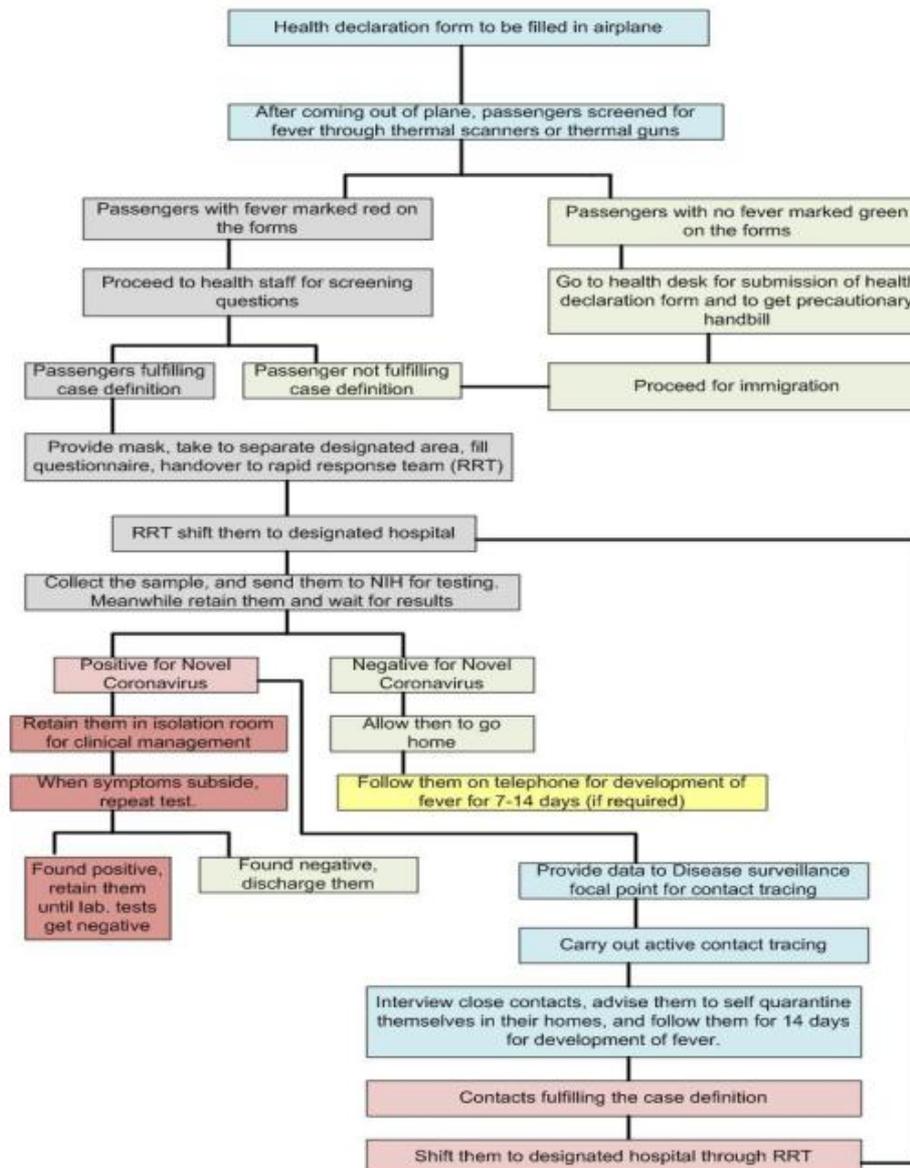
*Chinese State employees/travelers will be managed as mentioned in point 1 of the document.



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SUMMARY OF WORKFLOW:

Disease Surveillance Mechanism for Novel Coronavirus (nCoV)





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DETAILED WORKFLOW WITH INFOGRAPHS

Flights from China

1. Flights bringing direct passengers from China and or Connected flights from China. **0**
2. International flights originating/ en route other than China. **0**
Flights with additional risk, need more HR *

For every Flights needed detail:

- o Origin and route
- o Time of Departure and arrival
- o Type of aircraft and tentative number of passengers.

