Facilitator Guide

Introduction to COVID-19

For Healthcare Providers

****

Compiled and Edited by

Dr. Abdul Rehman Pirzado

2021

Contents

[Introduction 3](#_Toc62060964)

[COVID-19 4](#_Toc62060965)

[Vaccines 4](#_Toc62060966)

[About this training guide 5](#_Toc62060967)

[Participants 5](#_Toc62060968)

[Facilitators/ Trainers 6](#_Toc62060969)

[Training in the Classroom 6](#_Toc62060970)

[Methods and materials 6](#_Toc62060971)

[Handouts 6](#_Toc62060972)

[Videos: 6](#_Toc62060973)

[Group Work: 7](#_Toc62060974)

[For trainers: 7](#_Toc62060975)

[Materials 7](#_Toc62060976)

[Methods for instruction 7](#_Toc62060977)

[Course planning 7](#_Toc62060978)

[Course time frame 8](#_Toc62060979)

[Planning the agenda 8](#_Toc62060980)

[Note for facilitators: 9](#_Toc62060981)

[Annex-1: Principles of adult learning 10](#_Toc62060982)

[Annex-2: Training methods and how to use them 12](#_Toc62060983)

[Annex -3: Key Pre/Post-Test 14](#_Toc62060984)

[Annex – 4 – Overall Training Evaluation 15](#_Toc62060985)

[References 16](#_Toc62060986)

# Introduction

The coronavirus COVID-19 pandemic is the defining global health crisis of our time and the greatest challenge we have faced since World War Two. Since its emergence in China late last year (2019), the virus has spread to [every continent](https://www.undp.org/content/undp/en/home/covid-19-pandemic-response.html#covid19dashboard) except Antarctica.

The pandemic is much more than a health crisis, it's also an unprecedented socio-economic crisis. Stressing every one of the countries it touches, it has the potential to create devastating social, economic and political effects that will leave deep and longstanding scars. UNDP is the technical lead in the UN’s socio-economic recovery, alongside the health response, led by WHO, and the Global Humanitarian Response Plan, and working under the leadership of the UN Resident Coordinators.

Every day, people are losing jobs and income, with no way of knowing when normality will return. Small island nations, heavily dependent on tourism, have empty hotels and deserted beaches. The International Labor Organization estimates that 195 million jobs could be lost. The World Bank projects a US$110 billion decline in remittances this year, which could mean 800 million people will not be able to meet their basic needs.

The COVID-19 outbreak was treated as a case of pneumonia with unknown etiology appeared in the Wuhan city of China, at the end of December 2019, which spread across the country to worldwide with a high rate[[1]](#endnote-1). The PRC (People's Republic of China) Centre for Disease Control (CDC) analyzed the respiratory samples and declared that the pneumonia was caused by a novel coronavirus which named the pneumonia as Novel Coronavirus Pneumonia (NCP)[[2]](#endnote-2). The coronavirus is one of the major virus that target the respiratory system of the human[[3]](#endnote-3). The Chinese researchers named the virus as 2019-nCoV[[4]](#endnote-4). Later, the International Committee on Taxonomy of Virus named the novel coronavirus as Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2)[[5]](#endnote-5). On the same day, February 11, 2020 the World Health Organization (WHO) name the Pneumonia as Coronavirus disease-19 (COVID-19)[[6]](#endnote-6).

The World Health Organization (WHO) declared the COVID 19 outbreak as sixth public health of emergency Services (SPHEC) on January 30, 2020[[7]](#endnote-7). This was not the first outbreak of the coronavirus. The previous coronavirus outbreaks include Severe Acute Respiratory Syndrome Coronavirus (SARS-CoV) outbreak and Middle East Respiratory Syndrome Coronavirus (MERS-CoV) outbreak[[8]](#endnote-8). The COVID-19 thought the third outbreak of the coronavirus which affected more than 209 countries including Pakistan. According to the World Health Organization (WHO), total of 1,093,349 confirmed cases with 58,620 mortalities. To date, the number of highest positive cases encountered in USA followed by Italy and Spain[[9]](#endnote-9).

