

National Action Plan for Preparedness & Response to Corona Virus Disease (Covid-19) Pakistan



**Ministry of National Health Services, Regulation & Coordination
Pakistan**

12 February 2020

List of Abbreviations

Covid-19	=	Corona Virus Disease
AAR	=	After Action Review
AJK	=	Azad Jammu & Kashmir
BSL	=	Biosafety Level
CDC	=	Centers for Disease Prevention & Control
CHE	=	Central Health Establishment
DSRU	=	Disease Surveillance & Response Unit
EOC	=	Emergency Operation Center
FDSRU	=	Federal Disease Surveillance & Response Unit
FELTP	=	Field Epidemiology & Laboratory Training Program
GB	=	Gilgit Baltistan
GHSI	=	Global Health Strategists & Implementers
GoP	=	Government of Pakistan
HCF	=	Health Care Facility
HR	=	Human Resource
IEC	=	Information, Education & Communication
IPC	=	Infection Prevention & Control
JSI	=	John Snow International
KPK	=	Khyber Pakhtunkhwa
M&E	=	Monitoring & Evaluation
MERS	=	Middle East Respiratory Syndrome
MTA	=	Material Transfer Agreement
NAP	=	National Action Plan
NAP Covid-19	=	National Action Plan for Preparedness & Response to Corona Virus Disease, Pakistan
NHEPRN	=	National Health Emergency Preparedness & Response Network
NHSRC	=	National Health Services, Regulation & Coordination
NIH	=	National Institute of Health
NSTOP	=	National Stop Transmission of Polio Program
PDSRU	=	Provincial Disease Surveillance & Response Unit
PEMRA	=	Pakistan Electronic Media Regulatory Authority
PHEIC	=	Public Health Emergency of International Concern
PoE	=	Point of Entry
PPE	=	Personal Protection Equipment
PPRA	=	Public Procurement Regulatory Authority
PRCS	=	Pakistan Red Crescent Society
RC	=	Risk Communication
RCCE	=	Risk Communication & Community Engagement
RRT	=	Rapid Response Team
SAPM	=	Special Assistant to Prime Minister
SARS	=	Severe Acute Respiratory Syndrome
SOP	=	Standard Operating Procedure
TOR	=	Terms of Reference
TWG	=	Technical Working Group
WHO	=	World Health Organization

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Message by MoS/SAPM M/o NHR&C

The need for development of National Action Plan on preparedness and response to Corona Virus Disease (Covid-19) outbreak has become crucial in the light of exponential increase in number of cases in China and the spread to multiple countries across continents. Although not a global pandemic yet, the threat of Covid-19 outbreaks in multiple countries is dangerously real. Pakistan needs unified national efforts to increase preparedness to maximum level. It is an issue of national security.

Being a close ally and neighbour, Pakistan shares significant travel and trade ties with China. Our people travel and trade through air, land and seas routes. This puts our people at a significantly increased risk. Due to novelty of this strain and this being its first outbreak, rapid spread and unavailability of vaccine and treatment, the need for robust preparedness to avoid an outbreak is paramount. Furthermore, in case of an outbreak, we need to have rapid early detection of potential cases and control measures to prevent further spread.

A national effort is required through strengthened coordination between provincial and federal governments and to uniformly respond to this emergency. This is vital to achieve maximum preparedness and plan for robust response to a potential outbreak.

The document presents a comprehensive operational framework of the preparedness plan and response strategies by Government of Pakistan for the Covid-19 emergency. It highlights the preparedness in different sectors of the government and efforts for coordinated response on national level. Furthermore, it includes guidelines for risk assessment, goal assessment, case management, capacity assessment, screening of travelers and response generation on national and provincial levels through clear communication channels. This document also serves a guide for engagement of communities and communication to public through all forms of media.

The NAP Covid-19 reflects Government of Pakistan's commitment to tackle threats to the people of Pakistan through a coordinated, multi-sectoral national effort. My intention is that this framework will serve as a blueprint for how to tackle future outbreaks and create robust mechanism that kick in when similar global health security situations arises.

I want to wholeheartedly appreciate the team that has put this together through day and night work. Thank you All! Now time to implement as efficiently!

Dr. Zafar Mirza
Minister of State for Health/SAPM
Ministry of NHR&C

Message by Secretary M/o NHR&C

Ministry of National Health Services Regulations & Coordination has a stoic resolve and determination to maintain an environment that is conducive and congenial to prevent Corona Virus Disease (Covid-19) for people of Pakistan within a comprehensive framework. The Ministry has chalked out Standing Operating Procedures (SOPs) according to the best international practices and accredited by the World Health Organization (WHO)

Our surveillance, management and community-based programs are functioning pro-actively to promote prevention and control. Our medical services must operate within national established standards, norms and protocols to improve the services provided to customers.

All of the institutions and division under Government of Pakistan and M/o NHR&C are implementing national action plan aimed at improving effectiveness and efficiency in response for Covid-19 with seamless unity and coordination. The Ministry is focusing its energies on three major areas: Surveillance, Management, Response and Coordination in wake of protection of people of Pakistan. The National Action Plan is a very useful document which is dynamic in nature and will guide all stakeholders.

Dr. Allah Bakhsh Malik

PhD, PAS, UNESCO Confucius Laureate

Secretary

Ministry of NHR&C

Message by Executive Director, NIH

We are working with a multi-faceted approach in areas of surveillance, response, diagnostic services and many others, to ensure the optimal health and wellbeing of people of Pakistan. For surveillance and response to Corona Virus Disease (Covid-19) pandemic situation, NIH is providing best possible services for all institutions of Pakistan.

NIH is continuing to monitor this evolving situation. Relevant Guidelines and Advisories with structured plans for all of the institutions and organizations are being issued.

Our dedicated staff is working day and night to avert epidemics and spread of such diseases, promote healthy behaviors and response to public health emergencies in Pakistan.

It is highlighted that this plan has been prepared in very short time, it stays as a live document. We will keep on adding, modifying the plan according to evolving situation. A list of SOPs and forms is attached for strict implementation.

**Maj. Gen.
Prof. Dr. Aamer Ikram SI(M)
Executive Director NIH**

Preparedness Plan for Corona Virus Disease (Covid-19)

1. Overview

The world has experienced a new potent and gigantic challenge in the shape of Corona Virus Disease (Covid-19). While the Covid-19 is not new to the medical sciences, the outbreak of this novel 5th type of Covid-19 has its characteristics and evolving epidemiology under the microscope as of now.

Characteristics of the Virus

Coronaviruses are a large family of viruses, some causing illness in human and others circulate among animals. Rarely, animal coronaviruses evolve and infect humans and may then spread between them such MERS, Avian Influenza and SARS in the past. 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, suggesting person-to-person spread.

Both MERS and SARS have been known to cause severe illness in people. The situation regarding Covid-19 is still unclear; while severe illness, even resulting in several deaths as reported in China; other patients have milder illness and recovered. There are ongoing investigations to learn more. The situation is evolving rapidly, and more information is expected soon. Such outbreaks of novel viral infections among human are always of public health concern.

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 and on 12 January, China shared the genetic sequence of a Corona Virus Disease later named as Covid-19.

On the recommendation of the Emergency Committee, ***the Director General WHO declared the Covid-19 as a Public Emergency of International Concern (PHEIC)*** with no travel and trade restrictions were recommended.

Current situation

As of 12 February 2020, a total of 45,158 confirmed cases and 1,114 deaths have been reported for Covid-19 globally. Of these, 44,641 cases are from China whereas 1,112 confirmed cases with 2 deaths from outside China. So far, no case has been reported in Pakistan.

Rationale for this Preparedness Plan

Pakistan is a close ally of China with increasing frequency of travel and trade over the past few years. The increased influx of travelers through air, land and sea can facilitate the transmission of virus making Pakistan vulnerable. This necessitates the need for preparedness and response plan. The land route (Khunjrab order PoE) is closed at present due to heavy snow fall. 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.

The current capacity of the country for responding to the outbreak needs to be augmented including surveillance system in general and at PoEs. As the Covid-19 is new, very little is known about the virus and no specific treatment or vaccine is available, therefore case management and Infection Prevention and Control (IPC) at healthcare facilities is another challenge. The 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.

2. Vision

Define national effort for maximum preparedness in Pakistan while ensuring best possible, optimal and effective response to potential outbreaks of respiratory pathogens with pandemic potential including Covid-19.

3. Aims

- a. Develop National Preparedness & Response Plan for Covid-19 as a blueprint for Pandemic Preparedness for Pakistan under Global Health Security Agenda.

- b. The overall aim to provide policy frame work for federal, provincial and regional stakeholders to build capacity to prevent, detect and respond to any events due to Covid-19 or other novel pathogens with pandemic potential in Pakistan.

4. Objectives

The main objectives of NAP are:

- a. To strengthen country and community emergency preparedness in order to ensure a timely, efficient and effective response to potential events due to Covid-19 including local, regional and national outbreaks that can have a significant impact on the health of Pakistani population and on society.
- b. To advocate for prioritizing financial and other resources for community and country emergency preparedness, 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. It also evaluates resource allocation, guiding decisions to ensure that financial investments support implementation.

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

Short term

- a. Maximum preparedness and response by ensuring all safeguards in place to prevent outbreak of Covid-19.
- b. Identification and activation of available financial and other resources to ensure maximum preparedness.

Medium term

- a. Further 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-19 emergency.
- b. Sustainability of ongoing efforts; and continued strategy for long term.

Long term

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

5. Risk Assessment

Based upon the risk assessment for health, the risk is very high for China; and high at the regional level and global level. The factors include:

Likelihood of further spread

Human-to-human transmission, including transmission within families and healthcare settings, has been confirmed in Wuhan and in several cities outside China. The outbreak continues to grow within China at a rapid rate, and now affects all 31 provincial-level administrative regions. Imported cases continue to be reported internationally, with several reported cases of secondary transmission now confirmed in countries outside of China. Limited testing capacity in many countries globally, non-specific symptoms of Covid-19 acute respiratory disease, and co-circulation of other respiratory pathogens are factors that can complicate efforts to detect the virus rapidly.

Impact on human health

The virus can cause severe illness and death, although most cases appear to be mild. However, many uncertainties remain, including the full extent of the current outbreak within China, and the full clinical spectrum of illness, including the prevalence of mildly symptomatic cases. The evaluation under One-Health concept is also to be further strengthened.

Effectiveness of current preparedness and response measures

China has dedicated substantial resources to public health control measures and clinical management and has taken action that has included the quarantine of Wuhan city, and the widespread suspension of transport links between population centers. Countries that have reported an imported case have demonstrated efficient and effective disease surveillance and response measures. However, some countries

are less prepared to detect and respond to an imported case. Rumors, misconceptions, and misinformation disseminated online via social media can have a negative impact on response measures and health-seeking behaviors.

WHO has advised member states to strengthen their preparedness and response capacities to respond to the Covid-19 outbreak. Chinese Government has put in place stringent control measures to contain the outbreak with screening of the travelers while leaving the country.

Identification of Threat

Scope & Influencing factors

Approximately, 50,000 Chinese are working in Pakistan under various firms or individually. A significant number of Pakistani and Chinese businessmen are engaged in trade activities. Moreover, there are around 28,000 Pakistani students enrolled in various academic institutions of China; over 500 students are in Wuhan City.

There are 19 PoEs. Weekly around 41 flights are operating between three major cities (Islamabad, Lahore and Karachi) in Pakistan and going to the two destinations in China (Beijing and Urumqi Xinjian province). There are several projects in Pakistan which entail frequent travel of the employees between the two countries. These factors enhance the risk of importation of the virus to Pakistan and require strong preparations and stringent measures for early detection of potential cases and control measures to prevent further spread of the virus within Pakistan.

6. Strategic Determinants of NAP

- a. Rapidly establishing coordination to deliver strategic, technical, and operational support through existing mechanisms and country partnerships;
- b. Scaling up country preparedness and response operations, including strengthening readiness to rapidly identify, diagnose and treat cases including identification of contacts with tracing and follow up;
- c. Infection prevention and control in healthcare settings;
- d. Implementation of health measures for travelers; and
- e. Awareness raising in the population through risk communication and community engagement.

7. Goal Assessment

The goals have been assessed thoroughly with deliberations of all concerned stakeholders. In the light of that line of action has been prepared and actions initiated.

The overall preparedness and assessment must be based upon:

- a. Preparation contours.
- b. Prevention.
- c. Mitigation.
- d. Management.

8. Preparedness for Covid-19 (before outbreak)

Core elements for strengthening preparedness, response and information and their application at different levels includes:

a. Governance

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

b. Capacities

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

c. Resources

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

Focus of the Covid-19 Preparedness & Response Plan is on the following main areas:

Strengthening coordination mechanism at national and provincial level

- a. **Emergency Core Group** has been established at the Ministry of NHR&C under the leadership of Special Assistant to Prime Minister (SAPM) with members from area of expertise as leads (**Annexure-A**).
- b. **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.
- c. **National Committee** of relevant line ministries, provincial departments and partners. Technical Working Groups may be established under the emergency committee.
- d. Advisory/alert was issued to all relevant stockholders for taking necessary steps/preparedness measures (**Annexure-B**).

Screening and surveillance at PoEs

As the epicenter of the Covid-19 is China at the moment, screening has been recently initiated at the 3 PoEs (Islamabad, Lahore and Karachi) where direct flights between Pakistan and China are operating. The health declaration form in the context of Covid-19 of the passengers has prepared and dispersed to all the relevant airlines. This information is mandatory for all the passengers entering Pakistan especially those travelling back directly or indirectly from China (**Annexure-C**).