Days	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Number of Flights							
Number Passengers							

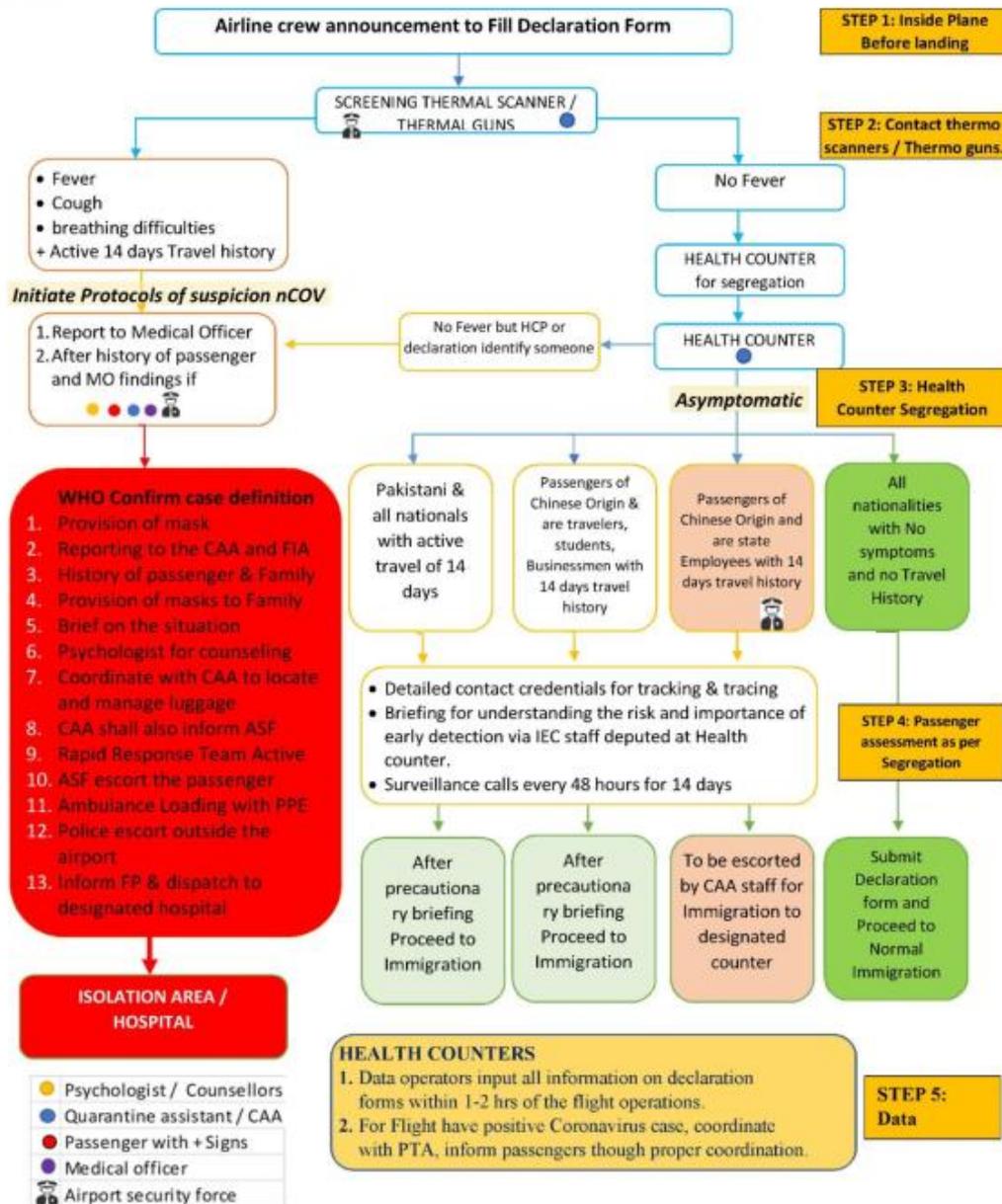
EXTRA FORMS, SITTING AREAS, WASHROOMS, ASSISTANCE IF SOMEONE HAS NOT FILLED THE FORMS

PASSENGER MOVEMENT TOWARDS ARRIVALS

LANDING (STAFF AT POINT OF ENTRY, GATE, DRIVER, ANY AIRPORT PERSONAL IN CONTACT WITH THEM SHALL HAVE GLOVES AND MASK)