The border countries of Pakistan highly affected including China, where the COVID-19 outbreak experienced first time. In the west, Italy with highest number of COVID-19 mortalities while in the north, Iran a high number of mortalities after the Italy[[10]](#endnote-10). In Pakistan, the first case of COVID-19 has been confirmed by the Ministry of Health, government of Pakistan on February 26, 2020 in Karachi, Sindh province. On the same day another case confirmed by the Pakistan Federal Ministry of Health in Islamabad. Within fifteen days, the number of total confirmed cases (COVID-19 Positive) reached to twenty (20) out of 471 suspected cases with highest numbers in the Sindh province followed by the Gilgit Baltistan. All of the confirmed cases had recent travel history from Iran, Syria and London.

The geographical location of Pakistan, with the continuous increases in the number of CVOID-19 positive cases need a high level of action, planes and management. On 12th of February, the Ministry of National Health Services, Regulation & Coordination Pakistan presented a plane “National Action Plan for Preparedness & Response to Corona Virus Disease (Covid-19) Pakistan”, it aims to control the spread of virus and 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, the local, regional and national outbreaks that can have a significant impact on the health of Pakistani population and society. To date, different steps have been taken by the government of Pakistan against COVID-19 outbreak. In this training, we will learn the different steps to address the pandemic and serve communities against CoVID-19, such as prevention, public awareness and the response of local community against COVID-19 outbreak.

# COVID-19

Updated Jan 19,2021 at 11:00 AM local

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Confirmed** | **Deaths** | **Recovered** |
| Global | 95,517,587 | 2,039,056 | 52,593,319 |
| Pakistan | 521,211 | 10,997 | 475,228 |
| Sindh | 235,576 | 3,793 | 213,624 |
| Punjab | 149,782 | 4,432 | 134,489 |
| Khyber Pakhtunkhwa | 63,615 | 1,783 | 58,240 |
| Baluchistan | 18,612 | 190 | 18,100 |
| Gilgit and Baltistan | 4,884 | 101 | 4,756 |
| Azad Kashmir | 2,298 | 62 | 2,115 |
| Islamabad | 40,111 | 457 | 37,914 |

# Vaccines

The Pfizer-BioNTech vaccine has now been cleared for use across North America, Europe and the Middle East, and vaccination campaigns have begun in at least 51 countries. That shot and the vaccine from Moderna were both found to reduce coronavirus infections by 95% in trials of tens of thousands of volunteers. A vaccine by AstraZeneca Plc and University of Oxford got its first major authorization by the U.K., on Dec. 30, 2020.

Other countries got a head start on vaccinations. China and Russia authorized their own shots in July and August 2020, before they’d been fully tested. Since then, the countries have administered millions of doses, though they provide less frequent updates on their progress.

More than 46.2 million doses have been administered in 51 countries.

Two doses are needed for full protection with the vaccines currently in use.

With the start of the global vaccination campaign, countries have experienced unequal access to vaccines and varying degrees of efficiency in getting shots into people’s arms.

Pakistan has approved AstaZeneca/Oxford and Sinovac Biotech vaccines.

There are more than 200 candidate vaccines globally.

Following are which are being inoculated in different countries under Emergency Use, Authorisation [EUA]

Pfizer/BioNTech –70ºC

Moderna 2–8ºC

AstraZeneca/Oxford 2–8ºC

Novavax 2–8ºC

Johnson & Johnson 2–8ºC

Sinovac Biotech 2–8ºC

Sputnik V 2–8ºC

EpiVacCorona

CanSinoBioligics

Sinopharm

# About this training guide

This training guide focuses on the participatory learning based on adult learning methods. It is designed to increase participants’ knowledge of and build practical skills to implement COVID-19 response in project area.

The training is organized around a set of handouts to be read by the participants themselves, facilitated by the trainers. Participants will keep the resources and addresses of webpages to get updated during the rolling information about pandemic.

# Participants

The training guide is designed for health care workers who manage OPDs on day to day basis, supervise extension workers and implement services for the management of common illnesses in public sector health facilities. This includes assessment, triage and referral of the COVID-19 suspects (if any), child health services, ANC clinics and supervision of community health workers who are involved in health outreach activities (e.g., health outreach coordinators, community mobilization coordinators, district supervisors for community health workers including CMWs and LHWs). It will also be useful for public sector providers outside project area. The guide is designed to be adapted for the target audience when necessary.