The Khunjrab Pass at KKH and Gwadar Seaport are also the PoEs for trade and travel between the two countries. The Khujrab pass is closed till April 2020. There are 3 seaports: Karachi, Port Qasim and Gwadar. Surveillance system need to be in

place to detect any case if symptoms develop after arriving at the place of work. Furthermore, surveillance system will be strengthened for contact tracing and monitoring. Sentinel surveillance will be also initiated at major hospital.

Establishing & Strengthening Sentinel Surveillance

Comprehensive surveillance mechanism / system is mandatory incorporating event-based surveillance, indicator-based surveillance and sentinel surveillance. This surveillance system may engage all the stakeholders which can provide health related information.

- a. Disease outbreak information management system must be strengthened.
- b. Comprehensive hospital information management system must be ensured as basis for early detection of outbreaks.
- c. Disease surveillance & Response Units (PDSRU) must be strengthened at district level and collaborated with Emergency Operations Centers (EOC) at provincial level.
- d. Financial resources must be allocated for operation of EOC and DSRUs during emergencies.
- e. Data management and data security mechanism may also be proposed.
- f. **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. Capacity to monitor and analyze data.

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

Laboratory Diagnostic Capacity

Hospitals and laboratories in the major cities have been designated to collect the samples from suspected cases on biosafety and biosecurity standards. The preparation includes availability of relevant supplies, PPEs and lab reagents for safe collection, storage, packing and transportation of samples from the designated hospitals to the National Reference Lab/ designated labs will be ensured. The sample collection and transport policy is attached as (**Annexure-D**).

Testing Sites

- a. National Institute of Health will be the main referral centre for the country.
- b. Provincial labs:
 - i. Punjab: Shaukat Khanum; and Punjab BSL.
 - ii. Sind: Aga Khan University Hospital; more being assessed.
 - iii. Rest of the regions are being considered.

Case management (Annexure-E1)

Hospitals have been designated for admission and management of cases based upon availability of isolation wards at Federal, provincial and regional levels. Emergency Response Teams have been identified, trained and equipped with ambulances to transport suspected cases to hospitals. Ambulance services by relevant hospitals, 1122 and PRCS should be ensured.

Case Definitions for suspected, probable and confirmed cases have been adopted from WHO standard case definition (**Annexure-E2**). A questionnaire has been designed for evaluation of suspected cases (**Annexure-E3**).

Stockpiling & Logistics (Annexure-F)

Each institute and hospital is expected to conduct initial availability assessment of supplies (equipment, personal protective equipment, laboratory diagnostics) potential need and including identification of sources to secure provision and availability of PPEs and other equipment at PoEs and key designated hospitals. Assessment regarding availability of ventilators, anti-virals, and complete supportive treatment along with backup.

Infection Prevention & Control (IPC)

IPC measures will be strictly implemented at all the healthcare facilities. Notify and train IPC team at the designated hospitals and PoEs or at least trained IPC focal person nominated to ensure the IPC measures implanted. Focal person in the other healthcare facilities will be identified and trained. The recently draft National IPC guidelines will be implemented.

Standard Operating Procedures (SOPs) for Hospital Waste Management at hospitals (**Annexure-G1**) and Airports (**Annexure-G2**) have been prepared and disseminated.

Infectious waste generated from such sources including labs should be appropriately disposed of appropriately. Briefly:

- a. In patient rooms, dustbins with lids shall be used and must be lined with coloured coded bags;
- b. 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 is recommended.
- c. PPE must be worn during this process.
- d. The sealed bag should be discarded through incineration.
- e. SOP should be developed and available in all HCFs.

SOPs for disinfection and Environmental decontamination has been developed (**Annexure-G3**).

Safe and dignified burial policy & guidelines

Guidelines have been prepared for burial of patient dying with Covid-19 infection. Deceased bodies theoretically may pose a risk when handled by untrained personnel. For details see clinical case management guidelines at Annexure-E1.

Risk Communication

The national risk communication and community engagement (RCCE) strategy for preparedness need to be developed/adapted from the global technical documents. Ministry of Information to be in lead in communication. The relevant healthcare workers, media and other staff need to be trained on risk communication, social mobilization and community engagement. Please note:

- a. An adaptation of WHO's Risk Communication and Community Engagement (RCCE) strategy is being applied to the current 2019 Covid-19 outbreak. A strategy document currently being developed, will be annexed.
- b. This strategy follows the short-term, medium-term and long-term objectives of this NAP.
- c. A public service message to inform about infection, its transmission, preventive measures for individuals and system-preparedness ensured by NHSRC, is being aired.

- d. Alongside, direct text messaging to travelers coming back from China about disease symptoms and appropriate action is also being done as part of this strategy.

IEC materials guided by the national RC 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 as **Annexure-H**.

A sit-rep format has been developed for daily situation report (**Annexure-I**).

Funding

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

- a. Federal level: Ministry of NHSR&C has already done that with an initial tranche of PKR 85 Mn.
- b. Provinces/regions: Need to do the same. (KPK has also established).
- c. 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)).

9. Capacity Assessment & Gaps

It is crucial to scale up country's preparedness and response operations. In order to do that we need to assess the current capacity like organizational capacity including healthcare, public health and diagnostic facilities; trained human resource; management of cases and follow up of contacts when feasible; IPC in healthcare settings; implementation of health measures for travelers; awareness raising in the population through risk communication and community engagement; and financial sources/mobilization. WHO tools for capacity assessment will be used (**Annexure-J**).

The current capacity of the country for responding to the outbreak need augmentation including surveillance system in general and at PoEs. Case management and IPC at healthcare facilities are among the challenges. Assessment must be initiated rapidly on following:

- a. Existing health infrastructure evaluation.
- b. Existing organizational infrastructure evaluation.
- c. Existing resources.

10. Response for Covid-19

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.
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. (Annexure-E3) • Training of CHE staff on screening, data collection and data management. • Develop / adapt contingency plans and operational SOPs for screening points. • 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-19. • Availability of ambulances and trained Rapid Response Teams (RRTs) for suspected cases from PoE to designated hospitals. • Conduct simulation exercise at PoE (Annexure-K) • Guidelines/SOPs developed for international flights inbound to Pakistan in wake of Covid-19 (Annexure-L)
Laboratory Support	<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.

	<ul style="list-style-type: none"> • 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.
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.
Risk Communication	<ul style="list-style-type: none"> • Develop or adapt risk communication plans with SOPs. • Train healthcare workers, media and others on Covid-19 risk communication, social mobilization and community engagement. • Prepare or adapt communication guidelines for frontline health and community workers and field staff. • Develop and disseminate IEC material for public awareness. • Measures will be taken to neutralize the rumours, misconceptions, and misinformation. <p>Important</p> <p>e. 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.</p>
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. • Train staff on case management of patients with Covid-19. • 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.

	<ul style="list-style-type: none"> • 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 identified staff orientation. • Identify, train the health facility staff on IPC guidelines, and ensure implementation. • Monitoring of application of IPC 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 selected health facilities. • Provision of IPC equipment and supplies.
Training	<ul style="list-style-type: none"> • Training is mandatory as highlighted in relevant sections. • Conduct simulation exercises / mock drills on emergency response. • PPE training is mandatory and so is the disposal. • Refresher trainings of the Rapid Response Teams (RRTs).
Quarantine	<ul style="list-style-type: none"> • Dedicated quarantine places have to be ensured at federal, provincial and regional levels. • Properly trained support staff with duty shifts. • Proper disposal of waste. • Medical support.
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-M) <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) c. Contact investigation refresher trainings of FELTP fellows and alumni irrespective of their current positions

	<ul style="list-style-type: none"> d. Armed Forces need to develop similar information in real time for proper contact investigations. e. Clusters of pneumonia in major hospitals needs to be notified by the respective hospitals • 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-19 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. • Establish event-based surveillance for the Covid-19. • 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)
Monitoring & Evaluation	<ul style="list-style-type: none"> • Develop monitoring indicators. • Define intervals for M&E. • After Action Review (AAR).

11. Broad Implementation Arrangements

The Ministry of 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 be complete understanding of identification of stakeholders with roles and responsibilities.

The actual success of the complete process depends upon:

- a. Economy of effort.
- b. Synergy.
- c. Coordination.
- d. Communication.

The **main stakeholders** include:

- a. Ministries:
 - i. Ministry of National Health Services, Regulations & Coordination
 - ii. Cabinet Division
 - iii. Aviation Division
 - iv. Ministry of Commerce & Textile Industry
 - v. Ministry of Communications
 - vi. Ministry of Defence
 - vii. Ministry of Finance
 - viii. Ministry of Climate Change
 - ix. Ministry of Foreign Affairs
 - x. Ministry of Interior & Narcotics Control
 - xi. Ministry of Information and Broadcasting
 - xii. Ministry of Inter Provincial Coordination
 - xiii. Ministry of National Food Security & Research
 - xiv. Ministry of Planning Development & Special Initiatives
 - xv. Ministry of Ports & Shipping
 - xvi. Ministry of Religious Affairs & Interfaith Harmony
 - xvii. Ministry of Maritime Affairs
 - xviii. Provincial Governments and Area (AJK & GB) stakeholders
- b. Armed Forces of Pakistan.
- c. Authorities/Agencies:
 - i. National Disaster Management Authority (NDMA)
 - ii. Civil Aviation Authority (CAA)
 - iii. Federal Investigation Agency (FIA)
 - iv. Pakistan Electronic Media Regulatory Authority (PEMRA)
- d. Institutes / Departments:
 - i. National Institute of Health (NIH)
 - ii. Central Health Establishment (CHE)
 - iii. Federal & District Surveillance Units (including FELTP)
 - iv. National Health Emergency Preparedness & Response Network (NHEPRN)
 - v. Designated Hospitals
- e. Civil Armed Forces
- f. Federal & Provincial District Administration
- g. Partners:
 - i. World Health Organization (WHO) Country Office

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

12. 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 what went wrong and where.

Dedicated committees 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 eventuality in future.

13. Conclusion

As understood, no one can prepare during an eventuality, one has to be prepared beforehand. NAP has been for the first time; directed to Covid-19. The hallmark is not only the preparation but simultaneous implementation. Snare, smooth and effective implementation must be the maverick at work. The success mainly depends upon very well coordinated efforts at national, provincial and regional levels; true dedication; perfect readiness; stringent implementation and follow up; and continual improvement. It is relentless monitoring, consistent and coordinated efforts by all the stakeholders that will lead us to sure success and make Pakistan safe and secure place.

Contributors

- Dr. Zafar Mirza, MoS/SAPM M/o NHR&C
- Dr. Nausheen Hamid, Parliamentary Secretary M/o NHR&C
- Dr. Allah Baksh Malik, Secretary M/o NHR&C
- Maj. Gen. Prof. Aamer Ikram, SI(M), Executive Director, NIH
- Dr. Safi Malik Director General, Health, M/o NHR&C
- Dr. Faisal Sultan, CEO & Consultant Physician, SKMC, Lahore
- Dr. Muhammad Salman, Chief PHLD - NIH, IHR Focal Point
- Dr. Irfan Tahir Director, Central Health Establishment
- Lt. Col. Rehan Mehmood, Pakistan Army
- Dr Rana Jawad Asghar, CEO at Global Health Strategists & Implementers (GHSI)
- Dr. Zaeem ul Haq, Minister's Communication Adviser
- Dr. Faisal Mahmood, Section Head ID, Agha Khan University
- Dr Muhammad Wasif Malik, Senior Scientific Officer, NIH
- Dr. Mumtaz Ali Khan, Senior Scientific Officer, NIH
- Dr. Usman Mushtaq, Advisor to SAPM
- Dr. Israr ul Haq, Advisor to SAPM

WHO Country Office

- Dr. Palitha Mahipala, WR, WHO Pakistan
- Dr. Farah Sabih, WHO Pakistan
- Dr. Musa Rahim, WHO Pakistan

ANNEXURE-A

Emergency Core Committee for Covid-19

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 Point 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 Malik	Senior Scientific Officer, NIH	Lead Disease Surveillance
Dr. Syed Faisal Mahmood	Section Head, Infectious Disease, Agha Khan University	Lead Clinical Care and Prevention
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



No: F.1-22/Advisory/FEDSD/2020

Islamabad, 28th January 2020

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.



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

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

National Focal Point for IHR



No: F.1-22/Advisory/FEDSD/2020

Islamabad, 25th January 2020

Subject: **Advisory on Pneumonia outbreak due to novel coronavirus, in Wuhan City, Hubei Province, China**

A recent surge of pneumonia cases, associated with the novel coronavirus, has been reported in China. The Chinese authorities have notified more than 1500 confirmed human infections and cases have also been reported from Thailand, Japan, and South Korea. This situation has urged the neighbouring countries to enhance their surveillance and vigilance for response in case of detection. The NIH is accordingly monitoring the situation and will keep all stakeholders updated.

The objective of this advisory is to alert and sensitize the health staff at border posts as well as in healthcare institutions of Pakistan to stay vigilant about any suspected cases coming from affected areas for an early detection. The information about the illness is summarized below:

Infectious Agent: This pneumonia like illness is caused by a novel Coronavirus named by CDC-US as “2019-nCoV” of the family of Coronavirus.

Occurrence of cases: According to the preliminary epidemiological investigation, most cases have either worked at or were handlers and frequent visitors to the Huanan Seafood and Meat wholesale Market in Wuhan City, Hubei Province, China.

Mode of Transmission: Recent evidences are highly suggestive that this is a zoonotic disease and primary cause of infections in human is through contact with infected animals, and animal products (needs to be confirmed). Substantial evidence is also suggestive of human to human transmission resulting in secondary infections (confirmed by Chinese authorities).