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ANNEXES

ANNEXURE 1. SOP for Screening Team

Standard operating procedure for Screening Team

1. Purpose:

Purpose of SOPs is to provide framework for formulation and operations of Screening Team to response for Novel Coronavirus emergency

2. Composition of Rapid Response Team:

- Team Leader (Airport Health Officer)
- Medical Management personnel (doctor and/nurse)
- Logistician
- Environmental health specialists
- Hazardous material teams
- Psychosocial support experts
- Communication expert
- IT support / Administrative Staff
- Ambulance Team

3. Procedure:

- i. Team lead will prepare operational plan about how to screen flight before arrival of the flight
- ii. Team will lead will brief the team, and assign roles and responsibilities to every team member
- iii. Upon arrival of flight screening personnel will welcome the passengers, take their health declaration forms, check fever through thermal guns, mark red or green on the form, and then guide them to relevant counter.
- iv. Psychosocial experts on health counter will counsel the passengers and handover necessary IEC material to them.
- v. Medical management personnel will carry out preliminary interview of the suspected case as per case definition and assess whether the passenger fulfil criteria of suspected case or not.
- vi. If passenger do not fulfil criteria of suspected case, then they will guide them to health counter.
- vii. If passenger fulfil the criterial of suspected case then they will provide mask to passenger and ask psychosocial expert to counsel them.
- viii. Medical management personnel then inform team lead.
- ix. Team lead will inform Rapid Response Team (RRT) and take suspected case to separate room / area.
- x. Team lead will make necessary arrangements before arrival of RRT.



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- xi. IT support / Administrative Staff will carry out necessary administrative procedure with immigration and airport administration.
- xii. Communication expert will talk to family or persons who came to receive the passenger and counsel them.
- xiii. If required communication expert will communicate with media also.
- xiv. If necessary, ambulance team will take suspected case to another retention area near airport whether RRT will arrive and carry out their required procedures.
- xv. Team lead will remain in coordination with RRT for further procedures.



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ANNEXURE 2. SOP for Rapid Response Team

Standard operating procedure for Rapid Response Team

4. Purpose:

Purpose of SOPs is to provide framework for formulation and operations of Rapid Response team (RRT) to response for Novel Coronavirus emergency

5. Composition of Rapid Response Team:

- Team Leader (DHO / need based)
- Medical Management personnel (doctor and/nurse)
- Epidemiologist/Surveillance Officer
- Communication expert
- Logistician
- Laboratorians
- Infection Prevention and Control expert
- Psychosocial support experts
- Environmental health specialists
- Hazardous material teams
- Media expert
- IT support / Administrative Staff
- Ambulance Team

6. Procedure:

- xvi. Preparation for field work and briefing to the team.
- xvii. Team lead assign and clarify roles and responsibilities to every team member
- xviii. Upon receipt of information from Airport health department (CHE), Team lead will communicate with all relevant stakeholder and inform about time of departure and time of arrival from destination to airport and from airport to hospital.
- xix. Team will arrive at airport as per plan laid out on need basis.
- xx. Team lead will coordinate / report to airport health department and take all relevant details.
- xxi. Medical management personnel will approach suspected case in PPE, and take passenger to ambulance
- xxii. Psychosocial support experts will carry out counselling of the suspected case, his family members, general passengers, airport staff etc.
- xxiii. Media expert will handle media if required
- xxiv. IPC team and hazardous control team will disinfect the area and safely dispose of waste if required.
- xxv. IT support / Administrative Staff will conduct relevant administrative procedures with CHE, airport authorities, immigration and other relevant stakeholders.



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- xxvi. Ambulance team will coordinate with designated hospital focal point or relevant staff for arrival time of patient to make necessary arrangements.
- xxvii. Medical management personnel will coordinate with focal person of hospital and provide all information and necessary instruction as required.
- xxviii. Epidemiologist / Disease Surveillance Officer will take all relevant data of the suspected case, and close contacts.
- xxix. Team lead will ascertain that all the relevant procedures will be followed before leaving airport
- xxx. Normalcy on airport will be maintained and no routine process will be halted.
- xxxi. Team lead will share data with relevant stakeholders.
- xxxii. Team lead will debrief to the team and give more instruction to team on basis of gaps if identified during the work.