# Facilitators/ Trainers

Recommended number is at least two trainers/facilitators should lead the training per 10 participants. The trainers should be familiar with the national guidelines and rolling developments in pandemic caused by COVID-19 and experienced in the practical application of facilitation skills. This guide contains guidance for trainers/facilitators on planning the course and describes the communication and training methods used in the guide.

# Training in the Classroom

The training methods and activities used throughout the day will be participatory, building on participants’ knowledge, skills and experience. In addition to the written materials focusing on jargon, terminologies, basic definitions, national policies, WHO guidelines and organization of health services at health facilities in outpatient and outreach care sites.

This is one day in person training which requires the space to accommodate 10 persons in a room keeping social distancing.

# Methods and materials

The full course takes one days and places significant emphasis on developing practical skills. It requires about six hours of classroom work.

## Handouts

There are FOUR handouts ordered sequentially. Trainers/facilitators may adapt the length of the interaction, leave out a handout or change the order of the handouts according to the context and the target audience’s needs. The handouts are supported with optional videos on hand washing and use of ABHR depending on the availability of resources to show the videos or skip.

1. Introduction to COVID-19 for Healthcare Providers
2. National Guidelines for use of PPE in Healthcare Settings
3. National Guidelines for working of OPD in PHC settings
4. National Guidelines - Clinical Management Guidelines for COVID-19 infections

## Videos:

1. Hand hygiene demonstration Alcohol Based Hand rub (ABHR)
2. Hand hygiene demonstration water and soap

## Group Work:

1. IPC protocols/activities to minimize risk of COVID-19
2. Prioritizing PPE in Healthcare Settings
3. Organizing OPD services in PHC settings

# For trainers:

The complete trainer course materials include this trainer guidance and information, the eight participant handouts.

The trainers/facilitators will need to provide all other course materials, including videos, clip folders, punching machine, white board, board markers, pens and notebooks, as needed.

## Materials

White board and Board markers / Flip chart with sheets and markers

Handouts for participants and trainers

Video playing facility

Facilitator guide for trainers

## Methods for instruction

This course is designed to build upon the participants’ knowledge and experience and to be relevant to their needs and the needs of their communities. It uses a variety of training methods including reading, discussions, video demonstrations, and personal feedback. These methods give participants a thorough overview of concepts and protocols. The course structure is designed to challenge participants to come up with their own solutions to problems.

Participants also serve as resources for one another. Respect for individual trainees is central to the training and sharing of experiences is encouraged throughout.

# Course planning

Before planning a course facilitator must be identified and shared soft and hard copies of the facilitators guide, videos and handouts. She/he must read all handouts and see videos, find out other resources if any to address the supplementary question.

Keeping in view the nature of the disease and pandemic scientific evidences and knowledge is changing and updating on daily basis. The data and views in handouts are subjected to the current updates in the scientific knowledge about virus, disease and pandemic.

National and well as WHO guidelines are subjected to updates if any. Facilitators have to be flexible to adapt the rolling evidence and facilitate group of participants accordingly.

## Course time frame

The approximate time it takes to cover each handout is noted in the table below as a guide for planning purposes. Trainers may choose to shorten or skip some handouts and spend extra time on others depending on the participants’ knowledge, skills and objectives, as well as the training time available.

Note that if any handout is skipped for any reason, trainers should give participants the print copy of all eight handouts that are mentioned:

## Planning the agenda

|  |  |  |
| --- | --- | --- |
| **Session** | **Activity** | **Duration** |
| Introduction and pre-test | | 30 minutes |
|  | Handout-1. Introduction to COVID-19 | 60 minutes |
| Group Work -1: IPC protocols/activities to minimize risk of COVID-19 | 30 minutes |
| **TEA BREAK** | | **30 minutes** |
|  | Handout-2: National Guidelines for use of PPE in Healthcare Settings | 60 minutes |
| Group Work-2: Prioritizing PPE | 30 minutes |
| Handout-3: National Guidelines for working of OPD in PHC settings | 30 minutes |
| **LUNCH BREAK** | | **60 minutes** |
|  | Group Work-3: Organizing OPD services in PHC settings | 45 minutes |
| Handout-4: Clinical Management Guidelines for COVID-19 infections | 45 minutes |
| Posttest and closing | | 30 minutes |

Trainers/facilitators should develop a course plan that best suits the needs of their participants and their resources.