Clinical Picture: Limited information is available to characterize the spectrum of clinical illness associated with 2019-nCoV. The observed clinical signs and symptoms of this illness include fever, cough, and difficulty 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 breathing **and** with history of travel to Wuhan or any other affected area of China within last 15 days prior to symptom onset
2. An 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 of China
 - 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 etiquette for prevention and personal protection.

Measures to be taken at all Health Facilities:

Generally the same as for seasonal Influenza.

- Ensure the standard precautions including hand hygiene and cough etiquette followed by using personal protective equipment (PPE).
- Cover nose and mouth with a face mask during examination of suspected persons.
- Ensure hand hygiene after contact with respiratory secretions.
- Clean and disinfect frequently touched surfaces and objects, such as doorknobs.

Laboratory Diagnosis and NIH Support:

- Sample from suspected pneumonia caused by new coronavirus case should be collected by trained technician with full preventive measures using appropriate PPEs
- Recommended samples for testing are respiratory sample nasopharyngeal and throat swab sample transported (in one tube) viral transport media (VTM), and all sample should be referred to the national reference lab, NIH, Islamabad.
- Test on patient sample present an extreme biohazard risk and should only be conducted under maximum biological containment conditions.
- 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

For General information:	Dr. Wasif Malik - 03005101696 Dr. Muhammad Mudassar - 03348252752
For Laboratory Information:	Dr. Mussab Umair - 03455176169
Risk Communication:	Majid Ali Tahir - 03000837480
For further Information:	Dr. Mumtaz Ali Khan - 03125114117

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



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

Travel History:

Visited China in last 14 days	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Visited Wuhan in last 14 days	Yes <input type="checkbox"/>	No <input type="checkbox"/>
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"/>

Arriving in Airport

Signature

ANNEXURE-D



Standard Operating Procedure (SOP) for Collection, Storage & Transportation of Specimens for Corona Virus Disease (Covid-19) Diagnosis

Version: 01 Pages 03

1. Materials Needed

- 1.1.1 Dacron or polyester flocculated 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

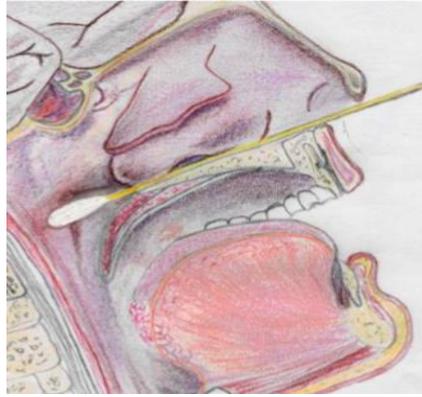
- 3.1.1 Wear disposable gloves and change gloves after each patient.
- 3.1.2 Wash or sanitize hands before putting on and after removing gloves.
- 3.1.3 Wear a N95 mask to minimize exposure to infection during specimen collection.
- 3.1.4 Follow standard precautions and any additional precautions specific 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

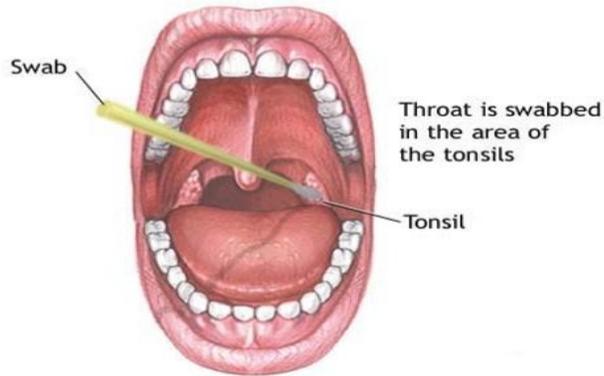
- 3.3.1 Explain the procedure to the patient. Emphasize the importance of remaining still during specimen collection to minimize discomfort.
- 3.3.2 Position the patient in a comfortable position.
- 3.3.3 Tilt the patient's head back at a 70-degree angle (see figure below).



- 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 Covid-19 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 Corona Virus Disease (Covid-19) in suspected human cases. WHO/Covid-19/laboratory/2020.3

Contact Information:

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

ANNEXURE-E1



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
 - 3.1.3. All health care workers must take the following precautions when entering the room/ward
 - 3.1.4. Wear surgical mask at all times during patient care
 - 3.1.5. Observe STRICT hand hygiene
 - 3.1.6. Avoid touching eyes or the mask
 - 3.1.7. Wear clean, long sleeve non-sterile gowns
 - 3.1.8. 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 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

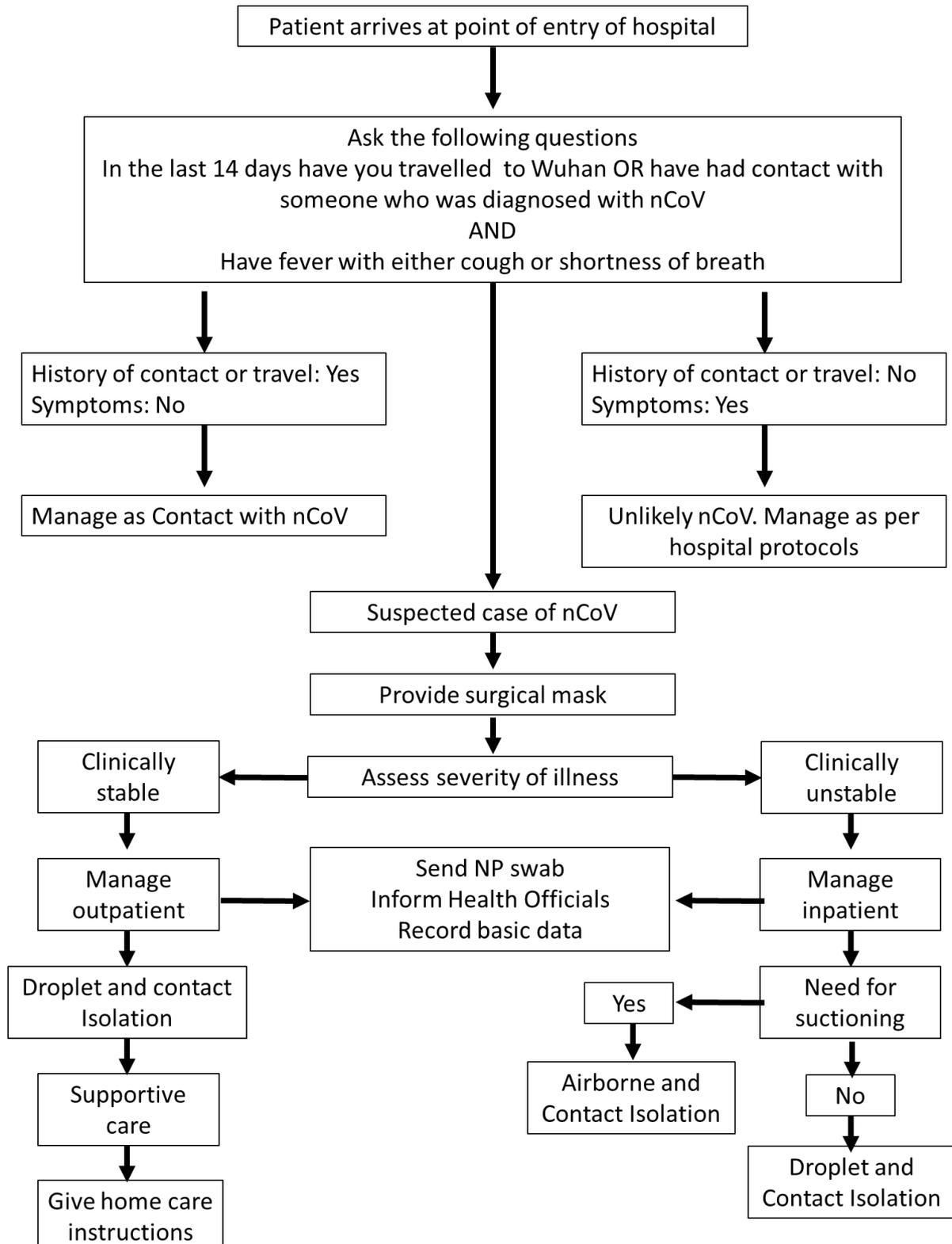


- 6.1.2. Gloves
- 6.1.3. Goggles/ face shield
- 6.1.4. Gown
- 6.1.5. Mask
- 6.2. After removing PPE, perform hand hygiene.
- 6.3. All PPE should be disposed of in an infectious waste bag for incineration
- 7. Transport the dead body to the cemetery for funeral prayer
- 8. Burial at the cemetery
- 9. 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 flocculated 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.

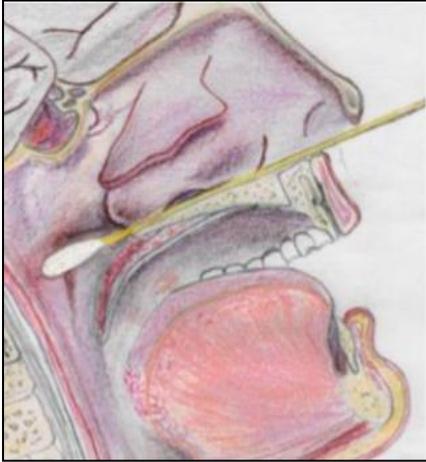
3.2.2 The NP swab for VTM should be collected first, followed by the OP swab. Both swabs will be placed in the same vial of VTM. **Note:** Placing the NP & OP swabs in the same tube increases the viral load.

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 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.



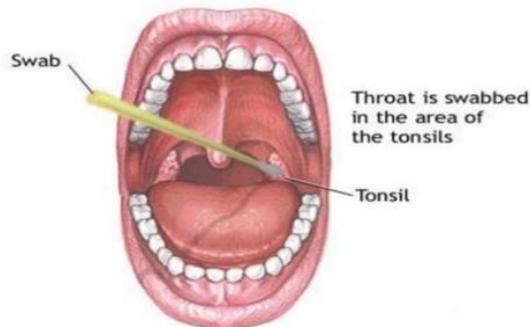
3.4.5 Place the swab into the vial containing VTM (same vial as the first NP swab).

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	

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.



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. Liaquat 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 genral hospital, Quetta



	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-E2



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 Covid-19 in the 14 days prior to illness onset, **or**
 - visiting or working in a live animal market in Wuhan, Hubei Province, China in the 14 days prior to symptom onset, **or**
 - worked or attended a health care facility in the 14 days prior to onset of symptoms where patients with hospital-associated Covid-19 infections have been reported.

Probable case:

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

Confirmed case:

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

(Source: WHO- Global Surveillance for human infection with novel coronavirus (Covid-19), Interim guidance- 21 January 2020)

ANNEXURE-E3



Questionnaire for Suspected Corona Virus Disease 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-F



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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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

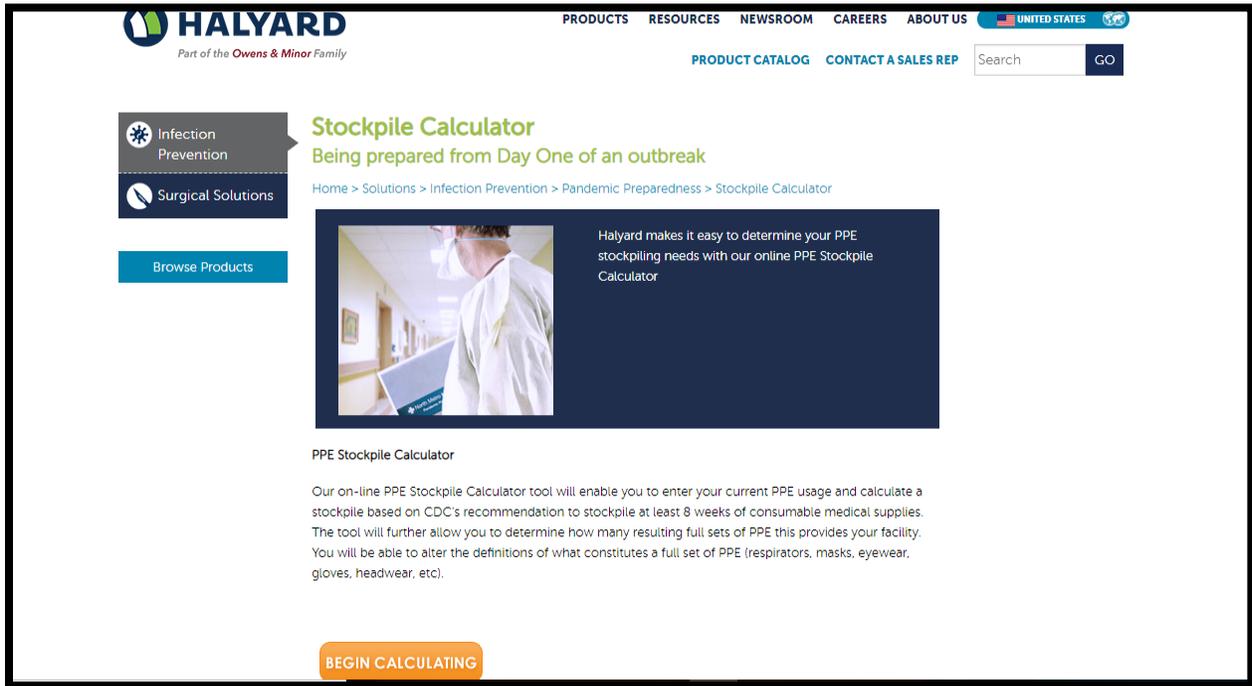


Figure 1: <https://www.halyardhealth.com/solutions/infection-prevention/pandemic-preparedness/stockpile-calculator.aspx>

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.