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ANNEXURE 3. SOP for Disease Surveillance Team

SOP for Disease Surveillance Team

7. Purpose:

Purpose of SOPs is to provide framework for formulation and operations of Disease Surveillance Team to response for Novel Coronavirus emergency

8. Composition of Rapid Response Team:

- Team Leader (TSO FELTP / need based)
- Medical Management personnel (doctor and/nurse)
- Epidemiologist/Surveillance Officer
- Communication expert
- Logistician
- Laboratorians
- Infection Prevention and Control expert
- Psychosocial support experts
- Environmental health specialists
- Hazardous material teams
- Media expert
- IT support / Administrative Staff
- Ambulance Team

9. Procedure:

- xxxiii. Preparation for field work plan and briefing to the team.
- xxxiv. Team lead assign and clarify roles and responsibilities to every team member
- xxxv. Upon receipt of information from Rapid Response Team (RRT), Team lead will communicate with all relevant stakeholder and inform about plan for contact tracing.
- xxxvi. Team lead will all relevant details from RRT.
- xxxvii. Logistician will make all the necessary logistic arrangements
- xxxviii. Team will go to the area of residence of close contacts of suspected case as per plan laid out on need basis.
- xxxix. Epidemiologist conduct active contact tracing and use questionnaire developed by MoNHSRC, NIH & CHE or use standard WHO guidelines.
- xl. Medical management personnel will carry out preliminary examination of close contact and assess whether the contact need to be hospitalized or quarantined at home.
- xli. Psychosocial support experts will carry out health awareness and education session in the community.
- xlii. Media expert will handle media if required.



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- xl.iii. IPC team and hazardous control team will disinfect the area and safely dispose of waste if required.
- xl.iv. IT support / Administrative Staff will conduct relevant administrative procedures with CHE, airport authorities, immigration and other relevant stakeholders.
- xl.v. Ambulance team will coordinate with designated hospital focal point or relevant staff for arrival time of patient to make necessary arrangements.
- xl.vi. Medical management personnel will coordinate with focal person of hospital and provide all information and necessary instruction as required.
- xl.vii. Team lead will ascertain that all the relevant procedures will be followed before leaving the area.
- xl.viii. Normalcy in the area will be maintained and no routine work will be halted.
- xl.ix. Team lead will share data with relevant stakeholders.
 - 1. Team lead will debrief to the team and give more instruction to team on basis of gaps if identified during the work.

Annexure-O: Contact tracing and case-based surveillance

Global Surveillance for COVID-19 disease caused by human infection with novel coronavirus (COVID-19)

Interim guidance
27 February 2020



Background

This document summarizes WHO's revised guidance for global surveillance of COVID-19 disease caused by infection with novel coronavirus (COVID-19). WHO will continue to update this guidance as new information about COVID-19 becomes available.

Updated information about COVID-19 can be found here along with other guidance documents. <https://www.who.int/health-topics/coronavirus>

Purpose of this document

This document provides guidance to Member States on implementation of global surveillance of COVID-19.

Objectives of the surveillance

The objectives of this global surveillance are:

1. Monitor trends of the disease where human-to-human transmission occurs
2. Rapidly detect new cases in countries where the virus is not circulating
3. Provide epidemiological information to conduct risk assessments at the national, regional and global level
4. Provide epidemiological information to guide preparedness and response measures

Case definitions for surveillance

The case definitions are based on the current information available and will be revised as new information accumulates. Countries may need to adapt case definitions depending on their own epidemiological situation.

Suspect case

A. A patient with acute respiratory illness (fever and at least one sign/symptom of respiratory disease (e.g., cough, shortness of breath), **AND** with no other aetiology that fully explains the clinical presentation **AND** a history of travel to or residence in a country/area or territory reporting local transmission ([See situation report](#)), of COVID-19 disease during the 14 days prior to symptom onset.

OR

B. A patient with any acute respiratory illness **AND** having been in contact with a confirmed or probable COVID-19 case (see definition of contact) in the last 14 days prior to onset of symptoms;

OR

C. A patient with severe acute respiratory infection (fever and at least one sign/symptom of respiratory disease (e.g., cough, shortness breath) **AND** requiring hospitalization **AND** with no other aetiology that fully explains the clinical presentation.



Probable case

A suspect case for whom testing for COVID-19 is inconclusive¹.