## Note for facilitators:

* Ensure all participants have filled signature sheet
* Introduce yourself
* Let participants introduce themselves
* Introduce the training
* Distribute pre-test
* Distribute Participants manual (handouts)
* Guide participants to read handouts by mentioning page numbers,
  + Handout 1 p 4 to 16
  + Handout 2 p 18 to 29
  + Handout 3 p 31 to 35
  + Handout 4 p 37 to 44
  + Identify one participant at start of the handout and assign her/him to summarize the handout at end of each handout time.
* Allow participants to read and encourage to ask questions but not in plenary.
* Guide participants to complete group work individual assignments on pages:
  + Group work 1 p 17
  + Group work 2 p30
  + Group work 3 p 36
  + Once each of the participants complete filling the grid for group work, guider them to sit in a group maintaining social distancing and fill the group work Performa and hand over to you.
  + Facilitate them to identify reporters for each group work
* Discourage to generalize the question for gaining moral support from other participants and wasting time.
* Give individual feedback in private.
* Conduct Post test
* Distribute overall training assessment checklist and get back once participants have completed
* Respond general concerns of the participants about the training (if any)

# Annex-1: Principles of adult learning[[11]](#endnote-11)

1. Dialogue: Adult learning is best achieved through dialogue. The majority of adults have adequate life experience to dialogue with any teacher about any subject and will learn new attitudes or skills best in relation to that life experience. Dialogue must be encouraged and used in formal training, informal talks, one-on-one counselling sessions or any situation where adults learn.
2. Safety in environment and process: Make people feel comfortable about the possibility of making mistakes. Adults are more receptive to learning when they are both physically and psychologically comfortable.

* Physical surroundings (e.g., temperature, ventilation, overcrowding, and light) can affect learning.
* Learning is best done when there are no distractions.

1. Respect: Appreciate learners’ contributions and life experience. Adults learn best when their experience is acknowledged and when new information builds on their past knowledge and experience (see “Relevance to previous experience” below).
2. Affirmation: Learners need to receive praise for even small attempts. They need to be sure they are correctly recalling or using information they have learned.
3. Sequence and reinforcement: Start with the easiest ideas or skills and build on them. Introduce the most important ones first. Reinforce key ideas and skills repeatedly. People learn faster when information or skills are presented in a structured way.
4. Practice: Allow learners to practice first in a safe place and then in a real setting.
5. Ideas, feelings and actions: Learning takes place through thinking, feeling and doing and is most effective when it involves all three.
6. 20/40/80 rule: We remember 20 percent of what we hear, 40 percent of what we hear and see, and 80 percent of what we hear, see and do. Learners remember more when visuals are used to support the verbal presentation, and they remember best when they practice the new skill.
7. Relevance to previous experience: People learn faster when new information or skills are related to what they already know or can do.

* Immediate relevance: People learn best when they can apply to the new topic things that they have learned in life or on the job.
* Future relevance: People generally learn faster when they recognize that what they are learning will be useful in the future.

1. Teamwork: Encourage people to learn from one another and solve problems together. This makes learning easier to apply to real life.
2. Engagement: Involve learners’ emotions and intellect. Adults prefer to be active participants in learning rather than passive recipients of knowledge. People learn faster when they actively process information, solve problems or practice skills.
3. Accountability: Ensure that learners understand and know how to put what they have learned into practice.
4. Motivation: People learn faster and more thoroughly when they want to learn. The trainer’s challenge is to create conditions in which people want to learn.

* Learning is natural, as basic a function of human beings as eating or sleeping.
* Some people are more eager to learn than others, and even within an individual, there are different levels of motivation.
* The principles outlined here will help the learner become motivated.

1. Clarity

* Messages should be clear.
* Words and sentence structures should be familiar.
* Trainers should explain technical words and make sure the learners understand the terms.
* Messages should be VISUAL.