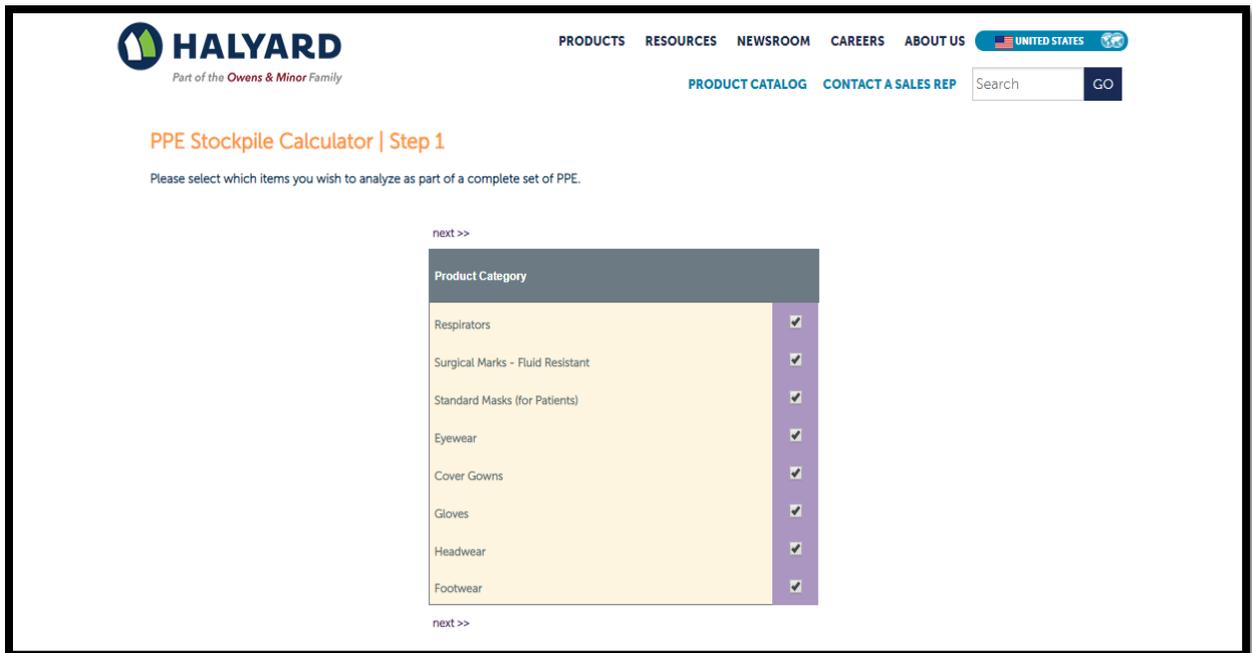


Figure 2: <https://www.halyardhealth.com/Pandemic>

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.”

The screenshot shows the 'PPE Stockpile Calculator | Step 2' interface. It features a navigation bar with the Halyard logo and various menu items. The main heading is 'PPE Stockpile Calculator | Step 2'. Below the heading, there is a question: '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.' A table lists various PPE categories with their required usage percentages. Navigation buttons '<< back | next >>' are visible above and below the table.

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.

The screenshot shows the 'PPE Stockpile Calculator | Step 3' interface. It features the same navigation bar as Step 2. The main heading is 'PPE Stockpile Calculator | Step 3'. Below the heading, there is a prompt: 'Now enter your current annual usage in cases for the PPE you have chosen.' A table lists various PPE categories with their required usage percentages and input boxes for annualized usage. Navigation buttons '<< back | next >>' are visible above and below the table.

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-G1

Field Epidemiology & Disease Surveillance Division

(Standard Operational Procedure-SOP)



Document Information

Category	Information
Document Title	SOP of Waste Management of Covid-19
Version	00
Document ID No	NIH- FE&DSD-SOP-27
Author(s)	Shazia Adeel (QMR of NIH)
Reviewer(s)	Dr. Jamil Ansari (Chief FE&DSD)
Approver(s)	
Authorized by	Executive Director NIH
Creation Date	
Issue Date	
Effective Date	
Control Status	Controlled
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

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:

- 2.1. This procedure applies to all concerned hospitals, laboratories and Points of Entry which are dealing with suspected cases of Covid-19 and generation of waste against it

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 log book 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 Disinfectants

4.2.5.1 The following are the instructions of disinfectant use

- chemical disinfectants must be clearly labeled and used within the expiry date. They should be freshly prepared and must be used at the correct concentration and stored in an appropriate container.
- Disinfectant or detergent solutions must not be prepared and stored in multi-use containers for occasional use. Solutions prepared and stored in this manner may easily become contaminated with microorganisms.
- Disinfectants can be corrosive and may damage fabrics, metals, and plastics.
- Manufacturers' instructions must be consulted on compatibility of materials with the method of sterilization or disinfection

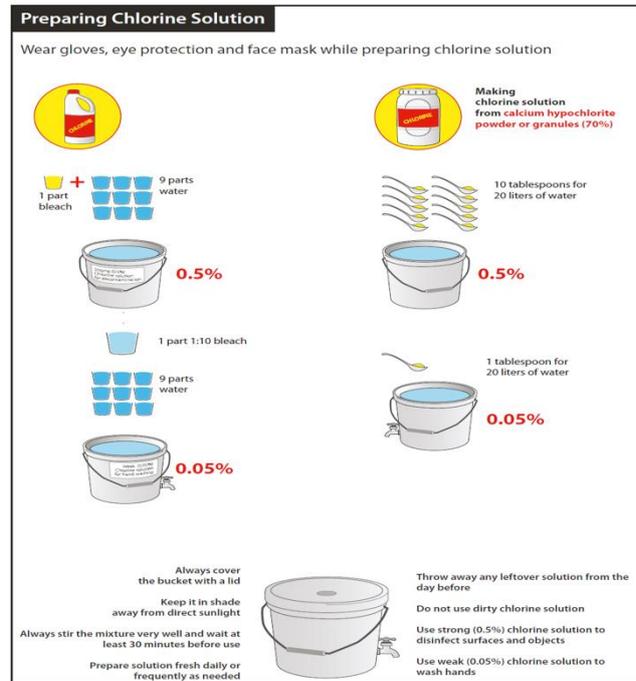
4.2.5.2 The following are materials required for disinfection and cleaning:

- Hypochlorite solution
- Surface disinfectant (low level disinfectant) eg. Quaternary ammonium compounds
- Ethanol
- Alcohol wipes
- Double bucket for cleaning
- Dust mop
- Duster for cleaning
- Detergent
- PPE
- Supply cart
- Mop with long handles
- Heavy duty gloves

4.2.6 Concentration of Disinfectants:

4.2.6.1 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.



Preparing hypochlorite solution

Source: National Infection Prevention and Control Guidelines. Freetown: Ministry of Health and Sanitation, Government of The Republic of Sierra Leone

4.2.6.2 Ethanol:

- Ethanol (ethyl alcohol, C_2H_5OH) and 2-propanol (isopropyl alcohol, $(CH_3)_2CHOH$) 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.
- Items that come in contact with intact skin include stethoscopes, sphygmomanometers, blood pressure cuffs, mercury thermometers, non invasive ultrasound probes, intravenous pumps and ventilators, ECG leads, etc. It is recommended to store them in a clean, dry place to prevent environmental contamination. Low level disinfection is required to disinfect these things. Ethanol may be used in this case.

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 (H_2O_2) 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.
 - To prevent cross contamination, cleaning must always be carried out from the **cleanest area first and finish in the dirtiest area last, and always clean from the top first and bottom last**
 - Special emphasis must be placed on cleaning and disinfecting *high frequency hand touch* surfaces and these areas should be cleaned *more frequently*
 - After spraying surfaces with low level disinfectant, for eg. tables, door-knobs, with suitable disinfectant, give adequate contact time. After that wipe meticulously with a cloth.
 - Dispersal of microorganisms in the air from the floor must be avoided. **Dry sweeping with a broom should never be used** as it disperses microorganisms from the floor into the air. Also avoid cleaning methods that produce mists or aerosols, or disperse dust e.g. spraying, dry mopping, or dusting.
 - Dust- retaining materials, which are specially treated or manufactured to attract and retain dust particles, should be used as they remove more dust from dry surfaces.
 - **The moist method** using the *double bucket method* is the most commonly used methods. One bucket is for *clean water* to which a detergent (\pm disinfectant) solutions are added and the other bucket contains clean water for rinsing
 - 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 repositioned 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.

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.

6. Records:

- 6.1. Data Sheet for Waste Handling DF#036

DF # 036						
Sample Data Sheet for Waste Handling						
Ward/Sec/Unit: _____				Month: _____		
Date	Waste Collection Deptt/ Lab/ Sec	Waste Category Specify: Infectious, sharps	Quantity of Waste Generated Per Day (weight & Volume)		Waste collected by	Waste received by
			Kg	Liter		

ANNEXURE-G2

Field Epidemiology & Disease Surveillance Division

(Standard Operational Procedure-SOP)



CATEGORY	INFORMATION
Document Title	SOP of Waste Management of Covid-19 for Islamabad International Airport
Version	00
Document ID No	NIH- FE&DSD-SOP-28
Author(s)	Dr. Mumtaz Ali Khan (SSO NIH/National IPC Focal)
Reviewer(s)	Dr. Jamil Ansari (Chief FE&DSD)
Approver(s)	
Authorized by	Executive Director NIH
Creation Date	09-02-2020
Issue Date	
Effective Date	
Control Status	Controlled
Distribution: Issuance / Withdrawal	1. Islamabad Airport Management Authority 2. NIH (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

1. Purpose:

- 1.1. To provide guidelines for airport personnel for proper management of waste against Corona Virus Disease 2019
- 1.2. To protect the health of employees, passengers, visitors and environment from hazards of infectious waste to maintain health and safety at Islamabad International Airport

2. Scope:

- 2.1. This procedure applies to all concerned airport staff who are dealing with generation of waste against Covid-19

3. Responsibilities:

- 3.1. The Islamabad Airport Management Authority is responsible for the compliance of whole process
- 3.2. Collection, storage and of transport of infectious waste for incineration and maintenance of log book is the responsibility of waste management personnel at the airport

4. Procedure:

4.1 Material and Equipment:

- 4.1.1 Waste for disposal
- 4.1.2 Color colored containers for waste collection
- 4.1.3 Personal protective equipment e.g. gloves, Shoe covers, face masks, respirators, long closed foot wear for sanitary workers etc.
- 4.1.4 First Aid Box
- 4.1.5 Spill Kit
- 4.1.6 Waste Disposal bags
- 4.1.7 Sharp disposal box
- 4.1.8 Waste transportation trolleys
- 4.1.8 Waste transportation vehicle

4.2. Handling and disposal procedures for contaminated materials and wastes

4.2.1 General Waste

General waste is the most commonly generated waste at airports which does not pose risks to human health. This includes everyday items that are used and discarded, such as aluminum cans, glass bottles and containers, plastic bottles and containers, packaging bags, paper products, and cardboard.

- Place all general waste in color coded bags/containers (e.g. black, blue, green white etc.)
- Special care must be taken to avoid mixing of general waste with infectious waste

4.2.2 Contaminated (infectious) “sharps”

- Collect needles, knives and broken glass; always in puncture-proof containers fitted with covers and treat as infectious
- Place complete assembly in a sharps disposal container
- Place the disposable syringes, used alone or with needles, in sharps disposal containers
- 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

4.2.3. Contaminated material for incineration:

- Place the contaminated waste in designated containers (e.g. Yellow or Red colored bag) and transport in a designated vehicle to NIH for incineration
- Reusable transfer containers should be leak-proof and have tight-fitting covers
- Disinfect and clean the transfer container before further use
- 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

4.3 Collection, Storage and Transport of waste

4.3.1 Waste Collection:

Certain recommendations should be followed by the workers in charge of waste collection:

- Waste should be collected daily (or as frequently as required) and transported to a designated storage site. A timetable should be provided to waste management staff
- Staff should ensure that waste bags are tightly closed or sealed and in no case more than $\frac{3}{4}$ full.
- No bags should be removed unless labelled with their point of production, date, weight and contents-this information should be written on the bag or on the printed label securely attached.
- The bags or containers should be replaced immediately in separate bins/drums with new ones of the same type.
- Ensure cleaning of the bin/container before new bag is fitted.
- Staff who regularly have to handle, transfer or transport waste containers must be provided with appropriate PPE, i.e. heavy- duty gloves, appropriate footwear, industrial apron or leg shields, waterproof clothing, face visors and respiratory equipment.
- All accidents and incidents involving clinical waste, particularly those resulting in an injury or of contamination of handlers, must be reported without delay to the line manager

4.3.2 Spill clean-up procedure: 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.

4.3.3 Storage of Waste: A storage location should be designated inside the facility and sized according to need.

- The area should have an impermeable, hard-standing floor with good drainage and be easy to clean and disinfect.
- Should have a water supply for cleaning purposes.
- Should afford easy access for staff in charge of handling the waste.
- Should be possible to lock the store to prevent access by unauthorized persons.
- Easy access for waste-collection vehicles is essential.
- There should be good lighting and at least passive ventilation.
- Storage time should not exceed 24-48 hours.
- A supply of cleaning equipment, hand washing facilities with soap and drying material, availability of personal protective equipment (heavy-duty gloves, boots, gown, etc.) and waste bags or containers should be located conveniently close to the storage area.