Confirmed case

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

Link for lab page: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance/laboratory-guidance>

Recommendations for follow-up of contacts

Definition of contact

A contact is a person that is involved in any of the following:

- Providing direct care without proper personal protective equipment (PPE)² for COVID-19 patients
- Staying in the same close environment of a COVID-19 patient (including workplace, classroom, household, gatherings).
- Traveling together in close proximity (1 m) with a COVID-19 patient in any kind of conveyance within a 14-day period after the onset of symptoms in the case under consideration.

Recommendations for laboratory testing

Any suspected case should be tested for COVID-19 infection using available molecular tests. However, depending on the intensity of the transmission, the number of cases and the laboratory capacity, only a subset of the suspect cases may be tested.

If resources allow, testing may be done more broadly (for instance through sentinel surveillance) to better assess the full extent of the circulation of the virus.

Based on clinical judgment, clinicians may opt to order a test for COVID-19 in a patient not strictly meeting the case definition, for example, if there are patients involved in a cluster of acute respiratory illness among healthcare workers or of severe acute respiratory infection (SARI) or pneumonia in families, workplaces or social network.

Recommendations for reporting surveillance data to WHO

Case based Reporting:

WHO requests that national authorities report probable and confirmed cases of novel coronavirus COVID-19 infection **within 48 hours** of identification, by providing the minimum data set outlined in the "[Revised case reporting form for 2019 Novel Coronavirus of confirmed and probable cases](#)", through the National Focal Point and the Regional Contact Point for International Health Regulations at the appropriate WHO regional office. [A template for the revised line listing in Excel format](#) with the [data dictionary](#), which suggests the name of the variables and their specifications is available. If the outcome of the patient is not yet available at first reporting an **update of the report** should be provided as soon as outcome is available latest **within 30 days** of the first report.

Reporting of case-based report is requested as long as feasible for the country. When it is not feasible to report case-based data, countries are requested to provide daily and weekly aggregated data.

Daily aggregated data

WHO requests reporting of the number of new confirmed cases by first administrative level (e.g. region, province, state, municipalities) and deaths

¹ Inconclusive being the result of the test reported by the laboratory.

² <https://www.who.int/publications-detail/infection-prevention-and-control-during-health-care-when-novel-coronavirus-%28ncov%29-infection-is-suspected-20200125>



Weekly aggregated data:

- Weekly number of new confirmed: Patients tested positive for COVID-19 infection
- Weekly number of new probable case: Patient with inconclusive laboratory test result
- Weekly number of new deaths due to COVID-19 infection
- Weekly number of new COVID-19 cases hospitalised
- Weekly number of new COVID-19 cases treated with mechanical ventilation or ECMO or admitted in intensive care unit (ICU).
- Weekly number of new cases and new deaths, by age-group in year (using: 0<2, 2<5, 5<15, 15<50, 50<65 and 65 and above; or similar).
- Cumulative sex ratio of confirmed cases and deaths
- Total number of laboratory tests conducted
- Total number of tests that are positive for COVID-19
- If possible, number of contacts under follow-up and number of new identified contacts

Procedures to report to WHO are similar to that implemented for the case-based reporting.

Recommendations for specimen collection

Lower respiratory specimens likely have a higher diagnostic value than upper respiratory tract specimens for detecting COVID-19 infection. WHO recommends that, if possible, lower respiratory specimens such as sputum, endotracheal aspirate, or bronchoalveolar lavage be collected for COVID-19 testing. If patients do not have signs or symptoms of lower respiratory tract disease or specimen collection for lower respiratory tract disease is clinically indicated but the collection is not possible, upper respiratory tract specimens, such as a nasopharyngeal aspirate or combined nasopharyngeal and oropharyngeal swabs should be collected.

If initial testing is negative in a patient who is strongly suspected to have COVID-19 infection, the patient should be resampled, and specimens collected from multiple respiratory tract sites (nose, sputum, endotracheal aspirate). Additional specimens may be collected such as blood, urine, and stool, to monitor the presence of virus and shedding of virus from different body compartments.

Full details about laboratory guidance for COVID-19 can be found here: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance/laboratory-guidance>

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WHO reference number: [WHO/2019-nCoV/SurveillanceGuidance/2020.4](https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance/surveillance-guidance)