1. Feedback: Feedback informs the learner about her/his strengths or weaknesses.

# Annex-2: Training methods and how to use them

|  |  |
| --- | --- |
| **Training Method** | **How to Use** |
| **Group discussion**: A group of no more than five participants discuss and summaries a given subject or theme. The group selects a chairperson, a recorder and/or someone to report to plenary. | * Outline the discussion’s purpose and write questions and tasks clearly to provide focus and structure. * Allow enough time for all groups to finish the task and give feedback. * Announce remaining time at regular intervals. |
| **Buzz group**:Two to three participantsdiscuss their immediate reactions to information and share examples and experiences. | * Clearly state the topic or question to be discussed along with the objectives. |
| **Brainstorm**:A spontaneous process through which group members’ ideas and opinions on a subject are voiced and written for selection, discussion and agreement. All opinions and ideas are valid. | * State clearly the brainstorming rule that there is no wrong or bad idea. * Ask for a volunteer to record the ideas. |
| **Plenary**: The entire group comes together to share ideas. | * Appoint a timekeeper.   Pose a few questions for group discussion. |
| **Action plan preparation**: Participants synthesize knowledge, skills, attitudes and beliefs into a doable plan. This bridges classroom activities with practical application at work site. | * Share action plans. |

|  |  |
| --- | --- |
| **Training Method** | **How to Use** |
| **Talk/presentation**:  A speaker shares information, sometimes | * Start with a **story or visual** that captures the audience’s attention. * Present an **initial case problem** around which the talk/ presentation. * Ask participants **test questions** even if they have little prior knowledge to motivate them to listen to the talk/ presentation for the answer. * Set a time limit. * **Allow time for feedback**, comments and individual questions. * **Pose a question** for participants to solve based on the talk/presentation. |
| **Feedback** | * Give feedback to individuals without disturbing the group. |

# **Annex -3: Key Pre/Post-Test**

|  |  |  |
| --- | --- | --- |
| ***Encircle the only correct responses*** each correct response carries TEN point. Total 100 | | |
| **Q.1:** Risk of COVID-19 infection for healthcare Providers in Screening area is | | |
| 1. Low | 1. Moderate | 1. High |
| **Q.2:** Risk of COVID-19 infection for Mothers visiting health facility OPD accompanying young children | | |
| 1. Low | 1. Moderate | 1. High |
| **Q.3:** Risk of COVID-19 infection for sanitary workers Cleaning frequently touched surfaces/ floor/cleaning linen | | |
| 1. Low | 1. Moderate | 1. High |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Q.4:** a disease \_\_\_\_\_\_\_\_\_\_\_\_\_\_is the occurrence of cases of disease in excess of what would normally be expected in a defined community, geographical area or season. Outbreaks are maintained by infectious agents that spread directly from person to person, from exposure to an animal reservoir or other environmental source, or via an insect or animal vector. Human behaviours nearly always contribute to such spread. | | | | |
| 1. Epidemic | | 1. Endemic | | 1. Case definition |
| 1. Outbreak | | 1. Pandemic | | 1. Emergency |
| **Q.5:**\_\_\_\_\_\_\_\_\_\_\_\_ is a set of diagnostic criteria that must be fulfilled in order to identify a case of a particular disease. It can be based on clinical, laboratory, epidemiological, or combined clinical and laboratory criteria. | | | | |
| 1. Epidemic | 1. Endemic | | 1. Case definition | |
| 1. Outbreak | 1. Pandemic | | 1. Emergency | |
| **Q.6:** \_\_\_\_\_\_\_\_\_\_\_\_\_ is the occurrence in a community or region of cases of an illness, specific health-related behavior, or other health-related events clearly in excess of normal expectancy. | | | | |
| 1. Epidemic | 1. Endemic | | 1. Case definition | |
| 1. Outbreak | 1. Pandemic | | 1. Emergency | |