4.3.4 Transport of Waste: On-site transport of waste should be by means of wheeled trolleys, containers, or carts that are not used for any other purpose and meet the following specifications:

- Must follow specific routes to the central storage area.
- Easy to load and unload.
- No sharp edges that could damage waste bags or containers during loading and unloading.
- Easy to clean and wash.
- Marked with corresponding colour coding.

4.3.5 Treatment and disposal of waste

4.3.5.1 General Waste:

- General waste should be disposed via routine procedures (e.g. in landfills)

4.3.5.2 Sharps Waste:

- Send sharps for incineration to National Institute of Health

4.3.5.3 Infectious waste:

- Place infectious waste in designated containers (e.g. Yellow or Red colored bag) and transport in a designated vehicle to National Institute of Health for incineration
- Reusable transfer containers should be leak-proof and have tight-fitting covers
- Disinfect and clean the transfer container before further use

- 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
- Sodium hypochlorite solutions, as domestic bleach, can be used for disinfection. It contains 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

4.4 Handling of Contaminated laundry:

- 4.4.1 Employees treating laundry should wear appropriate PPE
- 4.4.2 Contaminated linen should be put into a laundry bag in area with minimal manipulation, to avoid contamination of air, surfaces and people.
- 4.4.3 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.
- 4.4.4 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 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.

5. References:

- 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.
- 5.6. Damani N. Manual of Infection Prevention and Control. 4th edition. Oxford: Oxford University Press. 2019

6. Records:

- 6.1. Data Sheet for Waste Handling

ANNEXURE-G3

Field Epidemiology & Disease Surveillance Division

(Standard Operational Procedure-SOP)



Document Information

Category	Information
Document Title	SOP of Disinfection and Environmental decontamination of Covid-19
Version	
Document ID No	
Author(s)	
Reviewer(s)	
Approver(s)	
Authorized by	
Creation Date	
Issue Date	
Effective Date	
Control Status	
Distribution: Issuance / Withdrawal	
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

1. Purpose:

- 1.1. To provide a guideline for disinfection and environmental cleaning against novel Corona virus
- 1.2. To protect the health of employees, visitors and health care workers from contamination by microorganisms produced at different levels in order to maintain a safe, healthy and productive work environment

2. Scope:

- 1.1. This procedure applies to Points of Entry which are dealing with suspected cases of Covid-19
- ### Responsibilities:
- 3.1. The designated heads of relevant departments are responsible for the compliance of whole process

4. Procedure:

4.2.1 Disinfectants

4.2.5.1 The following are the instructions of disinfectant use

- chemical disinfectants must be clearly labeled and used within the expiry date. They should be freshly prepared and must be used at the correct concentration and stored in an appropriate container.
- Disinfectant or detergent solutions must not be prepared and stored in multi-use containers for occasional use. Solutions prepared and stored in this manner may easily become contaminated with microorganisms.
- Disinfectants can be corrosive and may damage fabrics, metals, and plastics.
- Manufacturers' instructions must be consulted on compatibility of materials with the method of sterilization or disinfection

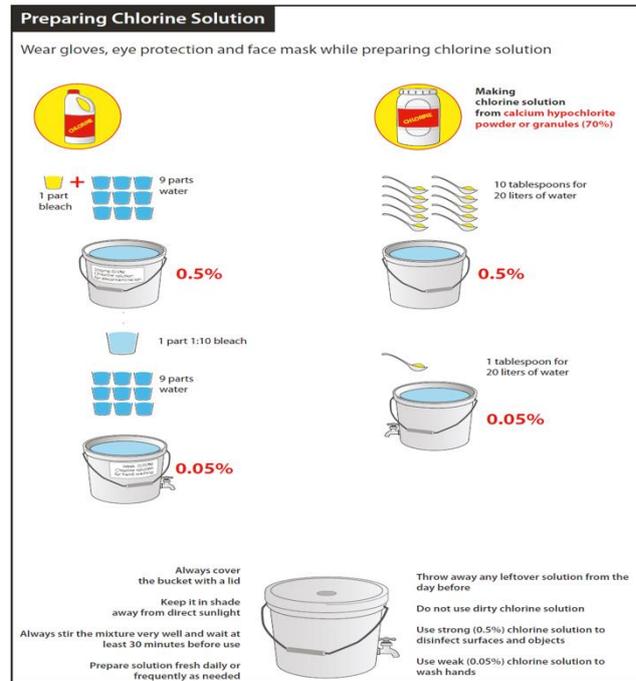
4.2.5.2 The following are materials required for disinfection and cleaning:

- Hypochlorite solution
- Surface disinfectant (low level disinfectant) eg. Quaternary ammonium compounds (EPA registered)
- Ethanol
- Alcohol wipes
- Double bucket for cleaning
- Dust mop
- Duster for cleaning
- Detergent
- Personal protective equipment like gloves, Shoe covers, face masks, face shields, respirators, long Closed-toe foot wear for sanitary workers etc.
- First Aid Box
- Spill Kit
- Waste Disposal bags (Red colored)
- Sharp disposal box
- Supply cart
- Mop with long handles
- Heavy duty gloves

4.2.2 Concentration of Disinfectants:

4.2.6.1 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.



Preparing hypochlorite solution

Source: National Infection Prevention and Control Guidelines. Freetown: Ministry of Health and Sanitation, Government of The Republic of Sierra Leone

4.2.6.2 Ethanol:

- Ethanol (ethyl alcohol, C_2H_5OH) and 2-propanol (isopropyl alcohol, $(CH_3)_2CHOH$) 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.
- Items that come in contact with intact skin include stethoscopes, sphygmomanometers, blood pressure cuffs, mercury thermometers, non invasive ultrasound probes, intravenous pumps and ventilators, ECG leads, etc. It is recommended to store them in a clean, dry place to prevent environmental contamination. Low level disinfection is required to disinfect these things. Ethanol may be used in this case.

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 (H_2O_2) 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 Area:

- 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 All medical devices that are reprocessed must undergo *rigorous cleaning* with detergent and water *prior* to decontamination and sterilization procedures. Soaking contaminated medical devices in disinfectants prior to cleaning is *not* recommended.
- 4.5.4 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.
 - To prevent cross contamination, cleaning must always be carried out from the **cleanest area first and finish in the dirtiest area last, and always clean from the top first and bottom last**
 - Special emphasis must be placed on cleaning and disinfecting *high frequency hand touch* surfaces and these areas should be cleaned *more frequently*
 - After spraying surfaces with low level disinfectant, for eg. tables, door-knobs, with suitable disinfectant, give adequate contact time. After that wipe meticulously with a cloth.
 - Dispersal of microorganisms in the air from the floor must be avoided. **Dry sweeping with a broom should never be used** as it disperses microorganisms from the floor into the air. Also avoid cleaning methods that produce mists or aerosols, or disperse dust e.g. spraying, dry mopping, or dusting.
 - Dust- retaining materials, which are specially treated or manufactured to attract and retain dust particles, should be used as they remove more dust from dry surfaces.
 - **The moist method** using the *double bucket method* is the most commonly used methods. One bucket is for *clean water* to which a detergent (\pm disinfectant) solutions are added and the other bucket contains clean water for rinsing
 - 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.

5. Reference:

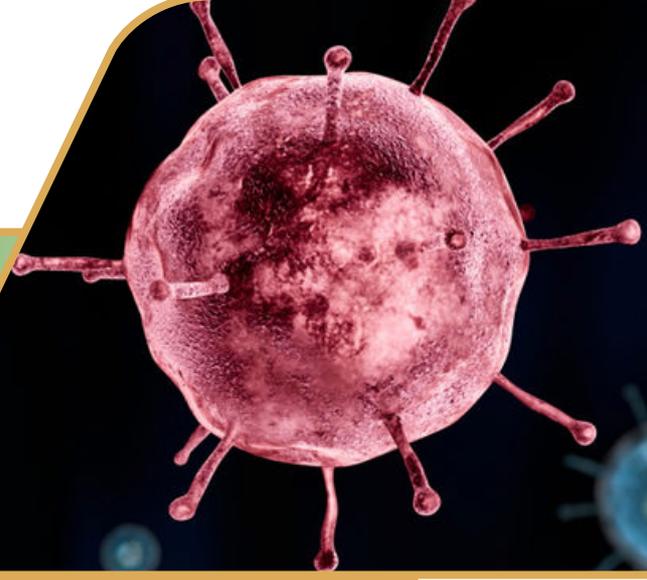
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ANNEXURE-H



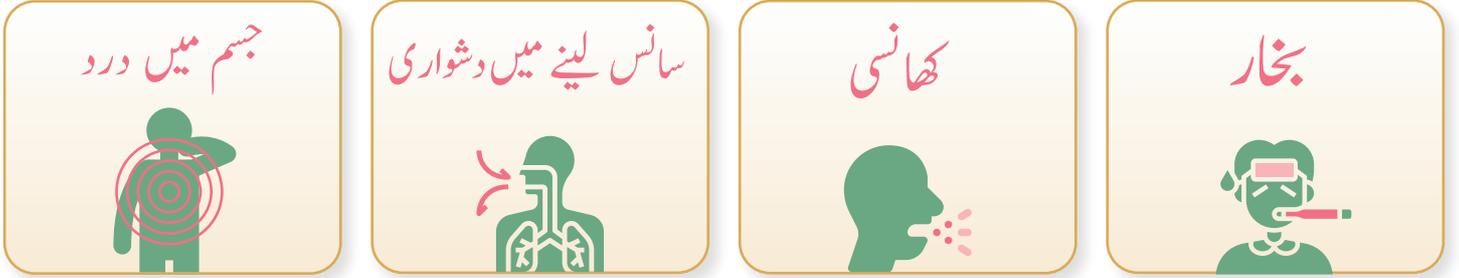
Government of Pakistan
Ministry of National Health Services,
Regulations & Coordination

نول کورونا وائرس (2019-nCoV)



بیرون ملک سے آنے والے مسافروں کے لئے ہدایات

علامات



گزشتہ 14 دنوں کے اندر چین سے آنے والے کسی بھی شخص میں یہ علامات پائی جائیں تو:

گھر پر رہیں اور دوسرے لوگوں سے ملنے سے پرہیز کریں۔

فوراً کسی قریبی ہسپتال سے رابطہ کریں۔

کھانسی یا چھینک آنے پر منہ اور ناک کو ٹیٹھو یا آستین کے کپڑے سے ڈھانپیں (ہاتھوں سے نہیں)۔

اپنے ہاتھوں کو صابن اور پانی سے کم از کم 20 سیکنڈ تک دھوئیں یا پھر ہاتھ صاف کرنے والا لوشن استعمال کریں۔

ANNEXURE-I

Daily Situation Report - Pakistan
Corona Virus Disease (Covid-19)

Date as reported by 6 February 2020: Time

Highlights:

-

Total Screened

of suspected cases

of Lab Tests Conducted

of cases Positive

Preparedness: (examples)

- EOC Activated and regular coordination meetings taking place
- Core Group and Technical Group at National level formed
- Hospitals designated for patient care
- Screening at POEs (health counters, health declaration cards thermoguns, medical assessment counter etc)
- National Action Plan developed
- SOPs developed and staff trained
- Any other

Surveillance:

Screening at POEs

POEs	# Screened		Suspected		Retained / Referred	
	New	Cumulative	New	Cumulative	New	Cumulative
Islamabad						
Lahore						
Karachi						
Quetta						
Peshawar						
Total						

Hospital Sentinel surveillance

Hospitals sentinel sites	Suspected		Lab confirmed		Outcome Positive cases		
	New	Cumulative	New	Cumulative	Cured / discharged	Still admitted	Expired

Response action / taken till date (may include):

- Preparedness and Operational Readiness
 - Advisory issued for Covid-19 (provide Link)
 - Hospitals designated and equipped for patient care.
 - Trainings conducted (surveillance, RRTs, case management etc.)
 - Coordination mechanism
 - Steps taken for IPC and waste management
 - Prepositioning of supplies
- Surveillance and Laboratory (Contact Tracing / Follow-ups, # of sample collected and tested)
- POEs (simulation exercises, IEC material, health information desk)
- Risk communication and community engagement (messages through media, website, helpline responded to questions)
- Any other

Important messages:

Contact Persons:	Tele:	
1. Focal person NIH		
2. Focal person Ministry		

ANNEXURE-J

Corona Virus Disease (Covid-19) Preparedness Checklist

Epidemiological Surveillance

I. Health Authority (National and Provincial level)

Interviewer:-----Respondent:-----Designation:-----

Place / Facility:-----Date of interview:-----

1.	What is the type/s of surveillance? ²	Comprehensive	Sentinel	EWARS
2.	In case of sentinel surveillance: What is the percentage of covered population? ³%			
3.	Is the private sector included in the surveillance system?	Yes		No
4.	Do you have reporting sources other than health facilities (community based /event based surveillance)?	Yes		No
5.	If yes please specify from:	community	Community health workers	media Others..
6.	Have you received reports from the community of unusual health events including cluster of unexplained deaths or febrile illness during this year?	Yes		No
7.	Is Influenza Like Illness / SARI one of the notifiable/immediately reported diseases?	Yes		No
8.	What is the frequency of reporting of ILI / SARI?	Immediate	daily	weekly monthly
9.	Do you have 24/7 hotline for immediate notification/reporting?	Yes		No
10.	Have the health facilities been informed to report suspected case/s of Covid-19	Yes		No
11.	Are points of entry included in reporting of suspected case/s Covid-19 ?	Yes		No
12.	If yes, specify the points of entry with health surveillance staff for Covid-19.....			
13.	How many surveillance personnel do you have at all levels?			
14.	How many of them have been trained on surveillance?			
15.	How many of them have been trained for Covid-19 surveillance?			
16.	Has the private sector been included in training for Covid-19 surveillance/reporting	Yes		No
17.	No. of health facilities with trained staff: Out of total a). Public health facilities .....b). Private health facilities			
18.	Is the available staff enough to perform Covid-19 surveillance activities?	Yes		No
19.	Do you have a plan to hire more staff in case of need for enhanced Covid-19 surveillance?	Yes		No
20.	Do you have the following surveillance tools, disseminated and staff trained on using them?			
	Tool	Available Y/N	Disseminated Y/N	The staff were trained in using it Y/N
	Case definition ⁴			
	Surveillance guidelines			
	Alert/reporting forms			
	Case investigation form			
	Contact tracing and follow up forms			
	Line lists			
	Simplified Covid-19 case definition for community use ⁵			

21.	Do you send regular epidemiological updates to points of entry? If Yes, please check	Yes	No
22.	Do you perform a regular analysis for surveillance data If Yes, how frequently? Daily Weekly Monthly Other..... please check If No, Why? Shortage in the staff Lacking of training Other	Yes	No
23.	Do you provide regular reports to the stakeholders? If Yes, what is the frequency? List stakeholders included in the dissemination list:	Yes	No
24.	Have you identified high risk areas and/or population including travelers from affected cities in China and other affected countries? If yes, Please list it with the reason...	Yes	No
25.	Do you list the flights coming from China and other affected countries?	Yes	No
26.	Do you report to IHR focal point regularly?	Yes	No
27.	Do you have a national preparedness plan with budget plan?	Yes	No

Please check the relevant documents whenever it is possible

References

¹Health Authority (National/Federal provisional level. The interview will be with surveillance focal point or any person assigned from Federal / provincial department of health)

² According to the proportion of reported health facilities, the surveillance system might be divided into comprehensive where all health facilities are included, sentinel sites surveillance where only the selected sites are reported and the EWARS which is usually a syndromic surveillance.

³Through calculation the catchment population of reporting sentinel sites to the total population

⁴WHO Definition: 1. **A person with SARI, with history of fever and cough requiring admission to hospital, with no other aetiology that fully explains the clinical presentation¹ (clinicians should also be alert to the possibility of atypical presentations in patients who are immunocompromised);**

AND any of the following:

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

- 2. Individuals with acute respiratory illness of any degree of severity who, within 14 days before onset of illness, had any of the following exposures:**
 - a) close physical contact with a confirmed case of Covid-19 infection, while that patient was symptomatic;**
 - b) a healthcare facility in a country where hospital associated Covid-19 infections have been reported;**
 - c) [direct contact with animals (if animal source is identified) in countries where the Covid-19 is known to be circulating in animal populations or where human infections have occurred as a result of presumed zoonotic transmission.]**

Corona Virus Disease (Covid-19) Preparedness Checklist

Epidemiological Surveillance

II. Reporting sites (Health Facility level)

Interviewer:-----Respondent:-----Designation:-----

Place / Facility:-----Date of interview:-----

1.	Is there an assigned team responsible for surveillance and reporting?	Yes	No
2.	Did the staff were trained on surveillance system		
3.	Do the following surveillance tools are available and the staff were trained on using them?		
	Tool	Available Y/N	The staff were trained in using it Y/N
	Case definition ⁴		
	Surveillance guidelines		
	Alert/reporting forms		
	Case investigation form		
	Contact tracing and follow up forms		
	Line lists		
	Simplified case definition for community use ⁵		
4.	Do the clinicians were trained/briefed on using the above mentioned tools and the case definition?	Yes	No
5.	Do the clinicians know to whom they will report when suspected any case of Covid-19 (If yes please check 3 clinicians and comment.....)	Yes	No
6.	To whom you should report the suspected case/s of Covid-19? (mention the job title)		
7.	When you should report the suspected case/s of Covid-19? Within one week	Immediately After confirmation	Within 24 hours

**Corona Virus Disease (Covid-19) Preparedness Checklist
Rapid Response Teams (National)**

Interviewer:-----**Respondent:**-----**Designation:**-----

Place / Facility:-----**Date of interview:**-----

1. Are RRTs identified and assigned? 1.1 If Yes, number of teams: 1.2 If No, Why? Shortage in the staff Lacking of training Financial reason Other		Yes	No
2. What is the composition of each team?			
Description	Trained*	Not trained	Total
Epidemiologist	.....	.....	.....
Public health officer	.....	.....	.....
Lab technician	.....	.....	.....
clinician	.....	.....	.....
Logistician	.....	.....	.....
Risk Communication	.....	.....	.....
Other (specify)	.....	.....	.....
*participated a training course on Corona Virus Disease (Covid-19) Rapid Response Team			
3. Are the term of references for each member clear and distributed to all team members 3.1 If yes, please check (copy of the TOR)		Yes	No
4. Are the teams equipped with:			
Item	Available (Y/N)	Remarks (Mention WHY in case of No)	
4.1 Investigation form			
4.2 Sample collection materials			
4.3 IEC materials			
4.4 Full PPEs			
4.5 Contact tracing and follow up forms			
4.6 Communication tool			
4.7 Transportation tools			
4.8 Field hospital/Isolation Room			
4.9 Mobile laboratory			
5. Do the RRTs able to start within 48 hours from receiving the information		Yes	No
6. How many hours are needed to mobilize the RRT from receiving the report to start the field investigation? hrs			
7. How many hours are needed to mobilize the RRT from receiving the report to start the field investigation? hrs			

8. Are the needed resources (logistics and financial) secured to ensure the timely respond?	Yes	No
9. Are the contact tracing and follow up forms available with the teams? 5.1 If Yes, Please check and comment	Yes	No
10. Are the tools for Corona Virus Disease (Covid-19) contact tracing are available as the following table:		
10.1 Contact Tracing Guidelines	Yes	No
10.2 Line List	Yes	No
10.3 Contact Tracing Form	Yes	No
10.4 Contact Tracing SOPs		
11. Are the RRTs trained on using the tools	Yes	No
12. Are the staff members enough to perform the contact tracing and follow up during the outbreak	Yes	No

Rapid Response Teams in National level (Central/Federal) and Sub-National level (State/Governmental/provisional,...). The interview will be with rapid response focal point or any assigned form the head of communicable diseases control/preventive department.

**Corona Virus Disease (Covid-19) Preparedness Checklist
Capacities at Point of Entries (POEs)**

I. Health Authority (CHE at National Provincial levels and POEs)

Interviewer:-----**Respondent:** -----**Designation:**-----

POE Name:-----**Date of Interview:**-----

1. Is there a public health emergency contingency plan, that can be used for potential Covid-19 events, is in place at each designated PoE? If yes check and comment	Yes	No
2. Are the staff at the POEs are trained on the SOPs for handling travelers with suspected SARI/Covid-19 infection		
3. Are staff working at PoE aware of the appropriate action to manage ill passenger(s) detected before boarding, on board conveyances (such as planes and ships) and on arrival at PoE?	Yes	No
4. Is a stockpile of PPE in place at PoE for assessing ill travelers? Please check and comment	Yes	No
5. Is there an appropriate place for rapid health assessment and isolation, in the event of detecting a potential Covid-19/ SARI case at PoE?	Yes	No
6. Do you have equipped ambulance vehicle/s to transport suspect Covid-19/SARI cases? 5.1 If Yes, How many vehicles?	Yes	No
7. Is there a mechanism for safely transporting ill travelers to designated hospitals, including the identification of adequate ambulance services?	Yes	No
8. Are procedures and means in place for communicating information on ill travelers between conveyances and PoE, as well as between PoE and national health authorities? If Yes, please check and comment	Yes	No
9. Have ground services for environmental cleaning and disinfection at PoE been identified?	Yes	No
10. Is the cleaning and disinfection protocol for potential Covid-19/SARI events been put in place? If No put comments:	Yes	No
11. Is there a mechanism for disposal of PPE/infectious material		
12. Are there means to provide incoming and outgoing travelers from/to affected countries, as well as travel, transport and tourism sectors with relevant information about the disease?	Yes	No

**Corona Virus Disease (Covid-19) Preparedness Checklist
Infection Prevention and Control (IPC)**

I. At National Level (IPC authorities at National and Provincial levels)

Interviewer:-----**Respondent:**-----**Designation:**-----

Facility/place:-----**Date of Interview:**-----

Item	Yes	No	Remarks (In case of No, Mention the reason)
1. There is a functioning IPC programme			
2. Is there a national IPC authority that has developed IPC guidance and/or monitor IPC at the hospital level?			
3. Does the national IPC authority gather, analyse, document, and report data on health care-associated infections (HAI) at the country level?			
4. National IPC authority standardizes definitions and methods of surveillance			
5. Are IPC Team trained			
6. Is there an identified budget for the activities to guarantee essential functions of the IPC programme			
7. National IPC guidelines are for national coverage, including public/private HCF*			
8. Contents and elements for specialized Covid-19/SARI training of IPC professionals (technical teams) developed			
9. Is the triaging system for patients with SARI applied in the health facilities? If so, is the triage system adequate?			
10. Are standard and/or droplet precautions are applied for all patients with suspected, or a confirmed high threat pathogen?			
11. Are airborne precautions applied for all patients who require aerosol-generating procedures?			
12. Does a protocol/strategy for environmental cleaning and disinfection exist? If so, is it adequate?			
13. Are policies for placement of patient under isolation precautions in health care settings defined?			
14. Are the Policies on medical waste management defined			
15. Does IPC programme regularly reports on the state of the national IPC goals and strategies?			

16. Procedures for the links between HCF and public health services are defined			
17. IPC programme is regularly monitoring the capacities in Ambulances and points of entry and report to relevant departments*			
18. IPC elements integrated into the national general emergencies preparedness plans			
19. IPC programme is sharing/exchanging the reports with surveillance and epidemiology teams*			

*** If Yes, please check the document/s and comment in the remarks**

**Novel Corona Virus (Covid-19) /SARI preparedness Checklist
Case management and Infection Prevention and Control (IPC)**

II. At Health Care Facility Level

Item	Yes	No	Remarks (In case of No, Mention the reason)
1. The hospital has been designated to deal with nCoV / SARI cases			
2. The hospital aware of possibility of detecting nCoV /SARI case/s at outpatient or inpatient rooms			
3. An appropriate isolation units for patient care is identified, designated and/or established (if Yes, please observe it)			
4. There is staff selected for dealing with the nCoV/SARI cases			
5. The HCW trained on nCoV / SARI case management			
6. There is staff trained on collection, storage and transportation of samples from suspected cases with appropriate bio-security measures			
7. Availability of essential medications according to the national SARI/nCoV management guidelines*			
8. Availability of sufficient quantities of Personal Protective Equipment (PPE) and other disinfectant materials at point of care			
9. The PPEs and other disinfectant materials are accessible 24/7			
10. Health care workers are appropriately trained on the use of PPE			
11. There is appropriate designated place for putting and taking off the PPEs			
12. Health care workers are trained on other barrier nursing practices for care of nCoV /SARI patients in HCF			
13. There is an Infection Control Committee			
14. The IPC programme responsibilities, goals and functions are clearly defined*			
15. The HCF has guidelines for preventing and controlling health care associated infections*			
16. The guidelines are updated for nCoV /SARI			
17. Both initial and periodical basic training in IPC for all health care personnel is provided regularly			

Item	Yes	No	Remarks (In case of No, Mention the reason)
18. The proper staffing ratio of IPC professionals and teams according to the national standards is maintained*			
19. Professional responsible for surveillance activities is trained in basic epidemiology, surveillance and IPC			
20. Surveillance is conducted with active data collection methods and standardized case definitions*			
21. Surveillance data is analysed and disseminated to all interested parties*			
22. Safe water for consumption is available			
23. Permanent environmental ventilation in patient care areas is available			
24. Hand hygiene facilities are available			
25. Policies for placement of patient under isolation precautions in health care settings are defined			
26. HCF regularly reports on the state of the IPC goals and strategies and the impact of the IPC activities			
27. Medical waste management guidance and procedure are available			
28. The waste management staff knows how to manage the waste of nCoV /SARI cases			
29. The staff of waste management and laundry trained on nCoV /SARI waste management			
30. There are available PPEs for the waste management staff			

*** If Yes, please check the document/s and comment in the remarks**

Corona Virus Disease (Covid-19) Preparedness Checklist

Case Management

I. Health Authority (National level and Provincial levels)

Interviewer:-----**Designation:**-----**Contact No:**-----

Respondent:-----**Designation:**-----**Contact No:**-----

Place / Facility:-----**Date of interview:**-----

1. Do you have a protocol for Covid-19/SARI case management 1.1 If Yes, is it updated? Yes No Please check and comment	Yes	No
2. Do you have a medical team/s trained on Covid-19/SARI case management? 2.1 If Yes, how many teams? 2.2 Do you have a list of the team? Yes No 2.2.1 If Yes, please check it 2.3 If No, Why? Shortage of staff Lacking of training Financial reason Other	Yes	No
3. Do you receive a regular information epidemiological update on influenza cases from disease surveillance system? 3.1 If yes when was the last time? Please check and comment	Yes	No
4. Do you have trained ambulance team to transport suspect Covid-19/SARI cases? 4.1 If Yes, How many teams? 4.2 If No, Why? Shortage of staff Lacking training Financial reason Other	Yes	No
5. Do you have equipped ambulance vehicle/s to transport suspect Covid-19/SARI cases? 5.1 If Yes, How many vehicles?	Yes	No
6. Is the ambulance service functioning 24/7?	Yes	No
7. Do you report to surveillance team in case ambulance transported a suspect notifiable case? 7.1 If Yes, Do you document the reporting? Yes No If Yes, please check and comment	Yes	No
8. Is there any facility assigned to provide care to a patient/s with suspected Covid-19 / SARI? 8.1 If No, Why? Shortage in the staff Lacking of training Shortage in facilities Financial reason Other	Yes	No
8.2 If Yes, How many facilities?		
8.2.1 How many patients the facility should cater initially?		
8.2.2. Is the stockpiles secured and monitored? Yes No		
9. What isolation facilities are available for Covid-19 patients/SARI? Describe:		
10. Do you have a list of other facilities that can be turned into a Covid-19/SARI Treatment Centre at short notice? If Yes, the facilities at which level? Province District	Yes	No
11. What controls are/would be in place to limit visitors of patients and require PPE for visitors of Covid-19 patients?		