|  |  |  |
| --- | --- | --- |
| **Q.7:** An epidemic (s) occurring worldwide, or over a very wide area, crossing international boundaries and usually affecting a large number of people is defined as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. | | |
| 1. Epidemic | 1. Endemic | 1. Case definition |
| 1. Outbreak | 1. Pandemic | 1. Emergency |
| **Q.8:**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is defined as “a sudden and usually unforeseen event that calls for immediate measures to minimize its adverse consequences” | | |
| 1. Epidemic | 1. Endemic | 1. Case definition |
| 1. Outbreak | 1. Pandemic | 1. Emergency |
| **Q.9:** Who is at risk of COVID-19 infection? | | |
| 1. Older population | 1. Children | 1. Everyone |

|  |  |  |
| --- | --- | --- |
| **Q.10:** Match the definition with its term.  The physical removal of foreign material, including dust, soil, and organic material such as blood, secretions, excretions, and microorganisms. | | |
| 1. Decontamination | 1. Cleaning | 1. Disinfection |

# Annex – 4 – Overall Training Evaluation

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **I would rate the training as** | **Poor** | | | | | **Excellent** | | | | |
| The Content overall | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| The content was CORRECT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| The content was RELEVANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| The content was COMPLETE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| The amount of information was | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| The trainer’s facilitation was | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| The training methodology was | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| The organization of training was | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Meals and Refreshment was | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| The administration of the training was | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Please write any other comments if you wish to make: | | | | | | | | | | |
|  | | | | | | | | | | |
|  | | | | | | | | | | |
|  | | | | | | | | | | |
|  | | | | | | | | | | |
|  | | | | | | | | | | |
|  | | | | | | | | | | |
|  | | | | | | | | | | |