12. According to your plan, how many health workers can work in each Covid-19/SARI treatment center?		
13. Do you have enough medicine and supplies for Covid-19/SARI case management at the Hospital	Yes	Yes
14. Is Personal Protective Equipment available for medical staff? If so, what PPE is available, how is it used/use assessed? Comment:		
15. What is the current available stock of PPE supplies and equipment		
16. What is the gap/ requirement		

ANNEXURE-K

Simulation Exercise on Covid-19 for Airports



Simulation Exercise on Covid-19 for Airports

Scenario:

Arrival of suspected case at screening counter:

On Friday morning at 11 am, a connecting flight from Dubai flight PK631 arrives at Islamabad Airport with 61 passengers, of them 21 are Chinese and 40 with Pakistan nationality. After Covid-19 outbreak in Wuhan city of China, airport staff is well aware to screen all passengers for the possible transmission of infection.

Screening of traveller:

All passengers are in queue and passing through thermal scanner before immigration counter. Scanner started beeping on one of the Chinese/Pakistani male passengers. The passenger is further scanned by CAA staff using thermal gun and it confirms the passenger is having fever.

Inject 1: Thermal gun is not working properly (Plan B)

As the thermal gun is not functioning properly, CAA staff uses thermometer to check temperature of the suspected case in the examination room. Use of thermometer should be at armpits.

Detection of fever and putting mask to passenger:

As Chinese passenger is discovered to have fever after thermal gun scanning, the CAA staff provides mask (surgical/medical) to the passenger and shift the patient to the examination room.

Instructions shared with the Chinese patients will be in Chinese language.

Shifting to examination counter:

After mask has been provided to the suspected case of Covid-19, he is taken away from main stream of passengers and counseled suspected/ relative/ accompanying about the prevailing situation. Moreover, CAA staff informs the CHE doctor on duty (focal person) to get prepared for examination of the suspected Covid-19 case. As the suspected case enters the room examination room, doctor with the appropriate PPE will handle the case accordingly.

Inject 2: Passenger not willing

Now duty doctor wants to take history (case investigation form) however, suspected case refuses to provide information and insists going to collect his luggage. Doctor briefs that it's just a precautionary measure to ensure that you are not the only one passing through this health safety check. And this is for your own safety and for the protection of your family. It will take some time and you will be free

to collect your luggage and go home once your labs are negative for virus. You are further requested to use hand sanitizer provided by the staff.

Call to the ambulance driver:

Doctor has provided the reassurance to the suspected case about the process. Doctor calls airport manager to take care of passenger's luggage for quarantine purpose. Ambulance driver to get ready to shift a suspected case of Covid-19 to PIMs hospital/ BBH hospital with provision of PPEs. He will be accompanied with the doctor/paramedical staff.

Inject 3. Driver's mobile not accessible:

Airport doctor calls to the driver for shifting of the patient but driver is not receiving call and he/she requests to Airport staff to rush towards the ambulance and call to next available designated driver/ ambulance if takes too much time to arrive.

Special request for opening of emergency exit gate:

After patient history gets complete and doctor finds that the suspected case fulfills the criteria for further investigation, doctor request ASF staff to open emergency exit gate. Doctor now inform the suspected case that he is being taken to the hospital for necessary investigation and for appropriate management. He confirms the availability of driver with appropriate PPE. Suspected case is requested to sit in the wheelchair and doctor along with ASF takes him through emergency exit gate towards ambulance.

Shifting to Ambulance:

Suspected case reaches ambulance on wheelchair and is advised to sit into the ambulance. In the meanwhile, doctor calls designated hospital focal person and informs that a passenger is found to be a suspected case of Covid-19 as **per case definition** and is plan to shift from airport to the hospital for further investigation and management. Duly filled case investigation form is handed over to the ambulance staff. Driver is informed about hospital via provided map for the most possible accessible route.

Inject 4: Ambulance breaks down/Heavy traffic:

Ambulance breaks down. Driver wants to reach hospital as soon as possible that makes him anxious. As it is the mid-day time and road is busy and may take more time to reach to hospital. Driver will immediately calls for alternate driver and ambulance through focal person. Therefore he uses alternate accessible route as the passenger is a suspected case and stable hemodynamically at the moment.

Disinfection of examination area/Couch, waste management

After shifting suspected case into ambulance, the CHE doctor comes back to the Examination room. In the examination room he notices that suspected cases had used a tissue paper and it was on the

floor instead of dust bin. Then he informs airport health department to disinfect examination room and waste generated during suspected case should be kept separated for further processing.

Shifting to Isolation ward through designated focal person of the hospital:

After receiving call from CHE doctor, hospital focal person informs ED hospital about arrival of suspected Covid-19 case, alerts isolation ward staff to be ready to receive a suspected case. He/ she ensures that all concerned must put on appropriate PPE while receiving/ handling suspected case.

Transfer of the suspected case at the isolation ward directly

Hospital focal person (HFP) receives suspected case of Covid-19 at the designated entrance point and collects case investigation form from driver. Doctor takes the suspected case directly to the isolation ward dedicated near the entrance point and where all concerned are equip with PPEs to receive the suspected case. HFP advises isolation ward staff to take all precautionary measures including limited movement with intention of minimum exposure of the staff in the isolation ward. For compliance, duty roster is made for doctors, nurses, housekeeping staff. HFP informs ED and other health authorities regarding admission of suspected Covid-19 case in isolation ward and ensures that all precautionary measures were taken at every step.

Disinfect the ambulance

After safe shifting of the suspected case to the designated isolation ward, HFP directs driver to take ambulance to the dedicated area for disinfection of ambulance.

History and documentation

After admission to the isolation ward, HFP informs Infectious Disease Specialist (IDS) that suspected case of Covid-19 has been admitted. IDS request to come and examine patient. He/she advise necessary lab investigations. IDS takes history and suggests tests for the suspected case after putting on appropriate PPEs. He advises paracetmal with supportive treatment for suspected Covid-19 case and continuous monitoring for any aggravation of symptoms leading to complications till the lab results come.

Inject: Doctor is scared

As HFP informs the IDS about suspected Covid-19 case has been admitted and he has to examine him. The IDS conveys this information to junior doctor to go and visit that patient but the junior doctor refuses by saying that I am not attending this patient as I will get this fatal disease and will die. IDS advises him to put on appropriate PPE before attending patient. But as the junior doctor is so scared and not agreed, therefore IDS himself visits and examines the patient.

Collection of sample, packaging, transportation to NIH virology lab

After IDS examines patient, he finds that he has all sign and symptoms of Covid-19 with positive travel history, he advises blood serology/ throat swab for possible detection of virus. He is coming out of isolation ward when he is called upon by nurse that who will take throat swab as she is not trained

and where to store and send sample?? IDS turns around and informs nurse that as it is a novel virus and needs specialized lab for virus detection, lets call Dr. Mumtaz at NIH for information/ guidance. After telephonic conversation with Dr. Mumtaz, now a team is coming from NIH for sample collection, storage, transportation and processing. Further a list of lab technician is prepared to be trained on the same by NIH lab team.

Waste Management:

The IDS Doctor after prescribing supporting treatment to the suspected case, asks on duty nurse to take vital signs of the patient. During vital signs checking nurse raises the question that what to do with the waste produced infectious as well non-infectious during this patient care or while taking sample or linens? The IDS guides the nurse and describes briefly that all the waste generated during this patient will be considered as infectious waste and will be processed in the incinerator even sharp container along with sharps. The housekeeping staff transporting waste must put on appropriate PPE and should have the knowledge of waste segregation and decontamination of the waste transport vehicle. IDS further explains that all the linens of the patient should be washed with normal detergent which is used in routine laundry setup. The surfaces of the room should be washed with normal bleaching solution commonly available in the hospital. The nurse after listening all the precautionary measures feels relaxed.

Action	Actor/responsibility	Inject	Positive outcomes
Arrival of passenger at screening counter	CAA/Airport health authority		
Screening of passenger	Screening staff with appropriate PPEs	Thermal gun is not working properly	Provision of thermometers .Replacement of thermal guns
Detection of fever in passenger and providing mask to traveler	Screening staff with application of appropriate PPEs		
Shifting to examination counter	CHE doctor with appropriate PPEs	Passenger not cooperative	Effective counseling of passenger. Engagement of ASF to contain situation
Sharing of information with the cabin crew for the necessary actions to be taken	CHE doctor/Airport Health Authority/CAA		
Counseling of the traveller	CHE Doctor with appropriate PPEs	Traveler not willing	Effective counseling of passenger. Engagement of ASF to contain situation
Call to ambulance driver	CHE staff	Driver mobile not accessible	Back up ambulance/1122 dispatch
Opening of exit gate	ASF staff	ASF staff not available	Contact ASF control room immediately at airport by concern
Shifting to Ambulance	CHE staff/1122 with appropriate PPEs	Ambulance not ready/breakdown	Coordinate with 1122 for the availability of backup ambulance
Disinfection of examination area/Couch, waste management	CHE staff with appropriate PPEs in coordination with airport health authority		
Shifting patient in the ambulance	CHE staff/Ambulance staff	People gathered around the suspected case and ambulance	ASF to handle the situation
Intimation to focal person at the concerned hospital	CHE Doctor with appropriate PPEs		
Shifting on the most direct rout	Driver with appropriate PPEs; ensured by the CHE doctor	Heavy traffic/breakdown	1122 to provide ambulance and relevant LEA to clear road
Receiving rout at the hospital	Driver: Ensured by hospital focal person Driver/accompanying staff will call to the focal person	Hospital focal person not available	Alternate focal person availability
Suspected case will be received at the isolation ward directly	Doctor with appropriate PPEs		
Disinfect the ambulance	Concerned with appropriate PPEs		

Patient to be shifted to dedicated ward and implementation of isolation precautions	Receiving doctor equipped with appropriate PPEs	Non availability of beds in ward	Shifting of the case to next designated alternate hospital for immediate shifting through same ambulance and coordination to be handled by HFP
History and documentation	Doctor on duty with appropriate PPEs	Doctor is scared	Active engagement of senior/experienced/trained doctor on call
Collection of sample, packaging, transportation to NIH virology lab	Hospital lab staff with appropriate PPEs		
Waste Management	Housekeeping staff with appropriate PPEs		

ANNEXURE-L

ANNEXURE-L



**Guidelines/ Standard Operating Procedures for
International Flights inbound to Pakistan in wake of
Novel Coronavirus (2019-nCoV)**

GOVERNMENT OF PAKISTAN

02 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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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



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.



- 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



- 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.



- 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

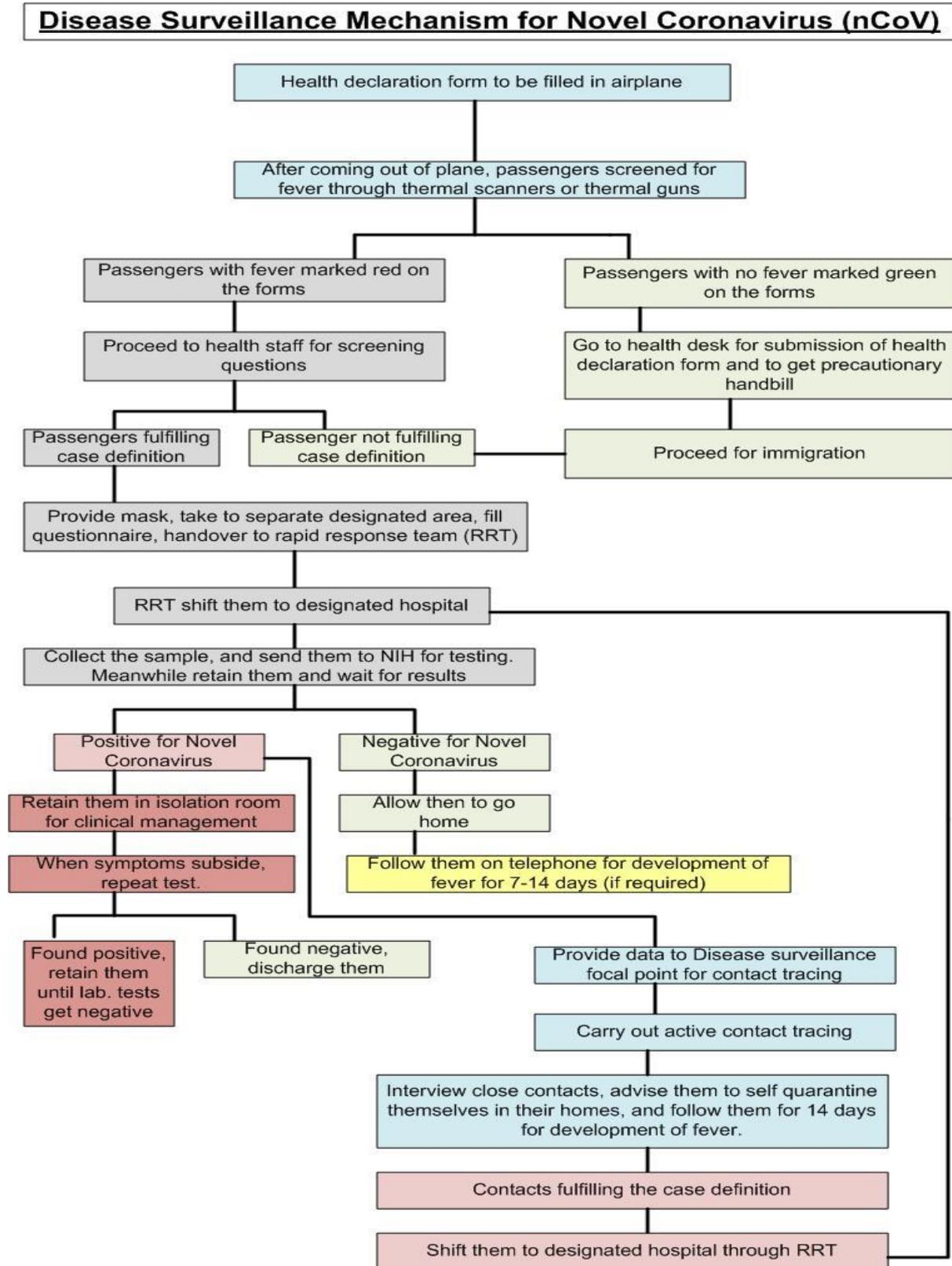
- Data punching operators would be required for ensuring that all information's on the declaration cards are entered within 1-2 hours of the flight operations.
- In case of a positive case of Corona virus, the exposure to passengers on flight are maximum, therefore coordination needs to be established 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.