# References

1. Sahin A.R., Erdogan A., Agaoglu P.M., Dineri Y., Cakirci A.Y., Senel M.E., Tasdogan A.M. 2019 novel coronavirus (COVID-19) outbreak: a review of the current literature. EJMO. 2020;4(1):1–7. [[Google Scholar](https://scholar.google.com/scholar_lookup?journal=EJMO&title=2019+novel+coronavirus+(COVID-19)+outbreak:+a+review+of+the+current+literature&author=A.R.+Sahin&author=A.+Erdogan&author=P.M.+Agaoglu&author=Y.+Dineri&author=A.Y.+Cakirci&volume=4&issue=1&publication_year=2020&pages=1-7&)] [↑](#endnote-ref-1)
2. Wang L.S., Wang Y.R., Ye D.W., Liu Q.Q. A review of the 2019 Novel Coronavirus (COVID-19) based on current evidence. Int J Antimicrob Agents. 2020:105948. [[PMC free article](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7156162/)] [[PubMed](https://www.ncbi.nlm.nih.gov/pubmed/32201353)] [[Google Scholar](https://scholar.google.com/scholar_lookup?journal=Int+J+Antimicrob+Agents&title=A review+of+the+2019+Novel+Coronavirus+(COVID-19)+based+on+current+evidence&author=L.S.+Wang&author=Y.R.+Wang&author=D.W.+Ye&author=Q.Q.+Liu&publication_year=2020&pages=105948&pmid=32201353&)] [↑](#endnote-ref-2)
3. Hoehl S., Rabenau H., Berger A., Kortenbusch M., Cinatl J., Bojkova D., Neumann P. Evidence of SARS-CoV-2 infection in returning travelers from wuhan, China. New England J Med. 2020;382(13):1278–1280. [[PMC free article](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7121749/)] [[PubMed](https://www.ncbi.nlm.nih.gov/pubmed/32069388)] [[Google Scholar](https://scholar.google.com/scholar_lookup?journal=New+England+J+Med&title=Evidence+of+SARS-CoV-2+infection+in+returning+travelers+from+wuhan,+China&author=S.+Hoehl&author=H.+Rabenau&author=A.+Berger&author=M.+Kortenbusch&author=J.+Cinatl&volume=382&issue=13&publication_year=2020&pages=1278-1280&pmid=32069388&)] [↑](#endnote-ref-3)
4. Zhu N., Zhang D., Wang W., Li X., Yang B., Song J., Niu P. A novel coronavirus from patients with pneumonia in China, 2019. New England J Med. 2020;382(8):727. [[PMC free article](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7092803/)] [[PubMed](https://www.ncbi.nlm.nih.gov/pubmed/31978945)] [[Google Scholar](https://scholar.google.com/scholar_lookup?journal=New+England+J+Med&title=A novel+coronavirus+from+patients+with+pneumonia+in+China,+2019&author=N.+Zhu&author=D.+Zhang&author=W.+Wang&author=X.+Li&author=B.+Yang&volume=382&issue=8&publication_year=2020&pages=727&pmid=31978945&)] [↑](#endnote-ref-4)
5. Zu Z.Y., Jiang M.D., Xu P.P., Chen W., Ni Q.Q., Lu G.M., Zhang L.J. Coronavirus disease 2019 (COVID-19): a perspective from China. Radiology. 2020 200490-200490. [[Google Scholar](https://scholar.google.com/scholar_lookup?journal=Radiology&title=Coronavirus+disease+2019+(COVID-19):+a+perspective+from+China&author=Z.Y.+Zu&author=M.D.+Jiang&author=P.P.+Xu&author=W.+Chen&author=Q.Q.+Ni&publication_year=2020&)] [↑](#endnote-ref-5)
6. Rodriguez-Morales A., Tiwari R., Sah R., Dhama K. COVID-19, an emerging coronavirus infection: current scenario and recent developments-an overview. J Pure Appl Microbiol. 2020;14:6150. [[Google Scholar](https://scholar.google.com/scholar_lookup?journal=J Pure+Appl+Microbiol&title=COVID-19,+an+emerging+coronavirus+infection:+current+scenario+and+recent+developments-an+overview&author=A.+Rodriguez-Morales&author=R.+Tiwari&author=R.+Sah&author=K.+Dhama&volume=14&publication_year=2020&pages=6150&)] [↑](#endnote-ref-6)
7. Bilgin S., Kurtkulagi O., Kahveci G.B., Duman T.T., Tel B.M.A. Millennium pandemic: a review of coronavirus disease (COVID-19) Exp Biomed Res. 2020;3(2):117–125. [[Google Scholar](https://scholar.google.com/scholar_lookup?journal=Exp+Biomed+Res&title=Millennium+pandemic:+a+review+of+coronavirus+disease+(COVID-19)&author=S.+Bilgin&author=O.+Kurtkulagi&author=G.B.+Kahveci&author=T.T.+Duman&author=B.M.A.+Tel&volume=3&issue=2&publication_year=2020&pages=117-125&)] [↑](#endnote-ref-7)
8. Zhou P., Yang X.L., Wang X.G., Hu B., Zhang L., Zhang W.,., Chen H.D. A pneumonia outbreak associated with a new coronavirus of probable bat origin. Nature. 2020;579(7798):270–273. [[PMC free article](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7095418/)] [[PubMed](https://www.ncbi.nlm.nih.gov/pubmed/32015507)] [[Google Scholar](https://scholar.google.com/scholar_lookup?journal=Nature&title=A pneumonia+outbreak+associated+with+a+new+coronavirus+of+probable+bat+origin&author=P.+Zhou&author=X.L.+Yang&author=X.G.+Wang&author=B.+Hu&author=L.+Zhang&volume=579&issue=7798&publication_year=2020&pages=270-273&pmid=32015507&)] [↑](#endnote-ref-8)
9. World health organization (WHO) <https://www.who.int/emergencies/diseases/novel-coronavirus-2019> [↑](#endnote-ref-9)
10. Saqlain M., Munir M.M., Ahmed A., Tahir A.H., Kamran S. Is Pakistan prepared to tackle the coronavirus epidemic? Drugs Ther Persp. 2020:1–2. [[PMC free article](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7095264/)] [[PubMed](https://www.ncbi.nlm.nih.gov/pubmed/32218652)] [[Google Scholar](https://scholar.google.com/scholar_lookup?journal=Drugs+Ther+Persp&title=Is+Pakistan+prepared+to+tackle+the+coronavirus+epidemic?&author=M.+Saqlain&author=M.M.+Munir&author=A.+Ahmed&author=A.H.+Tahir&author=S.+Kamran&publication_year=2020&pages=1-2&)] [↑](#endnote-ref-10)
11. Adapted from J. Vella. 1994. Learning to Listen, Learning to Teach. [↑](#endnote-ref-11)