SUMMARY OF WORKFLOW:





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:

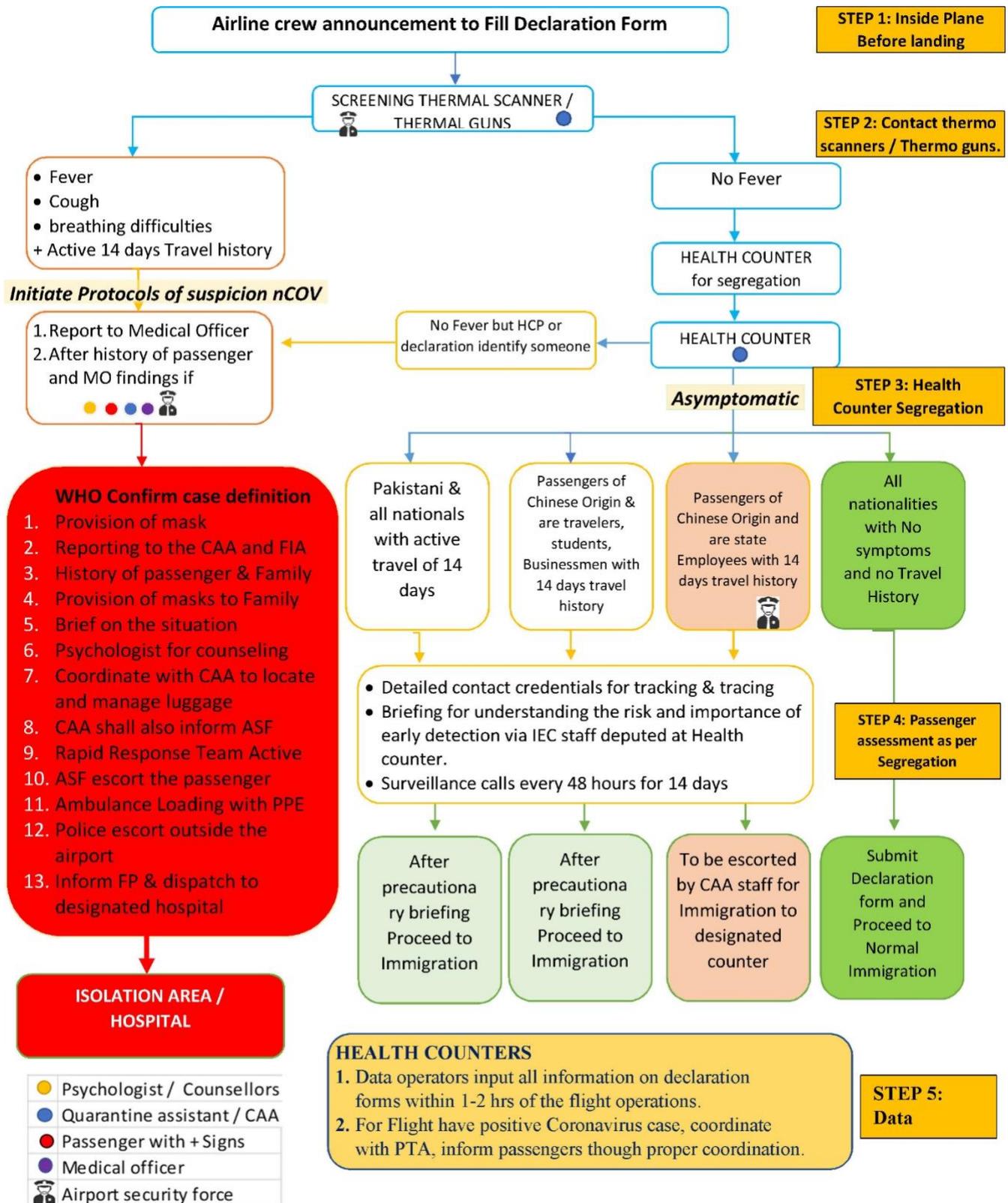
- o Origin and route
- o Time of Departure and arrival
- o Type of aircraft and tentative number of passengers.

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)





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.



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.



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-M

Field Epidemiology & Disease Surveillance Division

(Standard Operating Procedure-SOP)



Document Information

Category	Information
Document Title	SOP for Covid-19 Case Based Surveillance
Version	00
Document ID No	NIH- FE&DSD-SOP-29
Author(s)	Dr. Zakir Hussain (FDSRU) Dr. Khuram Shehzad Akram (Polyclinic)
Reviewer(s)	Majid Ali Tahir, HEO/AQMR
Approver(s)	Dr. Jamil Ansari, Chief FEDSD
Authorized by	Executive Director NIH
Creation Date	
Issue Date	
Effective Date	
Control Status	Controlled
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

DRAFT- STANDARD OPERATING PROCEDURES (SOPS) for CASE BASED SURVEILLANCE of CORONA VIRUS DISEASE

Purpose

This document shall provide guidance to facilitate sharing of information about suspected cases and passengers, between airports and the Disease surveillance units (DSRUs) located at Islamabad and in the Provinces.

Operational Responsibilities:

- FDSRU will be responsible for ICT, while PDSRUs will be responsible for provincial and regional level case-based surveillance and contact management.
- PDSRUs will finalize the focal persons at district level through FELTP trained workforce (FELTP alumni/ N-STOP Officers/ fellows/ frontline workers) and will share with FDSRU with their contact details.
- FDSRU and PDSRUs will maintain contacts numbers of Airport Teams including email addresses
- FDSRU and PDSRU Teams will have dedicated contact numbers
- FDSRU and PDSRUs will have list of designated hospitals with contacts of hospital focal persons

Process

There will two components of case-based surveillance;

- a. Suspected case investigation
- b. Contact tracing with data management.

1. Suspected case investigation

- FDSRU and PDSRUs will assign one dedicated team for case investigation, surveillance data management and report preparation
- FDSRUS and PDSRUs will collect all suspected cases information on pre-structured questionnaire from designated hospitals (annex-1)
- Suspected cases and contacts will be further investigated using pre-structured questionnaire which is already shared with PDSRUs
- PDSRUs will enter the investigated cases information in an online software developed by NIH Islamabad

- Sample collection and transportation and feedback mechanism will be linked with DSRUs
- Response will be generated at the level of suspected case admission (Federal and Provincial)
- Department of Health will stockpile PPEs and viral transport medium and disburse to the DHOs of the respective districts
- N-STOP officers (if allowed) to support, then districts in which they are posted will be their responsibility.

1. Contact tracing and data management

- Airport teams will share data of passengers including contact numbers traveling from China on daily basis with FDSRU in Islamabad and PDSRUs in Provinces
- Airport Teams will inform respective DSRUs and RRTs regarding suspected cases and RRT will shift these cases to the designated hospitals in their respective areas
- FDSRU and PDSRUs will maintain database of passengers record received from Airports
- FDSRU and PDSRUs teams will maintain contact list of suspected cases and will follow up with contacts periodically within 02 incubation periods
- FDSRU and PDSRU Teams will contact listed passengers periodically to
 - Ask about any Sign/symptoms related to Corona virus illness
 - Guide them taking precautionary measures
 - Guide them to nearest designated hospitals

Roles and responsibilities

FDSRU Teams

Surveillance team

- Surveillance team will maintain close coordination with RRTs and other relevant stakeholders
- Maintain a suspected cases database
- Investigate suspected cases reported at the designated hospitals using standard questionnaire developed by NIH
- Get daily updates with TSOs in other provinces on suspected cases reported
- Prepare daily report based on the case investigation and submit to FE&DSD

Contact tracing and Management Team

- Contact passengers traveled from China on daily basis and inquire about sign/symptoms within 02 incubation periods
- Follow up with the PDSRUs regarding their follow-up on contacts in their respective provinces/regions
- Maintain contact database and generate daily report
- Weekly conference call with TSOs at PDSRUs

FEDSD NIH

- Will arrange PPEs and logistics for case investigation team
- Provide dedicated telephone lines/Mobile Sims
- Facilitate contacts with all relevant stakeholders including airport teams, RRTS and Designated hospitals focal persons

PDSRUs Teams

Surveillance team

- F. Surveillance team will maintain close coordination with RRTs and other relevant stakeholders
- G. Maintain a suspected cases database
- H. Investigate suspected cases reported at the designated hospitals using standard questionnaire developed by NIH
- I. Get daily updates with District focal persons on suspected cases reported
- J. Prepare daily report based on the case investigation

Contact tracing and Management Team

- Contact passengers traveled from China on daily basis and inquire about sign/symptoms within 02 incubation periods
- Follow up with contacts on daily basis
- Maintain contact database and generate daily report
- Weekly conference on every Monday with FDSRU

References and Documents:

NIH had already developed

- SOPs regarding rapid response team (RRT) and
- Transfer of suspected patients of Corona Virus Disease (Covid-19) form airport

Records:

1. Primary Investigation Form from CHE (Copy)
2. Investigation questionnaire
3. List of passengers
4. Sampling Information
5. Contact tracing information forms (if any)

FDSRU TEAM NIH ISLAMABAD

S#	Name	Designation	Assigned Work	Contact No.
1	Dr. Zakir Hussain	F P Frontline	Overall on all DSRUs	03005666554
2	Dr. Khuram Shahzad	MO FGPC	Focal Person for FDSRU	03225001900
3	Dr. Fawad Khalid	MO ICT	Surveillance Team Member at FDSRU, FEDSD, NIH	03335348251
4	Dr. Nosheen Ashraf	SO FEDSD		03165954686
5	Dr. M. Muddasar	SO FEDSD		03348252752
6	Dr. Shafiqur Rehman	SO FEDSD		03335887886
7	Mr. Hussain Ali	SSO Animal H		
8				
9				

PROVINCIAL REGIONAL TEAMS - PDSRUS

S#	Name	Designation	Email Address	Contact No.
	Dr. Asif Syed	TSO Karachi	asif.mph@gmail.com	03213017677
	Dr. Qasim Khan	TSO Merged Areas KP	dmqasim@yahoo.com	03339298241
	Dr. Naveed Masood	TSO Sindh Hyderabad	Masood.naveed@gmail.com	03332856570
	Dr. Ehsan Larik	TSO Baluchistan	ehsanlarik@gmail.com	03327977162
	Dr. Mohsin Watto	TSO Punjab	Mohsanb74@gmail.com	03414305254
	Dr. Wasif Shah	TSO KP	Shah77@gmail.com	03336113735
	Dr. Shah Zaman	Focal Person PDSRU GB	Zamanshah471@gmail.com	03119814494

Case Based Surveillance – Corona Virus Disease (Covid-19)

PDSRUs will be responsible for case based surveillance and response in Provinces and regions while FDSRU will be responsible for ICT surveillance and case response

- PDSRUs will finalize the focal persons at district level through FELTP trained workforce (FELTP alumni/ N-STOP Officers/ fellows/ frontline workers) and will share with FEDSD with their contact details.
- If N-STOP officers are allowed to support, then districts in which they are posted will be their responsibility.
- Suspected cases and contacts will be further investigated using pre-structured questionnaire and is already shared with PDSRUs
- PDSRUs will enter the information in online software
- Response will be generated at the level of suspected case admission (District/ Province/ Federal)
- Sample collection and transportation and feedback mechanism will be linked with DSRUs
- DoH will stockpile PPEs and viral transport medium and disburse to the DHOs of the respective districts
- The FDSRU Office Landline: 051-9255815, Fax: 051-9255814

Surveillance Team at FDSRU, FEDSD

S#	Name	Designation	Assigned Work	Contact No.
1	Dr. Zakir Hussain	F P Frontline	Overall on all DSRUs	03005666554
2	Dr. Khuram Shahzad	MO FGPC	F P for FDSRU	03225001900
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5	Dr. M. Muddasar	SO FEDSD		03348252752
6	Dr. Shafiqur Rehman	SO FEDSD		03335887886
7	Mr. Hussain Ali	SSO Animal H		03335593642

Mechanism of information flow (Frequency - Case based)

